Back to the future:
Sustainable innovations for ethical food production and consumption

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Back to the future: Sustainable innovations for ethical food production and consumption

EurSafe 2024

Ede, The Netherlands

11 — 14 September 2024

edited by:

Mona F. Giersberg

Bernice Bovenkerk

Franck L.B. Meijboom



BRILL

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Copyright 2024 by Koninklijke Brill BV, Leiden, The Netherlands

Koninklijke Brill BV incorporates the imprints Brill, Brill Nijhoff, Brill Schöningh, Brill Fink, Brill mentis, Brill Wageningen Academic, Vandenhoeck and Ruprecht, Böhlau and VandR unipress.

All rights reserved. No part of this publication may be reproduced, translated, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the publisher. Requests for re-use and/or translations must be addressed to Koninklijke Brill BV via brill.com or copyright.com.

e-ISBN: 978-90-0471-550-9
DOI: 10.3920/978-90-0471-550-9

First published, 2024

© Koninklijke Brill BV
The Netherlands, 2024

The individual contributions in this publication and any liabilities arising from them remain the responsibility of the authors.

The publisher is not responsible for possible damages, which could be a result of content derived from this publication.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Reviewers

We would like to thank all reviewers for their efforts and the time they invested in the review process of the papers of this volume. Their constructive feedback provided all authors with valuable support for preparation of their contributions to the EurSafe 2024 conference.

Stef Aerts
Felix Arion
Volker Beusmann
Leon Borgdorf
Bernice Bovenkerk
Ellen Deelen
Diana Dumitras
Mona Giersberg
Mickey Gjerris
Herwig Grimm
Kristin Hagen
Amaia Inza-Bartolomé
Matthias Kaiser
Teea Kortetmäki
Koen Kramer
Franck Meijboom
Simon Meisch
Joachim Nieuwland
Anna Olsson
Frauke Pirscher
Per Sandin
Svenja Springer
Paulo Vaz-Pires
Ivo Wallimann-Helmer
Ariane Willemsen

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Table of contents

Reviewers 5

Preface: Still food for thought, but different questions 13

Introduction: Back to the future — Sustainable innovations for ethical food production and consumption 15

Section 1.
Innovations in farming and food production

Can organic food production develop to deal with both price consciousness and climate concerns? 21
P. Sandøe, S. Denver, K. Ditlevsen, T.B. Lund, J.V. Olsen, M.F. Pedersen, M. Schou and T. Christensen

The real(izable) price of climate-smart and healthy diets: a capacity-sensitive approach 27
T. Kortetmäki

Exploring social impacts of food surplus redistribution 32
A. Inza-Bartolomé and L. Escajedo San-Epifanio

Food safety and traceability in local farming of fruits and vegetables in the North of Portugal 38
A. Macieira and P. Teixeira

Moral landscape zoning solves the Dutch natural history drama 44
V. Beekman

Equitable access to plant genetic resources and benefit sharing: A comparison of existing systems 51
L. Escajedo San-Epifanio, I. Alonso Sanz, I. Filibi and J. Uncetabarrenechea

Women's (hidden) contribution to the sustainability of modern Australian farming businesses 58
E.A. Buddle

Sustainable diets: examining policies shaping the development of organic food production and consumption in the Nordic context 60
N. Strøm-Andersen, A.B. Milford and X. Liu

Should there be an Intergovernmental Panel on Food Security and Sustainability? 71
M. Kaiser

Section 2.
Novel technologies in food production

Is it unethical not to use genome editing? On how (not) to promote citizen engagement for responsible technology development 81
S. Carson, B. Myskja and A.I. Myhr

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Scoping genome editing in the Norwegian public 87
T. Blix and H. Wathne

Cultured meat and responsible research when the future is an illusion for financial speculation 93
R. Helliwell, E. Bjørnerud and T. Nerby

Ethics and aesthetics of alternative protein in Japan 99
A.H. Kimura and S. Hisano

Why do people choose to eat meat? — Changing views on meat replacement 106
J. Hirnet,, T. Bollmeier, K. Persson, A. Nelke, P. Kunzmann and M. Plötz

Understanding the politics of the European Union food nanotechnology regulatory choices 112
V. Sodano

Extending biomedical principlism and the ethical matrix: market farming, water scarcity and climate change 118
I. Wallimann-Helmer

Seaweed innovation — The role of missions-oriented policy 125
A. Myklebust and B.K. Myskja

Ethical responsibility in agricultural innovations: The role of technological imaginaries 130
M. Innocenti

Genome editing in Plants and EU provisions for coexistence with organic farming (poster) 135
L. Escajedo San-Epifanio, I. Filibi, J. Uncetabarrenechea and A. Lasa-López

Food technologies under and out of human control: philosophical accounts from posthuman feminism (poster) 142
V. De Gregorio

Why local plant proteins fail to take off? (poster) 143
T. Kortetmäki

Section 3.
Veterinary and animal ethics

3.1. Focus on ethical theory **148**

Challenging burger veganism with an argument from virtue ethics 149
L. Borgdorf

What can dignity do for animals? 155
K. Eckl

Løgstrup and animals — time for a Gestalt shift? 161
M. Gjerris and J.L. Harfeld

Franck Meijboom and Stephen Rutgers (eds), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Institutional epistemic barriers to anti-speciesist knowledge 167
E.L. van den Brandeler

Non-human animals in corporate social responsibility? Evidence from companies in the Nordic region 173
P. Pohjolainen, M. Vinnari and E. Vinnari

3.2 Animal welfare **179**

Simply the best? How the ranking argument prevents improvements in animal welfare law in the EU 180
C. Rodriguez Perez, N.D. Müller, K. Persson and D.M. Shaw

Closing the gap (2): A decision-making council for animal welfare 187
S.S. Andersen, M. Gjerris, M.P. Goddiksen, S.V. Kondrup and R.B. Mikkelsen

The history of animal welfare and its connection to ethics 193
J.L. Harfeld

Good animal welfare in a sustainable food system 199
H. Bjørkhaugand M. Thorseth

The challenge of nature-inclusive farming systems — A collection of potential dilemma's for veterinarians 205
A. van der Aa and J. van Herten

Breakfast on the farm: farm tour impacts on public perceptions of dairy cow welfare and sustainability 212
A.M.C. Smid, S.M. Roche, H.W. Barkema, W. Ruiter and B.A. Ventura

Breakfast on the farm: dairy farmer experiences in delivering tours to members of the public 218
B.A. Ventura, S.M. Roche, A. Schaafsma, H.W. Barkema, W. Ruiter and A.M.C. Smid

US public attitudes on farm animal welfare during a disease outbreak and pandemic preparedness 223
R. Anthony

3.3. Human-animal relationships **228**

The shame of being human: On the critical use of shame in human-animal relations 229
T. Kainberger and H. Grimm

What Tbilisi street dogs and their human patrons can teach us about animal agency and multispecies care 236
Y. Kisora, B. Bovenkerk and C. Driessen

Implementing animal care ethics through the arts of visual thinking strategies 242
M. Rooijakkers, B. Bovenkerk and J. Jacobs

Fur-ever comfort: the role of normative professionalism in animal hospice and palliative care 248
E. Deelen and F.L.B. Meijboom

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

3.4 Novel technologies and responsibilities **254**

Animal-centred AI: On the need of value-sensitive innovation in the context of animal production 255
M.F. Giersberg

Animal pain as a matter of technology: Ethical aspects of using automated pain detection for farmed animals 261
L.N. Bossert and M. Ryan

Ethical responsibilities of veterinarians in the context of genetic testing for degenerative myelopathy in dogs 267
S. Aerts, B. Broeckx and S. De Vliegher

Change to conserve? Genome editing threatened species 273
H. Winther and B.K. Myskja

What should we breed cattle for? Results of Public Engagement with a Democs card game 279
D. Bruce and A. Bruce

Attitudes towards genome editing in farmed animals: An interview study 285
L. Borgdorf and F.L.B. Meijboom

3.5 Animal experimentation **292**

Handle with care: The relational matrix of veterinary medicine 293
C.J. Rademaker

QALY as a supporting factor for animal model selection in animal research 299
K. Persson and S. Hartstang

Independent review of animal experimentation: Who should do what and when? 305
E. Louis-Maerten, A. Milford and B.S. Elger

Why all healthy laboratory animals should be rehomed 311
M.R.E. Janssens and P.L.P. van Loo

3.6 Veterinary professionals **317**

Mission veterinary medicine: Learning from methodological aspects in Just War Theory 318
K. Deininger, J. Karg and H. Grimm

Sociologising veterinary ethics: An exploration of professional identity 324
M.J. Bubeck and S. Springer

The hidden skill? Dealing with disgust in veterinary medicine 330
J. Karg and C. Dürnberger

Moral distress measurement in animal care workers: a systematic review 335
Y. Baysal, N. Goy, S. Hartnack and I. Guseva Canu

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Between the beast and the boss: Work psychology challenges for animal health and welfare staff 342
D.N. Costa, D. Rolo, N.H. Franco, M. Magalhães-Sant'Ana and I.A.S. Olsson

Live and let die — The distinction between doing and allowing harm and the veterinarian's integrity 348
E. Linder

Section 4.
Teaching ethics

Teaching protein futures — A cross-disciplinary approach 357
E. Bjørnerud, V. Jones, C. Bear, H.E. Pilskog, C.B. Halstvedt, R. Helliwell, T. Nerby and P. Varela

Understanding food issues in socioscientific argumentation: A case study of primary science classrooms in China 363
C. Liao and G. Liao

From engineering to bioengineering: towards an ethical turning point 370
P. du Jardin

Before studying veterinary medicine. A discussion of biographical aspects of veterinary students 376
C. Dürnberger, S. Fliri and S. Springer

Critical evaluation-methods of chatbot output accuracy in animal ethics (poster) 383
D. Springinklee

Section 5.
Environmental ethics

An ethical agenda for the oceans and the planet 389
M.E. Lam

Synthetic biology, genetic engineering in the wild, and biological diversity 391
K. Hagen, M. Otto, K. Stracke and M. Engelhard

Rewilding – Does changing nature require changing humans' (view of) nature? 398
C. Gamborg and P. Sandøe

Reevaluating feral cat management strategies in Australia 405
L. Vermeulen

Working with nature, but how? Moving beyond agroecology and ecomodernism in pest management 411
J.J. Glas, B. Bovenkerk and J. van der Stoep

Five fallacies in addressing the future in environmental studies 417
A. Kallhoff

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Bioprospecting microbial biodiversity for sustainable futures: An ethics of exploitation? 423
Z. Robaey and P. Sandin

Prioritizing climate adaptation limits and trade-offs 428
S. Kräuchi and I. Wallimann-Helmer

Section 6.
Miscellaneous

The eat-er and the fed-er: Feeling, feeding and livestock in more-than-animal worlds 437
S. Efstathiou and E. Roe

Obscured disruptions of industrial poultry sheds 443
N. Lis

Next level collaboration: towards responsible innovation for behavioural phenotyping in farm animals 448
M.F. Giersberg, A. van Putten and F.L.B. Meijboom

The use of the Research Ethics cards for enhancing reflexivity: Case study on detection of microplastics in salmon 454
H.S. Bjerklund , T. Antonsen and A.I. Myhr

Trends and developments in Asia Pacific food ethics: Perspectives from APSAFE2020 and 2023 460
K. Ota

Asia Pacific environmental food ethics for a sustainable future 465
J.D. Sellmann

Applying Eurocentric food ethics to non-Western contexts: Challenges and resolutions 471
T.I. Loonstra and J. Qian

Panel: The social epistemology of engineered agricultural ecosystems 477
C. Kendig, R. Ankeny, P. Sandin and P.B. Thompson

Author index 479

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Preface:
Still food for thought, but different questions

This year we celebrate 25 years of EurSafe congresses. In 1999 the first European Congress on Agricultural and Food Ethics was organised in Wageningen. That event also marked the launch of the European Society for Agricultural and Food Ethics (EurSafe), which was officially founded in 2000. From the beginning, the aim of EurSafe was to stimulate an international academic and public debate on ethical issues in agriculture and food. Already from that first congress, the scope has also included the role and position of animals and environmental issues related to agriculture and food. And its approach has been interdisciplinary since 1999.

Looking at this volume of papers that have been submitted for the 18th Congress of the European Society for Agricultural and Food Ethics, I think it fair to say that we have developed a valuable tradition that still builds on the ideas behind the first congress. With "Sustainable innovations for ethical food production and consumption" as its main theme, the congress includes contributions from many disciplines, from scholars with a variety of international backgrounds and on a broad range of topics that include cultural dimensions of food innovation, human–animal relationships as well as the ethical issues of novel technologies.

But this congress is much more than a confirmation that the issues and the approach of 1999 are still relevant. Food and agriculture are still food for thought and still in need of ethical reflection and discussion. However, the world has changed since then. And this is reflected in the themes of the EurSafe congresses. The early meetings focused on issues of food security, safety and quality, and the role of (bio) technology. In later years this shifted to issues of sustainability, culture and the role of professionals. And in recent years, issues of food security and safety have returned to the agenda. This is not just a return to 'old' issues, but a shift inspired by new challenges such as climate change, a growing world population and changes at the geopolitical level.

The search for sustainable innovations for ethical food production and consumption is therefore much more than a fashionable topic. There is an urgent need to discuss, analyse and contribute to a future of food production and consumption that takes into account the perspectives of humans, non-human animals and the environment. This volume shows the need of taking the ethical dimensions seriously in this context.

It is therefore important that this volume also indicates that there is more to celebrate than an anniversary. The papers show that EurSafe attracts scholars with inspiring and thought-provoking ideas and arguments. This shows that EurSafe is future-proof and an attractive community to discuss the still relevant ethics of agriculture and food, including animal and environmental issues. For the latter, we are pleased to join forces for this congress with the International Society for Environmental Ethics (ISEE) and have a stream dedicated to environmental ethics.

To the readers of this collection of congress papers, I hope that these extended abstracts will inspire and support your own work, and also show that science is a team effort. The individual papers are all worth reading, but it is in the context of all the papers that it becomes clear how they contribute to innovation towards sustainable agriculture and food. This is why the papers also form the basis for the presentations and discussions at the EurSafe congresses. This exchange is essential. New ideas and insights often emerge from the discussions. This applies not only to the biennial congresses, but also to EurSafe as a platform for exchange and networking. I therefore hope that this book will inspire you to follow the other activities of EurSafe and also to contribute to future activities, such as the EurSafe Congress in 2026.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

On behalf of the EurSafe Board,

Franck Meijboom

President of the European Society of Agricultural and Food Ethics (EurSafe)

June 2024

Franck Meijboom and Patrick Baur, Back to the Future, ISBN 90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Introduction: Back to the future — Sustainable innovations for ethical food production and consumption

'Back to the future' — some people may think of an attention-grabbing word play in which 'back' juxtaposes with 'future' in a self-contradictory way, and most of us will associate it with the popular 1985 science fiction film. Indeed, both the word play and Zemeckis' and Gale's film relate on many levels to the key theme of the EurSafe 2024 conference in Ede: Sustainable innovations for ethical food production and consumption. First, just as the film idea was rejected over forty times by different studios before production could eventually start ('Back to the Future', n.d.), it often takes numerous trials, rejections and adaptations before research ideas and theories on sustainable innovations in agriculture and food production bring about transformations in practice. The agricultural and food production sector faces substantial barriers to innovation, such as specialized adoption uncertainty, management of complex relationships and knowledge bases, particularly academic-industry partnerships, competing innovation goals, conservative markets, highly fragmented and uncoordinated supply chains, and regulatory requirements (Dahabieh *et al*., 2018). In addition, consumer rejection or acceptance of novel food technologies is variable and difficult to predict (Frewer *et al*., 2011). Only by anticipating these barriers and being responsive to them, the full potential of innovations in agriculture and food production can be realized to tackle urgent societal challenges like climate change, animal welfare and food security and safety. Second, the success and enduring popularity of the science fiction film were often attributed to its focus on storytelling rather than on effect ('Back to the Future', n.d.). The same holds true for research on the ethics of innovation in agriculture and food (Gremmen *et al*., 2019). The inclusion of social and ethical aspects or rather a shift towards an ethics of innovation requires rigorous research and carefully developed and applied theories. There is no room for catchy but premature conclusions. Third, in the film, technological advancement is uncritically embraced as a means to better people's biographies. The preference of solving problems with technology is also present in the field of agriculture and food production. This approach is often referred to as technological fix, i.e. reducing overwhelming societal challenges to technological problems which are manageable and less demanding to resolve. While a simple rejection of this approach falls short of the complexity of the issue, further analysis of the philosophical and practical criticisms of technological fixes in the field of agriculture and food production would be valuable to gain a better understanding of, for instance, certain policy arguments regarding biotechnologies (Scott, 2011). Finally, we look back on 25 years of research, exchange and networking in the field of agricultural and food ethics as we celebrate EurSafe's anniversary this year. Although we may never be able to travel back in time to build an alternate and better present, now is the time to take responsibility to create the kind of sustainable world and society we want for generations to come.

In this introduction, we explore different aspects of sustainable innovations for ethical food production and consumption. We do so by linking the sections and papers of this volume and by making explicit how the diverse contributions relate to the key theme of the EurSafe 2024 conference.

Section 1. Innovations in farming and food production

The agricultural and food production sector is facing major challenges, such as climate change, limited natural resources, biodiversity loss and inequalities in access to safe and healthy diets. To address the complexity of these challenges, to realize more sustainable food production and consumption patterns, and to reach the related UN Sustainable Development Goals (United Nations, 2015), paradigm changes are needed. This is illustrated by the contributions to this section, in which the focus does not lie on

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

specific technological innovations, but on innovations at a social- and a systems-level. One example is organic production which as a whole can be framed as an innovation of agricultural practices. Like all kinds of sustainable innovations, this is accompanied by value assumptions, discussions of norms and the need for ethical decision making. Is the system of organic production, which is often regarded as particularly sustainable but which currently relies on livestock production in many cases, still viable when climate- and animal welfare sensitive citizens reject the consumption of animal proteins? Other papers in this section discuss aspects of justice and policy making for a transition to sustainable food consumption. This section ends with a discussion on whether and under which conditions an intergovernmental panel on food security and sustainability should be established to fuel policy in analogy to the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

Section 2. Novel technologies in food production

Though it is evident that innovations in agriculture and food production need to take place at a social- and a systems-level to be sustainable in the long term, technological developments can act as an integral part or even a driver or barrier within these wider transitions. Therefore, this section zooms in on particular novel technologies and discusses their challenges and opportunities in the light of ethical food production and consumption. Technological innovations presented here include for instance genome editing, cultured meat, seaweed and other alternative proteins, and nanotechnology. The contributions at the beginning of this section set the focus on public resonance of the respective technology, while the papers that follow are directed towards policy and regulatory choices.

Section 3. Veterinary and animal ethics

Including a section on veterinary and animal ethics in this volume on sustainable innovations for ethical food production and consumption is essential because animals are part of many food systems and are directly or indirectly affected by transitions of these systems. However, both the volume and scope of this section show that sustainable innovations are researched in numerous other contexts than food production by the EurSafe community. In contrast to the UN Sustainable Development Goals, animals are visible and play a key role in this volume, also when they are not subjected to food systems. Contributions with a focus on ethical theory challenge novel consumption styles with virtue ethics, discuss the concepts of dignity and speciesism, and explore the role of animals in Corporate Social Responsibility. Several papers on animal welfare link to specific innovative farming systems, social innovations, and regulatory considerations. Next are contributions on the concepts of shame, animal agency and animal palliative care show that learning from and transforming human–animal relationships can be regarded as sustainable innovation in its own right. As in previous sections, we also zoom in on particular technological innovations and their normative implications in the context of animal care: Artificial Intelligence, genetic testing and genome editing. Similar to the topic of human–animal relationships, papers on animal experimentation discuss advances, such as rehoming healthy laboratory animals, as innovations in this field. This section closes with contributions focussing on the roles and responsibilities, but also on the moral burdens of veterinary and other professionals caring for animals.

Section 4. Teaching ethics

This section reflects many of the topics that have already been introduced: alternative proteins, bioengineering, genome editing, and Artificial Intelligence. What connects them is their focus on teaching and education. Teaching sustainable innovations in agriculture and food production can on the one hand be framed as a means to overcome barriers to innovation. On the other hand, however, education on these topics is much more: it enables future researchers and professionals to engage in

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

responsible research and innovation practices and to refrain from hasty conclusions. Eventually, the provision of inclusive and equitable quality education may be seen as a sustainable, social innovation in its own right.

Section 5. Environmental ethics

Both individual technological innovations and innovations at a systems-level in agriculture and food production often impact the broader environment and ecosystems in which they are situated, including humans, other animals and natural entities. At the same time, a changing nature, manifested for instance in climate change and biodiversity loss, may require radical changes in the way humans view and relate to nature, and what this entails for the development and maintenance of sustainable food production systems and consumption patterns. This section starts with a contribution on the global challenge of developing an ethical agenda for the oceans and the planet. In the following, this section unites elaborations on the topics of synthetic biology, rewilding, bioprospecting and climate change. Other papers in this section focus on ethical considerations regarding feral cat and pest management By including many contributions on these topics, we also highlight our ties with the International Society for Environmental Ethics (ISEE).

Section 6. Miscellaneous

This final section is a reflection of the enormous diversity of issues being researched within the EurSafe community. The papers of this section contribute in various, unique ways to the key theme of this volume. It starts with conceptual analyses of a fundamental practice (i.e. feeding and being feed) and historical developments in agriculture. Other contributions address novel methods and facilitation strategies for collaboration using technological innovations in the field of agriculture and food production as a case study. These novel strategies gain importance as we shift from interdisciplinary to transdisciplinary research initiatives, in which diverse stakeholders are not regarded as research subjects or participants, but as equal research partners. This approach may not only help to overcome barriers of innovation in an instrumental way, but also to create intrinsically just and sustainable future food systems. The section is closed by several contributions highlighting global perspectives on sustainable innovations for ethical food production and consumption. Including these perspectives helps to acknowledge that many common views, such as the labelling of organic production and plant-based diets as innovations are determined by Western perspectives that are not necessarily globally valid.

Overall, this volume includes a multi-facetted collection of contributions which deal with social and ethical considerations in the context of sustainable innovations in agriculture and food production. It is a matter of zooming in and out: from particular technological innovations to innovations at a social- and a systems-level. This also takes into account contexts other than food systems, in which sustainable innovations are relevant, such as the contexts of human–animal relationships or animal experimentation. With this collection of original research we aim to inspire further investigations and collaborations, and to move ahead towards a future of more sustainable and ethical food production and consumption.

M.F. Giersberg, B. Bovenkerk, F.L.B. Meijboom
Editors

References

'Back to the Future' (n.d.). In Wikipedia, The Free Encyclopedia. Available online at https://en.wikipedia.org/w/index.php?title=Back_to_the_Futureandoldid=1228171109 (accessed 19 June 2024).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Dahabieh, M.S., Bröring, S. and Maine, E. (2018). Overcoming barriers to innovation in food and agricultural biotechnology. Trends in Food Science and Technology, 79(July), 204–213. DOI: 10.1016/j.tifs.2018.07.004

Frewer, L.J., Bergmann, K., Brennan, M., Lion, R., Meertens, R., Rowe, G., Siegrist, M. and Vereijken, C. (2011). Consumer response to novel agri-food technologies: Implications for predicting consumer acceptance of emerging food technologies. Trends in Food Science and Technology, 22(8), 442–456. DOI: 10.1016/j.tifs.2011.05.005

Gremmen, B., Blok, V. and Bovenkerk, B. (2019). Responsible innovation for life: five challenges agriculture offers for responsible innovation in agriculture and food, and the necessity of an ethics of innovation. Journal of Agricultural and Environmental Ethics, 32(5–6), 673–679. DOI: 10.1007/s10806-019-09808-w

Scott, D. (2011). The technological fix criticisms and the agricultural biotechnology debate. Journal of Agricultural and Environmental Ethics, 24(3), 207–226. DOI: 10.1007/s10806-010-9253-7

United Nations (2015). The UN Sustainable Development Goals. United Nations, New York, NY. Available online at https://sdgs.un.org/goals (accessed 19 June 2024).

Franck Meijboom and Patrick Baas, Back to the future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Section 1.
Innovations in farming and food production

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Can organic food production develop to deal with both price consciousness and climate concerns?

P. Sandøe[1,2,], S. Denver[1], K. Ditlevsen[1], T.B. Lund[1], J.V. Olsen[1], M.F. Pedersen[1], M. Schou[1] and T. Christensen[1]*
[1] University of Copenhagen, Department of Food and Resource Economics, Rolighedsvej 23, DK-1958 Frederiksberg C, Denmark; [2] University of Copenhagen, Department of Veterinary and Animal Sciences, Grønnegårdsvej 8, DK-1870 Frederiksberg C, Denmark
** Corresponding author: pes@sund.ku.dk*

Abstract

Denmark has one of the highest shares of organically produced food products in the world and previously boasted an unbroken record of increasing market shares over two decades. However, this development reverted in 2022 and the downward trend has continued in 2023. One explanation for this drop is the general tendency towards 'downtrading' when it comes to food, which may have led consumers to substitute organic food products with cheaper organic varieties or with the products' conventional counterparts. This agrees with the finding that sales have fallen most dramatically for relatively costly organic products, especially beef, pork, and chicken. Downtrading may be a temporary trend due to the economic pressure on consumers caused by inflation and high food and energy prices. However, it could be a more permanent development. Furthermore, organic production is often perceived to be more sustainable than conventional production on several parameters, such as biodiversity and animal welfare. This perception may not apply unambiguously regarding the climate footprint μ particularly when it comes to animal production. Many consumers are concerned about climate change and some are also concerned about the climate footprint of their diet and are transitioning towards a more plant-based diet. Those who are willing to pay for organic food products are also among the most climate-conscious food consumers. Therefore, an increasing number of regular organic consumers could potentially reject animal-based products altogether. Although reduced animal production can be a positive thing, e.g., in terms of climate impacts, this potential development can be not only a livelihood challenge for organic livestock producers but can also threaten the organic sector as a whole due to the key role that animal production — particularly dairy — plays in current Danish organic production. A lower level of organic animal production may lead to higher production costs, also for organic plant-based products, because of economies of scope related to the supply of nutrients for plants from ruminant based production. This may lead to a price increase and in turn to more downtrading. We discuss these challenges for the organic sector using data on developments in the organic markets and consumer demand for organic food, as well as theoretical considerations of the role of economies of scope in organic food production.

Keywords: downtrading, organic market, plant-based diet

Introduction

This paper looks at the recent development of organic food consumption in Denmark, a country with one of the highest rates in the world (Willer *et al*., 2023). Organic food consumption in Denmark is differentiated by organic products being sold in almost all supermarket chains (Bech-Larsen *et al*., 2023). However, in 2022, what had appeared to be a never-ending increase in the organic share of food consumption reverted.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

In this paper we first document this recent development and then look into two possible explanations: first, increasing price consciousness leading to downtrading, second, increasing climate concerns leading the most committed organic consumers to shift towards plant-based products. We end by highlighting some possible challenges for organic production if organic consumers turn their backs on animal products.

The paper represents a work in progress. Over the next three years, the authors will undertake research to deepen our understanding of where future organic production and the market for organic food in Denmark is heading, under the project ØKO-KOST. This project is part of the Danish research programme: "Organic Research, Development and Demonstration Programme" (Organic RDD), which is financially supported by the Green Development and Demonstration Programme at the Ministry of Food, Agriculture and Fisheries of Denmark.

Recent developments in organic food consumption in Denmark

In 2022 two decades of increasing market share reverted with a stark decrease in organic retail sales that had already begun in 2021 (Statistics Denmark, 2023). The decrease from 2020 to 2022 measured in terms of the organic volume consumed was substantial (9%, see Figure 1), and the downward trend continued in 2023, while the reduction in the amount spent on organic food was smaller (3%). One of the most highly affected groups of products seems to be organic meat products, with a 30% reduction in volume and a 25% fall in the amount spent from 2020 to 2023 (Statistics Denmark, 2024a). The tendency for a lower decrease in the amount spent on organic food compared to volume consumed must be interpreted in the context of rising food prices during the period.

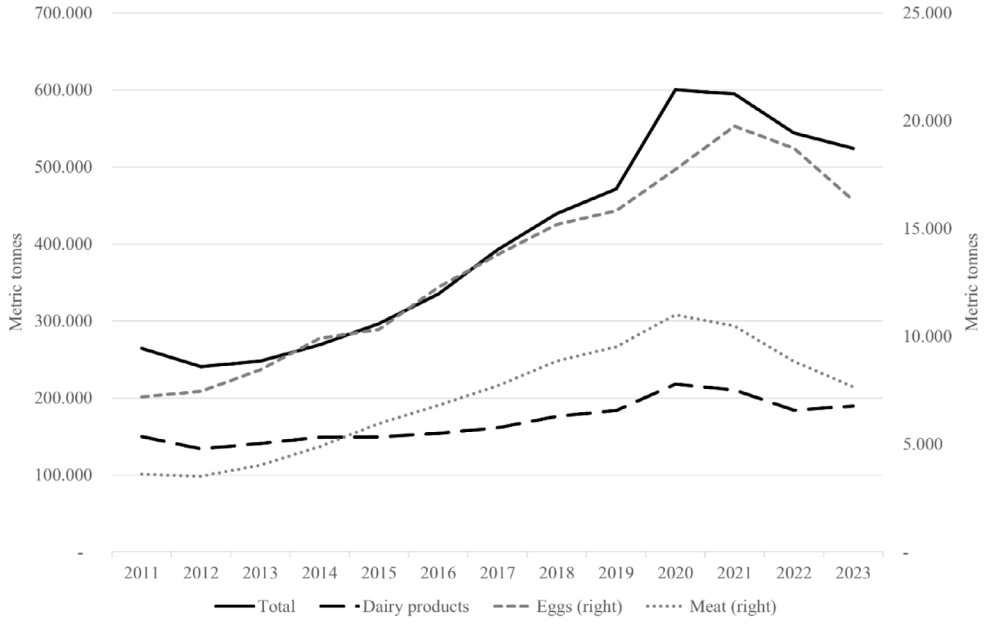


Figure 1. Development of retail sales including total amount of organic food products, organic dairy products, organic eggs, and organic meat (beef, poultry and pork) in Denmark from 2011 to 2022, measured in metric tonnes. Source: (Statistics Denmark, 2024b).

Franck Meijboom and Daniela Barcellos Lopes (eds), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

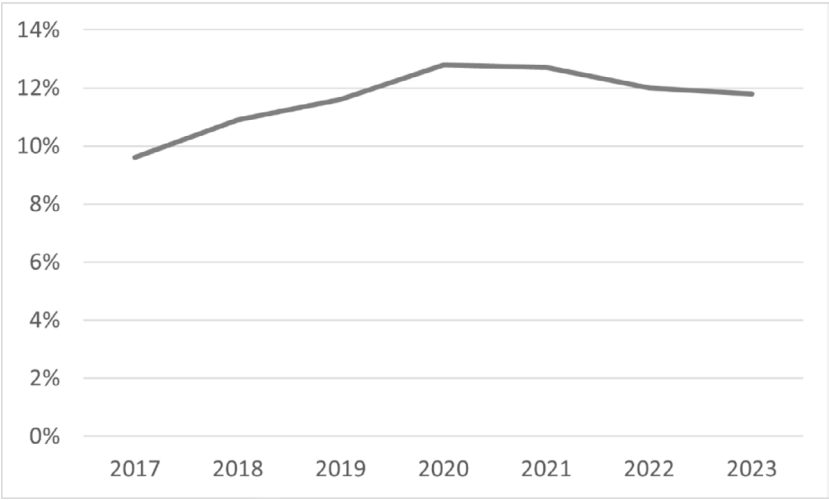


Figure 2. Organic budget share of food products from 2017 to 2023, measured in % of money spent on organic as part of total food expenditures. Based on data from Statistics Denmark (2024b).

In terms of the organic budget share (i.e. the amount spent on organic products compared to the total amount spent on food), there was a drop from 12.8% in 2020 to 11.8% in 2023 (see Figure 2) (Statistics Denmark, 2024b). More detailed data from 1,674 households providing daily records of food purchases to the market research institute Consumer Panel Services GfK indicate, that the share dropped substantially at the end of 2022 and beginning of 2023, and that it plateaued at a lower level in 2023. We therefore find a decrease regardless of the method used for measuring organic consumption.

We do not know whether the decrease in organic retail sales in Denmark is an ongoing and long-lasting phenomenon. In the next section we will discuss what has happened from 2020 to 2023 and possible future scenarios.

Can price consciousness and/or climate concerns explain the drop in organic consumption?

One explanation for the described drop in the consumption of organic food in Denmark is that there has been a tendency towards downtrading in terms of consumers substituting organic food products with cheaper organic varieties (thereby working against movements towards higher standards for organic products) or with conventional counterparts. At the same time, it is possible to imagine a parallel effect of climate-conscious organic consumers shunning organic animal-based products. Both explanations seem to fit the decrease in the sale of organic meats, which are the most expensive organic products and thus perhaps most affected by downtrading, but it is also possible that organic consumers would avoid these products — not because of the price but because they are moving towards a more plant-based diet.

As regards downtrading, the drop in organic retail sales registered in 2022 may be a temporary trend due to economic pressure on consumers affected by high inflation and high food prices. However, it could also represent a more general development of increasingly price-conscious consumers, to whom the retail markets must adjust. In the latter case, the market for speciality organic products produced according to higher standards than the EU requirements for organic production necessitate, sometimes referred to as 'organic plus' products (Schleenbecker and Hamm, 2013), may face a more permanent

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

decline. In contrast, increased price consciousness could also mean that a price premium for organic products or organic plus products is accepted, but only when it is accompanied by better documentation of the increased value of the product compared to its conventional counterparts. In the latter case, documentation of added value could also be used as a strategy to reverse the downward-sloping sales curve rather than simply focusing on finding ways to reduce organic prices.

As regards the role of climate-conscious consumers, organic production is often perceived by consumers to be more sustainable than conventional production on several parameters, such as biodiversity and animal welfare. However, this perception may not apply unambiguously with regard to climate footprint (Smith *et al*., 2019) — particularly when it comes to animal production (Olsen *et al*., 2023) as they have a higher feed conversion ratio and are less able to utilize technical climate/environmental mitigation technologies. An increasing number of consumers are concerned about the climate footprint of their diet and are slowly transitioning towards a more plant-based diet (Dagevos, 2021; Hielkema and Lund, 2021). Furthermore, those who are willing to pay for organic food products are also among the most climate-conscious food consumers (Christensen *et al*., 2020; Denver *et al*., 2022; Ditlevsen *et al*., 2020), thus over time many organic consumers could potentially reject animal-based products altogether.

Data from the above mentioned market research institute Consumer Panel Services GfK indicate that there are reasons to consider both effects. Dividing households into groups with different budget shares allocated to organic food shows a general reduction in the number of households that often purchases organic beef over the period from 2020 to 2023, but no similar reduction in the purchases of non-organic beef. This finding speaks in favour of both a general downtrading tendency and a reduction in the consumption of beef among the most dedicated organic consumers. At the same time, we can identify a trend where plant-based milk alternatives and vegetarian ready meals are more often bought by dedicated organic consumers than by groups of non-organic consumers and consumers who buy less organic food. This supports the hypothesis that we should expect organic consumers to avoid animal products to an increasing degree.

If organic consumers do end up rejecting animal-based products, this may have consequences for current organic modes of production, which we discuss in the following section.

Potential negative effects of a lower demand for organic animal products

While a lower demand for organic animal products could be a livelihood challenge for organic livestock producers, it may also have a negative effect on official targets to expand the agricultural area used for organic production, particularly if regular organic consumers also reject organic dairy products and a permanent drop in demand for organic milk is recorded. An agreement reached in the Danish Parliament in October 2021 set the goal of doubling the organic area and sales by 2030. At EU level, the target is for 25% of farmland in the EU to be organic by 2030, and a common EU sustainability label is being considered (European Commission, 2020). Since organic dairy producers currently occupy more than one third of all organic areas in Denmark (Landbrugsstyrelsen, 2022), a lower demand for organic dairy products risk decreasing the organic agricultural area.

Livestock — especially dairy — production plays a key role in the current organic mode of production. This centres on the supply of plant nutrients, particularly nitrogen. Because organic producers cannot use mineral fertilisers, they rely on legumes, most often clover grass, in two ways: directly, through the conversion of atmospheric nitrogen into an accessible plant-based fertiliser in the form of crop residues (Thers *et al*., 2022), and indirectly, through animal excreta from the consumption of fodder (often grass-based fodder). As ruminants can digest clover grass, it can be used for producing dairy products

Franck Meijboom and Pernille Boye Koch, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

and at the same time leave the soil more fertile. Manure from the cows can also be used as fertiliser that can be transported and used at the farmer's discretion, enabling the integration of organic vegetable and animal production (Mayen *et al*., 2009).

A recent study (Hermansen, 2023) estimated that organic farms have around 1 hectare of clover grass in rotation and 0.7 hectares of permanent grass per dairy cow. If the number of ruminants decreases significantly then the cost of producing green manure could come at economic cost. For example, at current prices, the cost of producing green manure as fertiliser without any profit from milk production could mean that every third year the organic areas would not produce any crops for sale or for feed.

A possible reduction in organic livestock production may lead to a significantly lower number of organic hectares of grass in rotation, and a smaller amount of organic manure available for non-legume organic crops. If no alternative cost-effective methods are adopted to build up soil fertility, this could decrease the land productivity from organic crop production (e.g. oats) and the cost of producing these products may rise, possibly leading to a price increase and lower level of consumption.

This argument is based on a U.S. study of economies of scope in conventional and organic dairy production (Mayen *et al*., 2009). To the authors' knowledge, economies of scope in organic (dairy) farming have never been analysed in detail using Danish data. If economically significant economies of scope are identified, this may point to a—perhaps surprising—increase in the cost of producing organic plant-based products due to a reduced demand for organic livestock products, which in turn could lead to more downtrading.

We plan to look at different scenarios for economies of scope combined in organic production with new knowledge of consumer price consciousness and other relevant factors such as the impact of a carbon tax expected to be implemented in Denmark. In light of this, we hope to help the organic sector understand how it will be affected and how best to navigate in order to strengthen its position.

Acknowledgements

The authors are grateful to Jakob Sehested and an anonymous referee for very useful comments to an earlier version of this paper.

References

Bech-Larsen, T., Christensen, T., Denver, S., Jensen, J.D. and Ruders, J. (2023). Markedet for økologiske produkter 2023 — drivkræfter og barrierer for vækst, Vidensyntese fra ICROFS — Internationalt Center for Forskning i Økologisk Jordbrug og Fødevaresystemer. Aarhus Universitet, Aarhus.

Christensen, T., Denver, S. and Bøye Olsen, S. (2020). Consumer preferences for organic food and for the shares of meat and vegetables in an everyday meal. Journal of International Food and Agribusiness Marketing, 32, 234–246.

Dagevos, H. (2021). Finding flexitarians: Current studies on meat eaters and meat reducers. Trends in Food Science and Technology, 114, 530–539.

Denver, S., Nordström, J. and Christensen, T. (2022). 57. Reduced beef consumption among different organic consumer groups — drivers and substitution patterns. In Bruce, D. and Bruce, A. (eds.) Transforming food systems: Ethics, innovation and responsibility, EurSafe 2022. Wageningen Academic Publishers, Wageningen, pp. 371–374.

Ditlevsen, K., Denver, S., Christensen, T. and Lassen, J. (2020). A taste for locally produced food - Values, opinions and sociodemographic differences among 'organic' and 'conventional' consumers. Appetite 147, 104544.

European Commission (2020). Farm to Fork strategy. Available online at https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy_en (accessed 12 March 2024).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Hermansen, S. (2023). Gødningsregler og balancen mellem dyrehold og afgrøder. In Eriksen, J. and Jespersen L.M. (eds.) Næringsstofforsyning og -recirkulering i økologisk jordbrug — udviklingsmuligheder og barrierer for vækst. Vidensyntese fra ICROFS — Internationalt Center for Forskning i Økologisk Jordbrug og Fødevaresystemer. Aarhus Universitet, Aarhus, Denmark, pp. 40–52.

Hielkema, M.H. and Lund, T.B. (2021). Reducing meat consumption in meat-loving Denmark: Exploring willingness, behavior, barriers and drivers. Food Quality and Preference 93, 104257.

Landbrugsstyrelsen (2022). Statistik over økologiske jordbrugsbedrifter 2022. Landbrugsstyrelsen, København, Denmark, 58 pp.

Mayen, C.D., Balagtas, J.V. and Alexander, C.E. (2009). Vertical Economies of Scope in Dairy Farming. Journal of Agricultural and Food Industrial Organization 7, 1281.

Olsen, J.V., Andersen, H.M.-L., Kristensen, T., Schlægelberger, S.V., Udesen, F., Christensen, T. and Sandøe, P. (2023). Multidimensional sustainability assessment of pig production systems at herd level — The case of Denmark. Livestock Science 270, 105208.

Schleenbecker, R. and Hamm, U. (2013). Consumers' perception of organic product characteristics. A review. Appetite 71, 420–429.

Smith, L.G., Kirk, G.J.D., Jones, P.J. and Williams, A.G. (2019). The greenhouse gas impacts of converting food production in England and Wales to organic methods. Nataure Communications 10, 4641.

Statistics Denmark (2023). Fald i økologisk detailsalg (No. 145), Nyt fra Danmarks Statistik. Available online at https://www.dst.dk/da/Statistik/nyheder-analyser-publ/nyt/NytHtml?cid=44954 (accessed 12 March 2024).

Statistics Denmark (2024a). OEKO3: Detailomsætningen af økologiske fødevarer efter vare og enhed. Available online at https://www.statistikbanken.dk/statbank5a/selectvarval/saveselections.asp?MainTable=OEKO3&PLanguage=0&TableStyle=&Buttons=&PXSId=142222&IQY=&TC=&ST=ST&rvar0=&rvar1=&rvar2=&rvar3=&rvar4=&rvar5=&rvar6=&rvar7=&rvar8=&rvar9=&rvar10=&rvar11=&rvar12=&rvar13=&rvar14= (accessed 12 March 2024).

Statistics Denmark (2024b). Detailomsætningen af økologiske fødevarer. Nyt fra Danmarks Statistik. April 26, 2014. Available online at https://www.dst.dk/Site/Dst/Udgivelser/nyt/GetPdf.aspx?cid=49251

Thers, H., Jensen, J.L., Rasmussen, J. and Eriksen, J. (2022). Grass-clover response to cattle slurry N-rates: Yield, clover proportion, protein concentration and estimated N2-fixation. Field Crops Research 287, 108675.

Willer, H., Schlatter, B. and Trávníček, J. (Eds.) (2023). Statistics and emerging trends 2023. The world of organic agriculture published by the Research Institute of Organic Agriculture FiBL and IFOAM. 24th edition. Available online at DOI: 10.5281/ZENODO.7572890 (accessed 12 March 2024).

Franck Meijboom and Patrick Baur, Book, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The real(izable) price of climate-smart and healthy diets: a capacity-sensitive approach

T. Kortetmäki
Department of Social Sciences and Philosophy; JYU.Wisdom School of Resource Wisdom, University of Jyväskylä, PO BOX 35, 40014 Jyväskylä, Finland; teea.kortetmaki@jyu.fi

Abstract

In this study we ask what the real price of climate-smart and healthy diets is and how to calculate it. The affordability of healthy and climate-smart eating has generated much discussion and empirical research in recent years. For example, many authors studied the affordability of the 'Planetary health diet' (suggested by the EAT-Lancet commission). Studies often calculate the median price of a planetary health diet and compare it to the income levels of populations or their low-income subgroups. However, something else than price counts in determining the opportunities for dietary transition in higher-income countries. In this context, some studies have found no correlation between the nutritional adequacy of diets and income level, and calculations on the minimum cost of a healthy and climate-smart diet have also shown that a transition towards healthier and climate-smart eating could even reduce grocery spending. Still, many people also report in surveys that the price of plant-based foods (constitutive to dietary transitions to healthier and climate-smart eating) is one of the main barriers that prevent them from engaging in dietary transition. We suggest a new framework for approaching the 'real price' of a climate-smart and healthy eating as a primarily capacity-dependent, and only secondarily income-dependent, matter. Our primary interest is in the transition required in the European and North American eating patterns, due to which we focus on plant-based protein sources and fruit and vegetable consumption as the key issues of dietary transition. Based on previous empirical studies and the conceptualization of dietary transition related capacities, we create a capacity framework that determines the range of available food products that a consumer can use to engage in dietary transition. Discussing the preliminary findings of the application of this approach, we show how non-monetary assets may significantly reduce the 'real price' of a healthy and low-carbon diet, which has significant implications on the discussions and policies regarding just and equitable dietary transitions.

Introduction

Imagine two families living in the same European residential area, both having two kids in their early teenage years, and the same level of income. It is perfectly possible that you could go interview them about the shift to more plant-based eating and reducing the meat consumption for environmental reasons and hear two very different stories from the person(s) responsible for food practices in the household.

The head of Family A might report: 'Yes I see the importance of going more plant-based eating for the planet, for health, et cetera, but eating healthy and climate-smart is just too expensive for us ordinary citizens. It is easy for those wealthy people who go out to eat or buy those Beyond Meat and like products but there's no way I could afford us to eat healthy and climate-smart.' The head of Family B, in contrast, might respond: 'We are on the way there. It's a learning process that takes time but now we are already eating mainly plant-based dishes especially on weekdays and this has brought many benefits such as reducing the money spent on food.'

These statements, while imaginary, demonstrate the two ends of the existing and publicly repeated perceptions about the price of healthy and climate-smart eating, both manifesting themselves in the real life and public discussions about the challenges and possibilities of dietary transition to more plant-based

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

eating. While the dietary transition to more plant-based eating is critically important in Western and many other industrialized countries due to health and environmental reasons, making dietary transition just requires the consideration of affordability and access to healthy and climate-smart eating (Kaljonen et al., 2021). The importance of this question is further highlighted by, for example, recent research that suggested that the 'planetary health diet' (EAT-Lancet reference diet) 'is affordable in many countries but for many people would require some combination of higher income, nutritional assistance, and lower prices' (Hirvonen et al. (2020), alongside many other studies with similar results) and might be out of reach for the world's poorest countries. Here, we focus on the question of dietary transition in the usually middle- or high-income Western and industrialized countries where the pressure for dietary transition to more plant-based eating is the central aspect of food system sustainability transitions.

As our imaginative interviewees demonstrate, the actual monetary cost of eating healthy and climate-smart might vary significantly even in the same food choice environment. In other words, the financial cost of climate-smart and healthy eating (or of diets) to households and individuals varies greatly between different cases. It is important to understand and conceptualize this phenomenon better to advance the discussion of just food system transitions (to more environmentally sustainable food systems), including the question of dietary transition, food affordability, and more equitable food and nutrition security.

Methodologically, this theoretical work draws on literature and existing research across disciplines. We pay attention especially to research that has sought to explain the various factors that determine individuals' capacities to engage in dietary transformation. Our assumption is that these capacities, in turn, greatly influence the size of financial input required to obtain or prepare wholesome foods and dishes that are both climate-smart and supportive to health by helping one achieve nutritionally adequate diet.

The conceptual idea of the 'real price'

The ordinary grocery stores (in Western industrial food systems) host tens of thousands of products. These goods are obtained by consumers with market prices that are absolute in terms of local currency. Their affordability is determined by the relative price of those goods i.e. how much the goods cost with relation to the financial resources an individual or household has available for food. For example, the average food expenditure (of household income) in the EU varies between countries between ca. 8–25% and variation is even greater between income levels. However, the affordability determined in this way is conceptually only applicable to determined foods or in some cases food groups. The affordability of a particular type of diet is a much more complex question because the diet can be constructed in many possible ways. As a concrete example, many nutrition recommendations suggest that the fruit and vegetable intake should be at least 500 g/day, yet there is multifold variation in the kg-prices of fruits and vegetables (even if exotic rarities are excluded). In principle, it is possible to get the daily recommended intake very cheaply (white cabbage, root vegetables, onions, apples, and frozen vegetables in the author's country outside harvest seasons) but also very expensively even with relatively common products (cherry tomatoes, blood oranges, avocadoes, kale, just to give a taste of it). The same goes for proteins in dietary transition: one can switch from ground beef to meat-like burgers, increasing one's food expenditure in the current market and policy settings, but also to dried legumes, dropping the cost of protein intake (the fact that legumes do not suit all people is irrelevant to my argument construction here).

Thus, the monetary implications of adopting a more climate-smart and healthy diet do not have a single necessary direction. Consequently, the food price does not as such create a clear-shaped barrier to dietary transition. The relationship seems more complex and understanding it is important for just dietary transitions: to understand, whether individuals can afford a climate-smart and healthy diet, and which measures — also other than monetary policy measures — could be used to make those diets more

Franck Meijboom and Daniela Bove, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

affordable. We argue that understanding this requires creating the conception of the real and realizable price of the climate-smart and healthy diet.

The real price of a diet in this work means the practically realizable monetary price of the diet (of a certain type). The realizable price is different from the 'theoretical' price of a diet that is often calculated quantitatively using various assumptions, averages, and data about the current consumption habits. The realizable price is determined by the set of factors that influence which of the available food items appear as possible, acceptable, and desirable dietary constituents to the given individual.

Next, we systematize this idea one step further and construct a preliminary framework of elements that influence the realizable price of a climate-smart and healthy diet.

Constructive elements for the 'realizable price' of food

Next, we build on the above-explained idea and reflect on how it influences the availability and affordability of various types of diets that would take people towards more plant-based eating. The purpose of this section is to demonstrate the diversity of capacity-type factors influencing the real price of food and develop the very rough classification of internal, environmental, and social or socio-cultural conversion abilities further but we do not aim to analyze or list all relevant factors. We draw on research on food choices as well as studies on the enablers and barriers to more plant-based eating or the increased use of plant proteins.

Literature on food choices has categorized food choice influencing factors in several ways, depending on the research perspective. The rich account of Furst et al. (1996) identifies influence-level factors comprised of ideals; personal factors; tangible and intangible resources (including money, equipment, and skills); social framework; and food context. To navigate influences from these factors, individuals 'personal systems' include the components of value weighing and often-habitual food strategies or choice patterns based on previous deliberations. The most salient values regarded monetary considerations; convenience; health and nutrition; managing relationships; quality; and sensory perceptions (the value labelled 'ethics' emerged much less frequently).

Here we combine the influence factors of Furst et al. (1996) with findings from four relatively recent works that studied either barriers to plant-based eating or factors that influence how meat is perceived (Table 1). The framework is not comprehensive but illustrative at this stage. The idea is that individuals endowed with certain food choice related factors face higher barriers to dietary transition because the selection of foods that would both match with constructing a climate-smart and healthy diet and fit within their budget narrows significantly due to these features. Let us clarify this with the following examples.

Case 1: perceived constraints may lead to the exclusion of lowest-price goods that would support climate-smart and healthy eating. For example, perceived time constraints may lead to the exclusion of dried legumes and low-price vegetables (such as white cabbage and root vegetables in the Nordic region) from the set of 'possible' food items to cook with. Consequently, the realizable price of a climate-smart diet with sufficient protein increases.

Case 2: attitudes and beliefs may cause an individual to consider only a very narrow set of expensive plant-based products as potential protein content providers. For example, if an individual considers meat as highly enjoyable and is incapable of considering non-meat-like products as equally enjoyable, plant-based main dishes might feel satisfactory only with the relatively expensive 'meat-imitating' proteins (like 'beyond burgers').

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Case 3: strong preference to familiar foods, especially when combined with the lack of confidence regarding cooking skills, might lead to a situation where one feels that plant-based food is a feasible choice only when cooked by others (i.e. eaten in restaurants or bought as convenience food) and served in a form that resembles familiar foods. This narrows the selection significantly and to relatively expensive options for plant-based eating.

Understanding these factors that influence the realizable price of a climate-smart and healthy diet open the avenue for new kinds of capacity-building policies for more just and effective dietary transitions in the Western societies. This does not mean the aim of making consumers eat as cheaply as possible: rather, the aim is to broaden the perceived set of opportunities how one can practically reach the goals for climate-smart and healthy eating. This is particularly important for developing capacity-building policies that help consumers engage in climate actions and feel the related demands easier to respond. Lowering the realizable price of the 'planetary health diet' would benefit both food justice and health of the lower-income people in Western societies.

Table 1. Illustration of the factors that influence the accessibility of different foods, food groups, and thereby the realizable price of climate-smart and healthy diets for each individual.

Factors that influence the accessibility of certain foods or food groups to the consumer	**Related barriers to dietary transition: these narrow the scope of accessible foods and raise the realizable price of a diet**	**Related facilitators of dietary transition: these broaden the scope of accessible foods and lower the realizable price of a diet**
Ideals and norms regarding 'right/proper' foods, meanings, and expectations etc.	Expectations of healthy food tasting bad (Re) Perceptions of meat as natural and normal (Pi)	
Personal factors, bodily and physical	Older age Male gender (P;Re;L)	
Personal factors, psychological	Perceptions that eating meat is very enjoyable (P) Preference to familiar foods (P)	Perception of plant-based foods tasting good (Re) Perception of healthy eating compromising taste (Re)
Resources (including intangible resources like skills, knowledge, time)	Preparing good vegetarian foods is harder (P) Perceived time constraints (B)	Perception of plant-based cooking as easy (Re) High confidence in food preparation skills (B)
Social framework Food context	Lack of vegetarian relatives or friends (P) Unavailability of plant-based options (L) Lack of information in food contexts (L)	
Values and quality perceptions	Beliefs of meat as necessary for nutrition (P) Experienced lower satiety of a plant-based diet (Re)	Health benefits associated with plant-based foods (L) Nutrition knowledge (B)

Sources from the literature: B, Burton *et al*. (2017) ; L, Lea *et al*. (2015); P, Pohjolainen *et al*. (2015); Pi, Piazza *et al*. (2015); Re, Reipurth *et al*. (2019).

Franck Meijboom and Patrick Baas, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Conclusion

Climate-smart and healthy diets can be composed in many ways. From the viewpoint of just dietary transition to more plant-based eating, food price provides only a narrow perspective to the question of whether such transition is accessible to different individuals and socio-economic groups. Attention is needed to other factors that together determine the realizable price of climate-smart and healthy eating by influencing which items of the vast selection of food are actually perceived as acceptable and utilizable by the individual. To capture this phenomenon, we introduced the notion of realizable food price and provided a preliminary framework of factors that influence how cheaply an individual can achieve the environmental and health related dietary transition objectives. Studying these factors further and their policy implications is important for both just and effective dietary transitions.

References

Brighouse, H. and Robeyns, I. (2010). Measuring justice: Primary goods and capabilities. Cambridge University Press, Cambridge, MA.

Burton, M., Reid, M., Worsley, A. and Mavondo, F. (2017). Food skills confidence and household gatekeepers' dietary practices. Appetite, 108, 183–190.

Furst, T., Connors, M., Bisogni, C.A., Sobal, J. and Falk, L.W. (1996). Food choice: a conceptual model of the process. Appetite, 26(3), 247–266.

Hirvonen, K., Bai, Y., Headey, D. and Masters, W. A. (2020). Affordability of the EAT — Lancet reference diet: a global analysis. The Lancet Global Health, 8(1), e59–e66.

Kaljonen, M., Kortetmäki, T., Tribaldos, T., Huttunen, S., Karttunen, K., Maluf, R. S., ... Valsta, L. (2021). Justice in transitions: Widening considerations of justice in dietary transition. Environmental Innovation and Societal Transitions, 40, 474–485.

Lea, E., Crawford, D. and Worsley, A. (2006). Public views of the benefits and barriers to the consumption of a plant-based diet. European Journal of Clinical Nutrition, 60, 828–837.

Piazza, J., Ruby, M.B., Loughnan, S., Luong, M., Kulik, J., Watkins, H.M. and Seigerman, M. (2015). Rationalizing meat consumption. The 4Ns. Appetite, 91, 114–128.

Pohjolainen, P., Vinnari, M. and Jokinen, P. (2015). Consumers' perceived barriers to following a plant-based diet. British Food Journal, 117(3), 1150–1167.

Reipurth, M.F., Hørby, L., Gregersen, C.G., Bonke, A. and Cueto, F.J.P. (2019). Barriers and facilitators towards adopting a more plant-based diet in a sample of Danish consumers. Food Quality and Preference, 73, 288–292.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Exploring social impacts of food surplus redistribution

A. Inza-Bartolomé[1,] and L. Escajedo San-Epifanio[2]*
[1]Department of Sociology and Social Work, Faculty of Labour Relations and Social Work, University of the Basque Country (UPV/EHU), Los Apraiz Street 2, 01006 Vitoria-Gasteiz, Spain; [2]Department of Constitutional Law and History of Political Thought, Faculty of Labour Relation and Social Work, University of the Basque Country (UPV/EHU), PO Box 644, Bilbao 48080, Spain
** Corresponding author: amaia.inza@ehu.eus*

Abstract

Concern for the efficiency of the food system is fundamental, given that the waste of food also involves the waste of all the resources used to produce it: water, land, energy, etc. Currently, there are measures so that part of this production that could be wasted can be used to respond to the food insecurity of people in vulnerable situations. For example, European Union launched in 2014 the Fund for European Aid to the Most Deprived (FEAD), whose main purpose is breaking the vicious circle of poverty and deprivation by providing non-financial assistance to vulnerable people in the EU. In 2020, FEAD supported almost 15 million people with food. Likewise, the food industry redirects part of its surpluses to food aid resources, which has a positive impact in terms of corporate social responsibility, they get tax deductions, it saves them the money it would cost to send them to the landfill, the costs of storage and transportation, etc. The main tool to redistribute food surpluses are food banks.

At the same time, the recommodification of these donated food products and/or that would otherwise be wasted in a secondary circuit, has given rise to a new charity economy (Kessl, *et al*., 2020), a system of free distribution of surplus basic goods or sold at discount prices to people who can no longer participate in the market economy. Although this secondary circuit of using food that could otherwise be wasted represents a contribution to the efficiency of food systems, it is important to observe what type of consequences all this has in high-income countries. Through a logical-critical reflection based on specialized bibliography, this work emphasizes that redirecting surpluses to help people in vulnerable situations has unintended consequences. As a main conclusion, it highlights the fact that not being able to acquire food in a normalized way in contemporary society means stigmatization and reinforcement of exclusion.

Keywords: food system efficiency, food waste, high-income countries, redistribution, social impact

Introduction

In recent decades, charitable food aid resources have expanded in high-income countries. Soup kitchens, food pantries and similar and, above all, food banks, use surplus or donated food to address food insecurity. Although in principle it was considered an emergency solution, today it raises numerous questions about the role that this charitable aid plays within developed welfare states, as well as the effects on the users. Numerous studies reflect the feelings of guilt, shame, or stigmatization of the recipients of this help. They also highlight the expulsion of these people from the normalized consumption market, which reinforces exclusion. This use of surplus food is useful for the efficiency of the food system. The food industry takes advantage of it for its corporate social responsibility, reducing stock, etc. Thus, a circuit of recommodification of the surplus has been created through these charitable resources. This work defends, through a logical-critical reflection based on specialized bibliography, that the use of established aid resources has decisive implications for the right to food, the role of the welfare state and the users. First, it contextualizes food insecurity in high-income countries and analyses the role of

EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_3, © Brill | Wageningen Academic 2024
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

food banks as food aid resources. Then, it explores the effects of these resources and, finally, presents the main conclusions.

Food insecurity in high-income countries

When people face a lower income they choose to economize on food by cutting down, by buying the cheapest possible items or even going without (Taylor and Loopstra 2016). According to FAO (2012), this is the moment in which the severity of food insecurity deepens: adjustments affect the amount of food consumed, the portions eaten are reduced or meal times are skipped. As described by Caraher and Furey (2018: p. 30), people avoid hunger by reducing food expenditure and shifting towards lower quality diets with more energy dense foods and, as a last resort, turn to emergency food aid providers.

The FAO (1996) indicates that: "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life." Although in developing countries, food insecurity is dangerous to life and food assistance is a matter of survival (Gentillini, 2013: 15), another series of elements would have to be introduced for it to be valid for high-income countries. Food insecurity will exist when the availability of safe and nutritionally adequate food or the ability to acquire food in socially acceptable ways is limited or uncertain; that is, food security means being able to obtain food in a dignified manner and in accordance with social norms (Anderson, 1990; Dowler and O'Connor, 2012: p. 45). And the access to food in high-income countries, has to do with two of the channels mentioned by De Schutter (2013): access to income-generating activities and social protection, whether informally through community support or through State-administered redistributive mechanisms.

Food insecurity can be measured in various ways. One of them would be, for example, that of Eurostat, which does so through the item "Inability to afford a meal with meat, chicken, fish (or a vegetarian equivalent) every two days" (Eurostat, 2024). Another measure is, for example, that of USDA (2024). It defines food insecurity as the "limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways".

The role of food banks as food aid resources

Through food aid, non-governmental organizations provide free food to people living in poverty (Salonen *et al*., 2018), and it works as a form of income transfer, so that the people they serve can dedicate their scarce resources to non-food needs (Tarasuk and MacLean, 1990: p. 331). Specifically, resources such as food banks are non-profit charitable institutions that collect food donated or purchased with financial donations to redistribute it to hungry people (Power, 2015). The operation of many of them depends largely on the work of volunteers (Escajedo *et al*., 2017). Some food banks distribute food directly to recipients and others operate by supplying food to other organizations for the distribution of what they need (Ronson and Caraher, 2016: p. 80).

For example, in 2022 the members of the FEBA in 30 European countries distributed 876 316 tonnes of food: over 58% of the food obtained was surplus food recovered from food businesses and the EU fruit and vegetable withdrawal scheme, and food funded through the EU (e.g., FEAD, REACTEU, ESF+), national programmes, and individual and corporate food collections (FEBA, 2023). The EU launched the Fund for European Aid to the Most Deprived (FEAD) in 2014, to break the vicious circle of poverty by providing non-financial assistance to vulnerable people in the EU (European Commission, 2015). A total of 83% of the FEAD budget is devoted to food assistances (European Court of Auditors, 2019). FEAD has been integrated into the European Social Fund Plus (ESF+) for the 2021–2027 multiannual financial framework (European Commission, 2022).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Food banks play a fundamental role in the mainstream food system, as they are very efficient at channelling excess food to the charitable welfare sector (Booth and Whelan, 2014). Food banks and the wider charitable impulse associated with hunger relief efforts enabled capitalist circuits to reinscribe value into surplus foods (Henderson, 2004). Donor companies make profits by supporting these types of initiatives. They improve their social image, save taxes, reduce storage and transportation costs, and avoid the costs of disposing of excess food as waste (Lorenz, 2012; Silvasti and Riches, 2014). Charity emergency food provision includes a provision of food outside the main market (Lambie-Mumford and Silvasti, 2020: p. 222). With this, a "new charity economy" has been shaped (Kessl *et al*., 2020), based on this system of free distribution of surplus basic goods or sold at discount prices to people who can no longer participate in the market economy. Nowadays, the charity economy has become an integral part of the modern welfare state arrangement (Schoneville, 2018). According to Fisher (2017: pp. 49–50) the food industry has influenced food banks to the point whereby they are dependent on corporate donations yet are also politically and institutionally constrained by them.

Effects of the use of food aid resources

Graham Riches has published numerous works (e.g. Riches, 1997, 2018; Riches and Silvasti, 2014a) on the progressive expansion and consolidation of charitable food aid resources in wealthy societies. He shows that governments often simply deny, diminish or depoliticize hunger and food poverty as a relevant social problem, and that hunger in these countries is an issue of distributive justice and human rights. Meanwhile, the corporatization and establishment of food banks strengthened globally. Although, his first works analysed countries with a liberal welfarist tradition in the 1980s and 1990s, in a work that analysed more rich countries (Riches and Silvasti, 2014a), it could be seen that domestic food insecurity in rich societies had increased, charity food resources continued to expand, and governments were failing to meet the obligations required by international law to fulfil the human right to adequate food. In one of his latest works, Food Bank nations (Riches, 2018), he states that corporate food charities have also built a long and enduring shelf life and require the support of Big Food brands.

A classic study on the effects of prolonged use of food aid is Sweet Charity: Emergency Food and the End of Entitlement by Janet Poppendieck (1999), according to which there are seven fundamental problems with emergency aid ("seven deadly ' ins'): insufficiency, instability, inaccessibility, inefficiency, inappropriateness, nutritional inadequacy and indignity. Later, McIntyre *et al*. (2016) concluded that the original list of 'ins' compiled by Poppendieck had been consolidated over time, and added more 'ins': inefficacy, inequality, invisibility, institutionalization and invalidation of rights.

As Caplan states (2017: p. 22), "while consuming surplus food or that gifted by consumers relieves immediate problems of hunger, it also involves 'swallowing' stigma". Others indicate that apart from the stigma, linked to some of the most corrosive effects of poverty, in this 'perfect storm', shame, fear and embarrassment were everyday realities for people who used a foodbank, in addition, worsening existing health problems (Gartwaite, 2016). Most people find that receiving charity is demeaning and dehumanizing, provoking feelings of shame and humiliation (Power 2014; Van der Horst *et al*., 2014). Baglioni *et al*. (2016) point out that public policies dealing with food poverty and food recovery remain rare and are only properly developed in a few selected countries. Thus, resources such as food banks have become secondary extensions of weakened social safety nets (Silvasti and Riches, 2014). But, it is important to keep in mind that, if the majority of people in consumer society satisfy their needs via the market, exclusion means being unable to buy basic goods or services when necessary (Lorenz, 2012).

This phenomenon raises important questions about the current direction of welfare reforms and social policies (Riches, 2002: p. 649), and about who is benefiting from such food charity (Riches and Silvasti, 2014b: 2). In the opinion of other authors, this phenomenon undermines calls for direct actions to both

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

reduce the production of surplus food and to address upstream drivers of food insecurity and ensure the right to food (Caraher and Furey, 2017) and evidently, the role of the state should be to protect these rights and to address the gap between income and food costs (Caraher and Furey, 2018: p. 43). On the other hand, the search for food justice would mean emphasizing sustainability in food production, empowerment of food actors, and food as a right for everyone (Elmes *et al.*: p. 12).

Conclusions

The use of food surpluses in a secondary use circuit allows us to take advantage of part of the food that would otherwise be wasted. However, the extension of resources such as food banks leads us to question the reason for their diffusion. Obviously, the role they play in the efficiency of the food system is part of the answer. But it is necessary to highlight the effects of these resources on the people they help, and what it means for the design of the welfare state. Responding to food insecurity remains, in part, in the hands of resources that cannot guarantee the right to food, and that cause a feeling of shame or stigma. Furthermore, these users are excluded from the normalized food purchasing market. All of these circumstances need to be taken into account when addressing food insecurity or poverty in high-income countries.

This highly institutionalized food aid circuit can be an opportunity to detect the needs of the most vulnerable population, and to establish efficient social inclusion processes, that is, a comprehensive intervention, also complying with the right to food. It is therefore essential to focus on how these resources are established in each community, the impact of the selectivity criteria on access, avoid their charitable nature, and evaluate them taking into account the role of minimum income systems.

References

Anderson, S. (1990). Core indicators of nutritional state for difficult to sample populations. Journal of Nutrition, 120, 1559–1660.

Baglioni, S., De Pieri, B. and Tallrico, T. (2016). Surplus food recovery and food aid: the pivotal role of non-profit organisations. Insights from Italy and Germany. Voluntas: International Journal of Voluntary and Nonprofit Organizations, 28, 2032–2053.

Booth, S. and Whelan, J. (2014). Hungry for change: the food banking industry in Australia. British Food Journal, 116(9), 1392–1404.

Caplan. P. (2017). Win-win? Food poverty, food aid and food surplus in the UK today. Anthropology Today, 33(3), 17–22.

Caraher, M. and Furey, S. (2017). Is it appropriate to use surplus food to feed people in hunger? Short-term band-aid to more deep-rooted problems of poverty. Food Research Collaboration, Centre for Food Policy, London.

Caraher, M. and Furey, S. (2018). The economics of emergency food aid provision. A financial, social and cultural perspective. Palgrave, London.

De Schutter, O. (2013). Report to the General Assembly ("Assessing a decade of progress on the right to food"). United Nations General Assembly: New York, NY. Available online at https://documents.un.org/doc/undoc/gen/n13/421/78/pdf/n1342178.pdf?token=3DlmkEp6w8I3ZEhxO0&fe=true (accessed 14 March 2024).

Dowler, E.A. and O'Connor, D. (2012). Rights-based approaches to addressing food poverty and food insecurity in Ireland and UK. Social Science and Medicine, 74, 44–51.

Elmes, M.B., Mendoza-Abarca, K. and Hersh, R. (2015). Food Banking, Ethical Sensemaking, and Social Innovation in an Era of Growing Hunger in the United States. Journal of Management Inquiry, 25(2), 1–17.

Escajedo, L., Inza-Bartolomé, A. and De Renobales, M. (2017). Food banking. In Thompson, P.B. and Kaplan, D.M. (eds.). Encyclopedia of Food and Agricultural Ethics. Springer, Dordrecht, pp. 1–7.

European Commission (2015). The Fund for European aid to the Most deprived (FEAD): Breaking the vicious circle of poverty and deprivation. Brussels: Publications Office of the European Union. Available online at https://ec.europa.eu/social/BlobServlet?docId=14777&langId=en (accessed 4 September 2023.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

European Court of Auditors (2019). FEAD-Fund for European Aid to the Most Deprived: Valuable support but its contribution to reducing poverty is not yet established. Special report No 05/2019. Brussels, Belgium: Publications Office of the European Union. Available online at https://www.eca.europa.eu/Lists/ECADocuments/SR19_05/SR_FEAD_EN.pdf (accessed 4 September 2023).

European Commission (2022). Report from the commission to the council and the European Parliament. Summary of the annual implementation reports for the operational programmes cofinanced by the Fund for European Aid to the Most Deprived in 2020. Available online at https://eur-lex.europa.eu/resource.html?uri=cellar:b048bb80-0753-11ed-acce-01aa75ed71a1.0018.02/DOC_1&format=PDF (accessed 11 September 2023).

Eurostat (2024). Inability to afford a meal with meat, chicken, fish (or vegetarian equivalent) every second day. Available online at https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_statistics_on_income_and_living_conditions_(EU-SILC)_methodology_-_economic_strain (accessed 14 March 2024).

FEBA. European Food Banks Federation (2023). Legally binding targets to reduce food waste. The position of FEBA and its members. Available online at https://www.eurofoodbank.org/publications/special-edition-eu-monitoring-report-on-legally-binding-food-waste-reduction-targets/ (accessed 12 September 2023).

FAO (1996). Rome Declaration on World Food Security. FAO: Rome. Available online at https://www.fao.org/3/w3613e/w3613e00.htm

FAO (2012). Pérdidas y desperdicio de alimentos en el mundo. Alcance, causas y prevención. FAO, Rome.

Fisher, A. (2017). Big Hunger. The unholy alliance between corporate America and anti-hunger groups. MIT Press, Cambridge, MA.

Garthwaite, K.A., Collins, P.J. and Bambra, C. (2015). Food for thought: An ethnographic study of negotiating ill health and food insecurity in a UK foodbank. Social Science and Medicine, 132, 38–44.

Gentilini, U. (2013). Banking on Food: The State of Food Banks in High-income Countries. IDS Working Papers, 415, 1–18.

Henderson, G. (2004). 'Free' food, the local production of worth, and the circuit of decommodification: A value theory of the surplus. Environment and Planning D: Society and Space, 22(4), 485–512.

Kessl, F., Oechler, M. and Schröder, T. (2020). Charity economy and social work. In F. Kessl, F.; Lorenz, W.; Otto, H.-U. and White, S. (eds.). European social work-A Compendium. Buchrich, Leverkusen, pp. 361–378.

Lambie-Mumford, H. and Silvasti, T. (eds) (2020). Conclusion: food charity in Europe. In The rise of food charity in Europe. Policy Press, Bristol, pp. 219–241.

Lorenz, S. (2012). Socio-ecological consequences of charitable food assistance in the affluent society: the German Tafel. International Journal of Sociology and Social Policy, 32(7–8), 386–400.

McIntyre, L., Patterson, P.B. and Mah, C.L. (2016). A framing analysis of Canadian household food insecurity policy illustrates co-construction of an intractable problem. Critical Policy Studies, 12(2), 149–168.

Poppendieck, J. (1999). Sweet charity: Emergency food and the end of entitlement. Penguin Books, New York, NY.

Power, E.M. (2014). Food and poverty in high-income countries. In Thompson, P.B. and Kaplan, D.M. (eds.). Encyclopedia of Food and Agricultural Ethics. Springer, Dordrecht, pp. 1043–1050.

Power, E.M. (2015). Food banks. In Albala, K. (ed.). The Sage Encyclopedia of Food Issues, vol. 2. Sage Publications, London, pp. 552–557.

Riches, G. (ed.)(1997). First world hunger. Food security and welfare politics. Macmillan Press, London.

Riches, G. (2002). Food Banks and food security: welfare reform, human rights and social policy. Lesson from Canada?. Social Policy and Administration, 36(6), 648–663.

Riches, G. and Silvasti, T. (eds.)(2014a). First world hunger revisited. Food charity or the right to food? Palgrave Macmillan, Basingstoke.

Riches, G. and Silvasti, T. (2014b). Hunger in the rich world: food aid and right to food perspectives. In Riches, G, and Silvasti, T. (eds.). First world hunger revisited. Food charity or the right to food? Palgrave Macmillan, Basingstoke, pp. 1–14.

Riches, G. (2018). Food Bank nations. Poverty, corporate charity and the right to food. Routledge, Abingdon.

Ronson, D. and Caraher, M. (2016). Food banks: Big society or shunting yards? Successful failures. In Caraher, M. and Coveney, J. (eds). Food Poverty and Insecurity: International Food Inequalities. Springer, Cham, pp. 79–88.

Franck Meijboom and Dennis Rasmussen, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Salonen, A.S., Ohisalo, M., Laihiala, T. (2018). Undeserving, Disadvantaged, Disregarded: Three Viewpoints of Charity Food Aid Recipients in Finland. International Journal of Environment Research and Public Health, 15(12), 2896.

Schoneville, H. (2018). Poverty and the transformation of the welfare (state) arrangement. Food banks and the charity economy in Germany. Social Work and Society. International Online Journal, 16, 2. Available online at https://ejournals.bib.uni-wuppertal.de/index.php/sws/article/view/570

Silvasti, T. and Riches, G. (eds) (2014). Hunger and food charity in rich societies: what hope for the right to food?. In Riches, G. and Silvasti. T. (eds.). First world hunger revisited. Food charity or the right to food? Palgrave Macmillan, Basingstoke, pp.191–208.

Taylor, A. and Loopstra, R. (2016). Too poor to eat: food insecurity in the UK. Food Foundation, London, Food Insecurity Briefing, 9. Available online at https://files.relevantnow.com/ul/p/46460dbcdea6c9c40f058c146085ef2021df66f1/FoodInsecurityBriefing_May_2016_FINAL.pdf (accessed 10 March 2024).

Tarasuk, V. and MacLean, H. (1990). The institutionalization of food banks in Canada: a public health concern. Canadian Journal of Public Health, 81, 331–332.

USDA (2024). US Department of Agriculture. Measurement. Available online at https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/measurement/ (accessed 14 March 2024).

Van der Horst, H., Pascucci, S. and Bol, W. (2014). The "dark side" of food banks? Exploring emotional responses of food bank receivers in the Netherlands. British Food Journal, 116(9), 1506–1520.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Food safety and traceability in local farming of fruits and vegetables in the North of Portugal

A. Macieira and P. Teixeira
Universidade Católica Portuguesa, CBQF - Centro de Biotecnologia e Química Fina, Laboratório Associado, Escola Superior de Biotecnologia, Rua Diogo Botelho 1327, 4169-005 Porto, Portugal
** E-mails: s-amacieira@ucp.pt; pcteixeira@ucp.pt*

Abstract

Traceability is important to control each step of the food chain and ensure the safety of both food producers and consumers. It is an inherent aspect of Food Safety and, fosters communication between all stakeholder within a supply chain. Although food companies from European Union countries are obligated by law to implement traceability processes throughout their supply chain, local fresh produce farmers in northern Portugal are still reluctant to do so. There are several reasons for this, such as the fact that most producers are responsible for their own production and management chain, which becomes burdensome for them, and because many processes involved in the traceability can be tiring and time consuming. The aim of this work was to involve local fruit and vegetable farmers in the North of Portugal in activities related to the traceability of their own supply chain, and to show them why technology could help them to trace their produce. Developing flexible and simple procedures to involve local farmers in the process was crucial to making traceability more appealing to our farmers. Introducing low-cost, simpler, and more accessible innovations and technologies into these systems could be important in promoting the implementation of traceability processes. Technologies such as the Internet of Things, Quick Response Codes (QR codes) and relational databases were used as tools to install simpler and easier traceability processes in local farming in the North of Portugal. At the beginning of the process, no farmer had implemented a traceability system through their supply chain, but we were able to involve 73.7% of our farmers in the process, although most of the records made by the farmers were still incomplete, and a continuous work was developed to get more complete information. So, there may be cheaper tools that could promote technology as an alternative to simplify traceability and get more fresh local farmers involved, although even with the use of these tools, incomplete records were still an issue due to the farmers' personal lives.

Keywords: Internet of Things, QR codes, relational databases, small-scale farming, tracking

Introduction

On-farm activities are vulnerable to microbial and chemical food hazards, requiring meticulous tracking from 'farm to fork' (Hassoun *et al*., 2023). Integrating traceability with robust safety guidelines and principles like Good Agricultural Practices (GAPs), along with technology-driven data management, enhances oversight of agricultural practices (International Trade Center, 2015).

In the European Union, the Regulation (EC) No. 178/2002 lays down the fundamental principles and standards for food safety and emphasizes the need to establish a robust traceability system within food and feed businesses (European Commission, 2002). The use of a traceability system enables targeted and precise action to be taken in case of food safety issues, thereby minimizing broader disruptions. According to this regulation, food suppliers are responsible for tracing both upstream and downstream in the supply chain and for taking prompt actions, such as recall products, destroying batches and informing the authorities in case of any identified risks (European Commission, 2002).

EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_4, © Brill | Wageningen Academic 2024
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Implementing traceability in food supply systems offers numerous benefits, including effective communication with stakeholders and consumers, risk management for producers, enhanced decision-making processes, resource optimization, increased profitability, reduced product losses, faster issue identification, improved customer confidence through compliance with requirements, product authenticity assurance, regulatory compliance, fraud prevention, market reputation enhancement, reduced risk of fines, and promotion of economic competition (Golan *et al*., 2004; Islam *et al*., 2021). These systems also enhance consumer protection by facilitating targeted and swift recalls, particularly in cases involving widespread distribution of contaminated products (Golan *et al*., 2004).

Small farmers face challenges beyond the cost of implementing a full traceability system. These include complexity of implementation, lack of guidance from support associations, limited technical expertise, inadequate government support, data scarcity, non-standardized data, and poor interoperability between supply chain stakeholders (Bosona and Gebresenbet, 2013; Zhang *et al*., 2010). Furthermore, many small-scale producers lack awareness of suitable traceability technologies, and ignorance and knowledge gaps are significant barriers to system adoption (Rao *et al*., 2022).

Small-scale farmers often lack access to traceability technologies suited to their needs. The success of information and communication technologies for small-scale operators depends on resourceful utilization of technology, making rural connectivity cost-effective and robust through a mix of new and traditional technologies (Bhatnagar, 2008).

Objective

This study aimed to engage fruit and vegetable farmers in Northern Portugal in traceability activities and to demonstrate the benefits of technology in tracing their products, using adaptable, uncomplicated, cost-effective, simple, and accessible methods of innovation and technology.

Methodology

An online platform was created through Notion Plus (Notion Labs, San Francisco, CA, USA), exclusively for use by farmers, where information on Food Safety, GAPs procedures, legislation, and other topics, was made available to producers, and where they could also share information with the platform manager or record information for themselves. The platform also enabled the creation of an open-access website to inform consumers about farmers' practices and products. Consumers were also invited to give their opinion on the production and commercialization of their products. Access to the producer's platform and consumers' website, could be achieved via smartphone using the Web or the Notion application, as well as through a computer. Notion is compatible with Windows, MacOS, Android and iOS. The information provided to consumers on the website, could be quickly accessed using Quick Response Codes (QR codes) displayed at farmers' outlets.

A database was created in MySQL Workbench 8.0.36 (Oracle, Austin, TX, USA), an open source and relational tool, to record the information that producers provided to the traceability manager regarding their pre-harvest, harvest, and post-harvest activities, such as information about fruits and vegetables production, sales and fertilizer and agrochemical applications. Farmers shared their information with the traceability manager through multimedia tools such as videos and photos, Microsoft Excel spreadsheets (Microsoft, Redmond, WA, USA), but mostly through handwritten records. They sent the recorded information by using the Notions platform, WhatsApp (Meta Platforms, Menlo Park, CA, USA) or email.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

A mobile application has already been developed, just as a proof of concept to be used in the future, to provide consumers with a batch number of the products (to facilitate traceability) and a little more information regarding the storage and sale of the product, as the farmers sold their products without packaging and labelling directly to the consumer. To develop this low-cost application, Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS) were used to customize and integrate some important information from the above-mentioned database into a mobile application using the free Jotform Apps tool (Jotform, San Francisco, CA, USA), compatible with Android and iOS systems.

Results and discussion

Technologies such as the Internet of Things, QR codes and relational databases were used as tools to introduce simpler and easier traceability processes in local farming in the North of Portugal. Mat Aris and Soon-Sinclair (2014) concluded that to avoid expensive traceability costs and to promote the use of technology by small-scale farmers, the introduction of traceability concepts to farmers should start with a blending of manual and technological systems, gradually moving towards full reliance on technology. In this study, a blend was used to involve them directly in the traceability process. Most farmers recorded information manually, but sent this information using some technological tools. The information was then recorded and integrated into a relational database, and in the future, we hope to make this information available to consumers through a smartphone application.

Initially, none of the farmers had implemented a traceability system throughout their supply chain. However, we managed to involve 73.7% of them in the process. However, these efforts are ongoing, as many farmers still find the traceability process time-consuming, resulting in incomplete records. While technology could streamline this, these farmers maintained a one-man job supply chain, and most had another full-time job, along with agriculture, which could contribute to a barrier to traceability. Bosona and Gebresenbet (2013) also identified insufficient data availability as a barrier to food traceability, within a local food supply chain in Kenya.

The consumer smartphone application has been developed but has not yet been deployed due to incomplete farmer records. Additionally, the access to incomplete information could highlight inconsistencies to the consumers. According to the Regulation (EU) No. 1169/2011, Article 7, the food industry must provide accurate, transparent, and easily understandable information to consumers (European Commission, 2011). Once the data collection problem is solved, the smartphone application will be implemented. Consumers won't have access to farmers' personal information through the mobile application. The traceability manager in this study, was the person responsible of the study, and was the only person authorized to manage the farmers' personal data, based on the consent signed by the farmers. Besides farmers' personal data, the security and confidentiality of any proprietary business data or other confidential information was ensured when implementing the traceability system for this study. Each harvest and sales activity were coded with an alphanumeric ID and linked to each other. In the mobile application, the information displayed will be the harvesting and selling activity ID, resembling a product's batch, making it easier to trace downstream (pre-harvesting and harvesting activities) and upstream (post-harvesting and selling activities) in the database. The mobile application will also provide consumers with some information about the batches, such as the type/name of the product supplied by the farmers to the consumers, the date of acquisition of the product by the consumers, the total quantity of the product sold in kg, and the storage temperature of the product (°C).

As these small farmers work together and are part of some regional organisations in the North of Portugal, someone from these organisations could still be responsible for continue and incentivizing traceability after this work has been completed. If the person responsible for this study is then authorized

Franck Meijboom and Dominic Barton (eds), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

to give then the necessary code and information, the new manager would need little coding skills, but also would need training to do so.

While the traceability tools used in this study are cost-effective, implementing this approach requires training for farmers and managers of regional organisations. The World Economic Forum (2019) emphasizes that training and advisory services are essential for adopting traceability technologies among small farmers. Therefore, to expand the project to include more local producers, the methodology should be adapted for new farmer groups to their specific regional and organisational contexts. Financial support from the government or private investors could also be beneficial (World Economic Forum, 2019). This study highlights that the daily challenges faced by small farmers can hinder the adoption of traceability systems. Additionally, other factors such as the perception of insufficient knowledge and resources (Fu and Huang, 2024), the belief that traceability is associated with high costs and risks, and the lack of support from agricultural technicians (Huang *et al*., 2022) may deter them from implementing these systems. However, to attract more producers to the project, it is crucial to communicate that traceability can improve transparency, reduce food losses, and increase revenues (World Economic Forum, 2019). Small farmers should also be made aware that failure to adopt traceability technologies could result in them being left behind (World Economic Forum, 2019).

Conclusion

Currently, there are many technological solutions that could help small-scale farmers implement traceability systems, and some of these tools are cost effective to be used. Although technology could be an alternative to simplify traceability and bring more fresh local farmers on board, it is important to guarantee that all the necessary records are kept. Unfortunately, although farmers in this study agreed with the implementation of friendly management and cheap tools for traceability of local vegetables and fruits, the farmers' context of life would have a higher impact on the efficiency of the traceability system than technologies. Although most of the farmers set up a traceability system from scratch, they did not record all the information needed to trace their products and activities. It is impossible to obtain information if producers do not record the key critical events in their supply chain, even when using friendly technologies. So, efforts are still being made to persuade farmers to record information, even though their personal lives may be a barrier to the efficiency of the system.

In the future, we hope that producers will be able to overcome personal constraints and record all the important information for the traceability of their products, so that we can implement the use of a mobile application to provide consumers with essential information for the traceability of local fruit and vegetables.

Conflict of interests

The request for ethical approval for this work, received a positive opinion from the Scientific Council of the Escola Superior de Biotecnologia - Universidade Católica Portuguesa, as the applicable ethical requirements and the requirements of the Regulation (EU) No. 2016/679, which regulates the processing of personal data and the free movement of such data, were considered for the development of this study. All the participants in the study, signed a declaration on the applicable confidentiality conditions and on conflicts of interest, all participants also gave their informed consent and personal data that could identify/trace the participants were always kept confidential.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Acknowledgements

This work was developed within the scope of the project HSoil4Food, Healthy soils for healthy foods (NORTE-01-0145-FEDER-000066), co-financed by the European Regional Development Fund (FEDER) through the Northern Regional Operational Program. We would also like to thank the scientific collaboration under the FCT project UIDB/50016/2020. Financial support for author Ariana Macieira was provided by a PhD grant (DOI: 10.54499/2020.06239.BD) from Fundação para a Ciência e a Tecnologia (FCT), Fundo Social Europeu (FSE), under Programa Operacional Regional do Norte-Norte2020.

References

Bhatnagar, S. (2008). Benefits of ICT applications to farmers with emphasis on transaction costs: experiences from India. Indian Institute of Management. Available online at https://www.lirneasia.net/wp-content/uploads/2008/03/bhatnagar_transaction-costs-and-icts.pdf (accessed 12 February 2024).

Bosona, T. and Gebresenbet, G. (2013). Food traceability as an integral part of logistics management in food and agricultural supply chain. Food Control, 33, 32–48.

European Commission. (2002). Regulation (EC) No. 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety. Official Journal, L 031. Available online at https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32002R0178 (accessed 4 February 2024).

European Commission. (2011). Regulation (EU) No. 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004. Official Journal, L 304/27. Available online at https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:304:0018:0063:en:PDF (accessed 4 February 2024).

Fu, S. and Huang, Y. (2024). Exploring farmers' perceptions of the technological characteristics of traceability systems. Agricultural Systems, 215, 103871.

Golan, E., Krissoff, B., Kuchler, F., Calvin, L., Nelson, K. and Price, G. (2004). Traceability in the U.S. Food supply: economic theory and industry studies. Agricultural economic report 830. Economic Research Service, USDA. Available online at https://www.ers.usda.gov/webdocs/publications/41623/28673_aer830_1_.pdf?v=0 (accessed 11 January 2024).

Hassoun, A., Kamiloglu, S., Garcia-Garcia, G., Parra-López, C., Trollman, H., Jagtap, S., Aadil, R.M. and Esatbeyoglu, T. (2023). Implementation of relevant fourth industrial revolution innovations across the supply chain of fruits and vegetables: A short update on Traceability 4.0. Food Chemistry, 409, 135303.

Huang, Y. Liu, H. Guo, X. and Jiao, W. (2022). The perception of the national traceability platform among small-scale tea farmers in typical agricultural areas in central China. International Journal of Environmental Research and Public Health,19, 16280.

International Trade Center. (2015). Traceability in food and agricultural products. Bulletin No. 91/2015. Available online at https://intracen.org/file/eqm-bulletin-91-2015traceabilityfinal-14oct15webpdf (accessed 18 January 2024).

Islam, S. Manning, L. and Cullen, J.M. (2021). Advances in traceability systems in agri-food supply chains. In Manning, L. (ed.) Developing smart agri-food supply chains: Using technology to improve safety and quality. Burleigh Dodds Science Publishing, Cambridge.

Mat Aris, A.I. and Soon-Sinclair, J.M. (2014). Investigation of traceability and recall plans of food processing plants and small and medium enterprises in Kelantan, Malaysia. Journal of Food Processing, 421648.

Rao, E.S., Shukla, S. and Rizwana. (2022). Food traceability system in India. Measurement: Food, 5, 100019.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

World Economic Forum. (2019). Innovation with a purpose: Improving traceability in food value chains through technology innovations. Available online at https://www3.weforum.org/docs/WEF_Traceability_in_food_value_chains_Digital.pdf (accessed 26 May 2024).

Zhang, X., Zhang, J., Liu, F., Fu, Z. and Mu, W. (2010). Strengths and limitations on the operating mechanisms of traceability system in agro food, China. Food Control, 21, 825–829.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Moral landscape zoning solves the Dutch natural history drama

V. Beekman
Wageningen Economic Research, P.O. Box 29703, 2502 LS The Hague, The Netherlands
volkert.beekman@wur.nl

Abstract

Dutch biodiversity was in a worse state in 2020 than in 1990. However, in 1990, biodiversity was already in decline compared to 1950 and 1900. Nutrient emissions from agriculture played a role in this development. Nature policy plans were developed since 1975. Implementation of these plans suffered from agricultural resistance. Negotiations to reach a Dutch Agricultural Agreement to address this natural history drama and outline perspectives for agriculture and rural areas stalled on June 21, 2023. Farmers objected to 2030 as end date for the proposed transition of agriculture, the critical deposition value for nitrogen and targets on livestock density and herd size. One of the ideas of the Agricultural Agreement was to use spatial zoning to find prospects for agriculture, rural areas, nature and landscape. This landscape zoning is an incomplete answer to the Dutch natural history drama when it does not make explicit the moral conditions that agriculture must meet in the various zones. Preserving and restoring biodiversity in natural landscapes requires space, tranquillity and time. In semi-natural landscapes it benefits from lower nutrient emissions. In cultural landscapes agriculture plays a role in preserving and restoring small landscape elements. This moral landscape zoning does not come about without enabling revisions to the moral conditions embedded in liberal market economics. The proposed transition is complex and agricultural resistance understandable but denial of the natural history drama is not a solution. It is better to try again with a taskforce with a timebound assignment to outline how to introduce prohibitive levies on use of artificial fertilisers and concentrate feeds in agriculture by 2050. Such levies lead to extensification of farming practices, reduction of nutrient emissions and restoration of nature.

Keywords: agriculture, biodiversity, emissions, rural areas, transition

Agricultural nutrient emissions cause biodiversity decline

Scientific evidence for Dutch biodiversity decline is overwhelming. Figure 1 presents some illustrative numbers from The Living Planet Report Nederland (WWF, 2020):

In areas on high sandy soils with high nitrogen deposition, terrestrial animal species did worse since 1990 than in areas with less high deposition. On heathland as the most nutrient-poor soils, terrestrial animal species did worse since 1990 than in forests. Even in 1990, however, biodiversity was already in decline compared to 1950 and 1900. Around 1900, the current period of upscaling and intensification in agriculture started and many plant and animal species were already having a hard time back then, e.g., grassland butterflies, field plants, grassland and field birds declined between 1900 and 1990, especially between 1950 and 1990. Dutch nature was in a worse state in 1950 than it was in 1900, in 1990 it was even worse, until 2010 it continued to decline and nitrogen emissions from agriculture played a role in that decline. Only in the last decade, with extensive and costly efforts in manure and nature management, has the state of nature stabilised at the poor 2010 level (see https://www.clo.nl; www.netwerkecologischemonitoring.nl).

Biodiversity decline already caught political recognition in the Relatienota (Ministeries van CRM, L&V en VRO, 1975; Van der Windt, 1995). This policy plan introduced two new area categories in

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (Eds.), ***Back to the future***
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_5, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

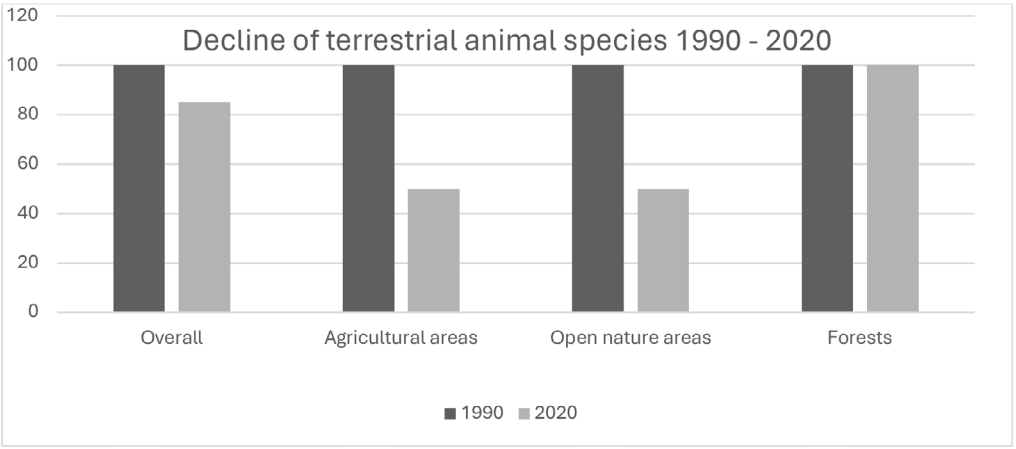


Figure 1. Decline of overall and characteristic terrestrial animal species for Dutch agricultural and open nature areas and forests between 1990 (=100) and 2020.

nature and landscape policies: management and reserve areas. In management areas, agriculture was to be aligned with nature and landscape preservation, with farmers receiving financial compensation for their efforts. About 100 000 hectare of agricultural land were to be given this designation. Reserve areas referred to specific reserves such as meadow bird and goose reserves, to be purchased and managed by nature conservation organisations. Again, this involved about 100 000 hectare. Some of the Relatienota areas were realised but the process was difficult, because farmers objected to restrictions. Later, the Relatienota areas were included in the main ecological structure from the Nature Policy Plan (Ministerie van LNV, 1990) and their realisation disappeared from view. June 21, 2023, negotiations to reach a Dutch Agricultural Agreement stalled. This was the outcome of a long journey to address the natural history drama and outline perspectives for agriculture and rural areas. Collectively, the country suffers not only from nature amnesia but also from nature policy amnesia (Argeloo, 2022; Kahn *et al*., 2009). In agriculture, there was much resistance to 2030 as end date for realising the proposed agricultural transition, the critical deposition value for nitrogen and targets on livestock density and herd size.

Moral landscape zoning makes normative choices explicit

One of the background ideas for the Agricultural Agreement was to use spatial zoning to find perspective on the complex interactions between agriculture, nature and the environment (Adviescollege Stikstofproblematiek, 2020; Remkes, 2022). The original source of the idea of spatial zoning is concentric spatial economics models of agricultural land use (Von Thünen, 1826; Fujita *et al*., 2001). The land use zones in the Von Thünen model (Figure 2) appear outdated two centuries later but still this is the core idea of moral landscape zoning. Over the past 50 years, time and energy has been wasted on discussions about the relative importance of natural, semi-natural and cultural landscapes for biodiversity, while all these landscape types have their ecological value and express divergent moral perspectives on nature and landscape. Keulartz (1998), for instance, distinguishes wilderness, arcadian and functional perspectives on nature, corresponding to natural, semi-natural and cultural landscapes respectively. Landscape zoning is also moral in another sense, since it is an incomplete answer to the natural history drama when it does not make explicit the normative conditions that agriculture must meet in the various spatial zones (Figure 3). Such conditions define what counts as morally good food production beyond productivism when space and time are considered to be important dimensions in the sustainable development of agriculture, rural areas, nature and landscape (Thompson, 1995).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

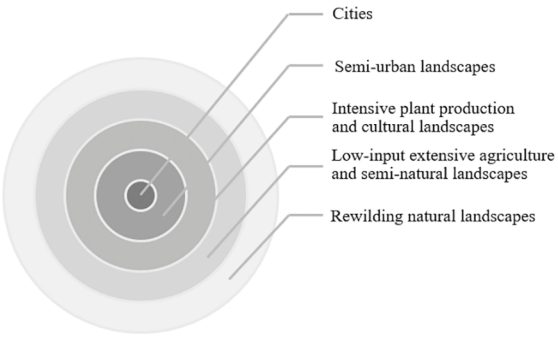


Figure 2. Agricultural land use model.

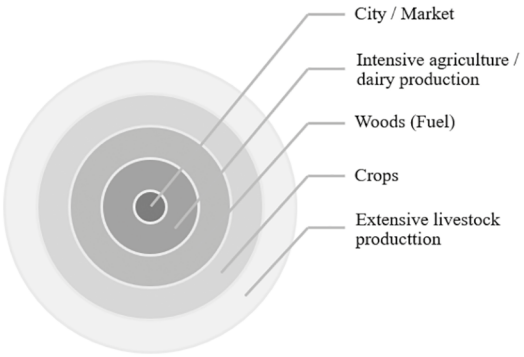


Figure 3. Improved moral landscape model.

Space and tranquillity rewild natural landscapes

Preserving and restoring biodiversity in natural landscapes requires space, tranquillity and time (Argeloo, 2022). This means that the area of these landscapes needs to be increased and pressure from tourism decreased.

Low-input agriculture preserves and restores semi-natural landscapes

Preserving and restoring biodiversity in semi-natural landscapes, often remnants of man-made landscapes from the nineteenth century, was in the past mainly done by nature management (mowing, sowing and so on) to counteract the effects of eutrophication (Westhoff, 1945). In natural landscapes today, large grazers are used for the same purpose, but that is not an option in postage stamp-sized semi-natural areas. Anyways, this is putting the cart before the horse; nature and landscape anywhere and anytime benefit from lower emissions of phosphorus and nitrogen. The royal road to that effect is to reduce input of artificial fertilisers and concentrate feeds. Groundwater levels also need to be raised and, in addition, farmers and horticulturists have a role to play in preserving and restoring small landscape elements, such as hedgerows, pollard willows, plot edges and ditch banks, with a corridor function between natural areas.

Franck Meijboom and Pamela Pennock | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Phasing out intensive animal production offers prospects for agriculture in cultural landscapes

Some industries are inherently hostile to nature and their practices should be phased out (Ullrich, 1984). Non-land-based intensive livestock farming is one such industry. Without input of artificial fertilisers and concentrate feeds, this industry is not sustainable and conceivable. Moreover, it shows morally unacceptable speciesism to force animals with at least the capacity to feel pain to spend their entire lives indoors (Brambell, 1965). Phasing out intensive animal production provides (emission) space for the development of extensive agriculture in semi-natural landscapes and intensive plant production in cultural landscapes.

Managing urban sprawl preserves memories in semi-urban landscapes

It is a travesty when the (emission) space created by agricultural transition is abused for urban sprawl. Companies in industrial and service sectors, such as Tata Steel, Dow Chemical or the energy-guzzling centres of the new data economy, have their own contribution to make in reducing emissions of phosphorus and nitrogen for the sake of preservation and restoration of nature and landscape. This requires development of a vision on (semi-)urban landscape planning with respect for the memories embedded in these landscapes (Schama, 1995) that has not been taken seriously since the Vinex (Ministerie van VROM, 1991).

Models estimate realities. When, for instance, walking, an eastward line from the city of The Hague you experience a spatially explicit, regional version of the need to address the natural history drama with moral landscape zoning. This walk subsequently passes inner semi-urban housing, outer semi-urban housing for the nouveau riche sprawling an almost vanished area of non-food greenhouse horticulture, dairy farming in a peat meadow landscape that could do with lowering nutrient inputs and raising groundwater levels, and the oddity of a peri-urban, medium-sized agglomeration before reaching the heart of the Groene Hart at the Nieuwkoopse Plassen that is not preserved and restored as a national park but sprawled with tourism. Walking a southward line from Amsterdam, a westward line from Utrecht and a northward line from Rotterdam gives identical experiences.

Moral economics enables moral landscape zoning

The crux of moral landscape zoning is that the acreage for rewilding natural landscapes is increased, animal production extensified and urban sprawl curbed. Many farmers and horticulturists are taking steps on the right agricultural transition pathway. It is indigestible how they allow themselves to be held hostage by colleagues chasing an outdated model of upscaling and intensification from the 1950s and 1960s. Agricultural companies with the best environmental performance are often also those with the best economic performance (Reijs *et al*., 2023; Zachariasse, 1972). Moral landscape zoning will not come about without enabling revisions to the moral sentiments embedded in liberal market economics (Smith, 1759). Such revisions call for explicit answers to normative questions.

A first question is how to finance area expansion for rewilding natural landscapes and nature management of small landscape elements in semi-natural landscapes. Land acquisitions for rewilding need to focus mainly on agriculturally marginal areas with relatively low land prices. Reducing nutrient inputs in agriculture saves on the costs of nature management in semi-natural landscapes. Agricultural nature management of small landscape elements is to be paid for by increasing the budget for ANLb (agricultural nature and landscape management), declaring it nationwide and no longer using it for ineffective measures like meadow bird nesting protection (Algemene Rekenkamer, 2021; Baayen *et al*., 2022).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

A second question is how farmers and horticulturists are able to earn a decent income within the boundaries set by moral landscape zoning. It is a deliberate normative choice to kill the business model of non-land-based intensive livestock farming. Otherwise, net farm incomes are determined by the balance between costs and returns. The costs of nutrient inputs go down in extensive forms of agriculture and so yields can go down proportionately without negative effects on economic performance. That balance is mainly determined by efficiency improvements based on knowledge-intensive innovation. Primary product prices of extensive forms of agriculture are nevertheless likely to be somewhat higher.

This raises the question of what this means for the international market position of Dutch farmers and horticulturists. It needs to be possible to impose the same sustainability requirements on imported agricultural products as on Dutch products. The spirit of the SPS and TBT treaties under the WTO is that import tariffs or bans on the basis of sustainability requirements do not count as trade restrictive measures. That would indeed be contrary to the Sustainable Development Goals of the United Nations. The discourse on free trade is wishful thinking devoid of historical realism anyways. No country in the world has achieved a transition of primary or secondary production sectors without temporarily protecting those sectors with import tariffs or bans (Piketty, 2022).

Questions about the international competitiveness of Dutch agriculture and horticulture are not only about competition on the domestic market but also about competition on export markets. Both markets are mainly characterised by competition within Northwest Europe and surrounding countries face similar challenges. Denmark, Ireland, Flanders and parts of Germany and France, for instance, also struggle with the impacts on nature and landscape of intensive animal production and have to impose similar sustainability requirements on agricultural production. Agricultural and food systems across this region need to go through a major transition in the coming decades.

Another derivative question is whether higher primary product prices do not lead to further increases in high and rising consumer prices of food products. On the one hand, this is again a deliberative normative choice, since it is a good thing that consumer prices for animal products go up. Reduction of intensive livestock farming and conversion of extensive livestock farming cannot happen without fundamental dietary change among food consumers. In a transition period until, e.g., 2050, they should return to a flexitarian diet with consuming fish and meat products at most once a week. This means that the Golden Age of Meat that started around 1950 ends after about 100 years (Dagevos *et al*., 2012; Dagevos and Verbeke, 2022). On the other hand, for plant-based products, consumer prices do not need to go up with the right pricing policy. One could, for instance, put Dutch sustainable vegetable products in the low VAT rate or prohibit processors and (retail) traders from passing on higher primary product prices into higher consumer prices.

Another attempt trumps denial

The Dutch Agricultural Agreement failed and the upcoming reactionary government presents denial as solution to the Dutch natural history drama (PVV, VVD, NSC and BBB, 2024). Denial does not solve anything. It is therefore better to give preserving and restoring nature and biodiversity another attempt with moral landscape zoning. The crux of this moral landscape zoning is that the acreage for rewilding natural landscapes is increased, animal production extensified and urban sprawl curbed. Space, tranquillity and time replace hope, courage and pride as motto for this attempt. Moral economics needs to enable this moral landscape zoning with the introduction, over time, of prohibitive levies on the use of artificial fertilisers and concentrate feeds in agriculture. Such levies lead through the invisible hand of the market to extensification of farming practices, reduction of nutrient emissions, reduction of nutrient deposition and restoration of nature.

Franck Meijboom and Pamela Pennock | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Moral landscape zoning needs the formation of a concise taskforce with six representatives from public bodies and stakeholders in agriculture, nature management and urban planning and an independent chairperson with a timebound mandate of nine months to detail a spatially explicit agriculture, nature and landscape plan that sets extensive agriculture without input of artificial fertilisers and concentrate feeds, and with a higher groundwater level, as normative goal for 2050 and casts back from that goal to interim benchmarks and immediate actions. This plan gives space, tranquillity and time to redirect necessary farm investments with reductions in livestock density and herd size only as possible outcomes of efforts to reduce nutrient inputs. Making Dutch agriculture and horticulture sustainable means a reduction in agricultural area, number of farmers and agricultural exports but this transition could tap into autonomous trends.

References

Adviescollege Stikstofproblematiek (2020). Niet alles kan overal. Eindadvies over structurele aanpak. Adviescollege Stikstofproblematiek, Amersfoort.

Algemene Rekenkamer (2021). Waar is de grutto? Aanpak bescherming weidevogels werkt niet. Algemene Rekenkamer, Den Haag.

Argeloo, M. (2022). Natuuramnesie. Hoe we vergeten zijn hoe de natuur er vroeger uitzag. Atlas Contact, Amsterdam.

Baayen, R.P., Van Doorn, A.M., Reijs, J., Kisters, T. en Van Hal, O. (2022). Sturing, waardering en beloning van duurzaamheid in de landbouw met kritische prestatie-indicatoren. Wageningen Environmental Research, Wageningen.

Brambell, F.W.R. (1965). Report of the technical committee to enquire into the welfare of animals kept under intensive livestock husbandry systems. HMSO, London

Dagevos, H. and Verbeke, W. (2022). Meat consumption and flexitarianism in the Low Countries. Meat Science, 192, 108894.

Dagevos, H., Voordouw, J., Verhoeven, L., Van der Weele, C. and De Bakker, E. (2012). Vlees vooral(snog) vanzelfsprekend. Consumenten over vlees eten en vleesminderen. LEI Wageningen UR, Den Haag.

Fujita, M., Krugman, P and Venables, A.J. (2001). The spatial economy: cities, regions, and international trade. MIT Press, Cambridge, MA.

Kahn, P.H., Severson, R.L. and Ruckert, J.H. (2009). The human relation with nature and technological nature. Current Directions in Psychological Science, 18(1), 37–42.

Keulartz, J. (1998). The struggle for nature: A critique of radical ecology. Routledge, London.

Ministeries van CRM, L&V en VRO (1975). Nota betreffende de relatie landbouw en natuur- en landschapsbehoud 1974–1975. Ministeries van CRM, L&V en VRO, Den Haag.

Ministerie van LNV (1990). Natuurbeleidsplan. Ministerie van LNV, Den Haag.

Ministerie van VROM (1991). Vierde Nota Ruimtelijke Ordening Extra. Ministerie van VROM, Den Haag.

Piketty, T. (2022). A brief history of equality. Harvard University Press, Cambridge, MA.

PVV, VVD, NSC and BBB (2024). Hoop, lef en trots. Hoofdlijnenakkoord 2024 — 2028. PVV, VVD, NSC en BBB, Den Haag.

Reijs, J., Jager, J., Daatselaar, C. en Beekman, V. (2023). KPI-sturing op NPLG-doelen. Vingeroefening voor Ministerie van LNV. Wageningen Economic Research, Wageningen.

Remkes, J. (2022). Wat wel kan. Uit de impasse en een aanzet voor perspectief. Available online at https://www.rijksoverheid.nl/documenten/rapporten/2022/10/05/wat-wel-kan

Schama, S. (1995). Landscape and memory. Vintage Books, New York, NY.

Smith, A. (1759). The theory of moral sentiments. Edinburgh.

Thompson, P. (1995). The spirit of the soil: Agriculture and environmental ethics. Routledge, London.

Ullrich, O. (1984). Wedstrijd zonder winnaars: In het slop van het industriële systeem. De Uytbuyt, Wageningen.

Van der Windt, H J. (1995). En dan, wat is natuur nog in dit land? Boom, Amsterdam.

Von Thünen, J.H. (1826). Der isolierte Staat. Hamburg.

WWF (2020). Living Planet Report Nederland. Natuur en landbouw verbonden. World Wildlife Fund, Zeist.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Westhoff, V. (1945). Biologische problemen der natuurbescherming, Verslag van de Natuurbeschermingsdag. Nederlandse Jeugdbond voor Natuurstudie, Drachten.

Zachariasse, V. (1972). Boer en bedrijfsresultaat: Analyse van de uiteenlopende rentabiliteit van vergelijkbare akkerbouwbedrijven in de Noord-Oost-Polder. Wageningen Universiteit, Wageningen.

Franck Meijboom and Bernike Pasveer, Brill, 2024 | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Equitable access to plant genetic resources and benefit sharing: A comparison of existing systems

L. Escajedo San-Epifanio[1], I. Alonso Sanz[2], I. Filibi[1] and J. Uncetabarrenechea
[1]Department of Public Law, Historical-Legal Sciences and Political Thought, University of the Basque Country (UPV/EHU), Bilbao 48080, Spain; [2]Department of Public Policies and Economic History, University of the Basque Country (UPV/EHU), Bilbao 48080, Spain
** Corresponding author: leire.escajedo@ehu.eus*

Abstract

In 1993, the Convention on Biological Diversity (CBD) came into force. The Convention on Biological Diversity (CBD) was established with the objective of conserving biological diversity, ensuring the sustainable use of its components, and promoting the fair and equitable sharing of the benefits derived from the utilisation of genetic resources. The legal framework encompasses the rights of indigenous communities and traditional knowledge, including the rights over such resources. With regard to other environmental conventions, the introduction of the concept of equitable access and benefit sharing (ABS) represented a significant advancement. Access and benefit-sharing (ABS) refers to the manner in which genetic resources may be accessed and the distribution of benefits derived from their utilisation between the parties involved in the process, namely the users and providers of the resources. Three decades later, however, it is evident that the implementation of the ABS concept is considerably more intricate than it initially appears. To date, two main approaches to ABS have been implemented. Bilateral systems (ABS-BS) are those in which a donor and a recipient enter into an agreement. In contrast, multilateral systems (ABS-MLS) entail the provision of access to genetic resources by partner countries to one another, with collective benefit sharing. This paper compares the relative strengths and weaknesses of the two main ABS systems currently applied to plant genetic resources. On the one hand, the multilateral benefit-sharing system (MLS) was implemented in the International Treaty on Plant Genetic Resources for Food and Agriculture (under the auspices of the FAO), which entered into force in 2004. Conversely, there are the bilateral frameworks that have been agreed between countries in compliance with the CBD and the Nagoya Protocol, which entered into force in 2014. Furthermore, it considers the ongoing negotiations under the Nagoya Protocol, which aim to establish an MLS framework.

Access and benefit sharing on plant genetic resources: background of current global systems

There are significant social, ethical, economic and political issues surrounding access, conservation and use of plant genetic resources for food and agriculture (PGRFA), the development of which can be traced back in history (Maxted *et al*., 2020). The origins of plant germplasm exploitation can be traced back to the earliest periods of human history (Esquinas Alcázar *et al*., 2010: pp. 6–7). However, the understanding of the detrimental link between biological exploitation and biodiversity loss did not emerge until the early 20th century, when it was generally recognised in the 1970s (Steffen *et al*., 2015).

Hunter-gatherers demonstrated considerable ecological flexibility and dietary resilience, which allowed them to adapt their diets to a large extent. With the initial development of seed-based agriculture (8th or 7th millennium BC, Near East), early farmers exploited plants they found growing in their locality, i.e. in situ exploitation (Maxted *et al*., 2020: p. 48). The process of plant exploration, or the locating of plants in one area and their subsequent movement to a second area for the purposes of preservation and exploitation, is a more sophisticated and intentional endeavour. Evidence of exploration (or ex situ

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

exploitation) can be found in antiquity, for example, in the case of Sargon I of Akkadia, who crossed the Taurus Mountains to collect figs, vines and olives (2500 BC), the envoys of Queen Hatshepsut of Egypt (1495 BC) or Alexander the Great (4th century BC).

Modern agriculture, food systems and diets rely heavily on a dozen plant species that were originally chosen and domesticated by early Neolithic farmers (Murphy, 2007). Furthermore, the three major staple cereals, rice, maize and wheat, alone provide 60% of the world's dietary energy intake (Maxted *et al*., 2020). Smallholder farmers, indigenous peoples and local communities have long been, and remain today, the custodians of a significant proportion of the world's crop diversity and its associated ecological knowledge (Shatpit *et al*., 2017). Nevertheless, there are thousands of plant species with potential utility that have been overlooked by humans and represent one of the most underutilised and underappreciated resources on Earth (Meldrum and Padulosi, 2017).

The 15th and 16th centuries are of particular significance in the history of the exploitation of plant genetic resources. This period is known as the Columbian Exchange, as described by Alfred Crosby in 1972. During this exchange, agricultural products and other foods were transferred from the Old World (Europe, Africa and Asia) to the New World (America), and vice versa. Some of these exchanges were deliberate, while others were unintentional. Regardless of their motivation, they had a profoundly negative impact on the health of indigenous populations, resulting in a significant decline in their numbers and the collapse of their socio-economic systems, including their agricultural systems (Williams, 2017).

The search for resources characteristic of the time was not species-specific; rather, it was aimed at the discovery of any useful resource, whether for food, medicinal purposes, or simply as a botanical curiosity. There was no concept of ownership, and there was no obligation to share the benefits derived from this type of exploitation with local custodians. The golden age of plant exploration commenced in the 18th century, particularly in the case of the crowns of Great Britain and Spain. The colonial powers considered themselves justified in scouring their territories worldwide in search of potential exploitable resources (Maxted *et al*., 2020). This was done in accordance with a utilitarian vision of the conservation and use of PGR, which sought to improve the agriculture of their nations and colonies, as well as to incorporate exotic species into their botanical gardens. In the 1950s, the FAO began to promote the conservation, exchange, and use of plant genetic resources for food and agriculture (PGRFA) on a systematic basis.

It was not until the 1970s that a series of intergovernmental negotiations gradually opened the way to a different way of looking at plant genetic resources and the role of local custodians. It is also necessary to consider the emergence of a global debate on environmental protection, biodiversity conservation and sustainable development. A series of summits and agreements will culminate in the United Nations Conference on Environment and Development (UNCED), also known as the Rio Conference, in 1992, which will promote the Convention on Biological Diversity. Furthermore, in addition to the Convention on Biological Diversity, the FAO initiated an international programme that facilitated the development of a global network of genetic resources. Furthermore, it facilitated the establishment of the Commission on Plant Genetic Resources for Food and Agriculture (1983), which resulted in the formulation and ratification of the International Treaty on Plant Genetic for Food and Agriculture (ITPGRFA, 2001).

In the wake of earlier declarations and guidelines, such as the International Code of Conduct for Germplasm Collecting and Transfer (FAO, 1989), which stressed the need to facilitate access to PGRFA (including indigenous knowledge), promoting their use and development on an equitable basis, the CBD and the ITPGRFA represent a qualitative leap forward. Both the CBD and the ITPGRFA will recognise the sovereign right of states over their genetic resources, as well as the obligation to conserve

Franck Meijboom and Bernike Pasveer, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

PGRFA and to ensure access to PGRFA and the equitable sharing of the benefits derived from such access.

The ITPGRFA potentially applies to a set of PGRFA listed in its annex (64 of the most important crops). However, it is the States Parties that voluntarily decide to make (or not) their PGRFA available to others in the multilateral system that will be explained in due course. The CBD applies by default to all PGRFA that are not under the ITPGRFA (irrespective of whether they are intended for food use or not). These circumstances make it difficult to know easily which specific legal status applies to a particular plant variety. In addition to that, a noteworthy limitation is that the signatories to the Nagoya Protocol and the ITPGRFA do not fully align. The fact that not all countries have signed (or ratified) the CBD, the Nagoya Protocol and the ITPGRFA further complicates the situation. 195 countries have signed the CBD, 150 the ITPGRFA (China, South Africa and Mexico are not parties) and 140 the Nagoya Protocol (the US and Canada, for example, are not parties). In addition, there is no concrete timeline for the implementation of ABS regimes, and the overlap of ABS regimes with previous international agreements on trade-related standards (such as the WTO SPS agreements), phytosanitary standards (plant protection from invasive alien plant pests, IPPC treaty) and standards related to intellectual property rights has not yet been well managed (Pauchard, 2017).

Besides, it is important to note two key dates in this respect. The CBD was opened for signature in 1992, and its articles do not contain any provisions regarding ABS. It was not until 2014, when the 2010 Nagoya Protocol entered into force, that work commenced on the CBD's own ABS system. What has occurred with regard to PGRFA under the CBD between 1992 and 2014? The only legitimate form of access to plant genetic resources in countries that are signatories to the CBD was through a bilateral agreement between the country in which the bioprospecting was taking place and the country of origin of the promoters of the bioprospecting. Negotiations were conducted on a case-by-case basis to determine the conditions of access and how to interpret the concept of "benefit-sharing". Since 2014, the signatory countries of the Nagoya Protocol have been engaged in the development of a standardised ABS system. This system is intended to streamline relations between donor and recipient countries while ensuring a harmonised application of fair benefit-sharing.

Analysed in their practical terms, what are the advantages and disadvantages, as well as the weaknesses and strengths, of bilateral versus multilateral systems of ABS? A detailed examination of the aforementioned systems is now required.

The idea of equitable benefit-sharing: simple or complex?

In 2010, the Secretariat of the Convention on Biological Diversity (CBD Secretary, 2010) published an introduction to access and benefit sharing (ABS). The access and benefit-sharing provisions of the Convention on Biological Diversity (CBD) are designed to ensure that the physical access to genetic resources is facilitated and that the benefits obtained from their use are shared equitably with the providers. In some cases, this also includes valuable traditional knowledge associated with genetic resources that come from Indigenous and Local Communities (ILCs) (Sirakaya, 2019).

In principle, the idea behind ABS does not seem to be complex. It seems to refer to a grand bargain between two parties: the provider granting access to a user; the user sharing the benefits with the provider (Chiarolla, 2013). Furthermore, the fact that this concept was incorporated as part of the United Nations Conference on Environment and Development UNCED, also known as the "Earth Summit" (1992), invites us to link ABS to important principles recognised in the Declaration of that summit. Thus, that human beings should cooperate to conserve, protect and restore the health and integrity of the Earth's ecosystem; and, most importantly, that States should cooperate to promote a supportive

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

and open international economic system conducive to economic growth and sustainable development in all countries. In this UNCED Declaration, adopted in Rio, peace, economic development and environmental protection are seen as interdependent and indivisible, and although it is not very clear how this will proceed concretely, a novel general framework of inspiration is adopted.

Turning to the detail of ABS, in practical terms, however, how it works is a mystery to be solved; for we are not talking about an agreement with certain clauses, but a way of doing things. Thus, according to the CBD Secretariat, "access and benefit-sharing (ABS) refers to how genetic resources can be accessed and how the benefits arising from their utilisation are shared among the people or countries using the resources". ABS systems are designed *from top to bottom*, but are to be applied from down to top. That means that the design tends to treat all cases homogeneously, without distinguishing types of resource, types of access/use, types of users.

Resources may, for example, be in situ (in ecosystems and natural habitats) or be part of botanical gardens or academic or private collections, and providers may include states, competent authorities, but also local and indigenous communities. The range of users requesting access is no less diverse (researchers, industry, universities), as is the justification or purpose for access (cataloguing, conservation, various commercial purposes, etc.). The benefits to the user, i.e. what is to be shared, can also be very diverse in nature, and can be grouped into two broad categories: monetary benefits - payment of royalties or obtaining industrial property rights, such as patents - and non-monetary benefits (such as technology transfer, capacity building or participation in research).

Current ABS global regimes on PGR: bilateral and multilateral

In 1992, 195 states agreed at the CBD to recognise the sovereignty of states over their genetic resources and to organise a system of access based on prior informed consent (PIC) and a set of mutually agreed terms in a document known as the MTA. The MTA document contains the details of the procedures to be followed with regard to the fair sharing of benefits, as well as the rights of indigenous peoples and local communities that may be involved.

When this convention was drafted, it was believed to contribute to agricultural development and food security. However, its implementation, prior to the adoption of the Nagoya Protocol, led to the implementation of a series of measures that resulted in the control of genetic resources being concentrated in the hands of a small number of entities, whether public or private (Halewood and Nnadozie, 2008). The fact that MTAs are negotiated in confidence between donor and recipient makes it impossible to ascertain not only their terms but even their existence. Furthermore, the CBD originally lacked a mechanism to monitor whether commitments to recognise local custodians or equitable benefit-sharing were honoured in practice.

Accordingly, the extant literature posits that the genesis of the Multilateral System proposed by the ITPGRFA is informed by the CBD, yet aspires to yield more tangible outcomes in the following areas: the conservation of plant genetic resources, access to plant genetic resources, the recognition of local communities' and farmers' rights, and the equitable distribution of benefits (Hallewood and Nnadozie, 2008). In a symbolic sense, a pool of plant genetic resources is created that States Parties share with each other, thereby enabling other members to make use of this pool. Access to this pool of materials is unrestricted and is facilitated through the application of a standard material transfer document, which is recognised by the acronym SMTA. The SMTA facilitates the expeditious and unencumbered access of a recipient to any material within the pool. Those who receive materials from this pool are

Franck Meijboom and Patrick Baas, Back to the Future, ISBN 90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

obliged, in accordance with the SMTA, to allow third parties access to the material without restrictions. Furthermore, the SMTA stipulates that in the event that material or products are developed from material in the pool that, from time to time, imposes restrictions on third parties (because they have been protected by patent or UPOV variety registration), the recipient of the material must pay a fee into the pool.

This pool is strategically important in MLS, as it facilitates the equitable sharing of benefits, considering that benefits can be shared in both monetary and non-monetary ways (e.g., training, provision of resources, etc.). In addition to remuneration for activities that impose limitations on third parties, this fund is replenished by voluntary financial contributions from donors (Moore and Tymowski, 2005).

The question then arises as to how equitable benefit sharing can be achieved. The distribution does not entail a percentage distribution according to the geographical origin of the resources accessed over a period of time. Once the resources have been collected over a period of time, the funds are distributed through agricultural development programmes targeted at developing countries that are part of the ITPGRFA.

It is evident that developing countries are not entirely satisfied with the current system, as they perceive room for improvement in terms of user contributions to the fund and the receipt of benefits by developing countries. Consequently, at the forthcoming meeting of the governing body of the ITPGRFA in Rome in November 2023, it was resolved to establish a working group with the objective of enhancing the MLS system.

With regard to the Nagoya Protocol, its adoption in 2014 has initiated a protracted process during which the concept of ABS has been delineated in almost all meetings of the governing body. The bilateral system presents the most significant challenges in the identification of the national authorities designated as competent, as well as inconsistencies in the interpretation of certain terms of the CBD and the Protocol itself, which are ambiguous and give rise to disparate interpretations by recipients and providers. One such tool is the establishment of an ABS Clearing-House, as provided for in Article 14 of the Nagoya Protocol. The ABS Clearing-House represents a pivotal instrument for the effective implementation of the Nagoya Protocol. It serves to enhance legal certainty and transparency in the context of access and benefit-sharing procedures, while also facilitating the monitoring of the utilisation of genetic resources along the value chain, including through the internationally recognised certificate of compliance. The objective is that, by hosting relevant ABS information, the ABS Clearing-House will facilitate connections between users and providers of genetic resources and associated traditional knowledge. Nevertheless, the specifics of the implementation and operationalisation of this clearing house remain under development.

The MLS system being developed under the Nagoya Protocol is also progressing at a slow pace, despite the fact that 10 years have already passed since its entry into force and that the experience of the ITPGRFA MLS is being used as a reference. It should be noted that throughout the negotiations for the Nagoya Protocol, Parties and relevant stakeholders made many suggestions on how ABS would lead to the creation of incentives for biodiversity conservation. This is a point of difference with regard to the latter. While some posit that benefit sharing will inherently result in biodiversity conservation, others specify certain economic incentives that would then generate such an incentive, resulting in governments directing the benefits received towards conservation activities (Sirakaya, 2021). It is evident that negotiating parties are meeting persistently, yet it remains unclear when sufficient consensus will be reached.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Remaining challenges and concluding thought

Climate change is modifying the growing conditions for crops. Consequently, countries must identify sources of adaptive traits in genetic diversity from other parts of the world (Kamau, 2015). However, ABS systems are developing at a relatively slow pace. Ambitious conservation targets have been adopted globally, yet there remains a significant gap between these targets and the tools required to achieve them.

According to Sirakaya, the overarching objective of access and benefit sharing (ABS) of genetic resources is to facilitate equitable benefit sharing between users (such as universities, research centres and companies) and providers (such as biodiversity-rich countries). Additionally, it is intended to facilitate innovation and create incentives for biodiversity conservation (Sirakaya, 2019). Nevertheless, it appears that this concept of ABS has yet to be implemented in a manner that is acceptable to all parties.

Bilateral systems, such as those based on national implementation of the CBD, have been found to be ineffective in terms of ABS. Consequently, alternatives are being discussed. However, multilateral systems, such as the one established by the ITPGRFA partners, have their own difficulties, especially with regard to in situ resources.

A more centralised management system would facilitate consultation on the availability and selection of resources, as well as the initiation of dialogue between providers and recipients at an earlier stage. Furthermore, it is necessary to ensure that the process is traceable from the initial request to the shipment, including the acceptance, preparation of the MTA, phytosanitary certificate, import/export permits and shipment logistics. Nevertheless, the precise definition of the term 'equitable' and the parameters within which it should be applied remain a matter of contention within both the ITPGRFA and Nagoya Protocol arenas.

Acknowledgements

This work has been supported by the Spanish Ministry of Science and Innovation, VegEquity Project — Plant Breeding and European Integration (PID2021-123796OB-C21 DER), PR L. Escajedo San-Epifanio; Jean Monnet Module PlantSciLaw — EU Law and Governance for Agroscientists, ERASMUS-JMO-2023-MODULE 101127121, PR L. Escajedo San-Epifanio.

References

CDB Secretariat. (2010). Convention on biological diversity. Introduction to access and benefit sharing, Montreal, QC. Available online at cbd.int.

Chiarolla, C., Louafi, S. and Schloen, M. (2013). An analysis of the relationship between the Nagoya protocol and instruments related to genetic resources for food and agriculture and farmers rights. In Morgera, E., Buck, M. and Tsioumani, E. (eds) The 2010 Nagoya Protocol on access and benefit-sharing in perspective. Martinus Nijhoff Publishers, Leiden, pp. 83–122.

Dedeurwaerdere, T., Melindi-Ghidi, P. and Broggiato A. (2016). Global scientific research commons under the Nagoya Protocol: Towards a collaborative economy model for the sharing of basic research assets. Environmental Science and Policy, 55(1), 1–10.

Esquinas-Alcazar, J.T., Frison, C. and Lopez, F. (2011). Introduction: a treaty to fight hunger-past negotiation, present situation and future challenges. In Frison, C., López F. and Esquínas Alcázar, J.T. (eds), Plant genetic resources and food security: Stakeholder perspectives on the international treaty on plant genetic resources for food and agriculture. Issues in Agricultural Biodiversity. Earthscan from Routledge, London, pp. 1–23.

Franck Meijboom and Pamela Pavey (eds), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

EU (2014) Regulation No. 511/2014 of the European Parliament and of the Council on compliance measures for users from the Nagoya Protocol on access to genetic resources and the fair and equitable sharing of benefits arising from their utilisation in the Union. Available online at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0511

Hallewood, M. and Nnadozie, K. (2008). The multilateral system of access and benefit sharing of the International Treaty on Plant Genetic Resources for Food and Agriculture, Recursos Naturales y Ambiente, 53, 30–38.

Kamau, E.C., Winter, G. and Stoll, P.T. (2015). Research and development on genetic resources: Public domain approaches in implementing the Nagoya Protocol. Taylor and Francis, London.

Kiehn, M., Fisher, F. and Smith, P. (2021). The Nagoya Protocol and access and benefit sharing regulations of the Convention on Biological Diversity (CBD) and its impacts on botanic gardens' collections and research. CABI Reviews. CAB International, Wallingford. doi.org/10.1079/PAVSNNR202116034.

Kumar, D.R. (2019). United States patents, biopiracy, and cultural imperialism: The theft of India's Traditional Knowledge. Inquiries Journal, 11(10), 1769.

Kusniati, R., Hafrida, H. and Marlina, S. (2016). Government's policy in implementing sharing of benefits from utilization of genetic resources of the traditional knowledge of the indigenous people. Journal of Law, Policy and Globalization, 56, 162–169.

Lawson, C., Rourke, M. and Humpries, F. (2023). Access and benefit sharing on genetic resources, Information and traditional knowledge. Routledge, Abingdon.

Maxted, N., Hunter, D. and Ortiz Rios, R. (2020). Plant Genetic conservation. Cambridge University Press, Cambridge. doi.org/10.1017/9781139024297

Meldrum, G. and Padulosi, S. (2017). Neglected no more: leveraging under-utilized crops to address global challenges. In Hunter, D., Guarino, L., Spillane, C. and McKeown, O. (eds) Handbook of Agriculture Biodiversity, Routledge, Abingdon, pp. 298–310.

Moore, G. and Tymowski, W. (2005). Explanatory guide to the International Treaty on Plant Genetic Resources for Food and Agriculture. IUICN Law Programme, Rheinbreitbach.

Pauchard, N. (2017) Access and benefit sharing under the convention on biological diversity and its protocol: What can some numbers tell us about the effectiveness of the regulatory regime? Resources, 6, 11. DOI: 10.3390/resources6010011.

Phillips, P.W.B., Smyth, S.J. and de Beer, J. (2018). Access and benefit-sharing in the age of digital biology. In Oguamanam, C. (ed.) Genetic resources, justice and reconciliation. Cambridge University Press, Cambridge, pp. 181–195.

Rosendal, G.K. and Andresen, S. (2016). Realizing access and benefit sharing from use of genetic resources between diverging international regimes: the scope for leadership. International Environmental Agreements: Politics, Law and Economics, 16(4), 579–596.

Sirakaya, A. (2019). Balanced Options for Access and Benefit-Sharing: Stakeholder Insights on Provider Country Legislation, Frontiers in Plant Science, 10, 1175.

Sirakaya, A. (2021). Is the Nagoya Protocol designed to conserve biodiversity? Plants, People and Planet, 10221. doi.org/10.1002/ppp3.10221.

Susilowati, I.F. and Hermono, B. (2017). Legal protection of traditional knowledge, recognition and certainty of property protection of traditional knowledge of indigenous peoples. Advanced Science Letters, 23(12), 11723–11726.

Thomson, J.C. and Achalender, R.C. (2015). Implementation of the access and benefit sharing provisions of the Biological Diversity Act. 2002: A case study on red seaweed (*Kappaphycus alvarezii*). Asian Biotechnology and Development Review, 17(3), 39–51.

Tully, S. (2003). The Bonn guidelines on access to genetic resources and benefit sharing. Review of European Community and International Environmental Law, 12(1), 84–98.

Vernooy, R. and Ruiz, M. (2013). Access to and benefit sharing of plant genetic resources: novel field experiences to inform policy. Resources, 2, 96–113.

Williams, D.E. (2017). Agricultural biodiversity and the Columbian exchange. In Hunter, D., Guarino, L. Spillane, C. and McKeown, P. (eds) Handbook of Agriculture Biodiversity. Routledge, Abingdon, pp. 192–212.

Wu, J.Y. and Xue, D. (2017). Important issues concerning the national legislation of access to genetic resources and benefit-sharing. Biodiversity Science, 25(11), 1156–1160.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Women's (hidden) contribution to the sustainability of modern Australian farming businesses

E.A. Buddle
School of Humanities, University of Adelaide, Adelaide, SA 5005, Australia

Abstract

The modernisation of Australian agriculture, against the backdrop of becoming an export-dominant country and the global insatiable hunger for more 'sustainable' food production, has resulted in an increasing need for regulation, certification, and compliance. This shift has introduced new responsibilities for farmers. Beyond non-traditional farming activities, farmers must ensure their business is adhering to regulatory requirements and capturing data to feed into certification schemes. This transition has not only added to the workload of farmers but has created a demand for additional labour within the farming business to meet these emerging needs. Research conducted in South Australia has shown that women play a crucial role in meeting these regulatory and compliance needs within farming businesses, contributing significant labour that is often unseen and uncompensated. My research explores how women perceive their role within farming, the impact of their contribution to their farming businesses on daily life, and the challenges they face with balancing farm responsibilities with other activities such as off-farm work. Understanding the perspectives of these women is vital for informing policy and identifying the support mechanisms required. By acknowledging and addressing the unseen labour of women in Australian agriculture, there is an opportunity to create more inclusive and equitable systems that empower the entire farming community.

Keywords: Australian agriculture, female farmers, women farmers

Women's (hidden) contribution to the sustainability of modern Australian farming businesses

> Can I ask how you define "the books?" "Just the books" I think I have heard a lot of you say.
>
> (Sighs) It is a lot, these days. It depends. You can do minimal, or you could go into depth… So, I think paperwork, (or the) books is like (tax), and that's like the bare minimum, and bills probably, and then then you flow on to all the other stuff. (Peta, Female, 35 to 44 years old, South Australian Mallee)

Australian agriculture is an export-dominant industry, with the nation being a net-exporter of many bulk commodities, including grains, wool and meat. This shift has largely been driven by the deregulation of key industries, the privatisation of state-owned assets and authorities and rescinding trade barriers (O'Keefe, 2019). Alongside this changing policy landscape, most of the current production capacity being created through scientific and technological advancement over the past 50 years (Henzell, 2007) and is supported by industry and government investment in research, development, and extension.

Despite being largely deregulated, Australian farmers are faced with the increasing responsibility of complying with the certification requirements of the importing country including biosecurity and quality parameters, as well as credence attributes such as animal welfare and environmental standards, sometimes collectively referred to as environmental, social and governance (ESG) criteria. Biosecurity

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (eds.), ***Back to the future***, ISBN 978-90-04-71550-9
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_7, © Brill | Wageningen Academic 2024
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

is one area where various tiers of government still have a place in maintaining and regulating. Australia remains free of catastrophic disease and pest, mainly due to being an island. However, increased international travel and imports introduce an increasing risk of a devastating biosecurity incursion that may be detrimental to the agricultural industry. While there has been substantial government investment in enforcing biosecurity legislation at Australia's borders, greater onus has been placed on individual farmers to enhance and document their on-farm biosecurity to support international trade.

Beyond biosecurity, there is little government involvement in the capture and reporting of other types of data. As expressed in the quote from Peta above, there are various levels at which the farmer can participate in data capture and sharing. Data that fit with ESG principles are largely captured by industry through mechanisms like farm quality assurance programs, which are largely voluntary. The capture and reporting of these attributes was previously the responsibility of the exporter, with the farmer left largely out of the picture. However, exporting companies are requiring more evidence from the farm gate, and there is a greater push for farmers to consider and alter these parameters during production. The need for such data is placing increasing pressure on individual farming businesses to ensure they are capturing, maintaining and sharing data in the relevant format.

The farming business has never just been about the production of products alone. As van der Ploeg (2023) describes, farming implies that farmers are actively engaged in other domains, such as markets, the household and family, and the reproduction of the farm and the resources within it. The distribution of the tasks within these domains distributed amongst the participants and can be influenced by factors such as legislation, religion and tradition (van der Ploeg, 2023). To explore how the domains fair in the South Australian context, I have conducted focus groups and interviews with 61 farmers from various industries including grains, livestock and horticulture. My preliminary findings have shown that it is largely women that assume the responsibility of data collection and reporting, with participants highlighting that the time required for these tasks is increasing. Within the farming businesses of those I spoke with, it was typical for traditional farming tasks, such as tractor driving and animal husbandry, to be the responsibility of the male farmer, while non-traditional farming activities such as domestic duties and "the books" including compliance were generally left to the female. Many of the women I spoke to were comfortable with their role within the business, often describing themselves as the chief executive officer (CEO) or as running the farm's "engine room". However, many recognised the challenge of managing the increasing level of work required against other priorities such as off-farm work and household duties.

Results from this research highlight that, while data capture and compliance are now considered to be a "cost of doing business", the modernisation of Australian agriculture has resulted in a change of the unseen and unpaid labour contributed by women to farming businesses. By acknowledging and addressing the unseen labour of women in Australian agriculture, there is an opportunity to create more inclusive and equitable systems that empower the entire farming community.

References

Henzell, T. (2007). Australian Agriculture: Its history and challenges. CSIRO Publishing, Melbourne, VIC. DOI: 10.1071/9780643094659

O'Keefe, P. (2019). Making markets in Australian agriculture: Shifting knowledge, identities, values, and the emergence of corporate power. Palgrave Macmillan, Basingstoke. DOI: 10.1007/973-981-13-3519-8

van der Ploeg, J.D. (2023). The sociology of farming: Concepts and methods. Routledge, New York, NY.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Sustainable diets: examining policies shaping the development of organic food production and consumption in the Nordic context

N. Strøm-Andersen[1,], A.B. Milford[1] and X. Liu[2]*
[1]Norwegian Institute of Bioeconomy Research (NIBIO), Ås, Norway; [2]Natural Resources Institute Finland, Luke, Finland
[*]Corresponding author: nhat.strom-andersen@nibio.no

Abstract

The EU's Farm to Fork strategy aims to create fair, healthy, and environmentally friendly food systems, ensuring universal access to sufficient, safe, nutritious, and sustainable food. Increasing the production and consumption of organic food is considered crucial to achieving these objectives. This study explores the development of organic food in four selected Nordic countries: Denmark, Finland, Norway, and Sweden. We have observed the variance in the market share of organic products in the retail sector among these countries, with 13, 2.5, 1.73 and 8.9%, respectively (2021 statistics). This highlights a significant gap, with Denmark and Sweden leading in organic food consumption. We seek to understand the reasons behind this disparity by delving into public policies governing organic food strategies in the selected countries. The analysis entails examining multiple policy documents to pinpoint fundamental strategies and significant milestones influencing the development of the organic sector. Our findings indicate that Denmark and Sweden have historically implemented supportive policies, including financial incentives, subsidies, and regulatory frameworks, to promote organic agriculture. Their consistent, credible, comprehensive and coherent governmental policies and long-term commitments offer a stable environment for the organic sector to flourish. They seem to possess extensive distribution networks and better market access for organic products, contributing to the sector's growth. The accessibility and availability of organic products in retail outlets play a vital role in influencing consumer choices. The paper provides policymakers with valuable insights into how to foster the consumption and production of organic food, not only within the case studies but also in other national contexts.

Keywords: action plan, document analysis, Nordic context, organic food strategies, policy mix

Introduction

The Farm to Fork strategy of the EU aims to establish equitable, healthy, and environmentally sustainable food systems, ensuring universal access to adequate, safe, nutritious, and sustainable food (European Commission, 2020). Enhancing the production and consumption of organic food is recognized as a pivotal measure to attain these goals. This study investigates the development of organic food in four chosen Nordic countries: Denmark, Finland, Norway, and Sweden. It is observed that there is a variation in the market share of organic products in the retail sector among these countries, with percentages of 13, 2.5, 1.73 and 8.9%, respectively (2021 statistics) (FiBL Statistics, 2024). This underscores a significant disparity, with Denmark and Sweden leading in organic food consumption. The study aims to comprehend the reasons behind this gap by delving into the public policies that govern organic food strategies in the selected countries.

Analytical approach and methodology

To obtain a comprehensive understanding of the complex dynamics surrounding policy development and implementation in organic food production and consumption, the analysis of policies often involves

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (eds.), ***Back to the future***
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_8, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

a multifaceted approach that integrates various research methods. We systematically review and analyse government policies, regulations, and strategic documents to understand the formal frameworks in place and map policies to understand the relationships between different policies, their actors, and the overall policy landscape.

The analysis involves examining around 60 policy documents to identify key drivers and strategies shaping the organic sector's development. We decide to focus on the organic governmental policies in two different periods to observe the policy development over time in each country case study. These documents are often addressed as strategy, action or implementation plan in the title. For Denmark, two organic strategies were announced in 2012 (updated in 2015) and 2023, i.e., "The Organic Action Plan 2020" (2012), updated with "Organic Action Plan for Denmark — Working Together for More Organics" (2015) and "Strategy for Organics" (2023), both issued by the Ministry of Food, Agriculture and Fisheries of Denmark (Ministeriet for Fødevarer LoF, 2012; Ministry of Food AaFoD, 2015, 2023). For Finland, there are two strategies made in 2013 and 2023, i.e., "More Organic! Government Development Programme for the Organic Product Sector and Objectives to 2020" (2013) and "Organic 2.0 — Finland's National Programme for Organic Production 2030" (2023) accompanied by "The Implementation Plan for the Organic 2.0" (2023), issued by the Ministry of Agriculture and Forestry of Finland (Ministry of Agriculture and Forestry of Finland, 2013, 2023a,b). For Norway, the two strategies were made in 2009 and 2018, i.e., "Action Plan to Reach the Target of 15 per cent Organic Production and Consumption in 2020 — Economic, Agronomic — Organic!" (2009) and "National Strategy for Organic Farming — National Strategy 2018–2030" (2018), both issued by the Ministry of Agriculture and Food of Norway (Landbruks- og matdepartementet, 2009, 2018). For Sweden, there are two organic strategies made in 2001 (updated in 2006) and 2018, which are "Organic agricultural products and foodstuffs — Action plan 2005" (2001), updated with "Organic production and consumption - Targets and direction until 2010" (2006) and "Action plan to increase production, consumption and export of organic food" (2018), issued by the Swedish Board of Agriculture (Jordbruksdepartementet, 2006; Jordbruksverket, 2001, 2018). It is worth noting that only documents from Denmark and Finland are originally in English, whereas those from Sweden and Norway are translated into English by the authors.

We follow the methodology for policy document analysis suggested by Bowen (2009), Cardno (2018) and Owen (2014) through the lens of the policy-making process as shown in Figure 1. To supplement the document analysis, our insights are enriched by participating in workshops (two organic workshops on the Nordic countries in March 2023 and March 2024), and several in-depth interviews with stakeholders in the sector.

- ✓ **Agenda-setting (where and when):** When and where was the document produced?
- ✓ **Agenda-setting (why and when):** Why was the document produced? What is the purpose of the policy? What values underpin and guide the policy?
- ✓ **Authorship and audience** (who): Who wrote the document? Who was it written for?
- ✓ **Policies/strategies** (What): What are the strategies/policies/measures introduced or implemented?
- ✓ **Key stakeholders**: Who are involved (directly and indirectly) in the policy implementation?
- ✓ **Implementation** (How): How long is the policy implementation period? How much is funding needed/located to carry out the policy in practice?
- ✓ **Results** (if any): Has the policy obtained its goals?
- ✓ **Evaluation** (if any): What is the intended overall impact of the policy? How and when is the policy to be reviewed? How is policy implementation intended to be monitored?

Figure 1. Key questions for coding policy documents in the analytical process.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Based on the analysis of the policy documents, our second analytical step will assess whether these policy strategies are consistent, credible, comprehensive, and coherent following the characteristics of the policy mix proposed by Rogge and Reichardt (2016) and Rogge and Schleich (2018). Consistency refers to how well the components of the policy mix align with each other, thereby contributing to the attainment of policy objectives. It spans from the absence of contradictions (indicating weak consistency) to the presence of synergies (indicating strong consistency) within and among the elements of the policy mix. Credibility pertains to the extent to which the policy mix is perceived as believable and reliable, both in its entirety and concerning its individual elements and processes. Comprehensiveness assesses the breadth and thoroughness of the elements comprising the policy mix, as well as the extent to which its processes are founded on thorough decision-making. Coherence refers to the synergistic and systematic processes of policy formulation and implementation that directly or indirectly contribute to accomplishing policy objectives. To be able to assess these characteristics, we rely not only on the content of the policy documents but also on numerous other documents and studies that evaluate the overall impact of the policies.

Findings

Denmark

Drivers and goals: Denmark aims to consolidate efforts in advancing organic production and consumption for the betterment of the environment, nature preservation, animal welfare, and the well-being of future generations. Over 800 000 individuals stand to benefit from the provision of nutritious organic meals daily in various settings such as canteens, hospitals, and nurseries. Investments are directed towards fostering new export opportunities and disseminating information to bolster the domestic and global sales of Danish organic products. The Organic Action Plan (OAP) in 2012 (updated in 2015) (Ministry of Food AaFoD, 2015, 2023b) aims to double the area under organic cultivation by 2020, surpassing the levels recorded in 2007. In the recent OAP in 2023 (Ministry of Food AaFoD, 2023a), Denmark's organic sector is aimed for significant growth by 2030, with the government targeting organic land to occupy 21% of total agricultural land by then. Additionally, doubling sales of organic products is a key objective, with retail consumption set to reach €3.5 billion and professional kitchens targeting €616 million by 2030. Export efforts in organic food are anticipated to stimulate sectoral expansion, aligned to double by 2030, supported by a government-set export target of €778 million.

Strategies: The strategies of the OAP in 2012 (updated in 2015) include:

1. Increase export effort by promoting exports of organics and calling organic businesses to apply for the EU sales promotion subsidies;
2. Boost domestic markets by allocating funds for sales promotion and supporting organics in public food purchases, and promoting organic food brands;
3. Strengthen collaboration and partnerships between ministries, institutions, non-governmental organizations (NGOs) and local authorities, research and agricultural training;
4. Develop the organic business sector by supporting organic producers and advisory services for organic and local green sales efforts;
5. Foster more and greener organic producers by promoting land conversion, preservation, sustainability and experimental organics;
6. Support a more resilient organic production by facilitating organic farmers' access to innovative fertilizers and feed options.

These strategies were continued in the OAP in 2023. However, to further increase exports, the Export Growth Action Plan for the food cluster was initiated in 2022 by establishing a task force, including businesses, organisations, and government bodies.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Financing: The OAP in 2012 (updated in 2015) provides a concrete financial plan for achieving different stated goals. To ensure a growth strategy for the organic industry, Denmark dedicated approximately €192 million for 2015–2018 and €147 million for 2018–2019. The Strategy 2023 mentions that the government has allocated €90.1 million to the Plant-based Food Grant for 2023–2030, with the aim of spending at least half of the fund's resources on organic food.

Stakeholder involvement: Spearheading the initiative of 2012 is the Ministry for Food, Agriculture, and Fisheries, tasked with orchestrating and executing the plan's implementation. The Ministry of Defence is initiating a pilot project to integrate more organic options into their canteens, while the Ministry of Health is teaming up with regional authorities to augment the presence of organic foods in hospital canteens. Furthermore, the Ministry of the Environment is revising regulations to exempt specific pesticides suitable for organic farming from mandatory pesticide certification requirements. Additionally, it is advocating for a flexible approval framework for specialized housing systems for organic producers, aiming to minimize ammonia emissions and nutrient runoff from pens. Effective execution of these strategies necessitates collaboration with local authorities and producers. The Strategy 2023 mentions that the Danish Agricultural Agency and the industry are working together to gain access to new fertiliser sources. The Danish Ministry of Climate, Energy and Utilities will, as part of their evaluation of the first upcoming financial support tender for biogas, investigate the possibility of creating a special fund for organic farming to produce degassed biomass that can be used as fertiliser. The Ministry of Foreign Affairs grants for joint business promotion campaigns, and supports companies in export markets, including negotiating bilateral agreements so that Danish companies have access to selling their goods.

Finland

Drivers and goals: Organic production typically imposes lower burdens on water sources and the climate compared to conventional agriculture, while also promoting greater biodiversity. The government is dedicated to executing a growth initiative for the organic product sector, aiming to broaden and boost organic production to satisfy demand and enhance the entire organic food chain, diversifying the range of available organic foods to offer consumers more choices, and improving the availability of organic products in retail and professional sectors to make organic food more accessible. There is a specific need for more organic livestock and horticulture products to be available in the market. The strategy of 2013 states that Finland aims to reach the target of having 20% of the cultivated arable area in organic production by 2020. By 2015, 10% of the food provided at the kitchens and catering services of state and central government contracting entities should be organic, increasing to 20% by 2020. The Strategy of 2023 aims for 25% of the total arable area to be organic, double the collection area of wild organic products to 14 million hectares, 18% of the food procured by public food services by 2025 and 25% by 2030 to be organic, and boost the market share of organic products to 5% by 2030 through balanced growth in consumer demand, exports, and production.

Strategies: For 2013, the strategies include:

1. Growing volumes of organic production: Allocating sufficient funding for organic production commitments to bolster the growth trajectory; ensuring national requirements are appropriately considered in production regulations and control organization of EU legislation; adjusting investment aid conditions for the transition of livestock farms to organic production; enhancing self-sufficiency in protein feed to meet the expanding livestock production demands through research, guidance, plant breeding and EU agricultural policy-compliant methods;
2. Greater diversity in the supply of domestic organic foods: Increasing the provision of advice to small enterprises on food legislation and good practices; strengthening producer cooperation in collection and distribution; promoting the development of companies manufacturing organic foods through

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

measures under the Rural Development Programme for Mainland Finland 2014-2020; developing statistics on production volumes, product flows, consumer demand; and revising approval procedures for organic collection areas;
3. Improving the access to organic food through trade and institutional kitchens: Developing procurement legislation and improving expertise on procurement procedures; raising awareness of consumers and institutional kitchens on organic production methods, labels and brands.

This is further supported by Strategy 2023, which aims for enhancing knowledge and competence through the farmers' competence network e.g. AgriHub and the Finnish Organic Research Institute's Research Strategy 2021-2024 to improve expertise across the organic production chain and implement new EU and national legislation on organic production starting in early 2022, with the Finnish Food Authority preparing new control guidelines.

Financing: The Strategy 2013 mentions that a new allocation of €1.58 million has been designated for the planning and execution of programs focusing on local food and the organic product sector for the period 2012–2015. In Strategy 2023, it is stated that approximately €60 million in support was paid under the measure concerning organic production in 2020. For the forthcoming programming period, the payments for organic production are expected to increase to €397 million, which means that the annual payments would be in the range of €70–78 million. The mention of potential funding sources suggests that funding may come from various channels, including EU schemes, government funding, and other sector-specific financial support mechanisms, but specific budget figures or allocations are provided in neither document.

Stakeholder involvement: Several ministries are involved in outlining the Strategy 2013, including the Ministry of Agriculture and Forestry, Ministry for Foreign Affairs, Ministry of the Environment, Ministry of Finance, Ministry of Employment and the Economy, Ministry of Education and Culture, and Ministry of Social Affairs and Health. Besides them, Strategy 2023 mentions LUKE (Natural Resources Institute Finland) acting as an advisory body, which encompasses the Organic Research Institute, Luomuinstituutti, along with educational institutions, the Finnish Food Authority, and Ely-Keskus (Centres for Economic Development, Transport and the Environment), alongside various advisory organizations. Public-private collaboration is facilitated through organizations such as ProLuomu (Finnish Organic Food Association), Business Finland, Aquaculture Development Groups, and MTK (The Central Union of Agricultural Producers and Forest Owners). Within the private sector, the food chain is represented by producers, food businesses, retailers, and project actors, as well as experts specializing in organic production.

Norway

Drivers and goals: There exists a consumer demand for organic food, thus indicating a necessity to increase production. A considerable portion of consumers purchasing organic food express concerns regarding health and the environment. Norway possesses the capacity to produce environmentally sustainable food. The action plan aims to enhance expertise in organic production and underscore the importance of organic farming for the entirety of the agricultural sector. Organic agriculture plays a role in fostering biodiversity and can serve as a pioneering force, leading conventional agriculture towards greater environmental friendliness. The main, numbered target of the Strategy 2009 is that 15% of food production and consumption should be organic by 2020. More specifically, 15% of the total agricultural area, 15% of the livestock sector, and 15% of the food consumption (of both imported and Norwegian products) should be organic by 2020. The Strategy 2018 does not have a specific target regarding organic

Franck Meijboom and Dominic Boyer, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

production or consumption. It mentions three times that the government aims to stimulate organic production demanded by the market. It is also mentioned that organic agriculture can contribute to food diversity and sustainable agriculture in Norway. However, in the introduction and two more times in later chapters, the strategy mentions that organic agriculture can conflict with aims for reduction of greenhouse gas emissions.

Strategies: The Strategy 2009 includes:
1. Establish the groundwork to maximize the proportion of organic food consumption sourced from Norwegian production;
2. Contribute to market development and increased consumption of organic food in the private and public sector;
3. Contribute to that work on developing organic food production and consumption is embedded in more sectors that the agricultural sector.

The Strategy of 2018 aims to establish a programme for organic agriculture ("Økologiprogram") that will contribute to the efficient use of resources received from the government. A "dialogue forum" should also be established, with participation from central actors in organic production, processing, sales, and consumption. Organic agriculture will be developed through three contribution areas:
1. Research, development and innovation (e.g. education opportunities and building advice and competence);
2. Facilitating organic production (e.g. continuation of the committee for regulation of organic agriculture);
3. Developing an efficient value chain. It is important to provide fact-based information about organic agriculture.

The organisation "Matmerk" will be responsible for the web page on organic agriculture, and the government will start work to attain data on the share of food sales that are organically labelled. Private and public procurers are encouraged to choose organic.

Financing: No funding amounts for the different strategies mentioned in Strategy 2009. Norway planned to increase rates on price depreciation for grain, peas, and oilseed and establish a time-limited grain campaign with €2.6 million in additional subsidies to producers of organic grain. In Strategy 2018, there is no specific mention of financing for each strategy, except that the "Økologiprogram" will distribute resources achieved in the yearly negotiations and agreement between the agricultural sector and the government ("The agricultural agreement"). It is noted that €11–13.5 million has been allocated each year for the development of organic production since 2009. Of these, around €8.5 million are direct subsidies to producers in the form of livestock subsidies and land subsidies. In addition to direct grants, €2.6–3.8 million in development funds for organic agriculture are allocated annually.

Stakeholder involvement: The Strategy 2009 has been developed with the involvement of an advisory committee, the "Meeting arena for organic production and consumption". Innovation Norway, the Norwegian Agricultural Agency and the County Governor are responsible for managing the means for accomplishing the business development strategy. The Strategy 2018 is developed by representatives from the government (Department of Food and Agriculture and Department of Climate and Environment), the two main Farmers Unions, and a reference group which is not named. There is no mention of which stakeholders will participate in the "dialogue forum" and contribute to the implementation of the "Økologiprogrammet", but it states that "relevant actors in the value chain are encouraged to participate actively".

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Sweden

Drivers and goals: The main drivers of the Strategy 2001 are the focus on sustainable development, changes in European environmental and agricultural policies, and the aim to promote ecological farming. The plan was influenced by various treaties and reforms in the environmental sector, such as the Maastricht Treaty and the European Action Plan for Organic Food and Farming. Additionally, economic aid played a significant role in supporting decisions and restructuring farming policies to enhance ecological production practices. The goal is that 20% of the country's arable land should be cultivated organically in 2005 and that 10% of the number of dairy cows and slaughter animals of beef and lamb should be in organic production. The Strategy 2018 emphasizes the limited use of pesticides in organic production to reach the Swedish environmental goals of "toxic-free environment" and "good quality groundwater". Public procurement of organics is important as it can increase also private demand by increasing knowledge. By 2030, 30% of agricultural area and 60% of public food procurement should be organic.

Strategies: The Strategy 2001, updated in 2006 includes:

1. Plant cultivation: Developing non-chemical weed control database and methods for weed harrowing; enhancing plant protection with new agents and methods; conducting extensive research on plant nutrients; encompassing greenhouse production, open-field vegetables, and fruit and berry cultivation; addressing specific challenges in potato seed cultivation through technical advancement;
2. Animal husbandry: enhancing animal welfare and health conditions, ensuring all animals have access to outdoor spaces; investing in on-farm feed, establishing correct feed states, and increasing the cultivation of protein feed;
3. Beekeeping: Enhancing organic honey production;
4. Mushroom cultivation: Improving the conditions for organic production;
5. Research, trials and development: Opening up for larger, more long-term research projects and allocating research funds to the primary production and processing stage;
6. Market support: maintaining consumers' interest in organic foods with the availability of organic foods in the usual retail chains; linking farmers, processors, and sellers; developing a commodity exchange for mainly fresh produce; and providing advice and consultation for processing companies that want to invest in organic production;
7. Consumer awareness: Increased funding for consumer information and developing an inventory of consumers' knowledge of organically produced foods;
8. Strengthening the advisory service: the Swedish Agency for Agriculture's coordinating role, establishing priorities within ecological advice;
9. Coordinating market and consumer strategies;
10. Follow-up of action plan 2005: A development forum for organic production is proposed to be established and managed by an independent organization.

The Strategy 2018 is reorganised into sub-categories:

1. For private trade and restaurants: Clarify how organic food should be promoted and handled; start a campaign in the restaurant sector to increase knowledge about and interest in organic food, including digital tools for customers;
2. For public procurement: Education programme for the public sector, focussing on economic aspects of increasing organic purchases, but also on organic production methods; build up regional platforms for dialogue with local farmers and businesses; increase organic share of food procurement in state institutions; and collect data regarding the development of public food procurement;
3. For the processing and food industry: Develop education and business opportunities for organic food; earmark venture capital for financing start-ups, innovations and production systems in companies with organic food production;

Franck Meijboom and Patrick Baur (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

4. For the primary production: Set aside resources such as reinforcement and long-term financing for organic production; market analysis and production calculations; advice and competence development for several production types; and increase research funding for earmarked organics;
5 For communication: Create a web page on organic production and consumption; information campaign to increase knowledge in the value chain; and statistics of the market development for organic products;
6. For exports: Business Sweden is developing a strategy to increase the export of organic food products.

Financing: In Strategy 2001, Sweden estimated costs to promote organic production and consumption in 2005 to be €60.7 million for environmental compensation for crop cultivation and animal production; competence development, advice, etc.; marketing promotion measures; research, trial and development activities; consumption promotion measures; and support for certification (Jordbruksdepartementet, 2006). The Strategy 2018 does not suggest total funding for the different strategies. However, it was noted that Sweden dedicated €33.5 million to research on organic farming in 2008–2017. It plans to increase to €4.3 million per year for Ekoforsk and coordination with EPOK at SLU. The earmarked grant to the Swedish Agency for Agriculture, which is used for trials and development projects in primary production, to at least €1.1 million per year. It plans to set aside €173 000 per year for information and training in areas with a low proportion of public organic consumption. Priority target groups are primarily catering staff, cooks, educators, buyers, and decision-makers.

Stakeholder involvement: Under the Strategy 2001, Sweden listed specifically the Ministries, Departments, and Organizations responsible for implementation (Jordbruksverket, 2001). The Government and the Swedish Agency for Agriculture took the lead role, in collaboration with the New Consultative Body, the Swedish Chemicals Agency, Formas and other research funders, the control bodies, the county administrative boards, the industry and the advisers, Danisco, the State Veterinary Medical Institution, Ecological advisors, the Swedish Consumer Agency, and the Horticulture Fund and other research financiers. In Strategy 2018, Organic Farmers, Organic Sweden, KRAV, Eco Food Center, LRF, and Swedish Groceries are named additionally.

Discussion and conclusions

Through the examination of the goals, strategies, financing, and stakeholder involvement in the organic strategies in the different periods of the four countries, and how well they are aligned, we observe that Denmark and Sweden have clear, comprehensive, ambitious goals and objectives, followed by solid plans and milestones to realize these goals, providing a roadmap for progress and growth in the organic sector. The success of these strategies has been proven. Denmark has made significant achievements in stimulating demand and production, conducting research, and fostering product innovation for organics (see Figure 1). It currently boasts the highest global market share of organic products and the highest per capita spending on organic food annually, with almost 13% of Danes purchasing organic food in 2021, a 400% increase since 2005. Approximately 97% of Danes recognise the national organic logo, reflecting significant consumer demand for organic produce (Ministry of Food AaFoD, 2023a). The plan successfully achieved its target of doubling the organically cultivated area compared to a 2007 baseline, demonstrating substantial progress in expanding organic agriculture in Denmark. Efforts to transition public kitchens to serve organic food have been successful, with notable achievements like the city of Copenhagen reaching 90% organic food in 2015 without increasing meal prices, showcasing the impact of the plan on public sector consumption (Ministry of Food AaFoD, 2023a). Another significant initiative entails the utilization of the Organic Cuisine label to promote the adoption of organic ingredients in both public and private kitchens. Danish organic exports have risen by more than 700% since 2007, indicating significant growth in the international market for Danish organic products. Denmark has been able to achieve this because the OAPs actively involved a wide spectrum

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

of stakeholders, including farmers, retailers, ministries and politicians, food companies, consumers, and environmental organizations. This collaborative approach ensured a holistic strategy that addressed various aspects of organic farming, leading to widespread support and implementation. The plans included innovative initiatives like organic conversion checks, conversion of public kitchens to organic food, marketing campaigns, and export promotion, which contributed to the plan's success and the growth of organic farming in Denmark. Sweden, with their organic strategies, has made a significant impact on the consumption of organic food in the country with a dramatic increase over the past decade. This growth can be attributed to various factors such as the promotion of organic foods by retailers, the expanding variety of organic products available, and the purchasing power of consumers in the country. The plan's focus on increasing organic food production and consumption, along with efforts to shift towards organic production in Sweden, contributed to the rise in organic food consumption among Swedish consumers. The main achievements of the organic sector in Sweden include significant growth in organic food sales, with a 2.5% increase in 2022, reaching a total of €2607 million. Despite challenges in various sales channels, organic food maintained an impressive 8.2% share of total food sales in Sweden (see Figure 1). Additionally, its efforts to increase organic farmland have been notable, currently managing almost 20% of its farmland organically, the highest among the four countries. Finland managed to allocate 14.95% of agricultural land for organic production, only after Sweden (see Figure 1). However, organic product sales in Finland decreased by 8% in 2022 compared to 2021, totalling €375 million in grocery stores, currently holding a 2.2% market share in the Finnish grocery sector. Finland exported organic food products worth approximately €59 million, making up about 3% of its total food exports in 2022 — a slight increase in the value of organic exports since 2020. The program focused on enhancing consumer demand and confidence in organic food through traceability, particularly in public food services, and fostering collaboration with restaurants. A 2022 survey revealed that over half of the food services in public professional kitchens used organic food daily, 23% weekly, and only 2% never. Finland has faced challenges in meeting its organic action plan targets due to several factors. One key reason is the ambitious nature of the goals set, such as aiming for a 20% increase in organic production by 2020. The slow progress can be attributed to the difficulty in achieving an 18% annual increase in production. Additionally, the lack of collaboration with key stakeholders in the food chain, insufficient incentives for the food industry to transition to organic practices, and the absence of effective measures like tax incentives and education on organic farming have hindered Finland's progress in meeting its organic targets. The divergence between the need for organic farming and the actual transition to organic practices have also contributed to Finland's struggles in fulfilling its organic action plans. With Norway, both retail sale share and farming land share are the lowest among the studied countries, with 1.73% and 4.66% in 2021 respectively (see Figure 1). The state secretary of the Department of Food and Agriculture stated that "it is consumer demand that will determine how much organic food should be produced in Norway, not political resolutions" (Kalstad and Nordmark, 2016). The goal of 15% organic by 2020 was officially abandoned in 2016. The 2018 strategy "had to a little extent contributed to making it possible for the goals for organic agriculture to be reached by 2030" (Oxford Research, 2023). Its main weaknesses were stated to be that it was "unclear and not action-oriented", and that it did not have "a concrete numbered production goal which would make work on organic production a priority" (Oxford Research, 2023). The backing for organic farming has remained unchanged since 2014. Since 2010, the conversion grants, aimed at transitioning conventional farmland to organic, have been decreasing and eventually ceased in 2016. Consequently, farmers seeking to convert their land to organic no longer receive support, making them eligible for governmental assistance only after completing the full conversion.

Undoubtedly, Sweden and Denmark have shown that their organic plans and strategies have been consistent, credible, comprehensive, and coherent over time while Finland's and Norway's are less so (illustrated in Table 1). Swedish and Danish organic plans were supported by substantial dedicated funding, enabling the implementation of initiatives and projects that drove the growth of organic

Franck Meijboom and Daniela Bove, Book, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

farming. Their government's consistent support and policy stability across different administrations have been crucial in prioritizing organic agriculture, creating a conducive environment for growth and development in the organic sector. The two countries have successfully enhanced a strong consumer demand — a driving force behind the success of the plans and the organic sector.

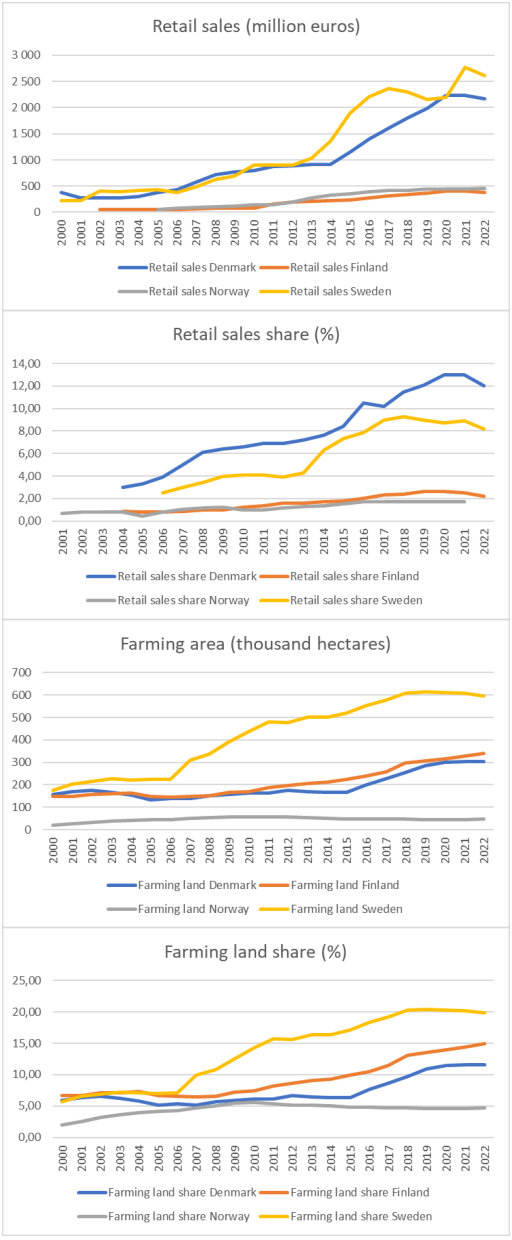


Figure 1. Organic retail sales, retail sales share, farming area, and farming area share of the four case countries in the period 2000-2022, compiled data based on statistics available on FiBL Statistics (2024).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Table 1. Assessing the policy characteristics of organic food strategies of the four countries

Characteristic	Denmark	Finland	Norway	Sweden
Consistency				
Credibility				
Comprehensiveness				
Coherence				

Colour coding: Green and yellow, high; orange and red, medium; brown, low.

References

Bowen, G.A. (2009). Document analysis as a qualitative research method. Qualitative Research Journal, 9(2), 27-40.

Cardno, C. (2018). Policy document analysis: A practical educational leadership tool and a qualitative research method. Educational Administration: Theory and Practice, 24(4), 623-640.

European Commission. (2020). Farm to fork strategy: For a fair, healthy and environmentally-friendly food system. European Commission, Brussels.

FiBL Statistics. (2024). Data on organic agriculture in Europe 2024. Available online at https://statistics.fibl.org/europe.html.

Jordbruksdepartementet. (2006). Regeringens skrivelse 2005/06:88: Ekologisk produktion och konsumtion — Mål och inriktning till 2010. Jordbruksdepartementet, Stockholm.

Jordbruksverket. (2018). Åtgärdsplan för att öka produktion, konsumtion och export av ekologiska livsmedel. Report No.: 2018:16. Jordbruksverket, Jönköping.

Jordbruksverket. (2001). Ekologiska jordbruksprodukter och livsmedel - Aktionsplan 2005. Report No.: 2018:16. Jordbruksverket, Jönköping.

Kalstad, L.M. and Nordmark, I. (2016). Regjeringen skroter mål om økologisk mat. nrk.no.

Landbruks- og matdepartementet. (2009). Handlingsplan for å nå målet om 15 pst. økologisk produksjon og forbruk i 2020. Økologisk, agronomisk - økologisk!. Report No.: M-0740-B. Landbruks- og matdepartementet, Oslo.

Landbruks- og matdepartementet. (2018). Nasjonal strategi for økologisk jordbruk - Nasjonal strategi 2018-2030. Report No.: M-0751 B. Landbruks- og matdepartementet, Oslo.

Ministeriet for Fødevarer LoF. (2012). Økologisk Handlingsplan 2020. Ministeriet for Fødevarer, Landbrug og Fiskeri, Copenhagen.

Ministry of Food AaFoD. (2015). Organic Action Plan for Denmark: Working together for more organics. Ministry of Food AaFoD, Copenhagen.

Ministry of Food AaFoD. (2023). Strategy for organics. Ministry of Food AaFoD, Copenhagen.

Ministry of Agriculture and Forestry of Finland (2013). More organic! Government development programme for the organic product sector and objectives to 2020. Ministry of Agriculture and Forestry of Finland, Helsinki.

Ministry of Agriculture and Forestry of Finland. (2023a). The Implementation Plan for the Organic 2.0. Ministry of Agriculture and Forestry of Finland , Helsinki.

Ministry of Agriculture and Forestry of Finland. (2023b). Organic 2.0 — Finland's National Programme for Organic Production 2030. Ministry of Agriculture and Forestry of Finland, Helsinki.

Owen, G.T. (2014). Qualitative methods in higher education policy analysis: Using interviews and document analysis. The Qualitative Report, 19(26), 1-19.

Oxford Research. (2023). Gode intensjoner — lite handling: Evaluering av nasjonal strategi for økologisk jordbruk. Kristiansand.

Rogge, K.S. and Reichardt, K. (2016). Policy mixes for sustainability transitions: An extended concept and framework for analysis. Research Policy, 45(8), 132-147.

Rogge, K.S. and Schleich, J. (2018). Do policy mix characteristics matter for low-carbon innovation? A survey-based exploration of renewable power generation technologies in Germany. Research Policy, 47(9), 1639-1654.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Should there be an Intergovernmental Panel on Food Security and Sustainability?

M. Kaiser
Centre for the Study of the Sciences and the Humanities, University of Bergen, Bergen, Norway

Abstract

The world of politics and academia has learned to listen carefully to the recommendations of the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) as important bodies to stimulate policy. They provide target measures for reaching goals on climate change and biodiversity which help to formulate appropriate measures of states. They also specify indicators for reaching the overall goals of the Sustainable Development framework (SDGs). The question arises, though, whether the world needs a similar effort in regard food security. The COVID-19 pandemic was just the latest reminder how the global food system affects various other systems as for instance climate change and biodiversity. But public health, economy, social cohesion, politics, and cultural values are similarly affected. Most assessments of our food systems agree that radical changes in our food system are required if we want to reach the SDG targets. This talk presents and discusses the recommendations recently advanced by the Academia Europeae to establish an Intergovernmental Panel on Food Security and Sustainability (IPFSS) and explains why a global target of a Human Trophical Level (HTL) of 2.0 might be one indicator to include.

Keywords: food insecurity, food systems, human trophic level, intergovernmental scientific bodies, science–policy interface

Introduction: What is the problem?

It is hardly an exaggeration to claim that many people feel that their life has become more insecure, that we are met with a battery of cascading risks which potentially threaten our wellbeing and that of the future generations. This feeling is probably justified. The sudden global reality of the Covid 19 pandemic has made us aware of our vulnerability wherever we live. The pandemic was a shock-event. Climate change has now also entered our minds as a dramatic human-induced change of the world we depend on. Climate change is a slow-burner event that is gaining speed. And we can list more of those global crises, or big societal challenges: energy, health, war, loss of biodiversity, pollution, social cohesion, refugees, poverty just to mention a few of them.

Here I want to focus on our food systems. Food is intimately related to virtually all of the above-mentioned global challenges. The food system certainly interacts with the systems of politics, health, environment, society, and economy. The food system is essentially an open system, and it changes under internal and external pressures. It is a complex system, not just complicated. This implies some sobering insights, namely that we cannot hope for a quick-fix delivered from science or some beneficial industry or political institutions. At the same time, all current analyses point to the need to change this system radically and the need to do this now rather than to wait for better times. Here is a quote from the Food and Agricultural Organization of the United Nations FAO:

> "One clear message that emerges is that 'business-as-usual' is not an option. Major transformations of agricultural systems, rural economies and natural resource

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

> management will be needed if we are to meet the multiple challenges before us and realize the full potential of food and agriculture to ensure a secure and healthy future for all people and the entire planet" (FAO, 2017: p. 7).

If business-as-usual is no longer a viable option and radical changes in the food systems are required, and if this system is inherently complex, then how do we go about putting this system into motion so that it improves and moves towards a sustainable and more ethical future? This is the problem I shall address here, if only with an admittedly birds-eye perspective and leaving out many of its more specific aspects.

Understanding the challenge

Research has moved into the direction of recognizing what is called the Nexus: water, energy, and food (Muscat *et al*., 2021). Now we even go further as one obviously forgot the importance of soil in this connection. Soil security alone relates also directly to several of the SDGs and its sub-goals, like e.g. 2.4 Zero Hunger (sustainable food production systems), 3.9 Good Health (reduce soil pollution), 6.4 Clean water and sanitation (water use efficiency), 6.6 Clean water and sanitation (water quality), 13 Climate change policy (climate change impact), 15.3 Life on Land (combat soil degredation), and 15.9 Life on land (ecosystem and biodiversity policy) (cf. Lal *et al*., 2017; Pozza and Field, 2020).

Is the problem then basically to reduce the number of food insecure people on earth?

Indeed, as research goes, one would first like to know how many people actually are food insecure presently? So, can one not just go out into the field and count them? Is this not simply one other example of the kind of facts that science normally claims it is good at? Well, a little philosophy of science helps to understand why even such "counting" of supposed facts is not straightforward. The problem is that we need to use indicators to assess food insecurity and in fact sustainability. But indicators are a truly mixed bag.

Indicators are not straightforward as a measure

The need for indicators arises always when the quality or property in which we are interested in is such that it is not directly observable but needs to be approached by some of its effects. Indicators can be very useful in certain settings. If we want to assess the biodiversity in a forest, we may go to a hot-spot like a river let and count species there. The hot spot is then the indicator from which we can extrapolate to the entire forest. However, when matters become truly complex, one needs to be more cautious and sceptical of their uses. They tend to be infected by value-bias and theory-ladenness.

From the point of view of system theory, indicators represent direct or indirect effects of a change in the property one is interested in, or they can also be related to changes in the causal drivers that affect this property. This is why one mostly needs to assess indicators in the context of other indicators. For instance, the SDG 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture) includes 8 "targets" with several indicators for each of them. To get an easier grasp on the complex targets and the overall goal, one can construct composite indicators as a function of the series of several underlying indicators. Thus one hopes to simplify complexity and come up with easy-to-understand political targets, obviously a meaningful intention.

On closer inspection this effort comes at a price, the prize being the influence of value-based choices in methodology and dealing with uncertainties (Giampietro and Saltelli, 2014; Kaiser *et al*., 2021a,b, 2022). The endpoint of this is loss of potentially useful information and building uncertainties upon uncertainties. What is often perceived as hard facts like the number of people suffering from malnutrition,

Franck Meijboom and Dominic Reyniers, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

turns out to be much softer projections as important value-based choices were made in the methodology to arrive at the number. The analysis of the Millenium Goals and the changing measures in regard of the goal to halve the world hunger is a classic example of this (Pogge, 2016). A new PhD from the University of Bergen (Iversen, 2023) applies similar insights in an analysis of measuring the end of hunger in the SDGs. Iversen shows how two major indicator (PoU and FIES) are expressing political and value bias and result in different numbers.

Targeting complexity and diversity in food systems

Post-pandemic times might have been viewed as providing new chances to develop sustainable and ethical food systems. In view of the inherent complexities Kaiser *et al*. (2021a,b) argued for new approaches which are: bottom-up, regional, cross-sectorial, non-partisan, and deliberative, including an ethical lens. Transdisciplinary research would be the means to achieve this (cf. Kaiser and Gluckman, 2023). The hope was to opt for a "new normal" as a rupture from the past and radically reset most of society. A very similar aspiration was published the same year by the iPES Food and the etc group report (Mooney *et al*., 2021): "A Long Food Movement: Transforming Food Systems by 2045". This report recognized the importance of existing complexities and diversity, both in terms of nature and culture, the importance of civil society, the importance of existing power structures, and it presented the basic choice as one between two extreme scenarios: agrobusiness-as-usual versus civil-society-as-unusual, with the latter carrying the hope for sustainable and ethical structural changes.

Admittedly, the report reads in part like outlining a New Utopia, and one might wonder how to start pathways under the current socio-economical and political conditions. Can we afford to wait for these bottom-up initiatives to show results?

An Intergovernmental Panel on Food Security and Sustainability?

The world has experience with the role of the IPCC in relation to address the challenge of climate change. The IPCC is a top-down initiative informing governments and relying on global scientific consensus. It reviews the published scientific contributions to climate change. However, there are also criticisms of how the IPCC is set to operate. A recent analysis (Hermansen *et al*., 2023; Table 1) develops basically four different modes of operation for a possibly renewed IPCC. These are developed around two axes. The first dimension would address the question whether the panel is designed to be process oriented or outcome oriented. The second dimension addresses the question whether the panel works from a two-world or one-world perspective. The two-world perspective insists in theory on a principal separation of facts and values, i.e. science-based factual reviews versus normative political recommendations, while the one-world perspective assumes that scientific processes and policy are intimately intertwined. From these the authors construct four possible modes of operation: (1) back to basics; (2) tailored broadcasting; (3) orchestrating broad knowledge generation; and (4) reflexive learning.

Table 1. Four ideal type reforms for the IPCC, as presented in Hermansen et al. (2023)

	Prosess-oriented	**Outcome oriented**
Two-world perspective	Back to basics	Tailored broadcasting
One-world perspective	Orchestrating broad knowledge generation	Reflexive learning

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

From a philosophy of science point of view it seems as if the One-world perspective would be the option of the day as we have come to realize the impossibility of separating the world of facts from the world of values (Douglas, 2009; Funtowicz and Ravetz, 1993; Kaiser, 2024). In terms of orchestrating a broad knowledge generation the effort would assumedly strengthen inter- and transdisciplinary research (Kaiser and Gluckman, 2023). Reflexive learning seems to blur the distinction between process and outcome and knowledge flows from a variety of sources, as in genuine transdisciplinary research.

But the political import of the IPCC is mainly through its target of limiting the global temperature rise to well under 2°C, striving to keep it within the 1.5°C limit. This gives a number and thus a measure for the success of individual policies. This can then be related to the national accounting of greenhouse gas emissions. It is the core of the Paris Agreement on UN Climate Change.

Now, is the IPCC and its modus operandi an example to follow in regard an International Panel on Food Security and Sustainability (IPFSS)?

An IPCC for Food? An IPFSS?

Calls for a new science-policy interface (SPI) for food systems and food security are not new but were put forward nearly a decade ago, as iPES FOOD with Clapp *et al*. (2021) observed. Since then the idea has re-surfaced in various international fora and has led to specialist committees. The existing High Level Panel of Experts on Food Security and Nutrition (HLPE) serving the UN Committee on World Food Security (CFS) is seen as the most prominent among various other bodies. But behind this question of a new SPI "is in fact a high-stakes battle over different visions of what constitutes legitimate science and relevant knowledge for food systems. This, in turn, is part of a broader battle over what food systems should look like and who should govern them" (Clapp *et al*., 2021: p. 3).

The worry is that various powerful actors are seeking to advance their policy goals and narrow technocratic visions through the establishment of an SPI on food security and sustainability. Diverse forms of knowledge including indigenous knowledge and the cultural and value-based diversity among people fall typically short in these high-level considerations (cf. Clapp *et al*., 2021: p. 14). This is mirrored in the Scientific Group by the UN Food Systems Summit in 2021. Clapp *et al*. (2021) provide a detailed and convincing criticism of these attempts to appropriate a global forum for discussing and guiding the imminent discussion of a radical change of our food systems.

If there was a new SPI like an IPFSS, it would have to be built around key features like trust and credibility, salience, and legitimacy (Cash *et al*., 2003). As Clapp *et al*. (2021) and Hermanson *et al*. (2023) indicate, copying the two-world perspective of the IPCC may be insufficient, and one should try either to add the one-world insights onto the existing HLPE or try to establish a new body on this foundation. However, I read these insights also as indications that the emerging cultural and social diversity in knowledge/epistemic approaches and value-landscapes as it transpires from transdisciplinary research needs to be captured in the workings of such an SPI. How this can be done in practice is unfortunately still an open question.

This challenge might be sobering the enthusiasm for establishing an IPFSS. However, in my mind these difficulties do not bespeak the potential benefit for politics if there were such a body. Targets emerging from such a body would focus the action needs on selected topics and immediate goals, would provide comparison of relative successes, would acknowledge the multiplicity of achieving healthy, ethical and sustainable foodways, and would provide encouragement for diverse bottom-up initiatives designed in a transdisciplinary manner. Thus, I would conclude we have to think harder about such a new SPI on food. But what could be the target or the targets of such a SPI, targets that are sending clear signals to policy?

Franck Meijboom and Patrick Baert (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Targets for a new science-policy interface on food systems?

A working group established under the Academia Europeae tentatively suggested to make the Human Trophic Level (HTL) a focal target of such an SPI (IPFSS). I want to argue that (i) this is indeed a meaningful target but only with reduced scope of the outreach of the SPI, and (ii) that HTL needs to be overriden by the ethical principle of nutritional equity. Furthermore, other targets need to be directed towards other areas and socio-economic frames of the food systyems.

Bonhommeau *et al*. (2013) introduce trophic levels as a basic metric describing the "number of intermediaries between basal species and predators throughout the food web and help define species' roles in the ecosystem" (Bonhommeau *et al*., 2013: p. 20617). Even small changes in trophic level can signify a completely different diet. On this background it becomes interesting to map the Human Trophic Level (HTL). Bonhommeau *et al*. (2013) state that the HTL in 2009 was 2.21, which reflects a 3% increase since 1961. The graphics they present are revealing (Figure 1).

The first thing to notice is the global increase in HTL in the period 1961–2009. When broken down to major regions it shows that China's and India's consumption contributes significantly to the global median of HTL. However, when looking at the map of the world colored by HTL, one immediately detects that the industrialized countries contribute substantially to the high HTL with India and China apparently pushing the HTL further up. At the same time it also shows that large parts of the developing world, particularly in Africa, remain on a relatively low HTL. In terms of possible policy implications I would conclude from this the following: (1) the HTL may function as a relatively good target for reduction policies (to a level of 2.0?) if restricted in scope, namely to the industrialised world and some emerging economies like China and India; (2) the global HTL leaves the existing problems of food insecurity in the developing world of the global South (sub-Sahara or parts of Southeast Asia) basically untouched. There the development needs to target other measures, like e.g. food prices and systemic features of production.

In terms of an SPI one should also note that breaking down global targets like HTL into social realities easily can imply nutritional deficiencies in selected groups and thus lack of equity even within populations. The PhD thesis of Theogene Habumugisha recently submitted to the University of Bergen concludes that the protein needs of elderly people may suffer if replacing animal-sourced food (ASF) across the board (Habumugisha, 2024). His thesis "substantiates the ethical call for more equity in dietary and food studies" and "meeting the protein needs of the increasingly aging population will

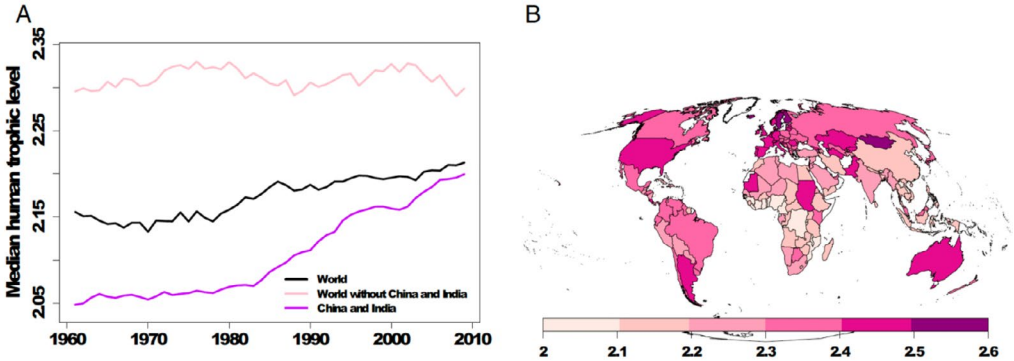


Figure 1. Graphics from Bonhommeau et al (2013).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

largely depend on sustaining or increasing the current levels of ASF consumption, which works against the need to reduce the food-related environmental footprint and make food systems more sustainable" (Habumugisha, 2024: p. 73).

Conclusion

With regard to the guiding question of this paper "Should there be an IPFSS?" I end up with doubt and ambiguity: Probably not, if this task is left to the current powerful actors to implement! Yet, when considering the difficult and long-term pathways from bottom-up activities to effective policy measures and looking at the mind-boggling tasks of addressing all the inherent complexities in the food systems, then I would clearly wish for an IPFSS based on a one-world world paradigm as guiding us along the way. If such an SPI would have to occur, then the sciences need to come up with a few simplified and measurable indicators that are relatively reliable and as far as possible cleansed for value-bias built into their methodologies. Being in a reflective mood I may admit that I am probably a sucker for Utopia.

References

Bonhommeau, S., Dubroca, L., Le Pape, O., Barde, J., Kaplan, D.M., Chassot, E. and Nieblas, A.E. (2013). Eating up the world's food web and the human trophic level. Proceedings of the National Academy of Sciences of the United States of America, 110(51), 20617–20620.

Caro, D., Sporchia, F., Antonelli, M. and Galli, A. (2023). Beyond the IPCC for Food: An Overarching Framework for Food Systems Sustainability Assessment. Sustainability, 15, 14107. DOI: 10.3390/su151914107.

Cash, D.W., Clark, W.C., Alcock, F., Dickson, N.M., Eckley, N., Guston, D.H., ... Mitchell, R.B. (2003). Knowledge systems for sustainable development. Proceedings of the National Academy of Sciences of the United States of America, 100(14), 8086–8091.

Clapp, J., Anderson, M., Rahmanian, M., Monsalve Suarez, S. (2021). "An 'IPCC for food'? How the UN Food Systems Summit is being used to advance a problematic new science-policy agenda". iPES FOOD. International Panel of Experts on Sustainable Food Systems, Brussels.

Douglas, H. (2009). Science, policy, and the value-free ideal. University of Pittsburgh Press, Pittsburgh, PA.

FAO. (2017). The future of food and agriculture — Trends and challenges. FAO, Rome.

Funtowicz, S.O. and Ravetz, J.R. (1993). Science for the post-normal age. Futures, 25(7), 735–755.

Giampietro, M. and Saltelli, A. (2014). Footprints to nowhere. Ecological Indicators, 46, 610–621.

Habumugisha, T. (2024). Should everybody reduce their meat consumption? — A multi-methods study of the available evidence and empirical data in older adults from Kigali, Rwanda. PhD thesis, to be defended at the University of Bergen, Bergen.

Hermansen, E.A., Boasson, E.L. and Peters, G.P. (2023). Climate action post-Paris: how can the IPCC stay relevant? npj Climate Action, 2(1), 30.

Iversen, T.O. (2023). Making world hunger legible: the politics of measuring global food insecurity. PhD thesis, University of Bergen, Bergen.

Kaiser, M. (2024). The idea of a theory of values and the metaphor of value-landscapes. Humanities and Social Sciences Communications, 11, 268. DOI: 10.1057/s41599-024-02749-4.

Kaiser, M. and Gluckman, P. (2023). Looking at the future of transdisciplinary research. International Science Council, April 2023. DOI: 10.24948/2023.05.

Kaiser, M., Goldson, S., Buklijas, T., Gluckman, P., Allen, K., Bardsley, A. and Lam, M.E. (2021a). Towards Post-Pandemic Sustainable and Ethical Food Systems. Food Ethics, 6(4), 117–121. DOI: 10.1007/s41055-020-00084-3

Kaiser, M., Chen, A.T.Y. and Gluckman, P. (2021b). Should policy makers trust composite indices? A commentary on the pitfalls of inappropriate indices for policy formation. Health Research Policy Systems, 19, 40. DOI: 10.1186/s12961-021-00702-4.

Kaiser, M., Buklijas, T. and Gluckman, P. (2022). Models and numbers: Representing the world or imposing order? Perspectives on Science, 30(4), 373. DOI: 10.1162/pos_a_00373

Franck Meijboom and Patrick Baert (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Lal, R., Mohtar, R.H., Assi, A.T., Ray, R., Baybil, H. and Jahn, M. (2017). Soil as a basic nexus tool: soils at the center of the food–energy–water nexus. Current Sustainable/Renewable Energy Reports, 4, 117–129.

Mooney, P., Jacobs, N., Villa, V., Thomas, J., Bacon, M.H., Vandelac, L. and Schlavoni, C. (2021). A long food movement: Transforming food systems by 2045. IPESFOOD and ETC Group, Brussels.

Muscat, A., de Olde, E.M., Kovacic, Z., de Boer, I.J.M. and Ripoll-Bosch, R. (2021). Food, energy or biomaterials? Policy coherence across agro-food and bioeconomy policy domains in the EU. Environmental Science and Policy, 123, 21–30, DOI: 10.1016/j.envsci.2021.05.001.

Pogge, T. (2016). The hunger games. Food Ethics, 1(1), 9–27.

Pozza, L.E. and Field, D.J. (2020). The science of soil security and food security. Soil Security, 1, 100002.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Section 2.
Novel technologies in food production

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Is it unethical not to use genome editing? On how (not) to promote citizen engagement for responsible technology development

S. Carson[1,], B. Myskja[1] and A.I. Myhr[2]*
[1]NTNU, Dep. Philosophy and Religious Studies, POBOX 8900, 7491 Trondheim, Norway,
[2]NORCE-Norwegian Research Centre, SIVA Innovasjonssenter, 9019 Tromsø, Norway
** Corresponding author, e-mail: siri.carson@ntnu.no*

Abstract

New genomic techniques such as CRISPR suggest disruptive changes in the way we produce food, feed, and other biobased products. In this paper we argue that to promote responsible use of genome editing technologies for the common good, it is important to include citizens in the regulatory discussions. Further, we discuss how such an inclusion can be promoted or discouraged. Our starting points are recent examples of experts arguing that it is "unethical not to use genome editing". We argue that such claims contribute to closing rather than opening for a healthy public discourse. We further support the continued need for applying the precautionary principle, also for new genome-editing techniques, and that this requires public participation. Genome editing is a tool that can be used in various contexts and under different conditions, and responsible development and use of genome editing should emphasize the different uses and contexts and distinguish more clearly what the benefits, risk, and ethical aspects are and that this can be dependent on purpose, type of organism, and the system the edited organism are to be used in. The use, for example, of genome editing in animals raise other aspects than the use in plants as question related to animal welfare.

Keywords: animal welfare, citizen engagement, genome editing, responsible research and innovation, transparency.

Introduction: Unethical not to use?

In 2019 the majority of the Danish Council on Ethics stated that it is ethically problematic to reject the use of GMOs when they have beneficial traits and no more risks than conventionally bred species (Det Etiske Råd, 2019). Building on this argument, but skipping the reservations, representatives from the majority of the Norwegian Public Committee on Gene Technology (Genteknologiutvalget) (NOU, 2023) argue that it is "unethical not to use genome editing" (Gamlund, 2023; Gamlund *et al*., 2023), a claim they repeat in several op-eds in Norwegian newspapers and public meetings following the publication of the Committee report in June 2023.

Our starting point in this paper is that it is conceptually confusing to claim that a technology is "unethical not to use". The double negation is bad grammar in the sense that the two negatives cancel each other out and should be replaced with a positive: "It is ethically mandatory to use genome editing". But when "translated" in such a way, it becomes clear that the claim lacks contextualization. The discussion should not be about whether the use of a certain technology as such is ethically obligatory or not, but whether concrete applications of the technology are ethically justified or not, and how we should regulate the technology to promote responsible and ethical use, and on how to prevent unethical use. The claim furthermore constitutes a straw man argument, since they provide no example of anyone actually claiming that we should refrain from using modern gene technologies. The real target of their critique turns out to be the Norwegian and European risk regulation regime, which they hold is too strict. But

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

this regulatory regime does not support a general prohibition against genetically modified organisms (GMOs) but requires that each application for use is risk assessed case-by-case. Genome editing is a tool which today is in frequent use, both within basic and applied research. Hence, we should focus the debate on the products, context, system, and value chains within which it is used and how these uses should be regulated.

We argue that when experts claim that it is "unethical not to use genome technology", this constitutes a derailing of the debate; a derailing which may counteract or discourage a sound, public engagement on the implementation of new forms of gene technologies in food production. The underlying premise seems to be that people's skepticism towards genome editing is based in fear and ignorance, as argued by Gamlund (2023, our translation): "Many people who today claim to be against genome-editing technology, does so on the background of thirty-year-old scaremongering about the risk associated with the technology". We will argue that the ethical and political debate should rather aim to discuss what would constitute responsible governance of this contested technology.

Background: governance of disruptive technologies

Governance of emerging technologies is debated, and different approaches has been implemented that cover the whole process from laboratory experiments to the commercialization process, and finally at the market. The use of genome-editing techniques has entered a diversity of life sciences as a crucial tool within basic research. More applied uses within the food sector include breeding of plants and animals. Applications promise benefits such as nutritional enhancement for consumers, increased resistance to disease, pests, and weeds for farmers, adaption to climate change, and improved welfare for animals.

Most of the research involving genome editing is on plants. Several genome-edited plants, for example soybean, rice, maize, mushroom, lettuce and tomato are in commercial use in agriculture, in among other countries Brazil, USA and Canada. Japan has approved two genome edited fishes, red seabream and tigerfish, both with improved meat yield (Van Eenennaam, 2023). Brazil and USA have approved two applications in cattle, one for increased meat growth and one for slick hair that entails higher thermotolerance, but it is uncertain whether these cattle are commercially sold yet (Van Eenennaam, 2023). It is also expected that virus resistant pigs soon will get commercial approval in USA and Brazil.

Genome editing can be used to introduce changes on a base-pair scale as point mutations without introducing novel DNA. This is arguably less invasive than earlier methods and held to mimic how mutations happen in nature and being like traditional mutagenesis. For such non-transgenic uses of new genome-editing techniques it is argued that their safety is equal to conventionally produced products, and several regulatory authorities have exempted these from standard GMO regulation processes and treat them as conventional food products. Others, including the EU and Norway, are in a process for adaption or revision on how to regulate genome editing and products thereof (Turnbull *et al*., 2021). To the extent there has been public debates about these regulatory decisions, there has been little concern with the ethical difference between genetic interventions in plants and animals. Furthermore, one struggles to find serious public engagement exercises, something that has often been considered essential to regulatory processes of biotechnology, at least in Europe. The questions are whether there are any special ethical concerns in gene editing of animals, and whether there is any reason to include the public in regulatory processes.

In July 2023 the European Commission published their proposal for a new regulation of some plants produced by genome editing (EC, 2023), using the term new genomic techniques (NGTs) to cover two categories: targeted mutations (NGT 1), using only genetic material from the same plant, and cisgenesis, with genes from crossable plants (NGT 2). Plants with genetic material from other organisms

Franck Meijboom and Patrick Baron (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

(transgenic) will remain under present GMO legislation. The NGT 2 plants will also follow present legislation, but the requirements for risk assessment, detection method and monitoring will be adapted. NGT 1 is suggested to be exempted from GMO regulatory requirements and will undergo a simpler verification procedure. They will be treated like conventional plants, but there will be labelling of seeds and a register established in a public database. Recently, a majority of the members of the European Parliament voted for a position for the proposal, requiring that NGT 1 should not be used in organic agriculture, and although supporting more adapted risk assessment for NGT 2, they emphasized respect for the precautionary principle.

In Norway, a government commission report on the future of gene technology was published in June 2023 (NOU, 2023) was divided in a majority and minority opinion. The majority held that all organisms under the category of NGT 1 should be exempted from present GMO regulation, while the minority pointed out the need for modernization of present regulation. This report is now under political treatment after an extensive hearing round where 263 opinions was submitted. The report includes animals and microorganism in their work, while the EC proposal excluded them due to a lack of experience and information concerning the use of genome editing in these organisms. Some of the submitted opinions to the NOU also point to the lack of knowledge about risk to animal health and welfare by the use of genome editing technologies.

Exemptions of NGTs from regulation is based on the assumption of equal risk as conventional plants. However, responsible governance is not simply about risk. It is also about how we organize our society and nature, and how to produce food in an ethical and responsible way. And as the members of the EU Parliament emphasizes, the new techniques do not justify discarding precautionary approaches. And that will also make clear that at least in the European context, engaging the public in the regulatory process is not only politically advisable, but required by law.

Gene technology regulation and the precautionary principle

The Precautionary Principle (PP) is a legal and political approach to handle environmental concerns under situations of scientific uncertainty. It can be regarded as a systematized reinterpretation of the common morality principle of taking care when it is difficult or impossible to assess the consequences of one's actions, developed under the gradually growing awareness of the long-term harmful environmental effects of collective human activity over the last fifty years. As such, it is connected to the growing concern with sustainable development, although not everybody will agree that sustainability is achieved by precautionary approaches.

There are several formulations of the PP, but they share at least three characteristics: "Threat of harm; Uncertainty of impact and causality; Precautionary response" (Gardiner, 2005: p. 36) The first means that there must be a scientifically plausible harm scenario even if one cannot assess the probability, which connects to the second characteristic. One lacks sufficient data to make an evidence-based risk assessment. The third simply says that one makes some kind of response to prevent or handle the potential harm. The principle has been strongly criticized for being vague, self-undermining and a paralyzing obstacle to crucial innovations (Sunstein, 2003) but has been equally strongly defended by others (Gardiner, 2005; Steel, 2015).

The international legal status of the PP is disputed, but it is a recognized part of European environmental regulation (Bourguignon, 2015), for example in the EU Directive on GMOs. The Norwegian legislation explicitly states that if a GMO is approved in the EU, it is approved in Norway, unless specific reasons are given for such non-compliance. Since the Norwegian Gene Technology Act requires that production and use of GMOs should be done in an ethically and socially defensible way, in accordance with sustainable

Franck Meijboom and Bernice Bovenkerk - 978900404-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

development, a GMO approved in Europe could be rejected for these non-safety reasons in Norway. The Act does not mention precaution, but the preparatory works do, and it is generally recognized as key to understand the sustainability requirement. This means that precaution is central to the approval process both in EU and Norway, although on partly different justifications.

There are many suggestions for formulations of the PP, usually classified as 'weak' or 'strong' dependent on their decision-making features. The weak have primarily a pragmatic function as justification for decisions made on other grounds, whereas the strong are absolute in the sense that they do not balance the potential environmental harm against other concerns, and that they are decisive: The authorities must act on the decision (Gardiner, 2006). In addition, strong PP is generally thought to shift the burden of proof to the proponents of the potentially harmful activity. The majority of the Norwegian Committee seem to promote a weak version of PP when they argue that those still in favor of a strict regulation of gene technology have a duty to show that the consequences of such a regulation are better than the consequences of a more liberal regulation (Gamlund, 2023; Gamlund *et al*., 2023).

Our primary focus here is, however, not on which version of PP should be used, but on the procedural aspects of the PP. A crucial question for any implementation of the PP is who should take part in the deliberations on how to handle the potential harm. Although the reason for taking precaution is based in scientific uncertainty, it does not follow that how to handle it in practice is merely a matter for scientists to discuss. On the contrary, since the scientific knowledge is recognized as uncertain, science alone cannot provide a comprehensive basis for decision. Admittedly, a workable PP requires threat of harm, and determining this likelihood is a matter of scientific knowledge. It will vary which branches of science that are relevant for deciding on the likelihood or plausibility of the warnings. One would think that in the case of development and release of genome edited plants or animals, the relevant scientific expert areas would include, among others, biotechnology, ecology, agronomy, botany, or zoology. As several forms of uncertainties are of a partly social nature and the plausible harm scenario may concern contested values, in these cases other areas of expertise may also be relevant, such as ethics, economy, social sciences and law. But even if deciding the plausibility of harm is a scientific matter, handling the uncertainty is at least partly a political task, and requires more than the scientific analysis.

This has been explicated in some versions of the PP, such as the UNESCO version, that ends with the declaration that "The choice of action should be the result of a participatory process" (COMEST, 2005: p. 14). Their justification is that it is a principle of modern democracies that those affected by some decision should be invited to participate in the process leading up to this decision (COMEST, 2005: p. 20). The ideal is to have a decision based in consensus, but as this is seldom achievable, "one should go to great lengths to consult with these parties and let their views inform the relevant considerations of the decision-maker. This is normally done through participatory consultation processes." (COMEST, 2005: p. 21) One could provide several reasons for public participation in regulatory processes. The point here is that it is also a legal requirement according to European and Norwegian gene technology regulation. When proponents of deregulation of gene editing claims that is ethically obligatory, the practical effect is undermining this legal requirement. In the following, we will supplement this with a more encompassing discussion of the value of public engagement for this particular debate.

Citizen engagement in the regulation of gene technology for food production

Participatory consultation processes may take a whole range of forms, and we will not go into details here, but we will discuss a common objection from scientists and technologists: That the issues are too complex for lay people to have a valuable contribution to the deliberative process. It is true that lay

Franck Meijboom and Dominic Boyer, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

people lack detailed knowledge, making their contribution to a discussion of whether the potential harm is plausible and of a nature that warrants precaution of little value. In the case of genome editing, the differences between traditional breeding, marker assisted breeding, different forms of mutagenesis-based breeding, targeted mutagenesis through genome editing, cisgenesis, intragenesis, transgenesis and xenogenesis may be difficult to grasp and may easily appear as exercises reminiscent of Medieval scholastics rather than as informative basis for discussions. In other words, they need a form of coaching to be able to participate in an informed debate, but this will inevitable be a value-based coaching. Illustrative is the normative loaded use of terms in the history of GMO, such as 'genetic manipulation' or more populistic 'Frankenfoods' or 'Golden Rice'. This is mirrored today in the British choice to call targeted mutagenesis by genome editing 'precision breeding', which has also been adopted by the majority in the Norwegian Committee. It is impossible to give a value neutral introduction to a publicly contested technology. Another problem with such expert coaching is that valuable contributions from non-scientists may be lost because teaching also inevitably means learning what are alleged to be relevant concerns. But the question about what the relevant concerns are is part of what is at stake in a discussion on how to handle uncertainty. One valuable lay contribution may be to see something that is not apparent for experts, because expert training and practice also means learning a particular conception of what are relevant concerns.

This is illustrative in the reference to 'naturalness', where experts from science, technology and philosophy reject the relevance of the term since the distinction between 'natural' and 'artificial' is impossible to uphold in a consistent way (see also Gamlund, 2023). What seems to go unnoticed by many of these experts, is that lay people's understanding of the term is usually gradualist and context dependent, not absolutist. Such lay perspectives may provide insights to the debate missed by those trained in systematic scientific or philosophical perspectives. This means that a participatory process requires more than a training of lay people to make them understand the basic academic distinctions, even if that is required to get a reasonably informed debate. It also requires training of the scientists to listen and to engage in a translation of lay concerns, based in the assumption that people without academic training may have valuable insights that are less accessible with a scientific training.

People's opinions about technology are expressions of value systems which experts do not have a privileged access to, and which can give important input to regulation. This stands in opposition to the so-called "knowledge-deficit-model", in other words the assumption that lay people's skepticism to biotechnology is primarily based in their lack of knowledge (Siipi and Atheensuu, 2011). A recent article shows that, while scientists working with CRISPR technology in the Norwegian context take very seriously the need to engage with society, their engagement often take the form of conveying knowledge and improving public understanding, rather than aiming for a two-way dialogue (Svingen and Jahren, 2024). However, if the objective is to develop a broad and value-based knowledge basis for responsible regulation of biotechnology, the contributions from citizens should be viewed as a necessary addition to the experts' viewpoints, whether researchers, technologists, legal scholars, or ethicists. Experts starting communication by determining what is unethical to do or mean, is no invitation to dialogue.

Public engagement processes represent a long-standing tradition in biotechnology and has a strong position in the context of European science and innovation. On one hand, one might argue that the diversity and complexity of the more recent techniques should be met with a strengthening of expert-led risk assessment procedures. This notwithstanding, introducing more genome-edited food products into society will have implications that only those that are affected by the technologies are able to evaluate. We argue that the contributions of "ordinary people" are more important than ever in a phase where we can expect disruptive changes within agri- and aquaculture, and in general in the food systems that affects us all, both as producers and consumers.

Franck Meijboom and Bernice Bovenkerk - 978[illegible]04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Conclusion

New genome editing techniques such as CRISPR are today implemented within constantly new areas of application. As these techniques become more accessible, the impact on food producers and consumers will be significant. The ongoing revision of different regulatory systems is, in other words, both timely and necessary. In this paper, we have not evaluated the alternative risk-oriented regulatory models that are implemented or are under development, but rather argued for the continued relevance and importance of the PP and public engagement in responsible governance of these technologies as well as in concrete technology development projects. The question of whether it is unethical not to use genome editing is a derailment from a sound public debate on responsible regulation. This derailment might have a negative effect on citizen engagement and may ultimately affect market and consumers accept.

References

EC (2023). New techniques in biotechnology, available online at https://food.ec.europa.eu/plants/genetically-modified-organisms/new-techniques-biotechnology_en (accessed 2 March 2024).

Gamlund, E. (2023). Genteknologi og etikk (Genome technology and ethics). Salongen, 27, 173244, available at https://www.salongen.no/essay/bioetikk/bioteknologi/crispr/173244 (accessed 14 March 2024).

Gamlund, E., Alsheikh, M., Bratlie, S., Brautaset, T., Holst-Jensen, A., Tøndel, C. and Wargelius, A. (2023). Uetisk å la være å satse på genteknologi (Unethical not to promote genome technology). Dagsavisen, 13 June 2023, available online at https://www.dagsavisen.no/debatt/2023/06/12/uetisk-a-la-vaere-a-satse-pa-genteknologi/ (accessed 13 March 2024).

NOU (2023). Genteknologi i en bærekraftig framtid, available online at https://www.regjeringen.no/contentassets/bf11075372cc451b91be1daadf8cfe65/no/pdfs/nou202320230018000dddpdfs.pdf (accessed 8 March 2024). (in Norwegian).

Siipi, H. and Atheensuu, M. (2011). The deficit model and the forgotten moral values. Icelandic E-Journal on Nordic and Mediterranean Studies, 6(1), available online at https://nome.unak.is/wordpress/06-1/conference-paper/the-deficit-model-and-the-forgotten-moral-values/.

Turnbull, C., Lillemo, M. and Hvoslef-Eide, T.A. (2021). Global regulation of genetically modified crops amid the gene edited crop boom–a review. Frontiers in Plant Science, 12, 630396.

Van Eenennaam, A.L. (2023). New Genomic Techniques (NGTs) animals and their agri/food/feed products. EFSA supporting publication 2023:EN-8311. DOI: 10.2903/sp.efsa.2023.EN-8311.

Franck Meijboom and Patrick Bijsterveldt, ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Scoping genome editing in the Norwegian public

T. Blix[1,] and H. Wathne[2]*
[1] NORCE Norwegian Research Centre, Climate and environment. Siva Innovasjonssenter, Sykehusveien 21, 9019 Tromsø, Norway; [2] Institute of Philosophy and Religious Studies, Norwegian University of Science and Technology, Økernveien 190B, 0508 Oslo, Norway
Corresponding author, e-mail: tobl@norceresearch.no

Abstract

Genome editing techniques have opened a plethora of possibilities for plant and animal breeding, and its application is considered controversial and widely debated. We believe that the discussion of the use of these techniques in food systems requires a broad *democratic* engagement, in which those in position of knowledge about the technology hold a great responsibility. In a recent paper, Kramer and Meijboom (2022) argue that "an important preliminary question for any ethical evaluation of (innovation in) genomic selection is how the scope of the discussion should be set". Their framework provides a useful starting point to think about how the genome editing technology is discussed in public. We argue that the concept of scoping choices is a fruitful way to signal the influence and responsibility of those who are familiar with the technology regarding the public debate. In this chapter, we seek to revise and adapt this framework to ongoing discussions in Norway as to the use of genome editing in food production.

Keywords: democratization, food systems, public discourse, scoping choices

Introduction

The development of techniques widely referred to as genome editing has sparked renewed interest in ethical and regulatory questions concerning the genetic engineering of plants and animals for food production. It is especially the innovation of CRISPR (clustered regularly interspaced short palindromic repeats) technology which has spurred this development. This novel tool has already been widely adopted in research and development and can be used to alter organisms by means of changing their DNA through inducing cuts at specific sites in the genome (Wang and Doudna, 2023). In Norway there is currently an ongoing public debate concerning how the new genome editing technologies should be regulated. A recent and significant addition to this debate was a report published last year, where the Commission on Genome Technology (*Genteknologiutvalget*) delivered their finalized Official Norwegian Report (NOU, 2023) with the title *Gene technology in a sustainable future* (Wargelius *et al*., 2023). The majority of the Commission members argued for a substantial liberalization of the regulation of new genome editing techniques. Norway's current Gene Technology Act is now over 30 years old, and the recent developments have added to the need for revising the act.

Currently, there are only two genetically engineered products accepted for commercialization in Norway — carnations and a recently accepted oil produced from a genetically modified Canola plant. Globally, a large range of food animals and plants are targets for genome editing (Van Eeneenaam, 2023; Vidya and Arun, 2023). In Norway, research is currently only focusing on a few organisms, primarily salmon (Güralp *et al*., 2020), in addition to strawberries (NIBIO, 2020) and potato (Forbes *et al*., 2023). Leading up to, and in a hearing of the NOU report, researchers and scientists in different positions have expressed opinions concerning the application of genome editing in Norwegian food systems. Many of these, it seems, are eager to put the technology into application as a solution to various challenges in food production (Department of Climate and Environment, 2023).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Genome editing has been hailed as democratizing genetic engineering (see, e.g., Zhang, 2014) due to its low cost, ease of use and precision, making it readily available to the larger scientific community and beyond. But whereas genome editing might have democratized genetic engineering in the sense of making the technology more *accessible*, there is still work to do to ensure that its use is truly democratic. In this chapter, we wish to introduce the concept of "scoping choices", adopted from Kramer and Meijboom (2022) to address some of the public communication made by researchers and experts on why and how the genome editing technology should be used. In short, scoping choices influence what is included or excluded from immediate concern. Kramer and Meijboom argue for broadening the ethical debate on innovations in genomic selection in academia. Discussions of innovations in genomic selection harbors preliminary questions that should be explicated and addressed concerning how we scope the debate (Kramer and Meijboom 2022).

Here, we focus particularly on the potential use of genome editing in food production systems in Norway and how those with firsthand knowledge of the technology, the experts, argue for the urgency of rapid adoption. We believe that the asymmetry of knowledge and power between scientific communities and the broader public implies that the public discussions on genome editing can better facilitate democratic participation if the scientific communities are more conscious of how they scope the debate. It is our contention that a true democratization of genome editing would ensure that its use mirrors a broad public sentiment and ethical values.

Applying three scoping choices

In the following we present three scoping choices which we consider to be frequently implied in science communication of genome editing in Norwegian public, with some recent examples.

Scoping the purpose

Potential applications of genome editing are often given from a broader framing of the debate, answering the question why genome editing should or needs to be used in the given context. This can further be divided into the targeted *result* (e.g., enhancing a plant's growth abilities), and the *purpose* (e.g., feeding the world). Targeted results answer the question of *what* alterations have been or are intended to be done. Purpose, on the other hand, answer the question of *why* this or that result is pursued, or deemed valuable or important. Both the result and purpose can be designated at different levels such as protein expression, epigenetic and environmental differences etc. This designation is a significant choice and framing which we exemplify with two different statements below.

The purpose of solving global challenges is often the main argument presented by experts who want to use genome editing, even though their interconnectedness is often left unexplained. Take for instance the following opinion piece published in the wake of the recent NOU report:

> If we are to achieve the sustainable development goals of eliminating hunger and stopping climate change, we will need to make use of new technologies (Thorstensen *et al.* (2024), our translation)

This example shows genome editing experts defining the purpose of applying genome editing as reducing the detrimental impact of environment and farmed animals and increasing food production. However, we claim that a such statement conceals the fact that it is not possible to use genome editing as a quick fix for systemic, complex issues in food production. In public debates, the connection between the potential of genome editing and its contribution to global challenges needs to be explicated. Such an attempt was made in an opinion to the national broadcaster NRK, where Sigrid Bratlie and Eirik Mofoss, both

Franck Meijboom and Patrick Bøyum Aarøe, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

representing a think-tank LangSikt, give a different description in which they use potential phenotypic results as the argument for application:

> In food production we can replace chemical pesticides, antibiotics and fertilizers with sustainable biological solutions. Examples are gene edited plants and production animals that are not susceptible to disease or gene edited bacteria that fertilize plants with nitrogen from the air. (Bratlie and Mofoss (2024), our translation).

This argument removes the global challenge-level of purpose, which makes it easier for the reader to either agree or disagree on the application of the technology. However, it still rests on an assumption that removing disease from production organisms, or artificial intervention of the nitrogen cycle will solve problems that might rather be caused by too intensive farming or poor resource management. Recently, Svingen and Jahren (2023: p. 10) interviewed several researchers involved in genome editing research in Norway and identified that some researchers are aware that consumers do not necessarily agree on what the problem actually is, and therefore do not agree to the solution sought in genome editing. One such perspective was that "(...) first society had to agree with science on what the problem was, and then (the researcher) could start interesting them in her solutions and successfully enroll the consumers as actors." (Svingen and Jahren 2023, p. 10).

This points to our main interest in the scoping choice of purpose — the purpose needs to be separated from the targeted level(s) of result(s) and subject to public discussion. We use Norwegian salmon farming as an example here, where genome edited sterile salmon is suggested as a solution to escaped farmed salmon breeding with wild salmon stocks, which threatens their viability (Güralp *et al*., 2020). Society might not agree that simply avoiding interbreeding is a solution to salmon farming's impact on ecosystems. We know from previous research that the purpose of applying genome editing in salmon aquaculture matters to social acceptance, as well as different underlying values (Winther *et al*., 2023). By scoping the purpose without considering alternatives or opening up the debate on the purpose itself, we believe experts fall into the trap of offering a solution before a public discussion has produced a common understanding of the problem. This has previously also been identified as a common approach of researchers in genetic modification (Lassen *et al*., 2002). Svingen and Jahren also reflect on this and suggest "the scientists should enter into dialogue with the consumers about these definitions" (Svingen and Jahren, 2024).

Scoping the approach: selecting the problem and the solution

Connected to the scoping choice of purpose, is that of scoping the approach and the selection of desired problem(s) and solution. In a recent application for environmental release of genome edited sterile salmon for field trial, the applicant researcher wrote:

> (Escapees) from fish pens housing the Atlantic salmon out at sea are considered to have the most negative and long-term effect on the environment. This aspect has again become topical now that the wild salmon has entered the red list over threatened species in Norway. That is why the use of sterile fish in commercial aquaculture provides a sustainable strategy by erecting a biological boundary around the farmed fish, thereby protecting wild salmon populations. (Anna Troedsson-Wargelius in a letter to Environmental Agency (2023), our translation)

A common feature of many intended uses of genome editing to modify organisms utilized in food production, is to deal with existing problems (i. e., in this example, the environmental impact of escaped farmed salmon). Genome editing techniques are then said to potentially (re)*solve* a problem through the

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

alteration of an organism — either partially or by a removal of the problem altogether. These problems are either of an industry-specific nature, such as insufficient animal welfare in animal agriculture. Or the problems cut across many sectors of society, such as climate change. Framing the use of genome editing as a long-sought solution creates a presumptive case for using it. There is a danger of making a switch from "we have to do *something* about the problem" to "we have to use *genome editing* to solve the problem." However, a public discussion of these specific problem-centred applications of genome editing will need to leave room for different understandings of these problems — particularly the fact that people are just as interested in *how the problem arose in the first place*, i.e. its root cause. This argument was for instance raised by the Norwegian Animal Protection Alliance answering the NOU report:

> There are limits to what technology can solve. If the animals are suffering because there are underlying problems related to farming practices, it will be both irresponsible and inexpedient to look towards gene technology as the preferred solution (Norwegian Animal Protection Alliance (2024), our translation).

This points to, in the first place, that technological fixes are conservative solutions in the sense that they support industries or societal structures that might be problematic in themselves (Scott, 2011); and secondly, that discussions concerning suggested uses of genome editing are often just as much about the problem-solution constellation as a whole, rather than just the use of genome editing itself. In our view, democratic participation in the decision to use genome editing cannot be reduced to a narrow problem-solving perspective that assumes that the use of genome editing can be discussed in isolation.

Scoping the contextual barriers

For genome editing to be useful for anyone, it must be considered in a particular context, such as different industries, countries and food chains. The context determines various aspects such as the stakeholders and participants, regulations, and the historical experiences with different technologies and practices. Without being aware of and transparent about what context is addressed, these aspects will go unnoticed. Most recently in Norway, the leader of the Biotechnology Advisory Board Ole Fridtjof Norheim claimed that the availability of the technology

> (...) will open up for smaller organizations, people in poor countries can apply the technology, and actually there is a democratization of the use of the technology (NRK, 2023)

He is certainly not the only one who has used this framing, which we can call the democratization argument. In a recent paper, Montenegro de Wit (2020) gives numerous examples of the same argument being used by CRISPR pioneers such as Jennifer Doudna and Rudolphe Barrangou. Montenegro de Wit identifies four barriers to genome editing, specifically CRISPR in Montenegro de Wit's work, actually being democratic: Knowledge, economics, regulation and property rights. We consider these being crucial aspects of the context, and therefore statements such as Norheim's fall short in describing the true potential for democratization of the use of genome editing. In addition, Montenegro de Wit asks who is making decisions about the development and use of CRISPR. The same can be asked of its products — the genome edited organisms. In that discussion, one needs to be aware of who is included in the decision making and the public debate — meaning who has access to the arguments and underlying scoping of the knowledge communicated in the public debate. This contributes to determining whether the application of genome editing is truly democratic.

Franck Meijboom and Pamela Pennock, [ISBN] 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Conclusion

In our view, a true democratization of the use of genome editing would let the public have a heavy influence on its use. This requires, in the first place, that there is a space for discussing where, when and why genome editing could and should be used at all. Furthermore, we have argued that people with special interest in the technology, e.g. scientists familiar with genome editing, have great influence on the premises of these discussions. Being considerate of how these debates are *scoped* is a means of achieving a democratic use of genome editing. In the first place, we have argued that it is pertinent to be careful in articulating the purpose of its use. It is easy to latch on to a purpose of global challenges (such as solving a food crisis) that has no clear relationship with the immediate result(s) pursued. Global challenges are broadly recognized to be matters we collectively need to address, making it hard to contest particular means such as the use of genome editing if reconstructed as directly serving these purposes. It is therefore an unhelpful framing and a moral impetus for applying a technology presented as the only or most fruitful possibility for solving global challenges. Second, we believe that although the suggested uses of genome editing often intend to solve predefined problems, we believe that for a public discussion would need to reconcile with the fact that people are not *just* addressing the solution of genome editing in isolation and how well it deals with the predefined problem. Rather, the very definition of the problem itself is at stake. Third, the intended use of genome editing will always go hand in hand with a particular context that defines who is able to use the technology, and who ought to be actively included in the decision-making. Acknowledging the context could further give rise to fruitful discussions on the main barriers to democratic use of genome editing.

References

Bratlie, S. and Mofoss, E. (2024). "Den neste teknologirevolusjonen". NRK Ytring, 18 January 2024, available online at https://www.nrk.no/ytring/den-neste-teknologirevolusjonen-1.16702209 (accessed 14 March 2024).

Carlson, D.F., Lancto, C.A., Zang, B., Kim, E.S., Walton, M., Oldeschulte, D., Seabury, C., Sonstegard, T.S. and Fahrenkrug, S.C. (2016). Production of hornless dairy cattle from genome-edited cell lines. Nature Biotechnology, 34(5), 479–481. DOI: 10.1038/nbt.3560

Coates, A., Robinson, N.A., Dempster, T., Johnsen, I. and Phillips, B.L. (2023). Evolutionary predictions for a parasite metapopulation: Modelling salmon louse resistance to pest controls in aquaculture. Evolutionary Applications, 16(12), 1982–1998. DOI: 10.1111/eva.13618

Environmental Agency (2023). "Oppdatert BSE-vurdering fra søker," in Søknad om feltforsøk med genredigert steril laks (GMO) på høring, available online at https://www.miljodirektoratet.no/hoeringer/2023/september-2023/soknad-om-feltforsok-med-genredigert-steril-laks-gmo-pa-horing/ (accessed 14 March 2024).

Forbes, E., Wulff-Vester, A.K. and Hvoslef-Eide, T.A.K. (2023). Will genetically modified late blight resistant potatoes be the first GM crops to be approved for commercial growing in Norway? Frontiers in Plant Science, 14, 1137598. DOI: 10.3389/fpls.2023.1137598

Güralp, H., Skaftnesmo, K.O., Kjærner-Semb, E., Straume, A.H., Kleppe, L., Schulz, R.W., Edvardsen, R.B. and Wargelius, A. (2020). Rescue of germ cells in dnd crispant embryos opens the possibility to produce inherited sterility in Atlantic salmon. Scientific Reports, 10(1), 18042. DOI: 10.1038/s41598-020-74876-2

Kramer, K. and Meijboom, F.L.B. (2022). The ethics of innovations in genomic selection: On how to broaden the scope of discussion. Journal of Agricultural and Environmental Ethics, 35(2), 7. DOI: 10.1007/s10806-022-09883-6

Lassen, J., Madsen, K.H. and Sandøe, P. (2002). Ethics and genetic engineering — lessons to be learned from GM foods. Bioprocess and Biosystems Engineering, 24(5), 263–271. DOI: 10.1007/s004490100262

Montenegro de Wit, M. (2020). Democratizing CRISPR? Stories, practices, and politics of science and governance on the agricultural gene editing frontier. Elementa: Science of the Anthropocene, 8, 9. DOI: 10.1525/elementa.405

NIBIO (2020). Norway's first CRISPR food plant, available online at https://www.nibio.no/en/news/norway-s-first-crispr-food-plant (accessed 14 March 2024).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

NOU (2023). Offentlig høring av NOU 2023:18, available online at https://www.regjeringen.no/no/dokumenter/offentlig-horing-av-nou-2023-18/id3014424/?showSvar=true&term=&page=1&isFilterOpen=true (accessed 14 March 2024).

NRK (2023). "Strid om genmodifisering" Dagsnytt, 18, 23 January 2023, available online at https://radio.nrk.no/serie/dagsnytt-atten/sesong/202301/NMAG03002023 (accessed 14 March 2024).

Scott, D. (2011). The technological fix criticisms and the agricultural biotechnology debate. Journal of Agriculture and Environmental Ethics, 24, 207–226. DOI: 10.1007/s10806-010-9253-7

Svingen, M. and Jahren, L. (2024). Making space for CRISPR: scientists' translation work to make gene editing a legitimate technology. Science and Public Policy, 51(1), 15–27. DOI: 10.1093/scipol/scad050

Thorstensen, T., Sandgrind, S., Brurberg, M.B. and Fossdal, C.G. (2024). "Slipp gensaksa fri" in Klassekampen, Available online at https://klassekampen.no/artikkel/2024-02-21/slipp-gensaksa-fri/4Jy4 (accessed 11 March 2024).

Van Eenennaam, A.L. (2023). New Genomic Techniques (NGT) in animals and their agri/food/feed products. EFSA Supporting Publications 20(9), 8311E. DOI: 10.2903/sp.efsa.2023.EN-8311

Vidya, N. and Arun, M. (2023). Updates and applications of CRISPR/Cas technology in plants. Journal of Plant Biology, 66(6), 499–518. DOI: 10.1007/s12374-023-09383-8

Wang, J.Y. and Doudna, J.A. (2023). CRISPR technology: A decade of genome editing is only the beginning. Science, 379(6629), eadd8643. DOI: 10.1126/science.add8643

Wargelius, A., Alsheik, M., Bartmann, A., Bratlie, S., Brautaset, T., Gamlund, E., Jakobsen, I.U., Holst-Jensen, A., Nielsen, K.M., Tøndel, C. and Wickson, F. (2023). NOU 23:18 Genteknologi i en bærekraftig fremtid. Department of Climate and Environment, available online at https://www.regjeringen.no/no/dokumenter/nou-2023-18/id2982905/ (accessed 14 March 2024).

Winther, H., Blix, T., Holm, L., Myhr, A.I. and Myskja, B. (2023). A social and ethical game-changer? An empirical ethics study of CRISPR in the salmon farming industry. Environmental Values, 09632719231196543. DOI: 10.1177/09632719231196543

Zhang, F. (2014). "CRISPR: The democratization of gene editing". In Hicklin, T. and Sanders, S. (eds), CRISPR-Cas9: Engineering a revolution in gene editing. The American Association for the Advancement of Science, available online at https://www.science.org/do/10.1126/resource.2375822/full/horizon_crispr-cas9_booklet_2014_01_28-1686067067900.pdf (accessed 14 March 2024).

Franck Meijboom and Patricia Rosa Lajka, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Cultured meat and responsible research when the future is an illusion for financial speculation

R. Helliwell[1,], E. Bjørnerud[2] and T. Nerby[3]*
[1]Ruralis, Institute for Rural and Regional Research, Loholt Alle 81, N-7049 Trondheim, Norway; [2]Østfold University College, Høgskolen i Østfold, P.O. Box 700, N-1757 Halden, Norway; [3]Norwegian Board of Technology, Kongens gate 14, N-0153 Oslo, Norway
Corresponding author, e-mail: richard.helliwell@ruralis.no

Abstract

Developments in cultured meat promise transformative societal and environmental impacts through remaking animals in the bioreactor. However, in contrast to many emerging technologies, the innovation niche of cultured meat is almost entirely sustained through private venture capital investment. The financial infrastructure of Silicon Valley, and its constantly shifting frontiers of hype and financial speculation is the foundation upon which cultured meat — as a product and as a vision — is based. In this paper we seek to reflect on the consequences of these financial dynamics for examining emerging technologies and future promissory discourses. Specially, we note how this financial context lends credibility to start-up founders and their future visions, who achieve legitimacy as the result of an entirely transactional arrangement: securing investment. It produces promissory narratives that are fabricated, from the start, to appeal to a set of private investors and financial interests. Equally, there are major incentives to deceive, in terms of technical possibilities, moral progress, and societal prospects, to sustain an illusion of imminent breakthrough and lucrative investment returns. The danger for futures analysis is in reifying promissory discourses that are inseparable from their ability to function convincingly as an investment pitch. In turn telling us little about possible socio-material futures because investment dynamics drive trajectories towards realising financial returns not promised social and ethical outcomes. There is a pressing need to involve voices beyond those of advocates and other immediately interested parties, and to develop critical and alternative narratives around these technologies. Otherwise, our own academic incentives to produce novel research creates the risk that scholarship becomes trapped in chasing only what is presently attractive within dynamics of financial speculation on innovations.

Keywords: anticipation, cultured meat, futures, speculation

Looking at the future of cultured meat

The future has undoubtedly become a lively and productive area of social science research, notably within Science and Technology Studies, and the critical Future Studies literature. The key premise of this literature is that promissory narratives, future expectations and visions should be taken seriously because they perform important political and material work in the present. Future orientated discourses are key for coordinating actors, creating shared agendas, legitimising certain trajectories of change over others, attracting financing from public and private sources, and initiating governance of the present in the name of the future (Alvial-Palavicino, 2015; Granjou *et al*., 2017).

Innovation is one of the important modes through which present actions are being shaped by and are shaping the future. Emerging technologies loom large in this literature because they are positioned as being more radically open. By definition they have yet to arrive, they exist primarily in the future, "what is said, shared, visualised and even traded only exists as speculative statements about their possibilities." (Alvial-Palavicino, 2015: p. 135).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

In this article we to contribute to literature on futures and place that grapples with impacts of the place specific cultural milieu within which futures are being articulated, emerging innovations are being developed, and — importantly — financed (Geiger, 2020; Sexton, 2020; Tarvainen, 2022). In particular, we want to reflect on the challenges that the dominance of Silicon Valley venture capital, private equity and investment incubators have for researching and considering the politics of the future, using the example of cultured meat.

Cultured meat and 'present futures'

Cultured meat involves cultivating animal proteins, including muscle cells, fat and connective tissues in vitro via tissue engineering (Stephens *et al*., 2018). As an emerging food technology cultured meat has been no stranger to articulating ambitious and desirable future visions. At time of writing, it promises a safe, 'clean', efficient, more environmentally sustainable, and more humane system of animal protein production. This is contrasted with animal agricultures' perpetuation of animal slaughter and suffering, potential zoonotic disease risks, high antibiotic use, and broad environmental impacts: pollution, green-house gas emissions, land, water and energy use (Helliwell and Burton, 2021). Developing these technologies is claimed to be urgent because of both climate change impacts on agriculture and projections that agricultural production must rise significantly to meet the needs of growing populations (both size and affluence) and their protein demand (FAO, 2017). This urgency amounts to a broad imaginary in which environmental crisis and animal suffering are averted through profitable biotechnology whilst perpetuating dominant capitalist political-institutional configurations and markets (Broad, 2020; Jönsson, 2016). Cultured meat therefore appears to be another technical fix par excellence.

However, one notably difference with earlier fixes, such as bio- and nanotechnologies, has been that cultured meat has developed almost entirely independently of public research initiatives that target sustainability in food and agriculture. It has been absent or, at best, a latecomer to relevant innovation policy agendas. Key lobby groups have lamented the lack of government interest and public funding for cultured meat and alternative proteins more broadly (Dale, 2019). Perhaps because of the growing profile of cultured meat and this lobbying pressure, 2022 saw a notable uptick in public financing activity. Collective global public funding in 2022, which includes Europe, Asia, North America, and the Middle East, amounted to roughly $142,5 million dollars, to be distributed in various annual and multi-year research investment programmes (Good Food Institute, 2022). But state support is highly uncertain, with both French and Italian governments looking to create legal frameworks to 'defend' national agriculture against these products.

Instead, as noted by Sexton (2020) 'Silicon Valley is especially conspicuous for its sustained concentration of alternative protein (AP) activity. Many AP companies have physical headquarters in the San Francisco Bay Area, were founded through local tech accelerators, and have received a considerable portion of their funding from investors based in the region' (p. 451). Venture capital, private equity and other private investors, between 2021 and 2022 provided $2.2 billion in financing, the majority from the USA (Good Food Institute, 2022).

Accordingly, not just the ideologies but the financial infrastructure of Silicon Valley is the foundation upon which the creation of cultured meat, as a product and as a vision, is based. Thus, cultured meat has emerged within an innovation niche that is almost entirely sustained through private sources of investment. Our contention is that this has significant implications for analysis of promissory futures and anticipatory governance.

Franck Meijboom and Patrick Baert | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

It started with an investment pitch!

On August 5, 2013, Mark Post, a scientist from a research group at Maastricht University (now known as Mosa Meat), unveiled the 'world's first laboratory grown burger' at a press conference in London. Although it was neither the first instance of laboratory meat production, nor the first tasting of an in-vitro burger, it remains the most high-profile demonstration in the emerging sectors history and has been repeatedly positioned as a founding moment for the industry (e.g., Jönsson, 2016; O'Riordan *et al*., 2017). The press conference undoubtably brought public attention to the project but it was primarily a very high-profile pitch to prospective investors.

O'Riordan *et al*. (2017), in their examination of this event, note that the involved scientists and initial financier were explicitly motivated by, and acutely aware of, the need to weave a story that appealed to 'real big money' (O'Riordan *et al*., 2017: p. 153). The result was the now familiar promissory narrative outlined earlier in this article. However, much of the subsequent analysis of promissory narratives fails to acknowledge this reality: That the trademarks of cultured meat futures emerged in the context of a pivot towards attracting private investment, and away from public research financing which had seeded initial experimental work (O'Riordan *et al*., 2017). This has had discursive and financial consequences. The main 'victim' was an earlier imaginary of cultured meat within the context of space travel and planetary colonisation, linked to research investments made by NASA in the early 2000s. Such a future was perhaps too futuristic to appeal to the interests of venture capital in 2013. Certainty it has remained peripheral since in favour of a shifting prospectus of expectations that address entirely terrestrial concerns.

The broader point though, is that cultured meat and its promissory narratives have been fabricated, from the start, to appeal to a set of private investors and financiers, their egos, visions, ideologies, and financial interests. It raises a key reflection; the analytical task of exploring futures has largely neglected the degree to which promissory narratives have been formulated and tested to provide compelling futures for private investors. Given the widespread replication of the story set forth by Mark Post, it would appear this story has proven very persuasive, with time, to venture capital and private equity.

Financial speculation and imminent breakthrough

Financial speculation is differentiated from investment principally in relation to the scale of the risk, expectations of returns and timeframe. Future orientated innovation projects are, like any investment, characterised by a degree of risk. Cultured meat has emerged as an investment prospect in a context of a broader explosion of interest in alternative proteins. A category which includes cultured meat, precision fermentation and plant-based materials (Sexton *et al*., 2019). Although often discussed together they constitute largely discrete emerging food sectors. All three innovation areas have received significant private financing. But this has arisen in a context where plant-based substitutes in particular, and to a lesser extent fermented milk proteins, have a demonstrated product portfolio, with the former being present across multiple markets and having a proven ability to upscale production.

Since its inception cultured meats have been repeatedly described as imminent, 'oven ready', with product launches across multiple companies nearly all anticipated within a 3-5 year timeline from the point of prediction/announcement (Philpott, 2021). At the end of 2023, only two California based companies, Upside Foods and Good Meat (formerly EATJUST), can boast an available product to purchase. Following much hyped regulatory approval in the USA these two companies now produce cultured chicken sufficient for two high-end, fine dining restaurants in the US, with further small quantities being supplied by Good Meat to restaurants in Singapore since 2019 (Faguy, 2023; Yu, 2023). Furthermore, both faced separate but similar allegations that this modest production capacity is based on a fabrication,

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

not sustained through pilot bioreactor facilities often shown in public media, but backroom lab-scale equipment largely manged by hand (Reynolds, 2023; Shanker and Anand, 2023).

One of the few public assessments of the technical and economic challenges of cultured meat to be conducted by a non-advocate organisation or individual concluded that at food scale the cell-culture process will be plagued by extreme, intractable technical challenges (Fassler, 2021). When it comes to the promissory claims regarding the environment and animal welfare, a 2023 review concluded that there is "very little publicly available evidence that these claims hold true at present" (Olenic and Thorrez, 2023).

The most straight forward observation is that these announcements of imminent breakthrough and product release have been repeatedly and reliably failed, whilst currently existing products are scarce and potentially produced from labour intensive lab-based methods to sustain an image of progress. Equally, it highlights that there are major incentives to deceive, in terms of technical possibilities, moral progress, and societal prospects, to sustain an illusion of imminent breakthrough and lucrative financial return on speculative investments.

Reshuffling the future and the pivot to chicken

The clearly felt pressure to deliver, and deliver now, is not without material and discursive consequence. Both Upside Foods and Good Meat have positioned chicken as the breakthrough product. Although chicken has always been a product category of interest in the sector, the beef burger has been the talisman product. But current beef cell lines simply do not reproduce quickly enough for the scale and throughput required for commercial viability. Since beef burgers are not just an iconic western product providing a familiar aesthetic for the sector the production of beef has been routinely positioned by scientists, founders and various advocates as the most environmentally and climate damaging element of the livestock industry and thus a key inspiration and target for substitution (Tuomisto *et al*., 2022). Beef then is intimately linked with the discursive environmental and social mission of the emerging industry.

With a shift to chicken has come a shift in promissory narratives. Animal welfare concerns and 'relieving' the maximum amount of animal suffering are now prominent. Animal welfare concerns have always been a part of the story, but conventional chicken production already achieves significant energy and material efficiencies. Consequently, this shift highlights that promissory narratives are a mosaic that can be pieced together in diverse forms to appeal to investors and then reformulated to justify more immediate choices in response to harsh financial realities and investor expectations of returns. But the consequences are not just discursive. The promissory futures of cultured meat have laboured to legitimate a set of environmental claims that are receding further into the future. Pending a breakthrough in beef cell cultivations the realisation of the environmental promises of cultured meat shift further into the future, whilst a material reality emerges in which conventional chicken production is potentially positioned as more environmentally beneficial than the emerging cultured chicken sector.

Conclusion

We end with a set of reflections on what the growing dominance of private investment, in driving the narratives and material practices of innovation, might mean for engaging with and analysing the future. Firstly, it means that there is a danger of reifying a promissory narrative that tells us nothing about the future, because it is inseparable from its ability to function convincingly as an investment pitch. The pertinent question is not to just examine the content of futures but also ensure critical assessment of the context within which they are being articulated. In this case, why these futures can be sold, to whom, and why? The anticipatory value of these visions is principally with regards to what they say about the cultural and financial context within which they are having success in attracting investment.

Franck Meijboom and Pamela Pennock | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Secondly, promissory analysis has consistently foregrounded the voices of scientists, advocates and investors operating in this space. Although it routinely notes that these individuals have a distinct interest the proliferation of positive narratives (Helliwell and Burton, 2021; Painter *et al*., 2020), there is less reflection on how these individuals are able to speak in the first place. The threshold for legitimacy is not sober analysis of anticipated technical, social, and environmental prospects, but the ability to sell a lucrative investment prospect whilst generating and sustaining hype. Those most likely to succeed are those who can make seem real and lucrative that which does not exist. That these individuals are legitimated through these transactional arrangements should be a source of significant reflection for social scientists seeking to examine such futures. After all investors in Silicon Valley have been repeatedly shown by fiascos such as the collapse of Theranos Inc. and FTX/Alameda, to be readily taken in by aesthetic parlour tricks, fear of missing out, herd mentality, and blinded by greed. At the least, there is a need to involve voices beyond those of advocates and other immediately interested parties, to develop alternative narratives around these technologies.

Thirdly, examining these futures is a double edge sword. On the one hand, earnest analysis of promissory narratives can legitimate these hyped technologies. Certainly, public financing and reactionary legislation seeking to ban such products has recently begun to emerge. Although not to overstate the importance of futures studies in these dynamics, they will have certainly contributed to shaping these perceptions and responses. On the other, STS and futures studies risk delegitimating itself in its response to each and every frontier of innovation hype. Our own incentives to produce novel research creates the risk that scholarship becomes trapped in chasing cycles of hype that offer little insight into the future, but only what is presently attractive within dynamics of financial speculation on innovation.

Acknowledgements

This research has been funded by RCN grant no. 336136, "ARRIVAL of cellular agriculture- Enabling biotechnology for future food production".

References

Alvial-Palavicino, C. (2015). The future as practice. A framework to understand anticipation in science and technology. Tecnoscienza — Italian Journal of Science and Technology Studies, 6(2), 135–172.

Broad, G.M. (2020). Making meat, better: the metaphors of plant-based and cell-based meat innovation. Environmental Communication, 14(7), 7.

Dale, J. (2019). How government-funded research on alternative proteins can grow the bioeconomy. Good Food Institute, available online at https://gfi.org/blog/ostp-comment/

Faguy, A. (2023). USDA Approves 'Lab-Grown' Chicken—Here's Where To Buy It. Forbes. available online at https://www.forbes.com/sites/anafaguy/2023/06/21/usda-approves-lab-grown-chicken-heres-where-to-buy-it/

FAO. (2017). The future of food and agriculture: Trends and challenges. FAO, Rome.

Fassler, J. (2021). Lab-grown meat is supposed to be inevitable. The science tells a different story. The Counter, available online at https://thecounter.org/lab-grown-cultivated-meat-cost-at-scale/

Geiger, S. (2020). Silicon Valley, disruption, and the end of uncertainty. Journal of Cultural Economy, 13(2), 169–184, DOI: 10.1080/17530350.2019.1684337

Good Food Institute. (2022). 2022 State of the industry report: Cultivated meat and seafood. Good Food Institute, available online at https://gfi.org/wp-content/uploads/2023/01/2022-Cultivated-Meat-State-of-the-Industry-Report-2-1.pdf

Granjou, C., Walker, J. and Salazar, J.F. (2017). The politics of anticipation: On knowing and governing environmental futures. Futures, 92, 5–11.

Helliwell, R. and Burton, R.J.F. (2021). The promised land? Exploring the future visions and narrative silences of cellular agriculture in news and industry media. Journal of Rural Studies, 84, 180–191.

Franck Meijboom and Bernice Bovenkerk - 978[illegible]04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Jönsson, E. (2016). Benevolent technotopias and hitherto unimaginable meats: Tracing the promises of in vitro meat. Social Studies of Science, 46(5), 5.

Olenic, M. and Thorrez, L. (2023). Cultured meat production: What we know, what we don't know and what we should know. Italian Journal of Animal Science, 22(1), 749–753.

O'Riordan, K., Fotopoulou, A. and Stephens, N. (2017). The first bite: Imaginaries, promotional publics and the laboratory grown burger. Public Understanding of Science, 26(2), 2.

Painter, J., Brennen, J. S. and Kristiansen, S. (2020). The coverage of cultured meat in the US and UK traditional media, 2013–2019: Drivers, sources, and competing narratives. Climatic Change, 162(4), 4.

Philpott, T. (2021). Is lab meat about to hit your dinner plate? Mother Jones, available online at https://www.motherjones.com/food/2021/08/is-lab-meat-about-to-hit-your-dinner-plate/

Reynolds, M. (2023). Insiders reveal major problems at lab-grown-meat startup upside foods. Wired, available online at https://www.wired.com/story/upside-foods-lab-grown-chicken/

Sexton, A.E. (2020). Food as software: Place, protein, and feeding the world Silicon Valley-style. Economic Geography, 96(5), 5.

Sexton, A. ., Garnett, T. and Lorimer, J. (2019). Framing the future of food: The contested promises of alternative proteins. Environment and Planning E: Nature and Space, 2(1), 1.

Shanker, D. and Anand, P. (2023). The Biggest problem with lab-grown chicken is growing the chicken. Bloomberg.com, available online at https://www.bloomberg.com/news/features/2023-12-14/upside-foods-struggles-with-lab-grown-chicken-despite-600-million

Stephens, N., Di Silvio, L., Dunsford, I., Ellis, M., Glencross, A. and Sexton, A. (2018). Bringing cultured meat to market: Technical, socio-political, and regulatory challenges in cellular agriculture. Trends in Food Science and Technology, 78, 155–166.

Tarvainen, A. (2022). The modern/colonial hell of innovation economy: Future as a return to colonial mythologies. Globalizations, 1–23.

Tuomisto, H.L., Allan, S.J. and Ellis, M.J. (2022). Prospective life cycle assessment of a bioprocess design for cultured meat production in hollow fiber bioreactors. Science of The Total Environment, 851, 158051.

Yu, D. (2023). Eat just to scale up cultured meat production on gaining new regulatory approval in Singapore. Forbes, available online at https://www.forbes.com/sites/douglasyu/2023/01/18/eat-just-to-scale-up-cultured-meat-production-on-gaining-new-regulatory-approval-in-singapore/

Franck Meijboom and Patrick Baas, Back to the future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Ethics and aesthetics of alternative protein in Japan

A.H. Kimura[1] and S. Hisano[2]
[1] University of Hawai'i-Manoa, 2500 Campus Road, Honolulu, HI 96822, USA; [2] Kyoto University, Kyoto, Japan

Abstract

Given the increased attention to environmental and ethical concerns from industrial livestock operations, there has been a boom in alternative protein (AP) products in the Euro-American markets. AP products have garnered significant media attention and financial investments. This paper centres on alternative meat in Japan as an example of the broader AP market. There are some analyses of their dynamics in terms of market growth and consumer attitudes in these regions. However, the dynamics in Asian markets — where the meat alternatives have historically been a part of the culinary traditions — have been under-explored. This paper zooms in on the experience of Japanese alternative meat and explores different ethical discourses that have emerged to promote it.

Introduction: Alternative protein and its emplacement

There is a growing literature on new developments in the food market around AP but many of the studies have focused on the markets in Europe and North America, particularly California. Jönsson *et al* (2019) researched "post-animal" novel food products such as alternative eggs, milk, and meat in the US, while Sexton *et al*. (2019) and Guthman and Biltekoff (2021) examined AP startup companies in California. Sippel and Dolinga (2023) analysed market players in the US/Europe, especially in California. These studies show how these alternative protein products conjure sometimes fantastical hopes of better, more sustainable, healthier, and animal-friendly products. For instance, Stephens (2013) interviewed scientists and animal advocates in Europe and North America and found the discourses of animal liberation. Amato *et al*. (2023) conducted a systemic review on stakeholders' beliefs about AP and found that potential impacts on human health, animal welfare, and other ethical concerns are aspects frequently and positively mentioned by AP stakeholders. Sexton *et al*. (2019) explored AP stakeholders in the US such as Beyond Meat and Mosa Meats. They identified narratives of "goodness for" health, food security, animals, and the environment. Guthman and Biltekoff (2021) analysed narratives by California-based startups for AP and found similar promissory languages of sustainability and wellbeing. In particular, they connect the discourse to the promise of dematerialization that claims to produce foods from nothing or very little or from materials that would have been wasted.

These studies have pointed out the often grandiose promise of AP and called for critical investigations into the actual delivery of these promises. Despite the claim of transparency and accountability by the start-up companies, the actual processes and the impacts in terms of health, well-being, and low environmental footprint are usually not disclosed by these companies (Guthman and Biltekoff, 2021).

Sexton *et al.* (2019) pointed out how such cultural-social dynamics of the alternative meat have been impacted by the culture of Silicon Valley where many startups are located or are drawing their cash from. There is a need to analyse the "specific role of place in the process of AP market formation" (Sexton *et al*., 2019: p. 451) and how the place shapes the "ontological and political-economic trajectories of this emerging alternative food sector" (Sexton *et al*., 2019: p. 464). This paper contributes to this lacuna in the literature on the geographic variations in the development of the AP sector and its promissory narratives in the case of Japan.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Ethical debates around meat eating in Japan

In Japan, questions about the ethics and sustainability of the existing food systems have been raised by the alternative food movements including organic/natural farming movements as well as consumer movements often centred around cooperatives. While some have become conventionalized, many retain the movement-like characteristics, espousing non-GMOs, local food, and organic food. Many of these started from the idea of *teikei*, the direct relationship between consumers and farmers with the objective not only of benefiting consumers via the elimination of middlemen but also of supporting farmers and rural communities. This has been an important issue due to de-peasantisation and de-agrarianisation in Japan (Hisano *et al*., 2018).

In terms of general consumer attitudes about sustainability and ethics of foods, studies have found high concerns about food safety. Anxiety is punctuated by a series of scandals around food safety (Yamaguchi and Suda, 2010; Tanaka, 2008). Specifically about AP, the unease about the health impacts of Westernization of diet is particularly relevant.

Meat eating was long prohibited in Japan. The official prohibition was first issued in 675 and the introduction of Zen Buddhism increased restrictions against meat eating with many official injunctions. Meat eating was considered sinful as it kills animals, an act that comes with *kegare* (impurity) (Jaffe, 2005). The official ban and social taboos did not eliminate meat eating and some meat such as wild boar and venison continued to be eaten. However, by the 16th century, "the eating of the meat of domesticated animals acquired the status of a taboo in Japan" (Cwiertka, 2006: p. 26). Significant culinary tradition of *mitate* (mimicry) foods developed that sometimes playfully simulate animal products using non-animal ingredients. The long-standing social stigma around meat-eating was officially and symbolically broken when the emperor announced his meat-eating in 1872. Even the Buddhist practitioners started to see meat eating as a way to modernize the religion (Jaffe 2005).

Yet it was only in the post-WW II period that meat eating rapidly grew among the regular citizens. The meat consumption in 1965 was 9.2 kg, which jumped to 34 kg in 2021 (see https://www.maff.go.jp/j/pr/aff/2302/spe1_01.html). Although the level of meat consumption is still low compared to the Euro-American nations and some Latin American countries, there has been an increase in anxiety about the overconsumption of meat as the Japanese morbidity and mortality pattern shifted to more chronic diseases than infectious diseases.

Method

We compiled the data on the alternative protein market in Japan. There is no single industry association for AP products. Even major business databases, such as Nikkei Compass and Nikkei Telecom, do not offer any business categories related to AP. Nikkei Compass instead provides seven related business themes, including vegetable meat, plant-based food, and cultured meat, but the list of companies under these themes (17 for vegetable meat, 7 for plant-based food, 2 for cultured meat, and 9 for insect meat) seems incomplete. Therefore, we referenced several sources including a food tech media, ATM.jp, which had a relatively comprehensive and updated list of 32 companies, and a report by Next Meats, an AP startup (see https://artificialmeat.jp/meat-substitute-japanese-manufacturer/). We decided to focus on the companies that are located in Japan, which are producers of AP products themselves and already have products on the market. After carefully examining and eliminating those that did not meet these criteria, we identified DAIZ, Green Culture, and Next Meats as the cases for AP startups. Nippon Ham/NH Foods and Otsuka Foods were chosen as the cases of the existing food producers who have entered into the AP market. We examined the websites as well as social media posts by these companies.

Franck Meijboom and Patrick Baas, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Market players

There are two categories of players in the contemporary AP market in Japan. The first is the already-established large food manufacturing companies and the second is new startups that have successfully courted the support of established companies and venture capitalists. An example of the first category can be seen in a consortium of companies called "Plant-Based Lifestyle Lab" established in 2021 which includes large food manufacturers such as Kagome, Itochu (trading companies), Fuji Oil, NTT (originally a telephone company but recently acquired a convenience store chain) and Calbee (there are 47 participating companies, of which the 15 founding members are all large established companies). The Japan Soy Meat Association, which was established in 2023, is led by existing food giants such as Nippon Ham, Ito Ham, Otsuka Foods, Marukome Foods and Starzen (a trading company specializing in processed meat). Interestingly, out of three leading AP startups, only DAIZ is a member of the former association, while the latter association is exclusively led and organized by the existing big food companies.

Even as for the startups, the funding seems to come from existing food businesses. For instance, DAIZ has received investment from 17 companies, mainly big domestic companies, including Nisshin Foods, Nichirei Foods, Ajinomoto, Miyoshi Oil and Fat, and Toyo Seikan, all of which are large food manufacturers. Green Culture has received investment mainly from a Japanese leading investment fund company and two food companies, Kameda Seika and Oisix ra daichi. Next Meats is rather exceptional in terms of being listed in the American stock market to raise capital. Hence the Silicon Valley style financialisation seems to have had less impact in the Japanese market, at least up to the time of writing, in comparison with the American experience narrated by scholars such as Guthman and Biltekoff (2020).

Ethical promises

Our analysis of discourses found various ethical promises made by AP companies. We have identified five themes. First is the health benefit. For instance, many companies emphasize "plant-based ingredients" and their nutritional benefits. Otsuka's *Zeromeat* says that it is "made only with plant-based ingredients primarily soybeans" and talks about how soybean's main nutrition is protein. DAIZ's *Miracle Meat* features its patented technology using germinated soybeans to emphasize that the product contains high levels of isoflavone and other nutrients and has high digestibility and absorption.

Second is the environmental benefits. The degree of environmental claims-making varies, but new startups tend to provide grand statements about environmental benefits and frame their corporate identity as a mission-driven one. For instance, Green Culture's marketing phrase for its *Green Meat* is "forever with health and the Earth" and it says "We will...help maintain the health of people and the continued greenness of our planet." As in this case, some are taking the claim to planetary scale environmental benefits. Next Meats' website starts with a dramatic video of the rotating Earth in space with the marketing claim, "We shall not terminate the Earth" and "putting our shared planet first".

The third is convenience. All but one sells only the deli-type foods that do not require cooking from scratch and the products are flavoured and meant to be just heated up by the customers. For instance, Nippon Ham's *NatuMeat* line has products like fried "chicken," fried "pork" and hamburger patties that could be "easily cooked in a toaster" (written on the packages). DAIZ collaborates with a convenience store giant, Seven-Eleven for the production of "Mirai (Future) Deli" series using DAIZ's alternative protein as the substitute for meat/fish meat. The brand only includes premade deli foods such as "chicken" nuggets, sandwiches, noodles with ground "meat", and rice balls. Similarly, Otsuka's *Zeromeat* appeals the ease of eating plant-based foods by saying "We are committed to convenience: we have

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

made convenience a priority so that busy people can enjoy the products by microwaving the product and eating them".

Fourth is the innovative aspects of the products. Here the startups tend to make references to data science. Next Meats says that: "Our strength comes from our closely connected R&D network that helps to develop ideas around improving taste and texture. Researchers from around the world have openly collaborated – combining ideas from various fields, including life science, food engineering, and genetic engineering. We make full use of the ideas and technology gained from this process, to improve Next Meats every day". The website features a person in protective eyewear and a lab coat looking at a test tube, and has a video entitled "Meet our scientist" on a staff researcher who has a Ph.D. in agricultural engineering (see https://www.nextmeats.global/lab). Similarly, but in a more modest form, Green Culture appeals the high-tech nature of the product, writing that "we are mixing data science with food manufacturing technologies to structure plant-based meat so that we can provide plant meat that is as delicious as meat at the cost that is close to meat's".

The last theme is the benefits to the local economy. DAIZ highlights its origin in Minamata city (the site of industrial pollution by methylmercury poisoning in Kumamoto Prefecture), a place that experienced, according to DAIZ, "the largest post-war environmental tragedy". It connects the locality to its mission, saying that "based on this painful experience, this region had aimed to rejuvenate the environment before the SDG became big in the Euro-American regions" its mission being aligned with it DAIZ has made local economic contribution an important part of its stated mission. It has committed to sourcing soybeans domestically in order to bolster local and domestic agriculture. Although DAIZ was the only company in our sample that made explicit comments about moral commitment to the local community, we found this theme in other stakeholder discourse. For instance, there are smaller, regionally-based food companies that have developed or are developing plant-based meat products using regionally available resources, such as mushrooms and brown rice and they tend to feature their commitment to local rejuvenation.

These themes invoke a morally righteous position of the AP products. They are portrayed as ethically superior as it promotes environmental and economic sustainability. Indexed as the embodiment of efficiency and meritocracy, the themes of innovation and convenience are often folded into the ethical claims about AP products under the influence of neoliberal governmentality that privileges market-centric logics. Similarly, neoliberal responsibilisation has moralised individual health management.

Interestingly, the ethical benefits above are presented as not compromising the taste. DAIZ markets its product as having elasticity and texture of meat". Next Meats sells its meat alternative to roast meat restaurants and for retail markets. It markets its products as close to the taste and texture of animal meat. The company says that "it has sought to enhance deliciousness but has also committed to getting it close to the texture of meat by substantial research". It claims that "Next Meats is most particular about taste and texture, and we receive comments from customers such as "texture is close to meat" and "I'd assume it would be meat if not told otherwise".

Concluding thoughts

The promissory claims are similar but slightly different from those found in the Euro-American contexts. First, little attention is paid to animal welfare. In contrast, Sexton *et al*. (2019) analysis of American startups found that environmental and animal welfare claims to be one of the prominent promises. Similarly, a systemic review conducted by Amato *et al*. (2023), which mainly covered the Euro-American contexts (the only exception was for China), found that beliefs about positive consequences on animal welfare were frequently expressed by AP stakeholders. Perhaps due to the small-scale nature of Japanese

Franck Meijboom and Daniela Bove, Book, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

cattle and pork industries in comparison with the American ones, the degree of animal welfare concerns is much less in Japan. Furthermore, several studies have shown a relatively low proportion of Japanese people self-identifying as vegan or vegetarian and a similarly low proportion of Japanese people aware of and conscious of the idea and practice of animal welfare (Shiga *et al*., 2022).

The second difference is the prominence of health benefits and convenience perhaps even more so than Euro-American literature has suggested. This is perhaps related to the fact that the key players in the Japanese market are existing food producers who take AP as an addition to their main products. These producers may be aware that Japanese consumers have relatively low concerns about climate change and the environment (Boston Consulting, 2022; Dentsu Soken, 2023; Murata, 2023; PEW Research, 2021). Hence AP might be a strategy of product diversification that has "healthier" and "easier" characteristics than ecological ones.

Another dimension of difference is the discourse around local food/domestic food production. In other studies that have been summarised above, there is little, if any, mention of the ethical value of AP in terms of its contribution to local agriculture or economy (although these seem to be some examples, such as Respect Farm in the Netherlands-we thank the reviewer for this insight). Guthman and Biltekoff (2021) astutely observed that many companies were silent on how the products would depend upon soybeans cultivated in Amazon with significant environmental impacts. In our data, while DAIZ was the only one that made this claim, the linking between AP and national food security is quite pronounced at the national policy level discussions. For instance, the Council for Public-Private Partnership in Food Technology was established in October 2020 by the Ministry of Agriculture with the objective of "utilizing food tech and other new technologies to promote food, agriculture, forestry, and fisheries and to strengthen food security" (see https://www.maff.go.jp/j/shokusan/sosyutu/). The extremely high rate of import dependence has been a significant policy concern for the country which can heighten the virtue of locally-sourced AP. We expect this theme will be particularly promoted in the case of cell-cultured meat (not yet marketed fully in Japan) as the discourse focuses on the "resource-poor" Japan and how new food technologies need to address national food security.

In terms of the market structure, it is important to notice how the AP market is being crowded by big food companies or new startups despite the presence of many producers of traditional soy products and meat alternatives. Financial and capital gaps aside, the shift in aesthetic expectations of consumers might be relevant here. Driven by the increased meat consumption and change in dietary patterns in the post-war era, the aesthetic and sensory profile of AP products are increasingly judged in their proximity to animal meat.

This is a contrast with the older culinary traditions that had the appreciation of *mitate* which can be translated as "resemblance" or "mimicry". *Mitate* is one of the foundational aesthetic elements in many Japanese cultural practices from architecture to cuisines. In terms of the culinary use of *mitate*, Buddhist *shojin* cuisine has extensive use of it in the form of "*modoki*" (resemblance) dishes (Ueda 2017). For instance, yamaimo potato, seaweed, and tofu are used to make "*shojin* eel"; *ganmodoki* is made from tofu but to mimic "*gan*" (wild goose); mushroom was used as fake abalone. But these modoki cuisines were appreciated for their *mitate* aesthetics. Rather than a mimicry of a "true" thing, *mitate*'s value is in its creation of "elegant confusion" (Mostow, 1996: p. 17). However, such aesthetics does not shape the emergent AP market.

To conclude, as in the Euro-American cases, many ethical promises are being conjured in the Japanese AP market which merits further empirical investigation as to their delivery. We have also noted the differences such as the weaker animal welfare appeal in Japan. Whether this is due to a lower awareness of Japanese consumer needs to be further analysed as our analysis focused more on consumer-facing

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

appeals than what the existing literature has tended to analyse investor-facing rhetoric by the startups who may not yet have market-ready products. These uniqueness needs to be further investigated as the difference might also involve the difference in terms of target audiences (the investor-facing vs. consumer-facing which this paper has focused).

This paper also started to analyse the industry structure and pointed out the exclusion of traditional foods from the category of the AP market and how the AP players emphasise the technological innovation of their products. However, what is understood to be innovative is socially constructed, often privileging the developments in modern scientific disciplines and those that are capital-intensive and monetizable. This myopic construction of novelty via modern technoscience obscures the existing crafts and knowledge such as those in *modoki* and other *mitate* foods. Furthermore, the promissory narratives of the emergent AP industry also reify and normalize a particular kind of aesthetic valuation of plant-based products that are based on their proximity to animal meat's tastes and texture. The exclusion of traditional AP products from the future imaginaries of sustainable and healthful food systems risks further marginalizing the small and medium producers of these foods.

References

Boston Consulting Group. (2023). 7th Consumer survey on realization of sustainable society (Japan and Global Comparison), available online at https://www.bcg.com/ja-jp/publications/2023/understanding-a-sustainable-society (in Japanese)

Cwiertka, K.J. (2006). Modern Japanese cuisine: Food, power and national identity. Reaktion Books, London.

Dentsu Soken. (2023). Attitude Survey on climate concerns (international comparative edition). Dentsu Soken Compass, 9, available online at https://qos.dentsusoken.com/articles/2823/ (in Japanese)

Gunji, M. 1988. Mitate no bigatku. J&J Corporation, Tokyo. (in Japanese)

Guthman, J. and Biltekoff, C. (2021). Magical disruption? Alternative protein and the promise of de-materialization. Environment and Planning E: Nature and Space, 4(4), 1583–1600. DOI: 10.1177/2514848620963125.

Hisano, S., Akitsu, M. and McGreevy, S.R. (2018). Revitalising Rurality under the neoliberal transformation of agriculture: Experiences of re-agrarianisation in Japan. Journal of Rural Studies, 61, 290–301.

Jaffe, R.M. (2005).Meat eating in Japanese buddhism. In W. Bodiford (ed.), Going Forth:Visions of Buddhist Vinaya. University of Hawaii Press, Honolulu, HI, pp. 255–275.

Jönsson, E., Linné, T. and McCrow-Young, A. (2019). Many meats and many milks? The ontological politics of a proposed post-animal revolution. Science as Culture, 28(1), 70–97. DOI: 10.1080/09505431.2018.1544232.

Mostow, J. (1996). Pictures of the heart: The hyakunin isshu in word and image. University of Hawaii Press, Honolulu, HI.

Murata, H. (2023). A result of international social survey programme: Environment IV. NHK Broadcasting Culture Research Institute Bunken Blog #512, available online at https://www.nhk.or.jp/bunken-blog/500/489504.html (in Japanese).

Pew Research Center. (2021). In Response to Climate Change, Citizens in Advanced Economies Are Willing To Alter How They Live and Work. 14 September 2021, available online at https://www.pewresearch.org/global/2021/09/14/in-response-to-climate-change-citizens-in-advanced-economies-are-willing-to-alter-how-they-live-and-work/

Sexton, A.E., Garnett, T. and Lorimer, J. (2019). Framing the future of food: the contested promises of alternative proteins. Environment and Planning E: Nature and Space, 2(1), 47–72. DOI: 10.1177/2514848619827009.

Shiga, Y., Ito, K., Imayama, R., Yamamoto, M. and Matsuura, A. (2022). A three-country comparison between Japan, Switzerland and China on animal welfare-conscious beef purchasing behaviour. Nihon Chikusan Gakkaiho 93(4), 331–346. DOI: 10.2508/chikusan.93.331 (in Japanese)

Stephens, N. (2013). Growing meat in laboratories: The promise, ontology, and ethical boundary-work of using muscle cells to make food. Configurations, 21(2), 159–181.

Tanaka, K. (2008). Seven samurai to protect 'our' food: the reform of the food safety regulatory system in Japan after the BSE crisis of 2001. Agriculture and Human Values, 25(4): 567–580. DOI: 10.1007/s10460-008-9152-y.

Franck Meijboom and Patrick Baas (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Ueda, J. (2017). Tsukurimono' Aruiwa 'mitate' Toshiteno Shojin Ryori. In Kyoryori No Bunkashi. Shibunkaku, Kyoto, pp. 177–195. (in Japanese)

Yamaguchi, T. and Suda, F. (2010). Changing social order and the quest for justification: GMO controversies in Japan. Science Technology Human Values, 35(3), 382–407. DOI: 10.1177/0162243909345837.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Why do people choose to eat meat? — Changing views on meat replacement

J. Hirnet[1],, T. Bollmeier[1], K. Persson[1,2], A. Nelke[1], P. Kunzmann[1] and M. Plötz[1]*
[1] Stiftung Tierärztliche Hochschule Hannover, Bischofsholer Damm 15, 30173 Hannover, Germany;
[2] Universität Basel, Petersplatz 1, 4001 Basel, Switzerland
** Corresponding author: juliane.hirnet@tiho-hannover.de*

Abstract

Meat replacement is a growing market in the European Union (EU) and a topic of intense public debate. Discussions are usually conducted from very emotional and heated positions and current media are giving a lot of space to more extreme positions in this debate. During the project WernähR**,** we planned to investigate the opinions and attitudes of consumers towards meat and meat replacement, including myths relating to meat and meat-free diets such as "Meat-free diets cause iron deficiency." or "A plant-based diet causes tropic deforestation.". We provided a group of interested volunteers with information from different sides of the debate. The participants opted into the project group during a public panel discussion on meat replacement or were recruited from students at the University of Veterinary Medicine in Hannover. This resulted in a diverse group regarding age and education with a small bias towards young people (<30 years). Participants were asked to attend six events, ranging from evening expert lectures on nutrition, sustainable agriculture including animal welfare considerations, and canteen cooking to excursions to a farm and a slaughterhouse, and changing attitudes towards meat and meat replacement were measured through questionnaires and videos of group discussions throughout the project. Especially people who started out strictly vegetarian showed a relaxation of their attitudes towards meat, indicating the importance of diverse sets of information to make a decision about a topic as personal and societal as food choices. This project was funded by the Ministry of Science and Culture in Lower Saxony (MWK) as part of the call "Zukunftsdiskurse", Grant number 11-76251-1226/2023 ZN 4113.

Keywords: consumer attitudes, public debate, vegetarianism

Project WernähR — Should we save the planet through food choices?

This project was funded by the Ministry of Science and Culture in Lower Saxony and designed to spark a public discussion about food choices, especially meat or meat replacement, and its effect on the planet.

For this project we used "meat replacement products" (Fleischersatzprodukte) in terms of products that imitate meat in appearance, taste, texture and smell; "meat alternatives" (Fleischalternativen) were defined as vegetarian products that replace traditional meat or fish in dishes, without imitating meat, such as cheese or mushrooms.

We decided not to include lab-grown meat or alternatives based on insect protein in the discussion because those products are not permitted on the European market or face serious public acceptance problems.

Participants opted into the group during a public panel discussion on meat replacement in June 2023 or were recruited from students at the University of Veterinary Medicine in Hannover in winter term 2023/2024. This resulted in a diverse group regarding age and education with a small bias towards young people (<30 years). 28% over 30, 44% under 30 and another 28% did not disclose their age.

EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_14, © Brill | Wageningen Academic 2024
ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Participants were asked to attend six monthly events with inputs, ranging from evening expert lectures on nutrition, sustainable agriculture including animal welfare considerations, and canteen cooking to excursions to a farm and a slaughterhouse, and changing attitudes towards meat and meat replacement were measured through questionnaires and videos of group discussions throughout the project. All inputs were given by people considered experts in their specific aspect of the field and presenters were introduced as such.

In the beginning of the project attitudes and general knowledge about meat and meat replacement products were evaluated via a questionnaire. All questionnaires were in line with German rules regarding data protection.

About half of the 24 individuals self-identified as vegetarian or vegan, and the other half self-identified as meat eaters

Even self-identified meat eaters reported low intake of meat, weekly or less than weekly as compared with the German average, 20% report daily consumption of meat product (BMEL, 2023)).

All questionnaire items were given in German. For this abstract, translations are provided. Original questions are available upon request. Statements were rated using a Likert scale with 5 options ranging from strongly agree to strongly disagree.

Attitude statements can be categorized into ethical (10 statements), hedonistic (6), social/political (5) and health related (6).

Additionally, people were asked several open questions, such as "Did this input change your attitude towards meat replacement and if yes, how?" and "What information was new to you?"

Every input was designed to cover a different aspect of the meat vs. meat replacement debate and therefore potentially led to changes in the participants' attitudes and opinions in different categories of statements (Table 1). The here presented changes can only be considered exploratory as the overall numbers were too small for statistically sound results.

As the same questionnaire was used throughout the project, changes in several categories could be measured as well as the sustainability of change through time.

Attitudes towards meat and meat production

After signing up to the project, but prior to the first input, participants were asked questions about different aspects of the debate. This first extensive questionnaire was filled in at home and covered attitudes as well as perceived knowledge regarding meat and meat replacement.

After each input the same statements were presented to the participants and rated from "strongly agree" to "strongly disagree". As statements not intended to be confounded by the specific input were presented at every date, the sustainability of change could be observed. Additionally hedonistic statements, such as "I enjoy cooking" should not change throughout the project and serve as a baseline.

Table 1 describes the changes expected after evaluation of the initial questionnaires and planning of inputs and the changes we actually observed after each input.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Table 1. Changes in attitudes towards meat and meat replacement by category of question

Input	Expected changes in categories	Observed changes in categories
Health	Health related	Hedonistic
Non-human edible fractions	Social/political, ethical	Ethical
Modern husbandry	Ethical, social/political	Ethical
Production of meat replacement products	Health related	Health related, social political
Community catering	Social/political	None
Slaughter	Ethical	Ethical, social/political

First input: health

The first input was two lectures about the health benefits of meat, resp. meat replacement, given by professors of nutrition from the Leibniz University Hannover and the University of Göttingen resp. Many common misconceptions regarding meat and meat replacement, such as nutritional value and processing of meat and meat replacement products were explained. This was valued highly by the participants (open questions).

Even though some meat replacements are highly processed and their health-impacts (still lacking long-term research results on this) estimated to be comparable to consumed meat, their value as bridging technology was discussed vividly among the participants.

The observed change in attitudes in the health questions (e.g. "removing meat from your diet will lead to deficiency in essential nutrients") showed a slight change towards meat- eating especially in the case of flexitarians and omnivores, while vegetarians and vegans did not change their attitudes. However, minimal variations in health-related questions were observed throughout the project.

Additionally, after input 1 a change in hedonistic attitudes was observed. There was a stronger agreement for statements regarding taste, such as "meat tastes good" and "vegetables taste good".

Second input: Non-human edible fractions

The second input was a public lecture with a subsequent discussion with study participants. The topic was human edible fractions of biomass and food production and security from a global and local perspective. In this input a strong emphasis was placed on the need for livestock to use non human-edible fractions of produced foodplants, as for example 2/3 of harvested wheat is chaff and stalks and cannot be used for human consumption. This input let to the strongest answers to the open-ended question "What information was new to you?" as most participants had not approached the debate from the perspective of land use and global food security. Changes in ethical reasons (for example: "Animals are an important part of Agriculture") for veganism were expected and observed, as several participants questioned their decision to be vegetarians. These changes, however, were not sustainable as people's attitudes changed back during the next event, which happened only two weeks later, which did not provide additional input on land use or food security.

Franck Meijboom and Patrick Baur, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Third input: Husbandry

A guided tour led through a teaching farm in which conventional farming methods on a relatively small scale are applied. The teaching farm allows students to learn about and investigate different aspects of animal husbandry and therefore caters to dairy cattle as well as pigs and poultry, allowing our participants an overview over modern animal farming conditions. In accordance with its teaching role, farming here adheres to all relevant standards (German and European) of food safety and animal welfare, albeit on a slightly smaller scale than monoculture farming. Even though, participants commented on the "industrialization" of farming and voiced distress over the treatment of animals as commodities. However, one older study participant from a farming background commented on improvements to animal welfare since the time she was involved in farming. As expected, people's attitudes towards meat changed in ethical statements towards vegetarianism.

Since the topic of workplace safety and tradition (pig farming in Lower Saxony) was also intensively discussed, we expected changes in attitude towards meat in political/social statements.

Fourth input: Meat replacement

An expert in development of meat replacement products for a commercial company gave an overview over the thought processes and experiments that go into the development and marketing of meat replacement products. Since a big part of development includes nutritional considerations, this topic was unexpectedly similar to input 1 regarding the influence on study participants. He also stressed the environmental protection steps his company is taking to reduce the impact of meat replacement production. This information was considered new by several participants, especially the production of meat replacements from locally grown legumes as peas or soy. Following the presentation, participants completed a sensory analysis of vegan and vegetarian meat replacement products under instructions of a specialist on sensory analysis at TiHo Hannover, simulating a process all new foodstuffs must go through before marketing. We expected health related changes, but additionally observed changes regarding the impact on the environment.

Fifth input: Community catering

This was a very open discussion, with three experts on school catering providing guidance in the discourse on how to change people's attitudes and to what extent means and manipulations should be allowed. General agreement was reached that children and young people should be exposed to a wide variety of foodstuffs and most of it should be vegetarian or vegan. The strong influence of the social environment and schools and family was discussed. We expected some changes in attitude towards meat replacement especially regarding development, but could not observe any changes. The discussion was described as interesting, but no one indicated receiving any new information or altering their attitude. (open questions)

Sixth input: Slaughter

After the offer of a guided visit to a slaughterhouse was not accepted by all but one participant the topic of slaughter was discussed online. In two presentations the methods of slaughtering cows were described with graphic pictures and diagrams. Two experts on slaughtering methods, semi-mobile and traditional presented their topics. The emphasis was on animal welfare during transport and slaughter, but a discussion regarding bureaucracy and the difficulties of ethical animal husbandry happened as well. We expected changes in ethical categories, which we found with additional changes in social/political statements, such as "animal husbandry is important"

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Free text answers

More information could be gathered through open questions compared to the attitude statements. Especially the question, "what information was new to you?" resulted in several unexpected statements (Table 2).

Table 2.

	What information was new to you?	Did it change your attitude?
Input 1	Meat and meat replacement are not as unhealthy as previously thought	No
Input 2	Existence of non human edible fractions (everyone)	" I believe a small amount of meat is necessary"
Input 3	Animal husbandry is cleaner and more industrialized than expected	Omnivores: more local organic meat Vegan/vegetarian: no
Input 4	New products	More meat replacement instead of meat alternatives
Input 5	No new information	No
Input 6	Mobile and semi mobile slaughter, transport of animals to slaughter is regulated	A stronger focus on locally sourced and butchered meat

Social reasons

Participants with vegetarian friends were more likely to also be vegetarian, this holds not true for vegans.

Most participants of our project were well informed about their food choices; this is not true for the rest of the population (Azzurra and Mariani, 2019; Werle *et al*., 2022). Most information coming via social connections (social media, followed by friends and family).

Conclusion

WernähR managed to create a room for valuable discussions around the recent development to replace animal products by such that are, in the best case, indistinguishable from meat. The role of those new products is ambiguous. On the one hand, they might serve as a bridging technology for those consumers who would like to avoid meat for ethical, health, or religious reasons but who would not forgo the overall positive experience when eating meat. On the other hand, being highly processed, and of widely varying nutritional value and environmental impact, meat replacement products can be considered critically. That ambiguity was mirrored in our study participants' attitudes during the discussions and, partially, also in their changes and back-changes of questionnaire answers. New information can change attitudes in the moment, but most people revert back to their opinion until constantly challenged. Real and sustainable change in diets might only be achieved gradually. The niche meat replacement products might have in the future will certainly depend on the extent and on the way relevant information will be disseminated to the public but also on the room for exchange and discussion such as provided in our discourse project.

Franck Meijboom and Patrick Bos, Back to the future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

References

BMEL (2023). Deutschland, wie es isst – Der BMEL-Ernährungsreport 2023, available online at https://www.bmel.de/SharedDocs/Downloads/DE/Broschueren/ernaehrungsreport-2023.pdf?__blob=publicationFile&v=4

Azzurra, A. and Mariani, A. (2019). Do consumers care about nutrition and health claims? Some evidence from Italy. Nutrients, 11(11), 2735. DOI: 10.3390/nu11112735

Werle, C., Nohlen, H. and Pantazi, M. (2022) .Literature review on means of food information provision other than packaging labels. JRC technical report EUR 31206 EN. DOI: 10.2760/553871

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Understanding the politics of the European Union food nanotechnology regulatory choices

V. Sodano
Department of Political Sciences, University Federico II of Naples, via L. Rodinò 32 80138
vsodano@unina.it

Abstract

Nano-innovations in the agrifood system have not yet received an adequate regulatory framework. Regulatory delays have been generally ascribed to technological causes, such as the difficulties in risk characterization of very different compounds. Social and political issues have received scant attention instead. This article endeavours to explain the regulatory processes of agri-food nanotechnologies in the European Union (EU), stemming from a wider perspective that shifts attention to the institutional architectures of regulatory bodies, and to power relationships among organizations and stakeholders involved in regulatory processes. To unveil the 'politics' of the regulatory process the article examines the EU regulatory choices using two analytical tools-perspectives: 1) the classical five benchmarks suggested by the literature on regulation for defining a 'good regulation'; 2) the two-dimensional view of power explained by the literature on power, i.e., the agenda power. The study's results strongly suggest that the current EU regulatory process is driven more by power relationships among stakeholders than by a true democratic decisional process.

Keywords: nano innovation, regulation, risk management, power

Introduction

The field of application of nanotechnology in the agri-food sector is vast. In agriculture, nano-applications include nano-fertilizers, nano-pesticides, seed germination and growth promoters, nano-sensors, and nano-cleaners (Das *et al*., 2022). In food manufacturing industry nanotechnologies are used in the field of food safety management and food enhancers. Food safety nanodevices include: antimicrobial food equipment coatings; inhibit biofilms for food contact surfaces; nanodevices for pathogen allergens and toxin detection (Onyeaka, 2022). Enhancing food techniques include: nano-additives and nutraceuticals for improving quality and nutritional value; nanoencapsulation for delivering aroma flavor and food ingredients; nanoparticles (NPs) and nanoemulsion to enhance food texture and to improve the availability and dispersion of nutrients or colouring and flavouring agents (Mohammad *et al*., 2022). In food packaging industry nanotechnology is used (Alp-Erbay, 2022): 1) for enhancing mechanical properties such as strength, elasticity and rigidity; 2) as active packaging, as in the case of NPs, carbon nanotubes (CNTs) and Chitosan based additives used as antimicrobials and antioxidants; 3) in smart packaging, as nanosensors to detect food contaminants and biological modifications, and NPS-based nano-barcode used as identity tags.

While some nanofood applications are still in the experimental stage, many are already on the market, as reported by the private website Statnano (https://product.statnano.com/) which in December 2023 mentioned: 423 products and 195 companies operating in 32 countries, for the food industry; 244 products and 88 companies in 28 countries, for the agricultural sector.

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (Eds.), ***Back to the future***
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_15, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Nanotechnologies may bring many benefits, but they have also been recognized as an important source of hazards. The use of nanomaterials (NMs) in the agrifood industry has been associated with health, environmental and socio-economic risks. Health issues depend on the ability of nanoparticles to pass through cell membranes and internalize in cells (Liu et al., 2022), triggering many forms of diseases such as brain impairment, Parkinson, Alzheimer, lung cancer, heart diseases, kidney and liver failures, colon cancer, dermatitis, and so on (Asmatulu *et al*., 2021). Environmental risks may come from direct nano pollution and the waste stream containing NMs, affecting aquatic flora and fauna, the biodiversity of microorganism communities in the soil and plant toxicity (Jan *et al*, 2022). Socio-economic risks are associated with the disruption of incumbent businesses and the further consolidation of the food system that nanotechnologies are very likely to produce. Concerns about a lack of democracy may also be raised since the lack of knowledge of nanotechnologies at the level of the general public precludes a broad debate on risks and social acceptability (Sodano, 2018).

Stemming from its Communication "Towards a European strategy for nanotechnology" in 2004, European institutions have repeatedly addressed the nano-risk issues, laying down a regulatory framework and issuing nano regulations in many food-related sectors. In this paper the current law provisions are assessed towards the five classical benchmarks for a 'good regulation' (Baldwin, 2012), i.e., legislative mandate, accountability and control, due process, expertise, and efficiency. Then, among the causes of the weakness of the current regulatory framework, a power-based explanation is provided, relying on the three-dimensional views of power offered by Lukes (2005).

Assessing the EU nano food regulatory framework

The EU regulatory framework for food nanotechnologies is made of: 1) hard law, which includes binding legislative acts, i.e. pieces of secondary law such as regulations and directives; 2) soft law, which includes non-binding legislative acts, such as Commission communications and recommendations; 3) other documents, i.e. a plethora of official documents, such as scientific reports, guidance, agencies' reports, and others. Tables 1 and 2 report regulations and directives and the non-binding legislative acts. Tables relating to the other documents are not reported due to lack of space.

Table 1. EU secondary law; regulations and directives, binding legislative acts

Regulation (EC) No 1333/2008 of the European Parliament and of the Council of 16 December 2008 on food additives.
COMMISSION REGULATION (EC) No 450/2009 of 29 May 2009 on active and intelligent materials and articles intended to come into contact with food.
Regulation 10/2011 on plastic food contact materials.
COMMISSION REGULATION (EU) 2016/1416 amending and correcting Regulation (EU) No 10/2011
Regulation (EU) No 1169/2011 of the EP and of the Council of 25 October 2011 on the provision of food information to consumers.
REGULATION (EU) 2015/2283 of the EP and of the Council of 25 November 2015 on novel foods, amending Regulation (EU) No 1169/2011.
COMMISSION IMPLEMENTING REGULATION (EU) 2017/2470 of 20 December 2017 establishing the Union list of novel foods in accordance with Regulation (EU) 2015/2283 of the European Parliament and of the Council on novel food (2023 update).
COMMISSION REGULATION (EU) 2022/63 of 14 January 2022 amending Annexes II and III to Regulation (EC) No 1333/2008.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Table 2. Non-binding legislative acts; Commission communications and recommendations

CE, Brussels, 12.5.2004 COM(2004) 338 final. COMMUNICATION. Towards a European strategy for nanotechnology, pp. 25.
CE Brussels, 7.6.2005 COM(2005) 243 final COMMUNICATION FROM THE COMMISSION TO THE COUNCIL, THE EUROPEAN PARLIAMENT AND THE ECONOMIC AND SOCIAL COMMITTEE Nanosciences and nanotechnologies: An action plan for Europe 2005-2009, pp.12.
CE Brussels, 17.6.2008 COM(2008) 366 final COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL AND THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE Regulatory Aspects of Nanomaterials (SEC(2008) 2036), pp 21
COMMISSION RECOMMENDATION of 18 October 2011 on the definition of nanomaterial (Text with EEA relevance) 2011/696/EU, pp. 3
Brussels, 3.10.2012 COM(2012) 572 final COMMUNICATION FROM THE COMMISSION. Second Regulatory Review on Nanomaterials (Text with EEA relevance) {SWD(2012) 288 final}, pp. 15.
Brussels, 10.6.2022 C(2022) 3689 final COMMISSION RECOMMENDATION on the definition of nanomaterial (Text with EEA relevance), pp.6

Notwithstanding the huge time and effort spent in elaborating an appropriate regulatory framework, currently there are scant provisions concerning food nanotechnologies. Ultimately, what the EU rules require is that food containing NMs (excluding genetically modified foods, food enzymes, additives, flavourings, and extraction solvents) also when such nanomaterials have already been approved in their bulk forms, have to undergo an approval procedure by the European Food Safety Authority (EFSA). Moreover, in the list of ingredients, ingredients in the forms of NMs (always excluding additives, enzymes, and flavourings) have to be accompanied by the word nano in brackets. Additives in nanoforms are also requested to undergo an approval procedure by the EFSA. For food-contact packaging, the only constraint is for intelligent materials including NMs where the concept of functional barrier does not apply.

The current regulatory system proves to be narrow in scope. Many applications already on the market refer to products not covered by current regulations. Applications in the agricultural sector, such as nanofertilizers and nanopesticides, are still not regulated. NMs in food packaging are under scrutiny only for intelligent food contact materials and also in the case of the food industry some food components as flavours are neglected. Scant attention is given to food contact materials other than food packaging, such as food processing equipment and machinery. The regulatory scope is also narrow with respect to the addressed risks since it considers only health risks while neglecting environmental and social risks.

The regulatory level is also weak. Current regulations do not set standards but simply require for only a limited set of applications the approval of European Agencies such as EFSA and ECHA (European Chemicals Agency). Moreover, these Agencies assess substances and products on the basis of the available scientific literature and producers' information without carrying out independent scientific research. Consumers' right to choose is also poorly protected since many NMs are excluded from the mandatory label requirements. Furthermore, the scope and the level of regulation are limited because regulations refer to a narrow definition of NMs so as to likely exclude dangerous materials from the regulatory system.

The EU nano food regulatory framework can be assessed using the five criteria suggested by regulation literature (Baldwin *et al*., 2012) for defining a 'good regulation': the legislative mandate, accountability, due procedure, expertise, and efficiency.

The legislative mandate refers to the legitimation of regulatory intervention based on the legislative system and the role played by democratically elected institutions. In the case of nanofood regulation the legislative mandate is weak due to the institutional architecture of the EU, with the blurred boundaries

Franck Meijboom and Pamela Pace, Leiden, ©2024 | doi:10.1163/9789004715509-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

between national and supranational legislative powers, the limited mandate of the EU institutions in fiscal and social policy areas, and the executive legislative power disproportionately residing in the Commission, which is a non-elected government body. In the field of nanotechnology, the Commission's regulatory power stems from four articles of the TFEU (the Treaty on the Functioning of the European Union), which constitutes the primary law on which secondary law depends (Barnard and Peers, 2017): article 26, laying down the general competences for the establishment and the functioning of the internal market; article 114, setting the competences of the Council and the Commission for protecting the free movement of goods, persons, services, and capital within the internal market; article 169, on consumer protection; article 191, stating the Union general goals for preserving the environment and human health, also in accordance with the precautionary principle. Such articles stress that the European institutions have a strong mandate and large policy autonomy for pursuing the economic goal of preserving the single market while having a much weaker legislative mandate in the field of consumer, health, and environmental policies. Moreover, the role played by non-elected public bodies is overwhelmingly stressed. As a result, nano regulation scores low with respect to the legislative mandate benchmark, both because the economic rationale for intervention is far stronger than the social and environmental ones and because non-elected bodies are given main powers.

With respect to the due process, this can be assessed towards the adherence to the rule of law, to the transparency of regulatory processes and to the degree of stakeholders and citizens' participation. In the European regulatory system rules of the law are clearly set only for legislative acts following the ordinary legislative procedure (OLP), i.e., secondary legislation. Nevertheless, also in the case of OLP, transparency and participation are low because the main legislative body, the Commission, makes wide use of suggestions and opinions by committees and Agencies, whose work is difficult for the public to scrutinize. For non-binding legislative acts, that constitute an important part of the nano regulatory system, transparency and participation are even more difficult to be fulfilled, making it even harder to hit the benchmark of due process. Accountability also proves to be very poor, due to the overwhelming role played by Agencies and external bodies, not accountable to elected bodies, in the regulatory process.

With respect to the fourth assessment criteria (expertise), it is worth noticing that European regulators strongly rely on experts' judgment not only to guide but also to legitimate their actions, thus compensating for the weak political legitimacy that comes from the high weight of unelected bodies in the regulatory process. Nevertheless, when there is a high level of scientific uncertainty and lack of scientific evidence, as in the case of nanotechnology, the appeal to experts makes the judgment on the "goodness" of regulation even more challenging.

Efficiency is a controversial regulation assessment criterion. Efficiency of regulatory process refers both to the amount of used resources and time, and to the economic effects of regulatory choices. The slowness and the resource-consuming nano-regulatory process, witnessed by the plethora of documents produced over the past 20 years, are signals of a clumsy process, unable to keep up with innovations. Consequently, also the economic effects have been contradictory, with the regulatory uncertainty jeopardizing European investments, with a loss of competitiveness with respect to other countries, first and foremost China and the United States, where a low level of regulation has been chosen (with likely negative effects on human health and environment).

Delay of regulation and agenda power

In this section, I suggest that delays and weaknesses of EU food nanotechnology regulatory interventions are the results not only of technical complexity, as generally argued in related literature (Gupta, 2021), and of institutional flaws, as contended in the previous section, but also the outcome of a form of political power called 'agenda power'.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The concept of agenda power stems from the development of Dahl's (Dahl, 1957) pluralist view of power which looked at subjective interests as policy preferences revealed by political participation. Bachrach and Baratz (Bachrach and Baratz 1962) challenged such an optimistic view of democracies by introducing the two faces of power, with the second face called 'agenda power', which refers to the power decision-makers have not only to choosing among "choices on the table" (first face of power) but also to leave some possible "choices off the table", excluding them from the political agenda. Lukes expanded the analysis of Bachrach and Baratz by better explaining the concept of agenda power, which he called the two-dimensional view of power (Lukes, 2005). Such power is exercised by excluding issues or potential issues from the political debate and agenda; in this way, some overt conflicts tend to be forgotten (marginalized in the public debate) or become covert, which means that they are somehow excluded from the public debate. In other words, conflicts are "neutralized" and parties interested in raising a particular issue are not able to bring it into the political arena, notwithstanding experimenting grievance.

Nanotechnologies are part of the wider process of further technologization of food systems through digitalization. Nanotechnologies represent the bones of digital technologies since NMs are widely used for building the hardware of IoT (Internet of Things), in bioengineering techniques, and as constituents of novel foods. For 25 years now, private and public institutions (EU. 2019; OECD, 2019; FAO, 2019; BASF, 2023) have been proposing in their agendas digitalization as the only pattern for a sustainable system while dismissing alternative solutions (like, for example, agroecology or a revision of the view of development as economic growth) and progressively eliminating from the public debate risks-related issues. Both public and private actors use a narrative of food system development that links digital, bio, and nanotechnology to two of the most important current global worries: food insecurity and climate change.

Understanding why so many different actors have been exercising such agenda power for supporting the very same food innovation goals, would deserve much attention by food scholars and social scientists. Aware of not being able to deeply analyse such an issue, here I only recall some features of the recent economic and political context which were probably among the causes of the phenomenon. Such features are linked to the crisis of the neoliberal era, following the economic and military crises that exploded at the dawn of the new millennium, such as the 2007/2008 financial crisis, the Twin Towers attack, the threat of Islamic fundamentalism, the Middle East crisis, and the resurgence of old empires (Russia, Iran, Turkey, China). In the new scenario the endorsement of digital technologies, and with them of nanotechnologies, promises to give: 1) to businesses, new profit opportunities for overcoming a contraction phase of the economic cycle; 2) to new populist political parties, the possibility to offer de-politicized solutions (based on technical instead of political arguments) for socio-economic and environmental crisis; 3) to hegemonic powers, the access to a brand new array of weapons to display in the conflicts that are reshaping geopolitical equilibria; 4) to international organizations, the possibility of overcoming their institutional weakness (derived from the desire of states to regain control over many regulatory issues in the social and political sphere which in the neoliberal era had been entrusted to international bodies) by seeking scientific legitimation, instead of political legitimation, to their work. In other words, digitalization, and, with it, nanotechnologies, seems to be a game changer in market competition, the domestic political arena, and geopolitical scenarios, which explains why there has been a strong interests' alignment of states, businesses, and multilateral international organizations towards its support.

Conclusion

Nanotechnologies are part of a wider process of 're-industrialization' of the food system through digitalization which is being proposed as a panacea for assuring food security and mitigating climate change. The European Union early recognized the many risks posed by nanotechnologies and the

Franck Meijboom and Dominic Boyer, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

need for an effective regulatory framework, which, nevertheless, has not been provided yet. The study suggested that among the causes of the current weak regulatory framework, besides those related to technical obstacles, there are some characteristics of the EU institutional architecture and a strong political will. Political will has received scant attention because it worked through the exercise of agenda power, which, contrary to the traditional political power envisioned by Dahl, is not exercised as the outcome of a political clash involving opposing interests but is exercised instead covering the opposing interests and consequently neutralizing conflicts. Agenda power also covers conflicts associated with ethical dilemmas that are typical of situations in which the precautionary principle is invoked. Therefore, the understanding of agenda power is also important in the debate on the usefulness of such a principle for guiding regulatory choices. Agenda power is a form of power that may entail a sort of unawareness of actors who exercise it and may be the consequence of various contingencies in the institutional environment and/or the exercise of other forms of power (for example lobbying activities) by other actors. Understanding the causes of the agenda power exercised by European and international regulatory bodies for limiting nano regulatory policies is an important step for allowing policy actions to be more effective in protecting citizens' rights.

References

Alp-Erbay, E. (2022). nanomaterials utilized in food packaging: State-of-the-art. Food Engineering Reviews, 14, 629–654.

Asmatul, E., Andalib, M.N., Subeshan, B. and Abedin, F. (2022). Impact of nanomaterials on human health: a review. Environmental Chemistry Letters, 20, 2509–2529.

Bachrach, P. and Baratz, M.S. (1962). Two faces of power. The American Political Science Review, 56, 947–952.

Baldwin, R., Cave, M. and Lodge, M. (2012). Understanding Regulation: Theory, Strategy, and Practice. Oxford University Press, Oxford.

Barnard, C., Peers, S. (2017). European Union Law. Oxford University Press. Oxford.

BASF (2023). Trends, available online at Trends in Agriculture (basf.com) (accessed 8 May 2023).

Dahl, R.A. (1957). The concept of power. Behavioral Science, 3, 201–215.

Das, I., Gogoi, B., Sharma, B., and Borah, D. (2022). Role of metal-nanoparticles in farming practices: an insight. Biotech 12(11), 294.

EU (2019). A Europe fit for the digital age, available online at https://ec.europa.eu/info/strategy/priorities-2019-2024 (accessed 10 November 2023).

FAO (2019). Digital technologies in agriculture and rural areas. Briefing paper, available online at http://www.fao.org/3/ca4985en/ca4985en.pdf (accessed 10 November 2023).

Gupta, N. (2021). Nanotechnology in agrifood sector. In Van de Voorde, M. and Jeswani, G. (eds) Ethics in Nanotechnology. De Gruyter, Boston, MA, pp. 25–58.

Liu, Y., Zhu, S., Gu, Z., Chen, C. and Zhao, Y. (2022). Toxicity of manufactured nanomaterials. Particuology, 69, 31–48.

Lukes, S. (2005). Power: A radical view, second edn. Macmillan, London.

Mohammad, Z.H., Ahmad, F., Ibrahim, S.A. and Zaidi, S. (2022). Application of nanotechnology in different aspects of the food industry. Discover Food, 2, 12.

Nelofer, J., Neelofar, M., Muneeb, A., Waseem, A.L. and Riffat, J. (2022). Nano-pollution: Why it should worry us. Chemosphere, 302, 134746.

OECD (2019). Digital opportunities for better agricultural policies, available online at https://www.oecd-ilibrary.org/sites/571a0812-en/index.html?itemId=/content/publication/571a0812-en (accessed 8 May 2023).

Onyeaka, H., Passaretti, P., Miri, T. and Al-Sharify, Z.T. (2022). The safety of nanomaterials in food production and packaging. Current Research in Food Science, 5, 763–774.

Sodano, V. (2018). Food nanotechnologies and policy challenges. Environmental Chemistry Letters, 16(1), 5–10.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Extending biomedical principlism and the ethical matrix: market farming, water scarcity and climate change

I. Wallimann-Helmer[1,2]
[1]*University of Fribourg Environmental Sciences and Humanities Institute, University of Fribourg, 1700 Fribourg, Switzerland;* [2]*Department of Geosciences, University of Fribourg, Chemin du Musée 4, 1700 Fribourg, Switzerland*

Abstract

This paper discusses aspects of market farming in the Bünz Valley in Switzerland, where market farmers rely heavily on water from the Bünz River to irrigate their vegetable fields during the summer months undermining minimal water sources for fish survival. It proposes to analyze such conflict situations using a principlist ethical methodology. Principlism, well known from biomedical ethics, is an ethical approach that relies on key ethical principles relevant to a particular area of practice without claiming to be a full-fledged ethical theory. Through a critique of the classical principlist approach, the paper shows why a principlist approach, with some improvements, can do two things in cases like the present one. On the one hand, it makes it possible to identify the various claims and entitlements in a given case. On the other hand, an extended principlism can help identify duty bearers, which are much less obvious in environmental contexts than in medical practice. The paper illustrates these claims with a likely resolution of the Bünz case as a result of the application of the principlist methodology.

Keywords: biomedical principles, climate adaptation, climate justice, conservation, market farming

Introduction

It is well-known that market farming requires intensive irrigation, especially during the hot summer months when the risk of water shortage is high. This paper discusses aspects of market farming in the Bünz Valley in Switzerland, where market farmers rely heavily on water from the Bünz River to irrigate their vegetable fields during the summer months (Fischer, 2023). They depend on the water from the Bünz River not only because the vegetables require regular irrigation, but also because their retailer requires specific amounts of irrigation to achieve the contracted vegetable quality. This situation can lead to difficult conflicts in times of low water levels, threatening the survival of local fish populations. In particularly hot seasons, there have even been water abstraction bans to avoid water temperatures too high for fish survival.

This paper proposes to analyze such conflict situations by using a principlist ethical methodology. Principlism, well known from biomedical ethics, is an ethical approach that relies on key ethical principles relevant to a particular area of practice without claiming to be a full-fledged ethical theory (Beauchamp and Childress, 2019). I first apply this methodology to the Bünz case, using the classical biomedical principles of respect for autonomy, non-maleficence, beneficence, and distributive justice. I then show why these principles are all lacking, either because they do not specify the relevant responsibility bearers or because they are not fully appropriate for environmental governance. As a consequence, I argue that in environmental contexts these principles need to be complemented by ethical principles and considerations well known from climate ethics and the environmental justice literature: polluter-pays, ability-to-pay, and procedural involvement (a variant of procedural justice).

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (eds.), ***Back to the future***
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_16, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Market farming and biomedical principles

Beauchamp and Childress developed a framework for ethical decision-making that is now standard in medical practice (Beauchamp, 2007). They argued that in medical practice we need to resolve ethical issues now and cannot wait to respond to ethical challenges until philosophers have decided what normative ethical theory should prevail over all other ethical theories known since ancient Greece. They propose a pluralistic framework that takes four principles as the core of all ethical decision-making. This principlist methodology assumes that the principles of respect for autonomy, non-maleficence, beneficence, and distributive justice are at the core of common morality and therefore relevant to resolving all ethical issues in medical practice. Later, Mepham developed the ethical matrix, based on the same principles, as a methodology for analyzing ethical issues, particularly in the context of biotechnology (Mepham *et al*., 2006). Both methodologies assume that we first specify the four principles and then weight them according to their importance in a given case.

While the original principlist methodology considered only one main stakeholder – the medical patient – the ethical matrix typically considers the following stakeholders (Biasetti and de Mori, 2021): people in the food industry, citizens, livestock, and the living environment. In the case of market farming in the Bünz Valley, the relevant stakeholders are at least the following (Fischer, 2023): the farmers who grow vegetables, the retailers who demand a specific quality of vegetables, the fish that may die due to low and warm water of the Bünz River during summer heath, and the consumers of the vegetables produced. The various ecosystems of the Bünz Valley are also relevant entities to be considered. With respect to all these different stakeholders, the ethical matrix principlist methodology suggests specifying what the different principles mean and then deciding what their importance is in the given case. The most important or highest-ranking principle or principles then decide the case.

In environmental contexts, specifying ethical principles with respect to different stakeholders is crucial because there is always a risk of not adequately considering the interests of non-human entities. The water conflict in the Bünz Valley not only affects farmers, retailers, and consumers, but also has negative consequences for fish populations and the water-dependent ecosystems of the Bünz River. In hot and dry summers, the demand for water for market agriculture rises sharply, but low water levels threaten the survival of fish populations and the functioning of water-dependent ecosystems. These considerations illustrate the fundamental conflict that affects the well-being of these stakeholders. In the ethical matrix, these aspects are considered under one principle, the principle of well-being (Biasetti and de Mori, 2021). In their original version, Beauchamp and Childress distinguish between non-maleficence and beneficence as two different principles capturing two different aspects that influence the well-being of living beings (Beauchamp and Childress, 2019): the harm done to them and the benefits they receive. I will show in the next section why I think this distinction is crucial for environmental contexts.

As another aspect, principlist methodologies suggest considering questions of justice. Most often these concern the fair distribution of scarce resources. In the case of the Bünz Valley, justice concerns primarily the distribution of water in light of the consequences of water scarcity for the various stakeholders. It seems clear that a critical minimum amount of water must be granted to all stakeholders in the Bünz valley whose living conditions depend on these water sources. Fish populations need enough cool water to survive. Water-dependent ecosystems must have sufficient water sources to continue functioning or at least to recover after extreme water shortages. Market farmers need a minimum amount of water to grow their vegetables. I do not expect the water shortage in the Bünz Valley to directly affect retailers or consumers, because they can get vegetables from other places. However, depending on how important a certain quality of vegetables is to them, they will stop collaborating with the farmers in the Bünz valley if the water shortage cannot be dealt with sensibly. This would have far-reaching consequences for the farmers and lead to further justice challenges.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

If fairness cannot be achieved, or if some stakeholders must be harmed or disadvantaged for the benefit of others, it becomes crucial to consult them on their assessment of the harm, disadvantage, or risk (Wallimann-Helmer, 2021). The principle of respect for autonomy seeks to address these aspects. It requires that those concerned can individually express their interests about the actions to be taken and their consequences for themselves and others. Respect for autonomy requires appropriate conditions for decision-making by ensuring that free choice is possible for all in light of all relevant information. In the case of the Bünz Valley, free and informed choices are particularly important for the people involved in food production and processing, but also for consumers. Respecting the autonomy of non-human animals and ecosystems is more challenging because these beings and entities obviously cannot express their interests themselves. The ethical matrix suggests respecting the autonomy of animals by respecting their freedom of action and ensuring that the biodiversity of ecosystems is not diminished (Mepham et al., 2006). The next section argues that the autonomy of all these stakeholders is best captured in terms of collective decision-making and procedural justice rather than in terms of respecting individual autonomy.

In a next step, a principlist ethical analysis requires weighting the different principles and then deciding according to the highest ranked principle or principles. Before indicating how the four principles could be weighted in the last section of this paper, I would like to point out some difficulties with the classical principles of biomedical ethics in environmental contexts. These shortcomings show why we need to analyze ethical challenges in environmental practice from at least two perspectives: the perspective of the patient as an entity that is faced with negative impacts, and the perspective of the various agents as potential responsibility bearers.

Shortcomings, responsibility bearers, and collectives

In my opinion, the most obvious challenge for the classical principlist methodology or the ethical matrix is the difference in conditions in the medical context as opposed to environmental practice. In a hospital setting, it is clear who is the target of the four principles. It is the physicians who must minimize harm to their patients (nonmaleficence), improve their health (beneficence), do justice to them, and respect their autonomy. In the Bünz Valley, however, this is not so obvious. A market farmer who withdraws more water from the Bünz River in a hot summer than appropriate may not cause the death of a fish population on his own. But if all the farmers in the valley do it together, it might. However, it is not clear whether they are the ones who are harming the fish, or whether it is the retailers with their quality demands, or even the consumers who only buy vegetables with a certain outlook. Similarly, we might ask who is responsible for guaranteeing a minimum level of well-being for all stakeholders in the Bünz Valley. Since farmers depend on retailers and retailers depend on customers, each could be obligated to ensure the welfare of those who depend on them. Furthermore, it could also be argued that the municipalities of the Bünz Valley have a duty to ensure minimum conditions of well-being for all, but especially for the non-human entities, concerned.

These observations suggest two conclusions. First, in order for the principlist methodology to work in a case like the Bünz Valley, it is necessary to provide criteria for identifying the relevant responsibility bearers. In what follows, I propose the use of additional principles to complement the classical principles of biomedical principlism (Wallimann-Helmer, 2019a). This first derivation can be justified conceptually. Every right or moral claim corresponds to a duty bearer, and every duty or responsibility corresponds to a rights holder (Wenar, 2023). Consequently, all rights holders in the Bünz Valley demand someone with a duty to ensure that their rights are fulfilled. And when duty bearers are identified, it is also necessary to define to whom they owe their duty. Second, if concerns about harm and the principle of non-maleficence in the case of environmental practice do not identify the same bearers of responsibility as concerns about well-being and the principle of beneficence, this might justify keeping the two principles separate rather than integrating them into only one principle of "well-being" as the ethical

Franck Meijboom and Patrick Baur, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

matrix suggests. For example, in the Bünz Valley, even though the market farmers may be the ones directly harming fish populations and water-dependent ecosystems, they alone are not in a position to ensure a minimum level of well-being for these stakeholders and hence should not be responsible on their own.

Let me turn first to the challenge of identifying responsibility bearers. There are two well-established principles in environmental governance and tax policy, as well as in climate ethics, that might help (Wallimann-Helmer, 2019a): the polluter-pays principle and the ability-to-pay principle. In climate ethics and governance, the polluter-pays principle is used to identify current and historically high emitters as those who should carry the burdens of climate action. In environmental practice more generally, internalizing the negative effects of pollution is precisely what is needed to identify the relevant actors to restore or prevent damage to environmental stakeholders such as fish populations or water-sensitive ecosystems. Thus, in the Bünz Valley, if certain market farmers can be identified as directly harming fish populations or ecosystems, this principle can help identify who must change their irrigation practices or should be fined due to too high water consumption. If it is the community of market farmers as a whole that tends to use too much water, even in hot summers, common changes of irrigation practices could help internalize negative environmental impacts.

Market farmers in the Bünz Valley who use water to irrigate vegetables have a direct causal impact on the availability of water in the Bünz River, but although they benefit from selling high-quality vegetables even in hot summers, they are not the only beneficiaries. Retailers and consumers also benefit from irrigation practices that use a lot of water, possibly more than is justifiable for healthy fish populations and water-dependent ecosystems. The beneficiary-pays principle known from climate ethics could be applied here to clarify the responsibilities of the further beneficiaries involved (Page, 2012). According to this principle, it is not necessarily those who directly cause the damage who are responsible for repairing it, but those who benefit from the damage caused by others. The mention of beneficiaries as potential responsibility bearers shows why it is not only market farmers who are responsible for ensuring minimum well-being of fish populations and water-dependent ecosystems.

Improving the efficiency of irrigation in the Bünz Valley or regulating the quality of vegetables to reduce the amount of water used may be as difficult for market farmers alone as it is for consumers or retailers to regulate the quality of vegetables in a binding way to motivate water-saving irrigation. Under these circumstances, it may be important to consider which stakeholder is best placed to improve the situation in the Bünz Valley. This would be a requirement of the ability-to-pay principle, which must not rely on the polluters or the beneficiaries to identify responsibility bearers, but on those with the most capacity for responsibility (Wallimann-Helmer, 2019b). Since the capacity of regulation is most likely with local or regional authorities, the municipalities of the Bünz Valley or the canton of Aargau. Not only are political institutions better suited to regulate irrigation practices and fine offenders, but the cantonal government in particular also has the capacity to define appropriate water levels to be safeguarded, as its administration has a Department of the Environment with qualified specialists.

Thus, in the Bünz case the ability-to-pay principle shifts responsibility away from direct beneficiaries of vegetable production and requires regulation by public authorities. The latter may consider arguments from the polluter-pays and beneficiary-pays principles but must define the conditions under which these apply to market farmers, retailers, and consumers. To define conditions under which polluter-pays and beneficiary-pays considerations might apply, it is crucial to define a fair distribution of water from the Bünz River. This implies considerations of distributive justice. Like the two principles discussed so far, the principle of justice implies two perspectives. One that defines the duties of justice of the responsibility bearers and one that defines the entitlements of justice. Since, in the classical principlist methodology, justice is most often concerned with the distribution of scarce resources, the bearers of distributive responsibility will be those who have resources or the authority to regulate their distribution.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

In environmental contexts, this often means that governments are the relevant responsibility bearers for ensuring justice.

Whereas in medical contexts it is patients who are entitled to justice, in environmental practice the claimants would be those most directly affected by environmental problems. Those most directly affected by scarce water resources in the Bünz Valley are market farmers, fish populations, and water-dependent ecosystems. A fair distribution of water would most likely start by defining a critical minimum level to ensure the survival of fish populations and the resilience of water-dependent ecosystems. Surplus water could then be distributed to market farmers in the Bünz Valley. Such a distribution would most likely assume an equal distribution of available water relative to cultivated area. A key point of disagreement could be the amount of water to be left in the Bünz River for fish survival. Major challenges could arise if minimum water levels in the Bünz River do not allow for adequate irrigation of vegetables. In such cases, other rules of justice would have to be established. They might be similar to medical rules in the case of rationing or triage.

I find it most difficult to specify the principle of respect for autonomy in environmental contexts. This is because in environmental contexts we are most often dealing not with individuals, but with communities (Wallimann-Helmer, 2021). Whereas in the medical case it's an individual patient whose interests need to be respected, in environmental contexts it's usually many different stakeholders. Although individual market farmers face the challenge of water scarcity in hot summers, it is the community of farmers in the Bünz Valley that has to deal with the challenge of water scarcity. Low and too-hot water in the Bünz River affects fish populations as a whole, not individual fish, although some individuals may be more affected than others. Finally, ecosystems are difficult to describe as individuals, but are inherently communities. This makes it more plausible to me to ensure that the diverse interests of different stakeholders are respected through procedural considerations of collective decision-making and procedural justice. Involving all stakeholders affected by an environmental challenge ensures that no one is left behind, including non-human individuals and collectives.

In addition to the advantage of involving all stakeholders, collective decision-making and procedural justice require the same conditions as respect for autonomy. Stakeholders must be properly informed and understand the options available to them (Wallimann-Helmer, 2021). No stakeholder should be prevented from expressing his or her beliefs and opinions on an equal basis with others. Once a decision has been made, the authorities responsible for its implementation should respect the decision taken. In the Bünz Valley, such a decision-making process means informing market farmers and perhaps retailers about changing climate conditions and what this means for their irrigation practices, fish populations, and water-dependent ecosystems. It also means ensuring that the interests of fish and water-dependent ecosystems are given their due weight in the decision-making process, either through proxy representation or other means. To be sure, specifying the outcome of such a process cannot be done in the abstract, but requires that the process be implemented in practice.

As a conclusion: Weighted principles for the Bünz case

Specifying principles is only the first methodological step in a principlist analysis. The second step is to rank the four principles. They must be weighed against each other to determine which of the principles is most important in a given case. Once such a ranking is established, potential ethical conflicts can be better understood and most likely resolved. In principlism, the methodology for deciding how to rank principles is usually less well developed than the methodology for understanding and thus specifying the principles themselves. Two of the most obvious methods of ranking principles are narrative ethics and environmental pragmatism (Voisard and Wallimann-Helmer, 2023). Both approaches rely on characteristics of the given context to define which ethical considerations are most relevant. Narrative

Franck Meijboom and Patrick Baas, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

ethics holds that telling the story of an ethical challenge helps to understand why certain reasons are best suited to explain how a conflict should be analyzed and resolved. In contrast, some versions of environmental pragmatism rely on social science to assess which ethical considerations are most important to stakeholders. Without going into too much detail about either methodology here, I will conclude by suggesting a ranking of the four classical principles in the Bünz case. As we will see, the additional principles and the reframing of the principles that I suggested in the last section help to better understand the context and to define the ethical considerations that are most relevant.

Although water use by market farmers is the most immediate threat to fish populations and water-dependent ecosystems in hot and dry summers, the last section showed that it is rather the local municipalities and the canton of Aargau that are responsible for ensuring the well-being of fish and ecosystems. This regional government has the capacity to define what water levels and temperatures are acceptable to them. This shift away from stakeholders causing harm to non-human nature as responsibility bearers is, in my view, also present when retailers and consumers are considered as beneficiaries of vegetable production. In the case of Bünz, none of these stakeholders alone has the capacity to define the residual amount of water that will ensure the survival of fish populations and water-dependent ecosystems. Furthermore, the legitimacy and power to regulate water use in a way that is just for all relevant stakeholders in the Bünz Valley clearly lies with local and regional authorities.

Since the fair distribution of available water is the basis for any further consideration of how to solve water conflicts in hot and dry summers, I think this is the principle to be weighted the most. Whether a system of water distribution based on considerations of justice alone will be accepted by the local population because the authorities, with their scientific capacity and regulatory power, determine the distributions, or whether it will only be accepted as legitimate if the local population is involved and allowed to decide how the water is to be distributed, depends on further research into the possible scope for regulating water use. The more leeway there is, the less importance scientific capacity may have. In any case, even in collective decision-making, scientific knowledge will be a crucial basis for informing the local population about the options open to them. As a consequence, I consider the ability-to-pay principle and considerations of collective decision-making and procedural justice to be of secondary importance, while the negative impacts of polluters and beneficiaries are the least important ethical considerations, although these impacts must be internalized to solve the water problem at hand.

References

Beauchamp, T.L. (2007). The 'four principles' approach to health care ethics. In Ashcroft, R.E. (ed.), Principles of health care ethics. Wiley, Chichester, pp. 3–10. DOI: 10.1002/9780470510544.ch1

Beauchamp, T.L. and Childress, J.F. (2019). Principles of biomedical ethics, eighth edn. Oxford University Press, Oxford.

Biasetti, P. and de Mori, B. (2021). The ethical matrix as a tool for decision-making process in conservation. Frontiers in Environment Science, 9, 110. DOI: 10.3389/fenvs.2021.584636

Fischer, R. (2023). Hitze und kein Wasser: Sitzt die Landwirtschaft von morgen auf dem Trockenen? Die Umwelt, 2, available online at https://www.bafu.admin.ch/bafu/de/home/themen/klima/dossiers/magazin-2023-2-dossier/hitze-und-kein-wasser-sitzt-die-landwirtschaft-von-morgen-auf-dem-trockenen.html

Mepham, B., Kaiser, M., Thorstensen, E., Tomkins, S. and Millar, K. (2006). Ethical matrix manual. Wageningen Economic Research, Wageningen.

Page, E.A. (2012). Give it up for climate change: a defence of the beneficiary pays principle. International Theory, 4, 300–330. DOI: 10.1017/S175297191200005X

Voisard, A. and Wallimann-Helmer, I. (2023). Towards a practical climate ethics: combining two approaches to guide ethical decision-making in concrete climate governance contexts. Ethics Policy and Environment, online first. DOI: 10.1080/21550085.2023.2236504

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Wallimann-Helmer, I. (2019a). Justice in managing global climate change, in: Letcher, T. (Ed.), Managing global warming : An interface of technology and human issues. Academic Press, London, pp. 751–768. DOI: 10.1016/B978-0-12-814104-5.00026-0

Wallimann-Helmer, I. (2019b). Common but differentiated responsibilities: agency in climate justice. In Harris, P. (ed.) A research agenda for climate justice. Edward Elgar, Cheltenham, pp. 27–37.

Wallimann-Helmer, I. (2021). Feasibility and justice in decarbonizing transitions. In Katz, C. and Kenehan, S. (Eds.), Principles of justice and real-world climate politics. Rowman&Littlefield, Lanham, MD, pp. 191–210.

Wenar, L. (2023). Rights. In Zalta, E.N. and Nodelman, U. (eds) The Stanford encyclopedia of philosophy. Stanford University Press, Stanford, CA.

Franck Meijboom and Patricia Rowe, Book, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Seaweed innovation — The role of missions-oriented policy

A. Myklebust[1] and B.K. Myskja[2,]*
[1]Department of Geography, Norwegian University of Science and Technology (NTNU), Trondheim, Norway; [2]Department of Philosophy and Religious Studies, Norwegian University of Science and Technology (NTNU), Trondheim, Norway
** Corresponding author, e-mail: bjorn.myskja@ntnu.no*

Abstract

Seaweed cultivation is an established industry in Asia. In Europe, the interest in seaweed cultivation is increasing, but the industry is still in its infancy, driven by a vision of an era of sustainable economic growth and job creation. Norway, with its long coastline, well-established fisheries and aquaculture industries and a profitable alginate production based on harvested seaweed, as well as ambitions for transitioning from a petroleumsbased economy, seems perfect for seaweed cultivation.

A publicly funded research and innovation project, has studied the conditions for a profitable, sustainable seaweed cultivation industry in Norway, as perceived by researchers, industry representatives, other stakeholder, supplemented by discussions in public meetings. One major obstacle identified in the study was the creation of markets for relevant products. Another was that commercial actors are either small-scale start-ups or producers dependent on innovation-oriented public funding. This presentation will discuss potential normative issues regarding public market creation efforts for a sustainable seaweed industry, in light of Mariana Mazzucato's theory of mission-oriented innovation policy.

Keywords: aquaculture, markets, Mazzucato, public value, sustainability

Introduction

Seaweed cultivation is a minor, but promising component in the struggle to achieve a green transition, which is perceived as necessary to handle the threats of a changing climate caused by human resource consumption. However, to bring the potential of seaweed cultivation to fruition, a significant innovation effort is required. We will indicate some normative concerns regarding market creating policies, as worked out in the mission-oriented approach to innovation policy. Drawing on recent work in innovation studies and STS, we suggest a Norwegian seaweed industry might imply economizing raw materials in ways that can come into conflict with the overarching aim of sustainability.

Seaweed cultivation is an established industry in Asia, but is also rapidly expanding in other parts of the world. In 2020 the global production was 35 million tons of biomass, most of it cultivated seaweed (FAO, 2022: p. 26), mainly for human consumption. There is, however, a growing market for other applications. One is animal feed, which will provide a source of essential proteins and minerals, but might also contribute to reduced methane release from cattle (Min *et al*., 2021). There are furthermore industrial applications in the pipeline, in particular bioplastics to supplement and eventually replace non-degradeable petrobased plastics (Lim *et al*., 2021). Finally, there are discussions concerning the potential of seaweed in biofuel production and its possible value for climate change mitigation through carbon capture (Johnston *et al*., 2023)

In Europe, the industry is still in its infancy, although the interest in seaweed cultivation is increasing, driven by a vision of a sustainable area of economic growth and job creation. Norway seems perfect for seaweed cultivation, as it is transitioning from a petroleumsbased economy, has a long coastline

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

and well-established fisheries and aquaculture industries, with relevant competence in other forms of aquaculture, and a profitable alginate production based on harvested seaweed. Norway is currently the largest producer of farmed seaweed in Europe (FAO, 2022), but the way from producing biomass to building a sustainable industry is highly challenging.

Creating markets

Based in a publicly funded research project, Koksvik and Myskja (2022) have studied the conditions for a profitable, sustainable seaweed cultivation industry in Norway, as perceived by researchers, industry representatives, and other stakeholder, supplemented by discussions in open public meetings. Generally speaking, the optimism is high, although some respondents were critical to the commercial potential. As has been reported in an earlier paper, especially the senior researchers were cautious about promises and sceptical towards what they considered unwarranted optimism about the commercial possibilities (Koksvik and Myskja, 2022). Similar critique of the hype in Norwegian public discourse on the industrial potential, is found in other studies (Albrecht, 2023). Still, most respondents from research and industry expressed a high degree of optimism about the prospects of being able to make valuable products. Their main worry concerned how to go about creating markets for relevant products. In terms of innovation, the problem can be seen as one pertaining to a lack of markets and demand, rather than of research, development or invention.

The commercial actors identified in Norwegian seaweed farming are either small-scale start-ups, subsidiaries of other aquaculture or food production businesses or research-based institutions. For those that are more than small-scale enterprises, the sources of income are either subsidies from other business activities or innovation-oriented public funding. In one part of the empirical study, all the respondent from start-up industries stated that they would not have been able to get off the ground without support from Innovation Norway (Kandal, 2022). This is "the Norwegian Government's most important instrument for innovation and development of Norwegian enterprises and industry" (Innovasjon Norge, 2023).

In all the material, be it interviews with researchers or industry representatives, document analyses of media or open meetings, the statements were the same: Public funding of innovation is needed in order to develop products and create markets required for a successful Norwegian seaweed industry (Koksvik and Myskja, 2022). The lack of markets for the emerging products is agreed to be the main obstacle. These products are still costly to produce and the consumers are partly or entirely unaquainted with them. This means that the public sector may either create a market for them as exclusive luxury products that can defend a high price, or that the production must be drastically increased in order to achieve competitive prices. But even if the products are useful, the markets that demand such products might no appear without substantial public sector contributions.

One concern raised in the interviews, was the missing coordination between clarifying the range of potential products, development of the technology needed for producing these products and the building up of a market for these products. However, such coordination is also a matter of regulation and overarching policies, which means that one should broaden the perspective. The mission-oriented innovation policy approach, currently dominating European and Norwegian research funding, assumes that innovation is a matter of political choices, based in a clear vision for societal development.

Mission-oriented innovation

The background for recent efforts to conceptualize and implement mission-oriented innovation policies is made up of the several global challenges that humanity faces, such as climate change. Leading proponent

Franck Meijboom and Patrick Baur, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

of mission-oriented innovation, Mariana Mazzucato holds the view that research and innovation can be directed "towards meeting global challenges by transforming them into concrete, measurable, and, most importantly, achievable missions." (Mazzucato, 2018a: p. 2) This view can be interpreted as consistent with a broader conceptual and philosophical argument Mazzucato has made for the need for a new discourse on value, which acknowledges not only what has traditionally been regarded as economic value, but also public values, which should give normative consensus concerning entitlements and obligations of citizens, as well as principles of governments and policies (Mazzucato, 2018b: p. 265). Overall, Mazzucato's work on matters of innovation policy has a critical edge towards the subjective conception of value adhered to by neoclassical economists, and which implies that value is seen as expressed through the price that customers are willing to pay for a commodity or service on the market (Mazzucato, 2018b: p. 7). Her argument suggests that public sector spending can be value creating (not just an expense), and that governments should be empowered to do what is desirable for the common good (Mazzucato 2018b: pp. 265–266).

Mazzucato's work on mission-oriented innovation policies arguably belongs to the so-called normative turn in innovation discourse and innovation policy (Kattel *et al*. 2022: p. 162; Uyarra *et al*., 2019). Previous innovation policies are regarded as not having taken the directionality of innovation into consideration, and thereby not been attentive to the potentially negative social and environmental impacts of innovation (Schot and Steinmueller, 2018; Weber and Rohracher, 2012). Policies that aim to rectify directional failures are seen as necessary to meet social and environmental grand challenges, with mission-oriented policies so far having been the arguably most impactful approach to meeting the aim of devising innovation policies that steer the direction of innovation in socially desirable and environmentally sustainable avenues. The qualitative study cited above, indicates that the Norwegian innovation support system for seaweed farming is compatible with mission-oriented policy, with an emphasis on sustainability.

Wanting to move beyond views that governments should only intervene in economic life on the basis of market and system failures, Mazzucato and other scholars belonging to the intersecting fields of innovation studies, economic geography, and science and technology studies, have emphasised the importance of influencing the demand side of economic activity (Mazzucato, 2019; Uyarra *et al*., 2019; Weber and Rohracher, 2012). In the context of mission-oriented innovation, Mazzucato has argued that public procurements which create and tilt markets can be one means for steering the direction of innovation, (Mazzucato, 2019: pp. 16–17). Furthermore, she argues that such public procurement initiatives should define the end outcome, rather than the specific solution, while also allowing for experimentation.

The Norwegian state has a long history of actively contributing to the establishment of national industries, and its efforts with regards to the development of hydropower and a petroleum industry at different points in time, have been described as entrepreneurial and direction-setting (Kattel *et al*., 2021: p. 9). As such, the Norwegian state has arguably shown a will and an ability of acting more or less in accordance with what Mazzucato has theorized as "the entrepreneurial state" (Mazzucato, 2018c). With regards to mission-oriented innovation specifically, Norway partakes in the current EU framework programme for research and innovation (Horizon Europe). Norway has also implemented two "missions" in its current "long term plan for research and higher education" (Meld. St. 5, 2022–2023), one of which is sustainable fodder (*bærekraftig fôr*). The plan also discusses the possibility of farming seaweed, to produce food and fodder (Meld. St. 5, 2022–2023: pp. 28–29). This suggests that the Norwegian state might be willing and able to take on an entrepreneurial role with regards to facilitating markets for seaweed.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Innovation and normative constraints

Mission-oriented policies are associated with a neo-Schumpeterian understanding of innovation, which by its proponents has often been presented as rejecting the assumptions of neoclassical economics, such as perfect rationality and perfect markets (Freeman, 1995; Mazzucato, 2018c; Nelson and Winter, 1982). According to Schumpeter (1939), economic systems are characterised by cyclical movements, which include periodic downturns (Schumpeter, 1939). The entrepreneur creates new economic activity and development, not by responding to preexisting subjective need or want held by economic actors; but instead by creating new wants and needs, through the act of carrying out an innovation (Schumpeter, 2006 (1911): pp. 133–134). However, even though mission-oriented innovation policies arguably presuppose the creative aspect in Schumpeterian entrepreneurship, they are also supposed to respond to public values. This implies that it if the Norwegian public sector should engage in creating markets and demand for specific raw materials (that have not traditionally had a market in this part of the world) it has to be able to justify that this effort is in line with public values. This might be challenging, as a Norwegian seaweed industry might imply acts of creative destruction, with undesirable local environmental impacts, implications for other food industries, etc.

The creation of markets for seaweed products can be more specifically considered in light of previous Norwegian processes of bringing the ocean into the economy (Asdal and Huse, 2023). Discussing the ways in which cod has been economized, STS-scholars Kristin Asdal and Tone Huse describe the "innovation paradigm". This paradigm involves practices of economizing, that do not focus on clashes of interests which creates winners and losers, but rather internalizes something that has previously been outside of the economy, in other words bringing it "*into* innovation as elements to work on, as problems to solve, hinderances to overcome, and 'obstacles' that must be surpassed" (Asdal and Huse, 2023: pp. 160). A Norwegian attempt to establish seaweed markets would probably imply economization in line with the innovation paradigm, which brings with it its own environmental, social and ethical questions.

There is general agreement among the key stakeholders that the development of a successful Norwegian seaweed industry requires an active government-financed support structure. One central task is the establishment of a market, which we have argued is in keeping with Mazzucato's understanding of innovation as an outcome of policies directed towards a socially desirable sustainable development. In accordance with this approach, market creation is considered part of a normatively directed policy effort. Still this approach should be subject to normative reflection, based on an attentiveness to:

- The conceptual underpinnings of the mission-oriented innovation policy approach
  - That innovation does not respond to needs and wants, but is a market creating operation, which also creates wants and needs.
  - That the state can and should create markets.
- Empirical lessons of how economization has been done within the Norwegian political-economic system.
  - That the innovation paradigm implies bringing elements, as problems to be worked on, into the economy.
  - That the innovation paradigm lacks attentiveness to clashes of winners and losers.

Based on a qualitative study of the current attempts to establish a Norwegian seaweed industry, we have argued that it is likely that the creation of a seaweed market in Norway would be conducted in line with the currently influential mission-oriented innovation policy framework, which presupposes a direction setting entrepreneurial state. In addition, we have indicated some conceptual and empirical insights which should foster normative discussions concerning market creation with respect to natural resources, such as seaweed.

Franck Meijboom and Dennis Pamlin | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

References

Albrecht, M. (2023). A Norwegian seaweed utopia? Governmental narratives of coastal communities, upscaling, and the industrial conquering of ocean spaces. Maritime Studies, 22, 37. DOI: 10.1007/s40152-023-00324-2

Asdal, K. and Huse, T. (2023). Nature-Made Economy. Cod, Capital, and the Great Economization of the Ocean. The MIT Press, Cambridge, MA.

FAO. (2022). The state of world fisheries and aquaculture 2022. Towards blue transformation. FAO, Rome. DOI: 10.4060/cc0461en

Freeman, C. (1995). The 'National System of Innovation' in historical perspective. Cambridge Journal of Economics, 19, 5–24. DOI: 10.1093/oxfordjournals.cje.a035309

Innovasjon Norge. (2023) About Innovation Norway, available online at https://en.innovasjonnorge.no/ (accessed 10 March 2024).

Johnston, K.G., Abomohra, A., French, C.E. and Zaky, A.S. (2023). Recent advances in seaweed biorefineries and assessment of their potential for carbon capture and storage. *Sustainability*, 15(17), 13193. DOI: 10.3390/su151713193

Kandal, A.H. (2022) Mot en bærekraftig tarenæring Perspektiver om bærekraftighet i en ny og voksende sjønæring. Master thesis. Norwegian University of Science and Technology, Trondheim.

Kattel, R., Mazzucato, M., Algers, J. and Mikheeva, O. (2021). The Green Giant: New Industrial Strategy for Norway. UCL Institute for Innovation and Public Purpose, IIPP policy report (PR 21/01). UCL, London, available online at https://www.ucl.ac.uk/bartlett/public-purpose/pr21-01 (accessed 10 March 2024).

Kattel, R., Drechsler, W. and Karo, E. (2022). How to Make an Entrepreneurial State. Why Innovation Needs Bureaucracy. Yale University Press, New Haven, Connecticut.

Koksvik, G. and Myskja, B.K. (2022) Sustainable seaweed food and feed – hope or hype? Bruce, D. and Bruce, A. (eds.) Transforming food systems: ethics, innovation and responsibility. Wageningen Academic Publishers, Wageningen.

Lim, C., Yusoff, S., Ng, C.G., Lim, P.E. and Ching, Y.C. (2021). Bioplastic made from seaweed polysaccharides with green production methods. Journal of Environmental Chemical Engineering, 9(5), 105895. DOI: 10.1016/j.jece.2021.105895

Mazzucato, M. (2018a). Mission-oriented research and innovation in the European Union. European Commission, Brussels, available online at https://data.europa.eu/doi/10.2777/360325

Mazzucato, M. (2018b). The value of everything. Making and taking in the global economy. Allen Lane, London.

Mazzucato, M. (2018c). The entrepreneurial state : debunking public vs. private sector myths, revised edn. Penguin Books, London.

Mazzucato, M. (2019). Governing Missions in the European Union. Brussels: European Commission Directorate-General for Research and Innovation; European Commission. Available online at https://research-and-innovation.ec.europa.eu/knowledge-publications-tools-and-data/publications/all-publications/governing-missions-european-union_en (accessed 10 March 2024).

Meld. St. 5 (2022–2023). Langtidsplanen for forskning og høyere utdanning 2023–2032. Kunnskapsdepartementet. Available online at https://www.regjeringen.no/contentassets/9531df97616e4d8eabd7a820ba5380a9/no/pdfs/stm202220230005000dddpdfs.pdf (accessed 10 March 2024).

Min, B.R. et al. (2021). The role of seaweed as a potential dietary supplementation for enteric methane mitigation in ruminants: Challenges and opportunities, Animal Nutrition, 7(4), 1371–1387. DOI: 10.1016/j.aninu.2021.10.003

Nelson, R.R. and Winter, S.G. (1982). An evolutionary theory of economic change. The Belknap Press, Cambridge, MA.

Schot, J. and Steinmueller, W.E. (2018). Three frames for innovation policy: R&D, systems of innovation and transformative change. Research Policy, 47(9), 1554–1567.

Schumpeter, J. (1939). Business cycles. A theoretical, historical, and statistical analysis of the capitalist process, volume 1. McGraw-Hill, New York, NY.

Schumpeter, J. (2006 (1911)). Theorie der wirtschaftlichen Entwicklung. Duncker and Humblot, Berlin.

Uyarra, E., Ribeiro, B. and Dale-Clough, L. (2019). Exploring the normative turn in regional innovation policy: responsibility and the quest for public value. European Planning Studies, 27(12), 2359–2375.

Weber, K.M. and Rohracher, H. (2012). Legitimizing research, technology and innovation policies for transformative change: Combining insights from innovation systems and multi-level perspective in a comprehensive 'failures' framework. Research Policy, 41(6), 1037–1047. DOI: 10.1016/j.respol.2011.10.015

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Ethical responsibility in agricultural innovations: The role of technological imaginaries

M. Innocenti
Department of Philosophy, University of Milan, Via Festa del Perdono 7, 20122 Milan, Italy
E-mail: marco.innocenti@unimi.it

Abstract

This article explores the influence of the narrative and symbolic milieu around in-progress technologies on innovator's awareness of the moral significance of their actions and decisions. Discussing technological imaginaries within the framework of Responsible Innovation, we elaborate on the concept of 'naturalness' in the development of agricultural technologies. Arguably, this 'thick' concept, when associated with these imaginaries, can diminish the perceived moral significance of technology. We will take as a case study the biomonitoring technologies using beehives, a hybrid of digital tools and traditional agriculture. This example will illustrate how technological imaginaries around 'natural' technologies can influence ethical perceptions and, thereby, innovator's responsibility-taking.

Keywords: biomonitoring; concept of naturalness; moral significance; narrative ethics; Responsible Innovation

Introduction

As of 2013, the European Commission has declared Responsible Innovation a priority in its Horizon 2020 programme, and it is esteemed that its influence on government and corporate policies could remain significant in this decade as well (van den Hoven, 2022). According to the framework delineated by Stilgoe *et al.* (2013), this responsibility is to be understood according to the implementation of four characteristics in technological innovation: 'anticipation', 'reflexivity', 'inclusion', and 'responsiveness'. This type of 'in-process' accountability, i.e. continuously integrated at every stage of the process, would help to contain the inherent unpredictability of innovation exemplified by the well-known Collingridge paradox (1980). However, the impossibility of predicting the effects of technological innovations before their diffusion into society leads some philosophers to question the very compatibility between the notions of 'responsibility' and 'innovation' (Blok and Lemmens, 2015). Indeed, as is well known, moral responsibility requires specific epistemological conditions that should be granted to the moral agent, i.e., in this case, the company or research centre. According to Rudy-Hiller (2018), '(t)here are four plausible epistemic requirements involved: awareness of action, of moral significance, of consequences, and of alternatives'. In these pages, we will interrogate the second one, namely 'moral significance', i.e. the knowledge of its – not neutral - moral value). This is an epistemological condition seldom mentioned in studies in this field, but we believe it acquires particular relevance in the links between new technologies and nature.

The thesis we want to argue, and which we believe is relevant to EurSafe 2024, is that the narrative and symbolic context in which innovation takes place has an influence on the maintenance of this responsibility and the perception of 'moral significance' in the actions performed. After having briefly developed the issue of technological imaginaries in the context of the ethics of technology and Responsible Innovation, we will elaborate on the relevance of the concept of 'naturalness' with regard to the narrative accompanying the development of agricultural technologies. This technological imaginary may in fact obtain from the concept of 'naturalness' a mitigation of the 'moral significance' of certain

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (eds.), ***Back to the future***
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_18, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

aspects of technology, by virtue of the intrinsic value attributed to it. In the following section, we will therefore present the example of biomonitoring technologies through technological beehives, which gives rise to a distinctive type of hybridisation of digital tools and traditional agriculture, particularly indicative for this discourse.

The role of the symbolic environment in R&D

Alberto Romele (2023) criticises the 'empirical turn' in the philosophy of technology for overlooking how the technological mediations influencing the moral subject and activating a change in values are symbolically mediated. In his research, he introduces the concept of "technological imaginaries", by which he means "a set of representations charged with expectations, hopes, and fears that a certain group of people has about a certain technology and that cannot be reduced to the material elements that constitute that technology. Technological imaginaries are both (re)configured by technologies and (re)configure these technologies in their invention, design, implementation, and use" (Romele, 2023: pp. 49–50). In *Narrative and Technological Ethics* (2020) by Wessel Reijers and Mark Coeckelbergh this symbolic dimension of technologies is explored through the lens of narrative ethics, which is explicitly directed towards virtue ethics for Responsible Innovation. This aspect is all the more visible when one looks at the identity narratives, scenarios, and more or less collective and explicit aspirations that concretely guide the research and development of a technological innovation (and not only its use or diffusion). Consider the case of a tech start-up, where this dimension supports the engagement of the different members and brings them together around the emerging technology (O'Connor, 2002; Ryan *et al.*, 2023). Narratives thus constitute an infrastructure that supports the organisational fluidity and the regime of instability that characterises this type of enterprise (Burnell *et al.*, 2023; Deuten and Rip, 2000).

New technologies and the concept of 'naturalness'

In the field of new technologies for agriculture, these considerations should be combined with those concerning the concept of 'nature', since their narrative aspect often relies on considerations of 'naturalness', as we shall see in a moment. We can divide the issue into two distinct aspects: the indistinct multiplicity of conceptions associated with the name of 'nature' and its common normative conceptualisation (in fact, it is a 'thick' concept; see Hopster *et al.*, 2023). Regarding the first aspect, we can take the opening passage of John Stuart Mill's treatise *On Nature* (1874), which reads: "Nature', 'natural', and the group of words derived from them or derived with them from other words, have always loomed large in the thoughts of humanity and taken a strong hold on their feelings. (...) (B)ut it is unfortunate that a set of terms that play such a great part in moral and metaphysical theorising should have acquired many meanings that -differ from the main one yet -are linked to it enough to create confusion". Alongside this, although not independently, he notes and criticises the tendency to adopt a normative approach to certain meanings of the term 'naturalness', elevating the 'Follow Nature!' to ethical maxim.

In the early 2000s, these analyses reappeared in several texts, such as Sagoff (2001a,b) and Verhoog *et al.* (2003), to outline the impact of these concepts in the perception of organic farming, conventional agriculture, and the use of Genetically Modified Organisms. Also in these cases, the different conceptions of the term are criticised for its acritical use in a (positive) normative sense, either without specifying the implied meanings (Verhoog *et al.*, 2003) or without considering the empirically validated advantages in the use of GMOs (Sagoff, 2001b). More recently, an article by Hopster *et al.* (2023) highlighted these two aspects in correspondence with certain new technologies that define unprecedented relationships with nature, such as cellular agriculture, solar geoengineering, and biomimicry. In the next session, we intend to extend these reflections by examining the new links between artificial intelligence and the practice of biomonitoring through sensors and cameras applied to a hive of honeybees. In this case, the

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

'thick' concept of nature can lead to assigning an intrinsic positive moral value to relying on a non-human activity (bee's foraging) for an important task such as monitoring the environment, thus discouraging the developers of this technology from taking responsibility for any critical outcome.

Biomonitoring and technological hives

Like all organisms within an ecosystem, honeybees can be effective bio-indicators, providing evidence of its health status (Farias *et al.*, 2023). Morphological or physiological changes in the animal and the substances it touches or ingests can reveal multiple characteristics of its environment (Girotti *et al.*, 2020). For different reasons, *Apis mellifera* is a highly suitable species for this task. Firstly, because of the thoroughness of the monitoring a honeybee colony allows, which is linked to its foraging activity. Between one-quarter and one-third (Ohlinger *et al.*, 2024) of the average 20 000 bees in a hive carry out 'several foraging trips per day (approximately 12–15 in their active period), covering an area of approximately 7 km^2' (Mair *et al.*, 2023). Another feature is their effectiveness in sampling and storing 'data' from the surrounding environment, collecting 'about ten million micro-samples of nectar and pollen per day', and accumulating them in the honeycombs grid (Mair *et al.*, 2023). Regarding the extraction of these data, the last decades have seen a shift from the analysis of honey samples or bee bodies in the laboratory to the widespread creation, by start-ups, makers, and amateurs, of minimally invasive acoustic sensors to be put inside hives, of weight sensors for their bases, and video cameras for their entrance (Ammar *et al.*, 2019; Burma, 2023). This allows for a smoother and more immediate transition from the colony's collected and produced data (such as its humming) to digital data processed through the machine-learning technique (Zhao *et al.*, 2021; Hadjur *et al.*, 2022). Moreover, video cameras at the hive entrance can detect the status of the surrounding biodiversity by recognising and analysing the variety of colours of the pollen carried by the bees (Conti *et al.*, 2016; Papa *et al.*, 2022). All this leads to creating a hybrid that is singularly effective in collecting, accumulating, and processing data about the surrounding ecosystem.

The resulting hybrid, taken as a whole, can be understood as an unprecedented case in which a digital technology is made capable of analysing the space around it from the perspective of a living (super) organism. Compared to other forms of monitoring, such as the reconstruction of a digital twin, this new technological medium boasts a more significant measure of 'naturalness' according to one of the gradients identified by Siipi (2008), namely the axis of greater or lesser human control. The risk here is that through this allegedly positive entrustment of nature, any resulting limitations derived from it are not considered humans' responsibility. Yet, many plants, including tomatoes, potatoes, tomatoes, and field beans, require wild bees for adequate pollination (Goulson, 2003), and the latter's presence is threatened by competition with hives *in situ* (Thomson, 2004). Two features commonly identified as undesirable in the new digital technologies (such as AI technologies) thereby can find their 'redemption' (i.e., a status of non-contestability) in the aura of 'naturalness' that can be attributed to this system. These features are the 'sampling bias', derived from the systematic exclusion of certain data sets in the training of artificial intelligence (Ferrara, 2023), and the formation of an 'echo chamber' through the gradual elimination of competing influences on the (informational) ecosystem (Levy and Razin, 2019). In other terms, through the technological imaginary of the 'natural technology', the 'sampling bias' and the 'echo chamber' of new ICTs are subtracted from the moral significance generally attributed to them through their hybridisation with a 'natural' species which is, in turn, a 'sampling *bios*' (forming an '*eco*-chamber').

Conclusions

Beginning this article with the concept of Responsible Innovation, we pointed out how the awareness of the moral significance of an action is necessary for the attribution and assumption of responsibility (especially 'active' responsibility) in the research and development of new technologies. We have

Franck Meijboom and Patricia Paz Avila, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

therefore argued how this awareness can be influenced by the technological imaginaries that permeate the environments of research and development of an emerging technology, and that project its future scenarios and impacts. In the context of agricultural innovations, we wanted to focus on how the thick concept of 'naturalness' can imbue these imaginaries and influence the awareness of this moral significance in the developed product. The example we gave is that of the biomonitoring of the environment by means of a beehive equipped with sensors and cameras, in which the beehive becomes a highly predictive 'black box' whose inputs and outputs are being monitored. In this case, the imagery of 'natural technology' that may be associated with it runs the risk of overshadowing the moral significance of the use of this technological hybrid.

References

Ammar, D., Savinien, J. and Radisson, L. (2019). The makers' beehives: smart beehives for monitoring honey-bees' activities. Proceedings of the 9th International Conference on the Internet of Things, pp. 1–4. ACM, Bilbao.

Blok, V. and Lemmens, P. (2015). The emerging concept of responsible innovation. Three reasons why it is questionable and calls for a radical transformation of the concept of innovation. In Koops, B.-J., Oosterlaken, I., Romijn, H., Swierstra, T. and Van Den Hoven, J. (eds) Responsible Innovation, volume 2. Springer International, Cham, pp. 19–35.

Burma, Z.A. (2023). Digital transformation in beekeeping to carrying beehives into the future. International Journal of Nature and Life Sciences, 7(2), 89–99.

Burnell, D., Neubert, E. And Fisher, G. (2023). Venture tales: Practical storytelling strategies underpinning entrepreneurial narratives. Business Horizons, 66(3), 325–346.

Collingridge, D. (1980). The social control of technology. Frances Pinter, London.

Conti, I., Medrzycki, P., Grillenzoni, F.V., Corvucci, F., Tosi, S., Malagnini, V., Spinella, M. and Mariotti, M.G. (2016). Floral diversity of pollen collected by honey bees (*Apis mellifera* L.) — Validation of the Chromatic Assessment Method. Journal of Apicultural Science, 60(2), 209–220.

Deuten, J.J. and Rip, A. (2000). Narrative infrastructure in product creation processes. Organization, 7(1), 69–93.

Farias, R.A., Nunes, C.N. and Quináia, S.P. (2023). Bees reflect better on their ecosystem health than their products. Environmental Science and Pollution Research, 30(33), 79617–79626.

Ferrara, E. (2023). Fairness and bias in artificial intelligence: A brief survey of sources, impacts, and mitigation strategies. Sci, 6(1), 3.

Fischer, J.M. and Ravizza, M. (1998). Responsibility and control: A theory of moral responsibility. Cambridge University Press, Cambridge.

Girotti, S., Ghini, S., Ferri, E., Bolelli, L., Colombo, R., Serra, G., ... Sangiorgi, S. (2020). Bioindicators and biomonitoring: Honeybees and hive products as pollution impact assessment tools for the Mediterranean area. Euro-Mediterranean Journal for Environmental Integration, 5(3), 62.

Goulson, D. (2003). Conserving wild bees for crop pollination. Food, Agriculture and Environment, 1(1), 142–144.

Hopster, J., Gerola, A., Hofbauer, B., Löhr, G., Rijssenbeek, J. and Korenhof, P. (2023). Who owns NATURE? Conceptual appropriation in discourses on climate and biotechnologies. Environmental Values, in press. DOI: 10.1177/09632719231196535

Jonas, H. (1985). The imperative of responsibility: In search of an ethics for the technological age. University of Chicago Press, Chicago, IL.

Levy, G. and Razin, R. (2019). Echo chambers and their effects on economic and political outcomes. Annual Review of Economics, 11(1), 303–328.

Mair, K.S., Irrgeher, J., and Haluza, D. (2023). Elucidating the role of honey bees as biomonitors in environmental health research. Insects, 14(11), 874.

Mill, J.S. (1874). On nature. In Nature, the utility of religion and theism, 1904 edn. Rationalist Press, London.

O'Connor, E. (2002). Storied business: Typology, intertextuality, and traffic in entrepreneurial narrative. The Journal of Business Communication (1973), 39(1), 36–54.

Ohlinger, B.D., Couvillon, M.J. and Schürch, R. (2024). Agricultural grasslands provide forage for honey bees but only when nearby. Agriculture, Ecosystems and Environment, 359, 108722.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Papa, G., Maier, R., Durazzo, A., Lucarini, M., Karabagias, I. K., Plutino, M., ... Negri, I. (2022). The honey bee *Apis mellifera*: An insect at the interface between human and ecosystem health. Biology, 11(2), 233.

Reijers, W. and Coeckelbergh, M. (2020). Narrative and technology ethics. Springer International, Cham.

Romele, A. (2023). Digital habitus: a critique of the imaginaries of artificial intelligence, 1st edn. Routledge, Abingdon.

Rudy-Hiller, F. (2018). The epistemic condition for moral responsibility. In Stanford Encyclopedia of Philosophy. Stanford University Press, Stanford, CA.

Ryan, M., Popa, E. O., Blok, V., Declich, A., Berliri, M., Alfonsi, A. and Veloudis, S. (2023). A model of social responsibility for start-ups: Developing a cross-fertilisation of responsible innovation, the lean start-up approach, and the quadruple helix approach. Journal of Responsible Innovation, 10(1), 2264615.

Sagoff, M. (2001a). Biotechnology and agriculture: The common wisdom and its critics. Indiana Journal of Global Legal Studies, 9(1), 13–34.

Sagoff, M. (2001b). Genetic engineering and the concept of the natural. Philosophy and Public Policy Quarterly, 21, 2–10.

Siipi, H. (2008). Dimensions of naturalness. Ethics and the Environment, 13(1), 71–103.

Stilgoe, J., Owen, R. and Macnaghten, P. (2013). Developing a framework for responsible innovation. Research Policy, 42(9), 1568–1580.

Thomson, D. (2004). Competitive interactions between the invasive european honey bee and native bumble bees. Ecology, 85(2), 458–470.

van de Poel, I. (2021). Design for value change. Ethics and Information Technology, 23(1).

van den Hoven, J. (2022). Responsibility and innovation. Journal of Responsible Innovation, 9(1), 133–137.

Verhoog, H., Matze, M., van Bueren, E. L., and Baars, T. (2003). The Role of the Concept of the Natural (Naturalness) in Organic Farming. Journal of Agricultural and Environmental Ethics, 16(1), 29–49.

Franck Meijboom and Patricia Brey (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Genome editing in Plants and EU provisions for coexistence with organic farming (poster)

L. Escajedo San-Epifanio, I. Filibi, J. Uncetabarrenechea and A. Lasa-López*
Department of Public Law, Historical-Legal Sciences and Political Thought, University of the Basque Country (UPV/EHU), Bilbao 48080, Spain
** Corresponding author, e-mail: leire.escajedo@ehu.eus*

Abstract

The European Union is in the process of finalising its regulation on genetically modified crops, although its success is still uncertain. The process of drafting the regulation has already passed two important milestones. The first was the preparation of a draft regulation by the European Commission (EC). After an intensive consultation process and following the mandate of the Consilium (2019), a draft regulation has been presented which proposes that plants obtained through certain new genomic techniques - which scientifically give rise to GMOs - should be subject to a different regulatory regime than GMOs under Directive 2001/18 EC. In February 2002, the European Parliament, by a narrow majority, accepted the general terms of this proposal, albeit with relevant amendments. In terms of the legislative process, the next step is to negotiate the text in the Council. Only if a majority is reached in the Council, which does not seem easy at this stage, will a trialogue process take place between the EC, the Parliament and the Council to discuss proposed amendments and finally adopt a new legal framework. The possibility of using NGT-derived plants in organic farming and, if not, the necessary regulatory adjustments to allow the coexistence of both groups have been discussed at some points in the regulatory deliberations. However, the issue has come to the fore following a series of amendments tabled by MEPs to the Commission's proposal. This paper takes a critical look at this issue.

Keywords: coexistence, EU regulatory framework genome-edited plants, GMO, organic farming

A new regulation for some genetically modified organisms (GMOs) in the European Union (EU) is currently under development

In 2019, the EU Council initiated a process within the EU with the objective of establishing a "clearer, evidence-based, enforceable, proportionate and sufficiently flexible regulatory framework to cope with developments in science and technology in this area" (Council Decision 2019/1904). This is the reference from which the EC initiated in October 2021 a process to attempt to reach consensus on the use of new techniques for the purpose of cisgenesis, intragenesis or targeted mutagenesis, on the proviso that the incorporation of foreign DNA is not involved. Cisgenesis is a form of genetic modification that involves the use of a complete copy of natural genes, along with their regulatory elements, which are exclusively found in sexually compatible plants. In contrast, intragenesis refers to the transfer of new combinations of genes and regulatory sequences belonging to a specific species (Espinoza a. al., 2013). Targeted mutagenesis is an umbrella term used to describe techniques that induce specific mutations at selected target locations in the genome. It is often also explained as a deliberate change in genetic structure directed at a specific site on the chromosome. Hence the adjective targeted.

The regulation of genetically modified plants is currently established through a variety of instruments, including Directive 2001/18/EC on deliberate release and Regulations 1829 and 1830 of 2003 on GM food and feed, their labelling and traceability (Escajedo e. al. 2023). In accordance with Directive 2001/18/EC, plants modified by NGTs are considered to be within the legal scope of GMOs, regardless

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

of whether or not foreign DNA has been incorporated. This is due to their status as organisms "in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombination". Consequently, plants obtained by cisgenesis, intragenesis and/or targeted mutagenesis, as well as those obtained by conventional mutagenesis, are GMOs. However, the latter have always been exempted from the 2001/18/EC.

The aforementioned regulations continue to apply to transgenic plants (involving the incorporation of foreign DNAs) as well as to techniques other than those mentioned above, which, according to the EC, can be understood as falling under the term NGT (EC study, 2021). These include site-directed nucleases (SDN) (including ZFN-1/2/3 and CRISPR systems); RNA-dependent DNA methylation (RdDM); grafting (non-transgenic scion on transgenic rootstock); reverse breeding; and agroinfiltration. It was therefore predictable that the draft regulation prepared by the Commission would have at least two tasks: firstly, to differentiate a new status for plants obtained by certain techniques; and secondly, to specify the decision-making processes and parameters of risk management for this new group in relation to its pre-market approval for agricultural and food use.

The report prepared for the Scientific Foresight Unit of the European Parliament (STOA) by Custers and Dima (2022: p. 13) states that certain new genome editing techniques are "very precise" and that, in relative terms, their risks and uncertainties are "lower than the risks and uncertainties of conventional random mutagenesis, which uses radiation or chemicals to induce genetic changes" (Custers and Dima, 2022: p. 16). However, given the difficulty of specifying when the risks are lower or higher, the draft regulation presented by the EC considers that it will be on a case-by-case basis in the authorisation process that the applicant will be able to demonstrate whether the risk can be considered equivalent to the conventional risk.

In July 2023, the European Commission presented a draft Regulation for plants produced by certain genomic techniques (including their food and feed products) following the completion of the anticipatory governance process. The initiative had already successfully completed the institutional and stakeholder feedback period, as well as the public consultation period (29 April to 22 July 2022). The Factual Summary Report published by the EC indicates a favourable tone towards the legislative amendment in the consultation results (EC, 2022). In February 2024, the European Parliament voted in favour of continuing the legislative process, albeit by a margin that was somewhat limited. During the parliamentary debate, a number of amendments were proposed, some of which were of significant importance. These included amendments related to the coexistence of plants obtained through NGTs and organic farming.

What regulatory framework should be established for genome-edited plants? The EU approach

In its proposal for a Regulation, presented in July 2023, the Commission acknowledged that plants modified by certain NGTs constitute a group with an intermediate status between plants obtained by conventional mutagenesis (GMOs exempted from Directive 2001/18 EC) and transgenic plants (whose deliberate release falls under that Directive). This position was subsequently endorsed by the European Parliament in its vote in February 2024. The position of the Council is still pending.

This categorisation is of significant importance. In the absence of new legislation, as set out in Directive 2001/18/EC, new plant varieties can be categorised into three groups: (1) non-GMO; (2) "GMOs excluded from the Directive", as they are obtained by conventionally used techniques with a long safety record; and (3) "GMOs under the Directive". Group 1 encompasses breeding techniques that do not result in the creation of genetically modified organisms. For the sake of clarification, the appendix to

Franck Meijboom and Pamela Pace, [illegible] 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

the aforementioned regulation indicates that certain techniques alter the genome of plants. However, for the purposes of Directive 2001/18/EC, the resulting plants are not considered to be GMOs. This is the case for plants obtained by in vitro fertilisation, conjugation or polyploidy induction, provided that no rDNA has been used in the application of these techniques.

Group 2 encompasses plant breeding techniques that are acknowledged by the Directive as resulting in GMOs, yet it is deemed inappropriate to apply the Directive to them (Escajedo San-Epifanio, 2022). This exclusion results in the legal status of these techniques being identical to that of non-GMOs. This is exemplified by mutagenesis techniques involving irradiation or chemical agents. This is justified by the long safety record of these techniques in agriculture, which suggests that it is the absence of such a record that leads to the establishment of a special regime for GMOs in Group 3 (whose safety record was not achieved in 2001). Currently, food products derived from Group 2 GMOs, which are prevalent, are not labelled as such, and may be labelled as "GMO-free". Many EU consumers who wish to avoid consuming GMOs are unaware of this, as a pseudo-concept of GMOs has taken over the regulation (Tagliabue, 2017: p. 57). A significant proportion of the general public is under the misapprehension that all genetic modifications are labelled as GMOs. Moreover, the Directive states that GMOs in Group 2 can be used without limitation in organic farming, as the ban on the use of GMOs in organic farming (referred to in EU Regulation 2018/848 in Article 11) was interpreted as only excluding the use of techniques listed in Group 3. The techniques/methods of genetic modification resulting in organisms to be excluded from the Directive, provided that they do not involve the use of recombinant nucleic acid molecules or genetically modified organisms other than those produced by one or more of the techniques/methods listed below, are as follows: (1) Mutagenesis; and (2) cell fusion (including protoplast fusion) of plant cells of organisms that can exchange genetic material through traditional breeding methods.

Finally, Group 3 encompasses techniques that result in genetically modified organisms (GMOs) that are subject to the provisions of Directive 2001/18/EC. This is the case for GMOs obtained by any technique involving the use of rDNA, as well as any technique of genetic modification that has not been specifically excluded in the list of exempted techniques described above as Group 2. With regard to these GMOs, MS can exercise their opt-out prerogative, according to Directive 412/2015. This option does not apply, however, to crops included in groups 1 and 2.

The Commission put forth the proposal to designate a distinct group of "certain NGTs" within the three previous categories of breeding techniques (hypothetically, a fourth group), to accommodate plants obtained by cisgenesis, intragenesis, and targeted mutagenesis. This decision, however seemingly inconsequential, is in fact the result of a series of implicit decisions of varying degrees of complexity. On the one hand, it is implied that NGTs will not be exempted from regulation. This implies that they will not be equated with any of the conventional techniques (group 1) or with GMOs exempted from the Directive (group 2). In the case of organisms obtained by techniques belonging to groups 1 and 2, it should be recalled that Community legislation does not provide for any pre-market authorisation system, labelling or traceability obligations. Conversely, it is evident that these organisms will not be subject to the rigorous requirements established by Directive 2001/18/EC for GMOs. The pivotal negotiation between the Commission, Parliament and Council will thus centre on the specific requirements that should be established for the authorisation of the cultivation and other uses of genome-edited plants.

It is also important to note that the name of the plant in question is also relevant. It should be noted that plants obtained through certain NGTs are GMOs (as are those obtained through conventional mutagenesis). However, they will not be labelled as GMOs in decision-making processes or, potentially, in the labelling of their products. In this particular instance of the application of scientific terminology in a legal and political context, the EU appears to be adopting a regulatory approach that, as has been the case in other countries, moves away from the terms "GMO", "GM food and feed" and "transgenic".

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

These terms have been at the centre of major controversies and disagreements for almost three decades, although with varying degrees of intensity.

A review of the current legislative process reveals two distinct categories of NGTs

The NGT plants are defined in accordance with Article 3(2) are genetically-modified plants obtained by targeted mutagenesis or cisgenesis, or a combination thereof, provided that they do not contain any genetic material originating from outside the breeders' gene pool (Kahrman and Leggewie, 2024). Although the definition appears to describe a single category (Group 4, as previously outlined), the Commission draft presents two subcategories, which it identifies as NGT1 and NGT2, when specifying the authorisation process for the agricultural use and agri-food use of plants obtained by these techniques.

The precise demarcation between NGT1 and NGT2 remains uncertain, as this is a matter of political decision. The Commission, as evidenced by the draft, and the Parliament, as evidenced by the amendments, hold disparate views on this matter, and the Council's position remains undetermined. Nevertheless, there is a general consensus that these two subcategories should be distinguished in accordance with the recommendations set forth by the European Food Safety Authority (EFSA) in their 2022 publication, "Criteria for risk assessment of plants produced by targeted mutagenesis, cisgenesis and intragenesis," at the request of the European Commission.

In accordance with the EC proposal, NGT plants are divided into two categories. On the one hand, the so-called NGT1 plants meet the equivalence criteria for conventional plants set out in Annex I and will therefore be treated primarily as conventional plants. The Annex I equivalence criteria permit a limited number of genetic alterations, specifically up to 20 distinct types of genetic modification, including the substitution or insertion of no more than 20 nucleotides or the deletion of any number of nucleotides.

In contrast, NGT2 plants are defined as all NGT plants that are not NGT1 (Article 3.8 of the Regulation draft). Plants obtained by NGT1 are considered equivalent to conventional plants, and their food and feed products will also be considered homologous, unless they fall within the category of novel food. Conversely, NGT2 plants are subject to a regulatory framework analogous to that of GMOs as defined in Directive 2001/18/EC. This is the reason why some have referred to the regulatory regime for NGT2 plants as "GMO light".

In their February 2024 vote, Members of the European Parliament (MEPs) concurred with the European Commission's (EC) proposal to categorise and regulate NGT plants according to two distinct sets of rules. NGT plants that are considered equivalent to conventional plants (NGT 1 plants) would be exempt from the requirements of the GMO legislation. In contrast, other NGT plants (NGT 2 plants) would have to adhere to more stringent requirements. However, it should be noted that the aforementioned amendments were proposed with regard to the regulation of each of these groups, with a particular focus on organic farming.

Genome editing and organic farming: Commission's draft and European Parliament proposals

The issue of the coexistence of genetically modified, conventional and organic crops has been extensively studied in the scientific and policy literature (Bodiguel, 2020). In this debate, it is of great strategic importance to consider how genome-edited plants are politically and legally defined. This is an issue that the EU has not yet permitted much debate, perhaps because it has not been willing to discuss the coexistence of GMOs and organics in depth at the time.

Franck Meijboom and Patrick Baert, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

With regard to the use of GMOs in agriculture, the legislation in question made two fundamental decisions. Firstly, it prohibited the use of GMOs in organic agriculture under Directive 2001/18/EC. Secondly, it required the implementation of a series of physical barriers to limit the possibility of cross-contamination with GMOs in the vicinity. The second of these bans has had minimal impact in the EU, given that only one maize variety is authorised for cultivation and a significant majority of Member States have opted out of GMO cultivation on their territory. The initial decision, the ban, has been more extensively developed, with the potential to affect organic products that could have been inadvertently contaminated during their handling. The broader approaches to the debate on the EU's desired organic agriculture and the effective translation of this into local and regional governance models remain pending.

With regard to NGTs, it is evident that Parliament and the Commission have adopted a position that genome-edited plants should not be automatically considered GMOs in accordance with Directive 2001/18/EC. However, they should not be considered conventional either. Nevertheless, there are significant areas of contention.

Given that NGT1 plants are considered potentially comparable to conventional plants, the EC proposed that they could be used in organic farming and that products obtained from these plants do not need to be labelled, except in the specific case of plant reproductive material. The EC, however, proposed that NGT2-derived plants should be excluded from organic farming and that their derived products should be labelled in some way.

In contrast, the European Parliament has expressed a preference for regulating all NTN-derived plants in a manner that is more closely aligned with GMOs than with conventional plants, with the objective of facilitating their utilisation in organic farming and labelling. In particular, MEPs have expressed a desire to maintain mandatory labelling of products derived from both NGT 1 and NGT 2 plants. Furthermore, they have agreed that all NGT plants should remain prohibited in organic production, as their compatibility requires further consideration. Furthermore, they have requested that the Commission provide an update on the evolution of consumer and producer perceptions of the new techniques, seven years after their implementation.

Concluding remarks

The most optimistic forecasts indicate that the regulation on NGT plants will not be approved in the EU before 2026. Should the regulation be approved, it is estimated that the first products derived from genome-edited plants will be imported into the EU for human or animal consumption. The stipulations of the proposed legislation, including those pertaining to NGT1, indicate that it is highly unlikely that a genome-edited plant could be cultivated in the EU before 2032.

In the event that the regulation is not finally approved, the GMO regulation under Directive 2001/18/EC will apply to genome-edited plants, with no practical possibility for edited plants to be cultivated in the EU. This would be a disappointing outcome. The objectives set out in the Green Pact, in particular the reduction of the climate impact of agri-food production and the guarantee of food security and strategic autonomy for the EU, will require significant efforts in plant breeding.

In any case, this proposal for a Regulation deals only with very specific aspects of plants modified by certain NGTs (pre-market authorisation for agricultural use and food and feed use). This is common practice in the European Union, which, in its search for a high level of consensus, tries to encapsulate as much as possible each issue it puts to the 27 states for negotiation. It is important to note that the full range of plant breeding techniques (from conventional to the most advanced), as well as the coexistence

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

of different ways of understanding agriculture, including organic agriculture, still require a holistic, inclusive and diversity-friendly governance framework in the EU.

Acknowledgements

This work has been supported by the Spanish Ministry of Science and Innovation, VegEquity Project — Plant Breeding and European Integration (PID2021-123796OB-C21 DER), Prof. L. Escajedo San-Epifanio; Jean Monnet Module PlantSciLaw – EU Law and Governance for Agroscientists, ERASMUS-JMO-2023-MODULE 101127121, Prof. L. Escajedo San-Epifanio.

References

Abbott, A. (2015). Europe's genetically edited plants stuck in legal limbo. Nature, 528, 319–320.

Bodiguel, L. (2020). GM crops and conventional or organic agriculture coexistence in EU regulation. In Andersen, V. (ed.) Genetically modified and irradiated food, Academic Press, San Diego, CA, pp. 183–194. DOI: 10.1016/B978-0-12-817240-7.00011-5.

Casacuberta, J. and Puigdomènech, P. (2018). Proportionate and scientifically sound risk assessment of gene-edited plants. EMBO Reports, 19, e46907. DOI: 10.15252/embr.201846907

Custers, R. and Dima, O. (2022). Genome-edited crops and 21st century food systems challenges. In-depth Analysis Panel for the Future of Science and Technology, Brussels; Scientific Foresight Unit (STOA), European Parliamentary Research Service (EPRS), available online at https://www.europarl.europa.eu/stoa/en/document/EPRS_IDA(2022)690194

Dederer, H.G. (2020). Patentability of genome-edited plants: A convoluted debate. International Review of Intellectual Property and Competition Law, 51, 681–684. DOI: 10.1007/s40319-020-00952-9

EC (2021). EC study on new genomic techniques. SWD2021 92 in fine. European Commission, Brussels.

EC (2022). Legislation for plants produced by certain new genomic techniques — Public Consultation Factual Summary Report: ARES (2022) 6392169, 16 September 2022. European Commission, Brussels.

ECJ (2018). Judgment of the Court (Grand Chamber) of 25 July 2018 Confédération paysanne and Others v. Premier ministre and Ministre de l'agriculture, de l'agroalimentaire et de la forêt Request for a preliminary ruling from the Conseil d'État, case C-528/16: ECLI:EU:C:2018:583. European Court of Justice, Luxembourg.

EP and EC. Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC - Commission Declaration. OJ L 106, 17.4.2001, p. 1–39. Current consolidated version, after EU Regulation 2019/1381 of 20 June 2019: 27/03/2021.

Escajedo San-Epifanio, L. (2022). The (un) protection of agri-biotechnological innovation in the EU: when regulations collide with reality. In Intellectual property in agriculture. Thomson-Reuters Aranzadi, Pamplona, pp. 103–118.

Escajedo San-Epifanio, L., Filibi, I., Lasa López, A., Puigdomènech, P. and Uncetabarrenechea Larrabe, J. (2023) Possible EU futures for CRISPR-edited plants: Little margin for optimism?, Frontiers in Plant Sciences, 14, DOI: 10.3389/fpls.2023.1141455

Espinoza, C., Schlechter, R., Herrera, D., Torres, E., Serrano, A., Medina, C. and Arce-Johnson, P. (2013) Cisgenesis and intragenesis: new tools for improving crops. Biological Research, 46(4), 323–331. DOI: 10.4067/S0716-97602013000400003.

González-Vaqué, L. (2017). Directive (EU) 2015/ 412 in the EU Acquis: its scope and significance. In: Escajedo San-Epifanio, L. (ed.) Towards a new regulatory framework for GM crops in the European Union, Wageningen Academic Publishers, Wageningen, pp. 47–59. DOI: 10.3920/978-90-8686-845-2_2

Hamilton, E. and O'Farrell, J. (2024) European Parliament proposes ban on patenting of gene edited plants and relaxation of strict GMO regulation of NGT plants. D. Young& Co, available online at https://www.dyoung.com/en/knowledgebank/articles/patent-ban-ngt-plants

Kahrman, J. and Legewwie, G. (2024). European Commission's plans for a special regulation of plants created by new genomic techniques. European Papers, 9(1), 21–38. DOI: 10.15166/2499-8249/740

Franck Meijboom and Patrick Bons-Rovers | 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Purnhagen, K.P. and Wesseler, J.H.H. (2018). Maximum vs. minimum harmonisation: What to expect from the institutional and legal battles in the EU on gene editing technologies Wageningen Working Papers in Law and Governance. Law and Governance Group, Wageningen.

Shieman, J. and Hartung, F. (2015). EU Perspectives on new plant-breeding techniques. In Eaglesham, H., Hardy, R. and Boyce, W.F. (eds) New DNA-editing approaches: Methods, applications and policy for agriculture. NABC Report 26. Thompson Institute, Ithaca, NY, pp. 201–210.

Van der Meer, P., Angenon, G., Bergmans, H., Buhk, H., Callebaut, S., Chamon, M., … Zimny, T. (2023). The status under EU law of organisms developed through novel genomic techniques. European Journal of Risk Regulation, 14(1), 93–112. DOI: 10.1017/err.2020.105

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Food technologies under and out of human control: philosophical accounts from posthuman feminism (poster)

V. De Gregorio
Sant'Anna School of Advanced Studies, Dirpolis Institute, Piazza Martiri della Libertà 33, 56127 Pisa , Italy
E-mail: valentina.degregorio@santannapisa.it

The contribution I propose for the purpose of EurSafe 2024 focuses on the impact of smart and sustainable food technologies within the dense relational networks, of exploitation and care, that compose food systems, which involve not only humans but also many and complex nonhuman worlds. To do this, I take the example of the food technologies that I am addressing in the context of the legal and philosophical analysis of the European agricultural policy scenario that characterizes my Ph.D. project, and precisely the New Genomic Techniques (NGTs), which I regard through a posthuman feminist perspective, aimed at critically approaching the role of science and technology in feeding and helping human social re/production in advanced capitalist societies and systems. Now in vogue in the debates on sustainability and resilience of the agri-food sector to climate change and (geo)political troubles, it is my understanding that NGTs might offer two interesting profiles of analysis. The first concerns serious issue of power and control performed through these reproductive biotechnologies by humans over the nonhuman edited bodies. The second encourages to think of alternative technological scenarios that might be occurring when producing food, where relationality between what is human and what is not can inspire the implementation of technologies that are no more under human control, but literally out of human control. The contribution concludes by stressing the importance of such an analysis, especially in times of sustainability, firstly because even agricultural technologies are political tools to inspire systems of socio-ecological relations, and secondly because thinking about what and how to produce, in terms of food, means also thinking about what type of relationship the human species intends to renew with all the others, questioning the responsibility of science and technology in this theoretical and practical exercise.

EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_20, © Brill | Wageningen Academic 2024
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Why local plant proteins fail to take off? (poster)

T. Kortetmäki[1,2]
[1]*Department of Social Sciences and Philosophy, University of Jyväskylä, P.O. Box 35, 40014 Jyväskylä, Finland;* [2]*School of Resource Wisdom, University of Jyväskylä, PO Box 35, 40014 Jyväskylä, Finland*
E-mail: teea.kortetmaki@jyu.fi

Abstract

This presentation describes the background for the poster that reports and reflects upon research findings from a study that examined the potential of local plant proteins in promoting more plant-based eating in public catering. The empirical case study was done by following and engaging in a 15-month local plant protein promotion project in Central Finland. Local plant protein cropping could provide a 'win-win' solution to support both dietary transition and local rural economies and agricultural livelihoods simultaneously. Thus, we sought to experiment and hoped that a project focused on introducing and broadening the use of local plant proteins in public catering could pave the way for the increased use of local plant proteins. However, plant proteins failed to take off during the project. The research attempted to understand reasons for this. This presentation summarizes how the public actor rationalities create barriers to the mainstreaming of plant proteins, even local ones, in public catering.

Keywords: dietary transition, food rationalities, local food, plant proteins, public catering, sustainability

Introduction

There is a need to shift to more plant-based diets in Western countries due to environmental reasons (e.g., Poore and Nemecek, 2018) and public health issues. Public catering may play significant role in this change (Colombo *et al*., 2020; Wahlen *et al*., 2012) as sustainability thinking has been central to it especially in places where the public catering system provides free warm school meals.

However, promoting sustainability does not necessarily lead to promoting dietary transition. Different environmental and social sustainability and justice objectives are in tension and may contradict regarding their commonly interpreted implications (Kortetmäki, 2019). The most pressing tension concerns local food systems. They are worth endorsing for social sustainability and food justice reasons. Yet they are also often animal production dominated in the EU. Since environmental sustainability and health reasons urge a transition to more plant-based eating in Europe, many rural and semi-rural regions encounter a new challenge as their agricultural production is currently dominated by livestock-based production. Thus, calls for more plant-based eating may be seen as threatening local livelihoods and food production.

Public catering is particularly well-equipped to create stable demand base for new products to keep their producers going and growing until the mainstream consumers start to purchase the same products in greater volumes. Simultaneously, public catering can help eaters try new products and adopt new eating patterns. In Finland, public catering serves nutritionally adequate, free warm school meals every school day for all children aged 7–16 and all secondary education students. Studying the prospects of promoting local plant proteins via public catering also helps understand the currently dominant conceptions of normal, desirable, and acceptable food practices that public catering 'mirrors' by having to justify its use of public money.

The poster summarizes the results of a study that sought to understand the potential of local plant proteins in promoting dietary transition via public catering. It is based on research that took place

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

within a 15-month development project in collaboration with local hemp and faba bean producers and processors and public catering actors in three municipalities. Collaborative experiments included testing ingredients, developing new dishes, and serving the new dishes to test groups or whole school groups. The research used the analytical framework of Weberian rationalities, which provides an interesting lens for considering the relationship between empirical knowledge, ethical considerations, and institutional structures. The more comprehensive results have been published as a full journal article (Kortetmäki 2023).

Results and reflections

Positive vibes surrounded the experiments around plant proteins in different municipalities, yet the upscaling did not happen: local plant proteins failed to take off and remained in the margin or a 'curiosity' product.

Research analysis was based on data collected from the events and from interaction between plant protein producers and catering actors. It used the analytical lens of Weberian rationalities helped understand how the rationalities of public catering prevent them from upscaling the use of local plant proteins. Rationalities in the Weberian sense (e.g., Weber 1958, 1978) are tools for making sense of the world and acting upon it, helping connect separate observations and events into comprehensible wholes (Kalberg, 2011). This way, rationalities are used in reasoning and justifying actions too. The nuanced framework of Weberian rationalities has four types (descriptions summarized from Kortetmäki, 2023):

1. Formal rationalities: regulative and formally institutionalized rationalities, beliefs, and values such as the 'effective use of taxpayers' money'.
2. Practical rationalities: heuristics and principles that help deal with daily challenges efficiently, without exposure to constant cognitive troubles.
3. Substantive (value) rationalities: values held by the actor, often determining the goals that practical rationalities should help reach more effectively.
4. Theoretical rationalities: means for making sense of and organizing factual and other information, and the ways of linking it to action.

The analysis revealed how the formal, practical, value, and theoretical rationalities are strongly linked to the ways in which public catering actors interpret, make sense of, and respond to sustainability demands. This also influences on the perceptions of local plant proteins and their potential in school catering. The essential implication of findings is that the failure of local plant proteins to appear as a particularly sustainable product can be rooted in the combination of institutional, practical and practice-related, value-related, and knowledge-related factors rather than any single aspect of these. Thus, measures that target single aspect such as knowledge provision or formal initiatives to promote their use are insufficient. The findings (Kortetmäki, 2023) are presented in the poster in greater detail but some highlights are below.

Formal rationalities make public catering actors reluctant to take action that could be seen as deviating from perceptions where meat is normal part of dishes (cf. Piazza et al. 2015). Also, sustainability measuring focused on food waste makes the introduction of plant-based dishes risky for actors. Practical rationalities discourage taking any risks that might undermine customer acceptance, such as introducing beans. Substantive (value) rationalities limit the acceptability of various solutions that could be used to overcome the barriers to more plant-based food provision. Theoretical rationalities make domestic and local meat appear as already very sustainable, due to which reasons for using plant-based products provide only a weak motivational incentive.

Franck Meijboom and Dominic Boyer, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Conclusion and implications

Results provide important lessons for the need to identify and address the 'taken-for-granted' beliefs and conceptions about sustainability and 'normal eating' to enable the broader incorporation of local plant proteins. Without addressing them, the win-win-potential of local plant proteins cannot realise. Policy and other measures need to go beyond promoting new products to address and reshape existing rationalities that support the status quo in 'normal eating'.

References

Colombo, P.E., Patterson, E., Lindroos, A., Parlesak, A. and Schäfer Elinder, L. (2020). Sustainable and acceptable school meals through optimization analysis: an intervention study. Nutrition Journal, 19, 61.

Florén, B., Amani, P. and Davis, J. (2017). Climate database facilitating climate smart meal planning for the public sector in Sweden. International Journal on Food System Dynamics 8: 72–80.

Kalberg, S. (2011). Max Weber's comparative-historical sociology today: Major themes, mode of causal analysis, and applications. Routledge, London.

Kortetmäki, T. (2019). Tensions between food justice and climate change mitigation. In Vinnari, E. and Vinnari, M. (eds) Sustainable governance and management of food systems: Ethical perspectives. Wageningen Academic Publishers, Wageningen, pp. 3508–3513.

Kortetmäki, T. (2023). Why do local plant proteins not take off? Sustainability rationalities in public catering. The International Journal of Sociology of Agriculture and Food 29: 25–43.

Piazza, J., Ruby, M.B., Loughnan, S., Luong, M., Kulik, J., Watkins, H.M. and Seigerman, M. (2015). Rationalizing meat consumption. The 4Ns. Appetite, 91, 114–128.

Poore, J. and Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. Science, 360(6392), 987–992.

Scott, W.R. (1995). Institutions and organizations. Sage, Thousand Oaks, CA.

Wahlen, S., Heiskanen, E. and Aalto, K. (2012). Endorsing sustainable food consumption: Prospects from public catering. Journal of Consumer Policy, 35, 7–21.

Weber, M. (1958). The protestant ethic and the spirit of capitalism (trans. T. Parsons). Scribner's, New York, NY.

Weber, M. (1978). Economy and society: An outline of interpretive sociology. University of California Press, Oakland, CA.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Section 3.
Veterinary and animal ethics

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

3.1. Focus on ethical theory

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Challenging burger veganism with an argument from virtue ethics

L. Borgdorf
Utrecht University, Faculty of Veterinary Medicine, Centre for Sustainable Animal Stewardship
Yalelaan 2, 3584 CM Utrecht, The Netherlands
E-mail: l.borgdorf@uu.nl

Abstract

Burger vegans argue against adopting a plant-based diet, but for consuming meat and milk of grass-fed cows from an animal rights perspective. They argue crop farming leads to more dead animals than farming grass-fed cows. In this article, I show that current rebuttals do not suffice to philosophically reject burger veganism. Subsequently, I introduce a new argument against burger veganism based on virtue ethics. I claim that humans possess empathy based on resonance, which inhibits them from committing acts of violence and that acting based on empathy is virtuous, while overriding empathy is vicious. Moreover, I argue that killing a cow requires a higher level of overriding empathy than spreading pesticides or killing small animals in other agricultural tasks. This makes burger veganism less virtuous than arable farming.

Keywords: animal ethics, burger veganism, crop farming, veganism, virtue ethics

Introduction

Burger veganism is an idea rooted in a paper by Steven Davis (2003), who argues based on Tom Regan's least harm principle. This principle states that 'Whenever we find ourselves in a situation where all the options at hand will produce some harm to those who are innocent, we must choose that option that will result in the least total sum of harm' (Regan, 2004: p. 302). Davis (2003) compares the numbers of animals killed in plant-based diets and in burger veganism, which is the occasional consumption of flesh and milk of large grass-fed animals. In crop farming, animals die because of ploughing, harrowing, or pesticides among others. Therefore, Davis (2003) argues that it is a harmful practice violating the rights of animals. Farming large grass-fed animals instead results in fewer deaths as these animals themselves take care of pastureland, so it requires less human activity. If arable farming thus causes more deaths than burger veganism, Davis (2003) argues that the least harm principle requires us to replace at least some of the plants we eat with large animals.

There are four different ways to address the burger vegan argument. First, one could accept that killing some ruminants would result in fewer deaths than arable farming as a burger vegan food system would include a significant reduction of the number of animals killed and therefore be much closer to the vegan ideal than the current food system. Second, the numbers that Davis (2003) uses are debated as he overestimates the deaths in arable farming (Lamey, 2007). Third, there is the idea of introducing vertical arable farming as a practical solution, which does not require the killing of animals (Milburn, 2022: pp. 122–134). In this paper, I do not aim to investigate the correct numbers of deaths in arable farming or to find a solution in the future, but to philosophically reject an idealised version of burger veganism, in which Davis's empirical premises are considered true. Finally, there are philosophical rejections of burger veganism, which require more attention that I address in the next section.

This paper consists of three steps. First, I show that the current attempts to philosophically counter burger veganism are debatable. Second, I introduce and argue for an ethical framework based on empathy

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

and virtue ethics. Third, I show that this framework provides sufficient reasons to prefer a plant-based diet over burger veganism.

Existing critiques of burger veganism

There are four philosophical objections to Davis's burger veganism, which are (1) the conflation of harm and death, (2) the claim that farmed animals have more to lose than animals killed in crop farming, (3) the doctrine of double effect, and (4) plant-based diets as a necessary step to an ideal food system. First, Davis (2003) is criticised for not differentiating between harm and death (Milburn, 2022: p. 116). He counts the numbers of animals dying in different agricultural systems and compares them. Although this critique indeed applies, an improved argument based on harm likely leads to similar results. It is plausible that animals dying in arable farming suffer more than a cow in an idealised burger vegan scenario. Ploughing and harvesting practices do not aim at killing these animals and are therefore done with little precision, which likely leads to severely wound animals suffering until their deaths. Meanwhile, a cow can be killed under anaesthesia with much precision so that she does not suffer pain. Thus, if Davis's premises are true, arable farming results not only in more deaths, but also more harm than burger veganism.

Second, one might argue that a cow has more to lose than a small animal killed in arable farming (Milburn, 2022: p. 116). It is true that cows have a higher life expectancy than most animals dying in crop farming, and they probably have higher mental capacities than many pest animals. However, does a cow also have more to lose than ten mice or hundred mice? According to Regan's worse-off principle, in such a scenario, 'when the harm faced by the few would make them worse-off than any of the many would be if any other option were chosen, then we ought to override the rights of the many' (Regan, 2004: p. 308). In Regan's case, if there is a choice between killing a cow and a billion mice, the mice should be killed as the cow would be worse-off than any of the mice when being killed. This principle is highly contested in animal ethics, inter alia, as it infers the value of a life from mental capacities, which is at odds with the idea of equal moral status (Jamieson, 2017).

Third, the doctrine of double effect states that, when pursuing a morally desirable goal also involves harms, intentional harms are morally worse than unintentional, but foreseeable harms (Milburn, 2022: p. 117). This counter of burger veganism assumes that animals dying in crop farming are victims of accidents. Indeed, crop farming involves unintentional but foreseeable harms like animals who get caught in machinery or die as non-target species of pesticides. However, the purpose of pesticides is, as the name already indicates, to kill animals threatening crop yields, such as certain insects or molluscs. These deaths are thus by no means accidental but intended. One might object that the main intention behind pesticides is not to kill the insects or molluscs, but to protect the crops. The burger vegan might reply that one can argue, on this line of reasoning, that the main intention to slaughter the cow is to get the flesh, not to kill her. On the objector's understanding of the doctrine of double effect, then, slaughtering the cow does not seem worse than killing 'pest animals'. According to the burger vegan, if both actions involve intentional, but undesired killing, the action involving less harm should be preferred.

Finally, one could object that one should already strive for plant-based diets as plant-based agriculture has the potential to be harmless, for example, because of vertical farming. This argument assumes that animal farming cannot occur in a harmless or violence-free manner. While this is true for so-called humane slaughter or high-welfare animal farming as in the burger vegan scenario, slaughter-free high-welfare animal farming is at least theoretically imaginable. Slaughter-free meat could be obtained through technology, such as cultivated meat, which can in theory be done in a harm-free manner, for example, by deriving cells from feathers that chickens naturally lose. This way, a harmless burger vegan scenario would be possible. Also, animal products such as eggs could be produced in a humane manner

Franck Meijboom and Patrick Bijsterveld, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

by using genetic technologies to breed chickens who only give birth to robust, healthy females and not slaughtering them. Although these forms of harmless animal farming are practically difficult and inefficient, they are imaginable on a small scale.

To summarise, the current philosophical rebuttals of burger veganism are at least objectionable. In the following section, I introduce an empathy-based account of virtue ethics based on which I reject burger veganism. The argument consists of three steps. First, based on Trivigno (2013), I argue that empathy results in a resistance towards harming others and is a prerequisite for a virtuous character. Second, in line with Trivigno, I argue that deactivating such resistance mechanisms prevent virtuous character development. Third, I show that the burger vegan scenario involves a higher degree of deactivating empathy and the resistance to harming other than the vegan scenario, which makes it less virtuous and thus more objectionable.

Virtue ethics and empathy

Franco Trivigno (2013) argues against training soldiers to kill others because it involves a suppression of humans' natural resistance towards killing others. This resistance can be seen in wars where most soldiers did not use their weapons or intentionally missed (Marshall, 2000, p.56) and is based on empathy, which can be defined as the perception of another's feelings without theoretically understanding them (Misselhorn, 2023, p.166). It is essential for moral judgements because it provides an understanding of pain in another individual and an evaluation of such pain as negative. This results in an inhibitory function of empathy, which can be described as the resistance to inflict pain on others and an activating function that is a motivation to alleviate suffering in others (Misselhorn, 2023, p.171). The character-building effects of empathy and violence can also be expressed neurologically as violence and empathy share parts of the same brain circuit and therefore inhibit each other (Moya-Albiol et al., 2010). Empathy and the resistance to harm others are crucial because the violent acts resulting from acting opposed to one's empathy are considered the most vicious. The conscious harming or killing of others are indicative of a worse character than deficiencies or excesses of most virtues, such as courage or temperance. In other words, a murderer is arguably a worse person than a coward or a glutton. Thus, in virtue ethical terms, empathy motivates virtuous action, while it inhibits vicious action and thereby contributes to forming a virtuous character (Trivigno, 2013: p. 90).

Trivigno (2013: pp. 87–89) describes three mechanisms of how soldiers unlearn the resistance to killing. First, there is the automatization of the action by training with human-like targets to provoke an automatic shooting reflex when a real human appears. Second, language-wise, the act of killing is euphemised by referring to targets or collateral damage. Third, the victims are characterised as nonhuman or less worthy. In virtue ethics, a virtuous person feels the right emotions in the right situation. If a person is desensitised to the suffering of others, they do not feel the proper unease towards it and are less inclined to mitigate or prevent it (Trivigno, 2013: p. 91). Moreover, desensitisation involves the habitual devaluation of others, which makes it hard for the desensitised soldier to emotionally distinguish between overriding one's empathy with the enemies and innocents as several war crimes show (Trivigno, 2013: p. 92). Psychological literature supports this idea by suggesting that veterans have an increased risk to show violence and aggression in general (Taft *et al*., 2007).

Finally, Trivigno (2013: p.93) argues that in Aristotelean thinking, virtuous action is required to be (1) recognised as vi rtuous by the moral agent, (2) chosen for its own sake, and (3) follow from a stable character trait. The mechanisms of moral disengagement are either training automatic motions or a sort of self-deception by the moral agent to conceal harm experienced by the victims or to perceive the victim different from who they are. Therefore, they are contradicting the first two requirements. The third requirement is not fulfilled either because veterans often experience combat guilt or regret when

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

reflecting about the situation (Trivigno, 2013: p. 93). Finally, a person enjoying the action and not feeling regret or unease because of the harm done, is typically classified as psychopathic or vicious as they do not feel the right emotions in the right situation.

Trivigno's essay is concerned with soldiers killing humans as he refers to empathy as the 'recognition of shared humanity with one's enemy' (Trivigno, 2013: p. 91) and therefore sees the vices related to training to kill in 'habitually thinking of a certain group as less than human and seeing them as such' (Trivigno, 2013: p. 91). However, his arguments equally apply to nonhuman animals. Veterans and first-time deer hunters report the same stages of emotionally processing the act of killing, which are (1) concern about killing, such as failing to fire; (2) killing, which usually happens automatically; (3) exhilaration and self-praise; (4) brief remorse and repulsion; and (5) acceptance and rationalisation by eating the deer and collecting the trophy (Grossman, 2014: p. 249). Notably, Grossman (2014) refers to first-time hunters implying that killing can be learned and becomes psychologically different once it has been done, which in turn indicates that killing itself affects the character. This appears logical since animals possess and show emotions with which humans resonate, which leads to a resistance to harm or kill these animals. If the mechanisms to override empathy are thus the same, it does not make a principal difference whether the victim is a human or nonhuman animal. In the following sections, I analyse to what extent the vices of desensitisation are habituated in the burger vegan scenario and compare it with arable farming.

The burger vegan scenario

The burger vegan scenario necessarily involves the conscious killing of animals, ideally under high welfare conditions. Here, the previously mentioned mechanisms of moral disengagement in wars also seem to apply. First, there is the routinisation. Instead of being trained to kill in an emergency like soldiers, slaughterers in the burger vegan scenario certainly kill animals regularly. The routinisation here is thus less related to automatic movement, but on constantly desensitising or numbing oneself (Joy, 2020: p. 82). Second, euphemistic language is omnipresent in animal farming, as the animals slaughtered are referred to as the corresponding products, such as broilers and beef instead of chickens or cows (Joy, 2020: p. 118). Third, although animals cannot be dehumanised as they are not human, animals are objectified, deindividualised, and dichotomised between edible and inedible animals (Joy, 2020: pp. 117–123). These mechanisms have in common that they involve perceiving the animal differently from who they are by removing those aspects from one's perception that cause resonance and with that empathy. Although deindividualisation is hardly possible because the animals are slaughtered individually in the idealised burger vegan scenario, the slaughterers still apply a dichotomisation to perceive the animals as killable. As this process is linked to a failure of recognising mental capacities that animals possess, the slaughterer is deceiving themselves to be able to kill the animal (Joy, 2020: p. 123). Such a dichotomisation was also found in hunters, who were only significantly less likely to grant animals the same rights as humans than non-hunters if they already have killed an animal (Flynn, 2002). Consumers as well unconsciously ascribe lower mental capacities to the animals whom they are eating (Loughnan *et al*., 2010). This as well is a dichotomisation involving self-deception and can thus be considered vicious.

Empirical research supports the claim that overriding empathy negatively affects one's character. Spillover effects happen here as well as slaughterers have been reported to violently mistreat animals apart from just slaughtering them (Dillard, 2008: p. 396). A review study has shown that slaughterhouse workers are more likely to become aggressive, show more violence-supportive attitudes, and have higher criminality rates than other workers (Slade and Alleyne, 2023). In short, slaughterers in the burger vegan scenario require similar mechanisms to shut down their empathy as soldiers. These processes are not happening consciously and rely on self-deception, which renders them vicious.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Burger veganism and the plant-based scenario

In the plant-based scenario, these vicious mechanisms apply to some degree as well. The animals killed by pesticides are literally called 'pests' and thereby devaluated. However, in the burger vegan scenario, habituating these mechanisms enables the act of killing, while plant-based agriculture does not require such training. The key aspects contributing to the intensity of experiencing the act of killing are argued to be physical distance and visual contact with the victim (Grossman, 2014). Furthermore, humans feel more empathy with animals with whom they resonate. Intuitively, more people would thus be able to spray pesticides or harvest crops than to shoot and stab a cow. In a forced choice scenario, we would expect virtuous people to prefer harvesting and spraying pesticides over slaughtering a cow. Both intentionally applying pesticides and working a field are more distant and cause no resonance-based empathy with the victim, which needs to be overridden by moral disengagement mechanisms. Killing a cow involves a strong haptic resistance and a directly experienced bloodshed with little physical distance and high visual contact, which makes it different. Here, the emotion of disgust plays a role which is stronger the more empathy with animals is felt (Joy, 2020: pp. 126–128). Humans, who are not used to perform such acts of violence, must develop strategies to override their resonance-based empathy with the cow and the resulting inhibition to harm her. This habitual overriding of empathy makes the burger vegan scenario more vicious than arable farming.

Two objections can be raised against this approach. First, one could propose to let machines kill the cow automatically, which would require less overriding of empathy as both physical distance and absence of visual contact are given. However, sourcing the killing out to robots involves self-deception as the harm done to the animal is hidden from one's perception, which is vicious. Spraying pesticides hides the harm as well because of the increased distance, but a lower degree of self-deception is required since the initial resonance with the insects killed by pesticides is much lower than the resonance felt with a cow. Still, it can be questioned whether a virtuous person is supposed to feel empathy with insects, but properly addressing this question exceeds the space of this essay. In any case, building killing machines and sending a cow into such a killing machine when knowing what happens to her involves overriding empathy. Considering what killing machines represent on a societal level, empathic citizens would likely feel more regret about killing machines than about pesticides as they can still imagine the harm done by such a machine and because of the empathy a cow evokes. Furthermore, disconnecting from the cow and allowing her to be harmed hinders the moral agent to train their empathy. Empathy also has an active component of promoting behaviour to mitigate suffering in others, which is related to several virtues, including compassion. A burger vegan scenario with killing sourced out to machines would thus still be vicious. In the plant-based scenario instead, empathy can be trained by improving it to reduce the number of animals killed as far as possible.

Second, Milburn (2024: p. 6) argues that amount of blood and body size are morally arbitrary criteria for determining the wrongness of killing. He states that his mother is smaller and contains less blood than him, but that is no reason to rather kill his mother than him. To clarify, as Milburn points out as well, I am not concerned with rights or moral status. Instead, I talk about virtues and vices related to overriding one's empathy based on resonance. This resonance is stronger with cows than with, for example, mice or insects, inter alia, because of the haptic resistance, the blood spilled, and other factors. Therefore, killing a cow requires a higher level of overriding one's empathy, thus, a more vicious character than killing mice or insects. The vices it takes to kill a smaller or a large human are comparable as the resonance-based empathy is similar. Here, the vicious character makes killing a cow worse than killing a mouse, which is, unlike species, amount of blood, or body size, not an arbitrary variable.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Conclusion

In this paper, I argued against burger veganism, which aims for slaughtering big, grass-fed animals to reduce the total number of animals being killed in agriculture. First, I showed that current philosophical rebuttals of burger veganism are insufficient, most importantly, by arguing that the deaths occurring in arable farming are not unintentional. Second, I echoed Trivigno (2013) about the importance of empathy, the role it plays in inhibiting violent actions and the viciousness of overriding and unlearning it. Third, I showed that Trivigno's arguments about soldiers learning to kill equally apply to the case of slaughterers in the burger vegan scenario habitually killing animals and therefore involve the same set of vices. Finally, I compared the burger vegan scenario with arable farming to conclude that the burger vegan scenario still requires humans to override their empathy, which is not the case in arable farming.

References

Davis, S.L. (2003). The least harm principle may require that humans consume a diet containing large herbivores, not a vegan diet. Journal of Agricultural and Environmental Ethics, 16, 387–394.

Dillard, J. (2008). A slaughterhouse nightmare: Psychological harm suffered by slaughterhouse employees and the possibility of redress through legal reform. Georgetown Journal on Poverty Law and Policy, 15, 391–408.

Flynn, C. (2002). Hunting and illegal violence against humans and other animals: Exploring the relationship. Society and Animals, 10(2), 137–154.

Grossman, D. (2014). On killing: the psychological cost of learning to kill in war and society (Rev.). Open Road Media.

Jamieson, D. (2017). Rights, justice, and duties to provide assistance: A critique of Regan's theory of rights. In: Palmer, C. (ed.) Animal Rights. Routledge, Abingdon, pp. 177–190.

Joy, M. (2020). Why we love dogs, eat pigs, and wear cows: an introduction to carnism. Red Wheel, San Francisco, CA.

Lamey, A. (2007). Food fight! Davis versus Regan on the ethics of eating beef. Journal of Social Philosophy, 38(2), 331–348.

Loughnan, S., Haslam, N. and Bastian, B. (2010). The role of meat consumption in the denial of moral status and mind to meat animals. Appetite, 55(1), 156–159.

Marshall, S. L. A. (2000). Men against fire: The problem of battle command. University of Oklahoma Press, Stillwater, OK.

Milburn, J. (2022). Just fodder: The ethics of feeding animals. McGill-Queen's Press-MQUP, Montreal, QC.

Milburn, J. (2024). Relational animal ethics (and why it isn't easy). Food Ethics, 9(1), 6.

Misselhorn, C. (2023). Is empathy with robots morally relevant?. In Emotional machines: perspectives from affective computing and emotional human-machine interaction Springer Fachmedien, Wiesbaden, pp. 159–181.

Moya-Albiol, L., Herrero, N. and Bernal, M.C. (2010). The neural bases of empathy. Behavioural Neurology, 50(2), 89–100.

Regan, T. (2004). The case for animal rights (Updated with a new preface). University of California Press, Stanford, CA.

Slade, J. and Alleyne, E. (2023). The psychological impact of slaughterhouse employment: A systematic literature review. Trauma, Violence, and Abuse, 24(2), 429–440.

Taft, C.T., Vogt, D.S., Marshall, A.D., Panuzio, J. and Niles, B.L. (2007). Aggression among combat veterans: Relationships with combat exposure and symptoms of posttraumatic stress disorder, dysphoria, and anxiety. Journal of Traumatic Stress, 20(2), 135–145.

Trivigno, F.V. (2013). A virtue ethical case for pacifism. In Virtues in action: New Essays in applied virtue ethics. Palgrave Macmillan, London, pp. 86–101.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

What can dignity do for animals?

K. Eckl[1,2]
[1]*Veterinary Medicine Vienna, Messerli Research, Vienna, Austria;* [2] *University of Vienna, Philosophy Institute*
E-mails: konstantin.eckl@vetmeduni.ac.at; eckl.ko@univie.ac.at

Abstract

In this paper, I will argue that dignity-based arguments for a *prima facie* prohibition against genetic engineering that alters animals' capacities fail because of the problematic nature of the concept of dignity at play. I will argue that the kind of dignity necessary for those arguments does not work as a consistent ethical or legal principle, and is instead more properly understood as a *post hoc* justification of otherwise not rationally justifiable emotional responses. I will, however, propose a way in which the concept can nonetheless be taken seriously when thinking about the issue of capacity-reducing but harm-less genetic engineering. The example which I will use to make this argument is the discussion around dignity of the creature as a legal concept in the German-speaking world, and particularly the development of the use of the term in the Swiss legal code.

Keywords: animal ethics, bioethics, genetic engineering

Dignity and genetic engineering

Somewhat uniquely in the German speaking world, there has been a lot of attention paid to the role which the concept of dignity could potentially play in structuring our conduct with animals, both as an ethical and as a legal norm. This has even led to the inclusion of the concept as 'dignity of the creature' ("Würde der Kreatur") in the 1992 Swiss constitution (Bundesverfassung der Schweizerischen Eidgenossenschaft, BV (Swiss Constitution)) (BV Article 24, revised in 1999 to Article 120). Though initially met with revolutionary expectations (cf. EKAH and EKTV 2001), the term has in subsequent interpretations increasingly been made less powerful (Odparlik, 2007: p. 77ff.), with a 2010 position paper of the Swiss Academy of Science's Ethics Commission for Animal Testing denying *any* concrete consequences to an application of the concept at all (ECAE, 2010). Rather, according to the commission, dignity is to be understood as the purely formal condition of something being morally relevant at all, roughly synonymous with 'moral status' (cf. also ECAE, 2017; somewhat inconsistent with this; cf. BLV, 2017). An animal having dignity, under this understanding, tells us nothing about what kind of duties we have towards it, only that it is the kind of thing one can have duties towards. In terms of concrete protections for animals, this puts dignity-endowed animals in Swiss law on a par with those in Austrian and German law which lack such endowment since there, the positive moral status of animals is clear from the sheer fact that these legal codes contain animal welfare laws at all (Binder, 2011: p. 41).

There nonetheless remain calls to allow dignity not only this formal meaning, but also one which entails concrete and specific duties — what Peter Kunzmann calls a "material" understanding of the term (Kunzmann, 2011: p. 61). This would entail, as Kunzmann puts it, that dignity is both "grounds (and) subject of a weighing-of-interests" (Kunzmann, 2011: p. 57; translations mine throughout). I translate 'Güterabwägung' as single term, 'weighing-of-interests' rather than a phrase, as done in usual translations, to distinguish the operationalized weighing of different moral goods, only some of which are the animal's actual, psychologically experienced *interests* from the weighing of such actual interests only These calls tend to focus on the role that dignity can play in the discussion around genetic engineering. Genetic engineering is also the context in which the term 'dignity of the creature' has been first introduced into

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

the Swiss constitution and remains the context of a significant number of its invocations within the Swiss legal code (e.g. in the Gentechnikgesetz (Swiss genetic engineering law, GTG); PatG Section 1B Article 1; PatG, Patentgesetz (Swiss patent law)). The intention of using dignity in this way is, then, at least partially supported by the legal text.

In particular, the claim is that a material interpretation of dignity is needed in order to make sense of deep and widespread intuitive opposition to certain forms of genetic engineering which fundamentally change the animals in question but do not cause them any suffering or frustrated interests (Gavrell Ortiz, 2004; Kunzmann, 2009; cf. also Ferrari, 2009: p. 135ff.). The most prominent, albeit still hypothetical, case of such 'harm-less' genetic engineering is that of "animal microencephalic lumps" (AMLs) (Gavrell Oriz, 2004: p. 95). AMLs are potential animals which have been engineered to be insentient. They cannot experience suffering (or anything), have interests or act autonomously making them into 'vegetable animals'. The motivation for producing such animals is to replace ordinary animals in agriculture with AMLs, thereby alleviating the suffering of billions of animals. To the prospect of such and similar creations, we react with a "unified groan" (Loder, 2016: p. 63) - very widely, most people intuitively see their creation as objectionable. The worry of thinkers like Kunzmann is, however, that under the 'pathocentric', that is, feeling-focused paradigm of most countries' animal laws, and of most orthodox animal ethics, no justification can be given for that objection. Since AMLs cannot experience ordinary, subjectively based harms like suffering, their creation cannot be condemned in reference to those harms. Instead, an additional, non-experiential harm is needed which can, when performing a weighing-of-interests, counter-balance the suffering that would be alleviated were ordinary farm animals replaced with AMLs. This is the work a material understanding of dignity would do. For it to do that work, we would need to adopt a specific understanding of dignity. It has to be, for one, a *material* understanding, meaning that concrete rights and duties follow directly from a creature having dignity. It also must not be reducible to any other subjectively-grounded values such as the badness of suffering or the goodness of intact autonomy since it would be used to counterbalance these values. And it has to be violated by instances of harm-less genetic engineering. This last condition is generally met by describing dignity as the value inherent in an animal's species-specific nature (e.g. Balzer *et al*., 2000; Bolliger, 2015; Kunzmann, 2009, 2011). Obstructing an animal's species-specific nature, under this interpretation, is equivalent to violating its dignity. From here on out, I will use 'Dignity', with a capital D, to denote the understanding of dignity that meets all those conditions. The argument for which Dignity is a necessary component — 'Animals possess Dignity, harm-less genetic engineering violates Dignity, therefore harm-less genetic engineering is *prima facie* objectionable' — I will call 'the Argument', with a capital A.

My claim, which I will be substantiating over the next few pages, is that the Argument fails, and that it does so for the same reason why Dignity in its material interpretation is untenable as a legal principle. It is because Dignity as a concept fails to meet the minimal standards we ought to apply to a value when asking whether to use it when performing a weighing-of-interests. Dignity is neither well-substantiated enough nor consistently enough practically applicable to justify us in potentially sacrificing animal welfare to uphold it as a basic value.

This is, on the one hand, a problem of evidence. We are simply not epistemically justified in making the assumption that next to welfare, interests and autonomy, there is also another basic value in the form of Dignity to consider in a weighing-of-interests. I will go into that evidence shortly. But there is also, and relatedly, a moral problem which arises from this. If we find that there is no principle of animal Dignity which we are justified in generally applying to animals, then insisting on its use in the Argument can only be interpreted as an attempt to rationalize, *post hoc,* our deep emotional reaction to capacity-reducing, harm-less genetic engineering. In that case, we would be using animals and their right to be protected as a means of masking our own discomfort. There may very well be a sense in which "in the protection of the dignity of others, "man retains and confirms his own dignity" as Kunzmann (2007: p. 25) says (cf. also

Franck Meijboom and Dominic Berry, Animal Ethics 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Preuß, 2009) but once this is the *only* reason we are interested in animals' supposed Dignity, we are no longer engaging in the protection of animals, but in austere self-therapy. To potentially sacrifice animals' welfare for a Dignity we use to prop up our own status is precisely that kind of instrumentalization which Dignitarians claim they want to prevent.

Epistemic evidence

Before talking about the evidence *against* Dignity, I will first make explicit the evidence cited *for* it in the context of the Argument. Recall that we are asked to accept Dignity because it is necessary for the Argument to succeed, a success which in turn is implied by our intuitive response to harm-less genetic engineering. The evidence cited for Dignity is, then, an argument from best explanation. We experience 'the unified groan' and find it best explained by stipulating the existence of Dignity. This is an argument which could also successfully be made for, e.g., the badness of suffering - we all agree that at least our own suffering is bad, and the best explanation for this is that suffering is indeed bad.

But while the badness of suffering is extremely uncontroversial, the existence of animal Dignity is disputed. It therefore carries a more demanding burden of proof than does the badness of suffering. In other words, our confidence in the badness of suffering is so high that if a worldview would ask us to deny that badness, that would invariably count against that worldview, rather than against our confidence in the badness of suffering. Not so with Dignity; the fact that many people are unsure about its status means that it carries a burden of proof to show that its existence coheres with views on the world about which there is higher consensus.

Next, I will show how Dignity has problems doing just that when it comes to its view of species. After that, I will go into the second evidentiary problem for Dignity, that of its inconsistent applicability. This is especially problematic for its use as a legal principle and, if I am right, is likely to be the reason for its diminished potency over time in the interpretation of Swiss law.

Species

In order for Dignity to function in the Argument we must assume a particular picture of 'species'. For there to be a 'species-specific nature' which can be violated by genetic engineering, 'species' must be thought of as a natural kind with a static essence which is stable until disrupted, and which remains with an animal, in an infringed-upon form, even in those animals which are the result of genetic engineering that changed their capacities (cf. Shriver and McConnachie, 2018). This 'Aristotelian' (Rippe, 2011: p. 27) picture of species does not align with the one used in biology, nor in the disciplines of genetic engineering which the concept is meant to be regulating. There, species is generally considered fluid and essence-less (Ereshefsky, 2016). Even taking one of the more essentialist definitions of species used in biology, that of animals capable to produce fertile offspring, this would still not suffice for the Argument, since if that was what defined species, then violation of species-specific nature could be avoided by simply sufficiently changing the animal's genetic material as to not be able to reproduce with their source species (I thank Erich Linder for pointing this out to me).

Since both dignity as well as the picture of species it relies on are more controversial than the biological picture they conflict with, this counts as evidence against Dignity, and as a reason for us to be wary in including the concept in our practical deliberation.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Universalizability

The second evidentiary problem for Dignity is arguably even greater. It is that although Dignity appears like a plausible assumption in a limited number of emotionally charged cases, it does not universalize over relevantly similar but less fraught cases as one would expect a coherent concept to do. Dignity is plausible mainly when it comes to capacity-reducing changes to animals on the genetic level as in the Argument, but even there only when it comes to such changes in the *future*. It does not get evoked, for example, when talking about backwards-facing cases of anthropogenic influence on species, such as the breeding of wolves into dogs with radically divergent species-specific nature, or of wild fowl into chickens whose species-specific ability to fly has literally been bred away. Our familiarity with these infringements on species-specific nature seems to have neutralized most intuitions against them. This extends also to 'abstract' instances of insentience such as cultured meat, which is essentially an AML without a repulsive body. Non-genetic infringements on species-specific nature don't seem to be of much concern to the defenders of Dignity either, as their general lack of opposition to animal agriculture as a practice shows (Balzer *et al*., 2000: p. 23)

Importantly, there is a strong counter-intuition against the application of Dignity in those cases where the animal the Dignity of which is at stake is also the animal which would be benefited by Dignity's infringement or harmed by its retention. In such cases, the idea to privilege the retention of their species-specific nature over their own interests, wellbeing and freedoms in a weighing-of-interests appears unduly callous. Take the de-horning of rhinos for their protection against poachers. Presumably, a case can be made against it on the basis of the infringement of social capacities of the rhino. But imagine such arguments against the de-horning and for their intact social life being made without reference to the fact that it would benefit the rhino's flourishing and that it, if it was well-informed, would likely be interested in retaining that social life. Imagine someone convinced of the de-horning serving a rhino's interest, improving its welfare and range of possibilities while not hurting any other animals around it or in its ecosystem. Surely it would be an act of cruelty against the rhino, or at least a critical lack of empathetic compassion, to refuse it that improvement of welfare, no matter how small, only to retain some nebulous species-specific nature the animal is unable to care about. So while there appears to be wide intuitive backing for Dignity when one looks only at cases like the engineering of AMLs, that support quickly evaporates once we apply the concept consistently.

This point is especially problematic in the context of Dignity's use in the Swiss legal code. As Klaus Peter Rippe (2011) points out, for dignity to effectively ground legal norms, it has to fulfil criteria of argumentative trackability and justifiability. In this, even if the problems resulting from the Argument's picture of species are not fatal, the concept's inconsistent applicability makes it all but useless as a legal term. If the term should function as a legal concept, then it must be consistently applicable, not only to allow citizens to trace the argumentative justification of legal claims but also because that is simply what a legal concept should do: *If* animals have Dignity and *if* obstructing their species-specific nature violates that Dignity, then the offense of 'violating a creature's dignity' better obtain not only in some, but in all cases of such obstruction, and exceptions should be explicitly stated and argued for in a trackable manner. If we can pick and choose when to apply it and when we don't, then we may as well simply give an exhaustive list of actions which would constitute a violation of a given animal protection law without reference to a broader principle — as is indeed *also* done when dignity is mentioned both in the animal welfare law — (Swiss animal welfare law (Tierschutzgesetz, TSchG)) (TSchG Article 3a) as well as the genetic engineering law (GTG Article 8) of Switzerland.

Franck Meijboom and Patrick Bateson | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Moral evidence

Epistemic evidence is of course not the only thing we ought to look at if we want to ascertain whether we are justified in including a norm in our practical deliberation. We also look at the moral seriousness that a violation of that norm, if it turns out to be applicable, would entail. The worse the possible consequences, the lower the evidential threshold should be for us to include a moral norm in our practical deliberation – we should be more cautious if the stakes are higher.

And indeed, our reaction to the prospect of insentient animals is very strong, implying a very problematic potential infraction. However, it has to be kept in mind that (a) the alternative which the hypothetical insentient animals would be produced to replaced is the suffering and instrumentalization of billions of animals, about the heinous badness of which we are quite confident and that, as said above; (b) although our reaction to AMLs is very serious, that reaction does not transfer to other cases which are relevantly similar in how Dignity is affected. It is not at all clear, therefore, if the seriousness implied by our 'unified groan' is actually the seriousness we should associate with harm-less, capacity-reducing genetic engineering and not rather a function of the depth of disgust which we feel at the thought.

Our lack of justified confidence in Dignity in general, and its practical inconsistency in specific, not only makes it prudent not to include it in weighings-of-interests, it also draws into question the original argument from best explanation for Dignity. There are multiple alternative explanations for the 'unified groan' which do not rely on Dignity or a similarly problematic concept. One is the one suggested by Shriver and McConnacie (2018), that this intuition is a mere "aesthetic response" with "no moral force". According to this explanation, we feel outrage at the prospect of capacity-reducing genetic engineering due to disgust and unfamiliarity which have no reasonable grounding. Since this explanation manages to account for the same phenomena Dignity is supposed to account for, but without its implausible assumptions and without its inconsistent application, even the argument for Dignity from best explanation fails, and with it, so does the Argument.

Still some use for Dignity?

Most people would want their moral opinions to be at least rationally consistent, but they also may be (quite reasonably) suspicious of just throwing off as irrational a true-seeming conviction like that expressed by the unified groan. For them, the option remains open to employ what elsewhere I call 'tempered rationalism' (Eckl and Deininger, 2024) - they can take their disgust responses as a piece of evidence for, and as a tool in, the deliberation about the problematic nature of AMLs which ought to encourage caution. They can even employ the concept of dignity (lower case d) to call for such caution, using it as a fuzzy "cluster concept" (Challenger, 2023: p. 12) meant to denote a not yet fully articulated set of harms, or harms we are not yet sure about obtaining. Perhaps a social kind of harm will eventually be identified, as proposed for example by Schindler (Schindler, 2013; cf. also Gruen, 2014). Or perhaps the practice of genetically engineering animals to reduce their capacities in order to improve their (or others') welfare, as repugnant as it may seem, will turn out to be unproblematic, if no harm can be identified, in which case the claim of dignity will have to be dropped. In this way, one can take seriously the intuition that something is not right when animals are reduced to blobs of meat without committing oneself to positing a new and irreducible value.

This option does not deliver the kind of settled *prima facie* prohibition of capacity-reducing genetic engineering which our intuition seems to demand, nor will it reliably trump the suffering such engineering could prevent. But it would go some way to avoid the possibility that in an effort to protect animals, we are instead subjecting them to real and tangible harm for no other reason than to remove our personal sense of distaste.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

References

Balzer, P., Rippe, K.P. and Schaber, P. (2000). Two concepts of dignity for humans and non-human organisms in the context of genetic engineering. Journal of Agricultural and Environmental Ethics 13 (1): 7–27. DOI: 10.1023/A:1009536230634.

Binder, R. (2011). Würde erster und zweiter Klasse? Überlegungen zur Forderung nach Anerkennung der Würde des Tieres dus Tierschutzrechtlicher Sicht." TIERethik, 3(3), 32–55.

BLV. (2017). Güterabwägung: Erläuterungen. Bundesamt für Lebensmittelsicherheit und Veterinärwesen (BLV). available online at https://www.blv.admin.ch/blv/de/home/tiere/tierversuche/schweregrad-gueterabwaegung.html.

Bolliger, G. (2015). Legal protection of animal dignity in Switzerland: Status quo and future perspectives. Animal Law, 22(2), 311–396.

Challenger, M. (2023). Beginning with Dignity. In Animal dignity. Philosophical reflections on non-human existence. Bloomsbury, London, pp. 5–21.

ECAE. (2010). Würde des Tieres und Güterabwägung im Schweizerischen Tierschutzgesetz. Ethikkommission für Tierversuche der Akademien der Wissenschaften Schweiz (ECAE). ALTEXethik.

ECAE. (2017). Weighing of interests for proposed animal experiments — Guidance for applicants. Swiss Academies Communications, Ethics Committee for Animal Experimentation (ECAE) of the Swiss Academies of Arts and Sciences, 12(3). DOI: 10.5281/zenodo.844378.

Eckl, K. and Deininger, K. (2024). A tempered rationalism for a tempered yuck factor. Asian Bioethics Review, in press. DOI: 10.1007/s41649-023-00278-x

EKAH and EKTV. (2001). Die Würde des Tieres. Eidgenössische Ethikkommission für die Gentechnik im ausserhumanen Bereich (EKAH) und Eidgenössusche Kommission für Tierversuche (EKTV).

Ereshefsky, M. (2016). Natural kinds in biology. In Routledge encyclopedia of philosophy, 1st edn. Routledge, London. DOI: 10.4324/9780415249126-Q124-1.

Ferrari, A. (2009). Gentechnisch veränderte Tiere: ein Sonderfall? In Der ethisch vertretbare Tierversuch. Brill mentis, Paderborn, pp. 265–295. DOI: 10.30965/9783969750988_015.

Gavrell Ortiz, S.E. (2004). Beyond welfare: Animal integrity, animal dignity, and genetic engineering. Ethics and the Environment, 9(1), 94–120.

Gruen, L. (2014). Dignity, captivity, and an ethics of sight. Oxford University Press, Oxford. DOI: 10.1093/acprof:oso/9780199977994.003.0015.

Kunzmann, P. (2007). Der Stumme Appell um Schonung. Hans Jonas und der Systematische Ort einer 'Würde der Kreatur.'" In Odparlik, S. and Kunzmann, P. (eds) Eine Würde für alle Lebewesen? Herbert Utz, Munich, pp. 9–35.

Kunzmann, P. (2009). Die „Würde der Kreatur" und die Frage nach dem moralischen Status von Pflanzen und Tieren bei gentechnischen Eingriffen. Journal für Verbraucherschutz und Lebensmittelsicherheit, 4(3), 305–311. DOI: 10.1007/s00003-009-0304-9.

Kunzmann, P. (2011). Die 'Würde des Tieres' - Grund oder Gegenstand einer Güterabwägung? TIERethik, 3(3), 56–65.

Loder, R.E. (2016). Animal dignity. Animal Law, 23(1), 1–64.

Odparlik, S. (2007). Und die Würde der Pflanze?" In Odparlik, S. and Kunzmann, P. (eds)Eine Würde für alle Lebewesen? Herbert Utz, Munich, pp. 73–103.

Preuß, D. (2009). Die „Würde der Kreatur" im Kontext der Gentechnologie – zwei Facetten einer Anthropologie. Journal für Verbraucherschutz und Lebensmittelsicherheit, 4(3), 393–398. DOI: 10.1007/s00003-009-0321-8.

Rippe, K.P. (2011). 'Würde des Tieres' aus Rechtsphilosophischer Sicht. TIERethik, 3(3), 8–31.

Schindler, S. (2013). The animal's dignity in Swiss Animal Welfare Legislation – Challenges and opportunities. European Journal of Pharmaceutics and Biopharmaceutics, Biological Barriers, 84(2), 251–254. DOI: 10.1016/j.ejpb.2013.02.013.

Shriver, A. and McConnachie, E. (2018). Genetically modifying livestock for improved welfare: a path forward. Journal of Agricultural and Environmental Ethics, 31(2), 161–180. DOI: 10.1007/s10806-018-9719-6.

Franck Meijboom and Patrick Baron (eds), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Løgstrup and animals — time for a Gestalt shift?

M. Gjerris[1,] and J.L. Harfeld[2]*
[1]University of Copenhagen, Department of Food and Resource Economics, Rolighedsvej 23, 1958 Frederiksberg, Denmark; [2]University of Aalborg, Department of Culture and Learning, Kroghstræde 3,9220 Aalborg Ø, Denmark
** Corresponding author, e-mail: mgj@ifro.ku.dk*

Abstract

In this paper we will argue that what Bernard E. Rollin describes as a gestalt shift and what K.E. Løgstrup calls "the immediate experience" are two converging epistemological approaches that enables ethical awareness. This paper thus serves as a prequel to an earlier paper (Gjerris and Harfeld, 2019), where we developed the idea that the ethical perspective of K.E. Løgstrup can provide fruitful insights in an animal ethics context. Together the two papers point to a possible Rollian gestalt shift in the reception of Løgstrup. Further, this approach not only makes Løgstrup's thinking relevant in an animal ethics context even though Løgstrup himself never mentioned this as an opportunity, but also, based on the idea of sympathetic observations in Rollin, makes it possible to connect Løgstrup's thoughts of "the silent demand" and the responsibility of the individual with the virtue ethics strand within contemporary animal ethics.

Keywords: animals, epistemology, ethics, phenomenology, Rollin

Introduction

Billions and billions of animals are each year bred, raised and killed under conditions that are encapsulated by the words of literature Nobel laurate Isaac Bashevis Singer: *To the animals, life is an eternal Treblinka* (Singer, 1968/1982). Ethical thinking about animals have followed closely the intensification of animal production since the development accelerated after WW2, as encapsulated in Ruth Harrison's perennial work *Animal Machines* (Harrison, 1964). To the best of our judgment, it has made only little difference. The intensification of animal production continues today, excused, if even that, by concerns of food security, economic and cultural importance, freedom of consumer choice, and/or vague claims of sustainability. Animal welfare as a concept is misused in large publicly funded research project, political statements, legislation, commercials and even presented with the undeniable evidence of the horrors most of us maintain our willed blindness towards the suffering and death of the nameless billions.

So why, you may ask, do we spend the time writing a paper trying to bring the thoughts of a deceased animal philosopher and an even longer deceased theologian together and then connect them with trends within animal ethics — a discipline that apparently does not change the situation? One answer is that this is what we do. We are academics: we think, and we write, because we know no other way — even though the situation might call more for action and civil disobedience. Another answer is that at least we can bear witness through this task and put into words what mostly goes unspoken. As Granny Aching says in *Wee Free Men: Them as can do has to do for them as can't. And someone has to speak up for them as has no voices.* (Pratchett, 2003). And finally, we still believe that we as humans do have the ability to open our eyes and, in the word of Basil of Caesarea (330–378 AD), experience that animals also *love the sweetness of life* (Preece, 1999). We believe that this gestalt shift is a normative necessity. And the population of EU ought to make it so as to be able to act in accordance with the values that most express when asked about the importance of animal welfare (see e.g. European Parliament, Directorate-General for Communication, 2023). We just need to find figure out how we manage to open the eyes of others — and ourselves. So.... here we go:

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Looking through the sympathetic eyes of Bernard Rollin

Before considering, let alone acting on, our particular types of obligations to animals — e.g., deontologically, or according to utilitarianism — we must become aware that such considerations are meaningful, an awareness that based on the observations in the introduction, is not widespread today. Bernard E. Rollin describes the shift in awareness as a *gestalt shift* (Rollin, 1992). Although, borrowed from Gestalt psychology, Rollin's concept is deeply connected to moral psychology and normative ethics. It is a way of describing an epistemology necessary for ethical action as well as an ethical demand in itself. According to Rollin this gestalt shift away from an anthropocentric world view, happens first by sympathetic observations where one brackets one's current worldview of moral status and re-observes phenomena with a renewed epistemological openness. From such sympathetic observation we can evolve a new and ethics-inclusive epistemology – an empathetic understanding. Although the idea of 'bracketing' one's fundamental moral perception could sound inspired by phenomenology it is, in the original form from Rollin, a matter of sceptic methodology. It is more inspired by David Hume and John Stuart Mill and emphasizes the idea of constant vigilance toward one's fundamental assumptions and perceptions. For Rollin there is no pure perception of phenomena – or at least there is no pure perception of moral phenomena. The Humean inspiration is clear when Rollin asserts that a pre-action ethical stance is a directedness that includes emotional elements – what Hume would have called sentiments. This unfolds itself through two stages. The sympathetic observation is a deliberate act in which a person questions her previous assumption in order to observe anew a given phenomena in an act of radical openness.

Such an approach of course presupposes that being human includes an epistemological living in the world that include a vast number of normalities that can be seen as unreflected background assumptions. We take these for granted in a simple sense, and it is most likely a compartmentalization necessary to function adequately in a day-to-day interaction with both other beings and other things. By compartmentalization we mean the moral-psychological feature of internalizing two (or more) epistemologically contradictory assumptions. Rollin, however, insists that on the matter of animals we seem to be stuck both as (many) individuals and as a society in ways of thinking that are exclusionary to animals in an ethical sense. As a culture or a society, or as sub-groups of society, we have a number of epistemological-ethical assumptions about the world. Rollin calls this "Ethics_1" – and describes it as "the set of beliefs that society, individuals, or subgroups of society hold about good and bad, right and wrong, justice and injustice, fairness and unfairness" (Rollin, 2006: p. 31). If we are to seriously address the problem of animal ethics, we need to find epistemological ways of challenging our set of beliefs. One way is to engage in sympathetic observations. To do sympathetic observations in the Rollian sense, we must first of all recognize that that our embeddedness in any group – and often more than one – predisposes us to certain 'sets of belief'. Second, we must identify what the content and thus also the limits and extents are of these types of epistemologies. Lastly, we must bracket our current epistemologies to the extent we can in order to open up possibilities of perceiving differently and more. For this last step to be relevant in an ethical sense, the openness must be sympathetic. That means it must explore the unexplored with an emotional directedness that, at least at the onset, must include the possibility of meaningful feeling-with (Greek *sympatheia*, from *syn* meaning 'with' and *pathos* meaning emotion). It this way Rollin's sympathetic observation is both a very open epistemological activity, and it is an activity that carries with it a theoretical directedness, probing the world for meaningful connections.

The second stage of Rollin's moral epistemology is his concept of empathetic understanding. One can understand this as post-discovery level of moral epistemology. The openness of the sympathetic observation has brought to the forefront relevant new beings and empathetic understanding is focusing in on the way that it is to be such beings – such animals – and in what ways they can have good lives. In this way an empathetic understanding is a way of considering the *telos* of an animal, i.e. it is an

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

understanding of imaginative qualitative ethology about the flourishing life of an animal that is not human. These stages of moral epistemology are not matters of epiphanies and sudden conversions. The turn-around of the Gestaltshift is linked to a continual process of ethical reflection – including an ethical demand of ethical reflection – on our current observations and understandings of the non-human world. It is an unending process. Perhaps it is even an *unfulfillable* demand.

Experiencing the universe with Løgstrup

In an earlier paper (Gjerris and Harfeld, 2019), we developed the idea that the ethical perspective of K.E. Løgstrup can provide fruitful insights in an animal ethics context. Writing in a phenomenological tradition, Løgstrup draws on a body of work dating back to Edmund Husserl (1859–1938) that focuses on the distinctly human experience of being-in-the-world. To be human is to be something that the rest of the animal world is not, what Martin Heidegger calls a *Dasein*. Løgstrup seems to continue this line of thinking when he, in his philosophy of perception, suggest that animals are radically different from humans in that we, through our understanding of the world expressed through language, differentiate ourselves from nature and therefore perceive nature as something different from ourselves: an Umwelt, whereas animals, though capable of sensations, live in the world as *an element* from which they cannot distinguish themselves (Løgstrup, 1995a). So far, the thinking of Løgstrup seems to end up somewhere along Thomas Nagel's thoughts about what it is like to be a bat: We have no idea as we do not experience the world as a bat (Nagel, 1974). And in Løgstrup's case it is not only that we lack the sense modalities to do so that leaves the animal as an enigma. It goes deeper and pertains to the unavoidable distance that our faculty of understanding the world ("language" in Løgstrupian terms) creates between humans and the world that leave us unable to understand what it is like to be without that distance. So how to connect Rollin's moral epistemology of empathetic understanding with this seemingly unbridgeable gulf between human and animals in Løgstrup? How to empathetically understand that which you cannot understand?

Here we wish to point to the category of "immediate understanding" in Løgstrup's epistemology. A category that opens an opportunity to understand what the universe — and animals — are before we begin understanding them through a lens completely decided by human needs and interests. Løgstrup develops this idea in a discussion with the epistemologies of Immanuel Kant (1724–1804) and Heidegger (1889–1976). Briefly (all too briefly), Løgstrup's claim is that even though Kant and Heidegger's epistemologies both point us in the right direction when claiming that we cannot help but understand the world as such through the beings we are both mentally and physically this does not exclude the world from being present as itself in our understanding of it. Løgstrup coins the term "countered transcendence" to illustrate the doubleness in our understanding of the universe: that it is both shaped by the beings we are and the universe we seek to understand (Løgstrup, 1995b).

We perceive and understand a tree as the beings we are. It is extended in three spatial dimensions. It moves from seed to tree in an always progressing timeline and exist in a causal network with other beings. When we perceive it as living, vulnerable, mortal beings we can find uses for it: shelter, rest, timber, food etc. Lately we have even developed scientific methodologies to better understand what it is made of, how it functions, what it does and how it is causally connected to the rest of the biosphere, which again enables us to better use it to continue our own existence. So far Løgstrup walks with Kant and Heidegger. Where he, at least in his own understanding, veers away, is in his insistence that a phenomenological description of the tree as a phenomenon in the world can also grasp some of what the tree is before we begin telling the tree what it is to us. To Løgstrup this is trying to understand the phenomenon based on the universe, not ourselves. He is only all too aware that this is a difficult task, perhaps an unfulfillable ideal, but nonetheless a meaningful task as it enables what he calls a "silent conversation" (ibid.) with the universe. Løgstrup labels this way of thinking "Cosmos-phenomenology" signifying the presence of reality as it is before we arrive at it, in our understanding of it. Jakob Wolf, a student of Løgstrup, has expressed it this way:

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

"We articulate what the tree cannot articulate itself. We lend the tree our words. The word may be ours, but it has arisen in an interpretive dialogue with the tree, where the tree's contribution to the word is at least as significant as ours. We do not know what they are saying, but things speak to us. Although the world is silent, it speaks to us, and language tries to give words to this speech" (Wolf, 1997: p. 77).

Thus, Løgstrup finds that the universe can inform us of what it is. And to Løgstrup what we can understand is that the universe that can be used, but also misused. That there are ethical limits to our exploitation of the world. We see no reason not to include animals in the term "universe" which in Løgstrup's thoughts mean "all of reality". And to us this is the connection between Løgstrup's and Rollin's epistemologies. Both provide a way of perceiving, understanding, sensing the universe where we can discover what is ethically relevant. Where Rollin were focused on animals as beings, we could establish an ethical relationship with, Løgstrup in his later metaphysical thinking uses this to develop the foundation for an environmental ethics. As to whether Rollin's thinking can be expanded into an environmental ethics, we will not touch upon here, but it seems clear to us that Løgstrup's metaphysical and ethical thinking can be interpreted to provide fruitful insights into the pre-conditions for speaking about our ethical duties towards animals.

Why was Løgstrup silent on the topic of animal ethics?

We believe that it is important to know the apparent inherent limitations of the traditional phenomenological approaches to understand the limits of inclusion that Løgstrup's philosophy on animals and nature exhibits. Contemporary scholars have shown that there are fruitful opportunities in the phenomenological tradition of analyzing animal existence and addressing questions of animal ethics. A scholar like Martin Huth has shown how it is meaningful to draw on, for example, Maurice Merleau-Ponty and his concepts related to *intercorporeality* and *interanimality* to show an interconnectedness with animals that is also normative (Huth, 2016). Nicolai Krejberg Knudsen argues that Heidegger's phenomenology could be seen as a type of *anthropoexcentrism* which leaves this approach open to both epistemological and ethical non-anthropocentrism (Knudsen, 2021). Nonetheless, it is still clear that animal philosophy in a modern sense, and animal ethics in particular, played a minimal role in original focus of the phenomenological program in the beginning and the middle of the 20th century. And thus, a minimal role in the foundation that Løgstrup's philosophy was standing on.

Similarly, with Løgstrup's theological background. He grew out of a Lutheran tradition and had a continued dialogue with Søren Kierkegaard throughout his career. From a theological standpoint his main contribution is an insistence on that good co-exist in the world together with evil, although never in a way that humans can take credit for it. To Løgstrup human existence is situated between creation and annihilation, but with the opportunity to interpret certain phenomena in a religious way pointing towards a loving and caring God. This is not the place to expound on Løgstrup's theology, but just to say that much can be said about the traditions and thinkers that he embraced, discussed, and rejected throughout his work, but animal ethics was not at the forefront of any of them. Løgstrup sought to break free of what is today often called an anthropocentric worldview which both the philosophical and theological traditions he formulated his thoughts in discussion with were steeped in. Through his philosophy of the senses, his language philosophy and not least his cosmos-phenomenological twist of the phenomenological tradition he established humans as an integral part of a universe that was open to religious interpretation and worthy of ethical consideration. That he never explicitly concerned himself with the issues of animal ethics, so obvious to us today, is from our perspective not because his thinking does not allow this, but simply a sign of his times.

Franck Meijboom and Dominic Berry, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

A Løgstrupian flavored animal ethics

As discussed in Gjerris and Harfeld (2019), also Løgstrup's ethical thinking is open to including animals as beings, that humans stand in an ethical relationship with. There we show how the concept of an unconditional non-reciprocal ethical demand to take care of those dependent on our actions can be seen as the basis not only of an inter-human ethics, but an ethics that include all animals. Here we will end by focusing on one aspect of Løgstrup's notion of the ethical demand that we are to use the power we have others to their benefit: It is silent (Løgstrup, 2020). With "silent" Løgstrup wishes to signify that the demand can never be solidified into unbreakable principles be they utility-maximizing or deontological in character. The demand must always be incarnated in context by the ethical agent based on her/his understanding of the situation and the other. This does not prevent us from establishing what Løgstrup calls "a material ethics", but it will always be provisionally and open to the context.

In Gjerris and Harfeld (2019) we suggest that this understanding is not far from an Aristotelian understanding of how virtues are expressed in context through the intellectual virtue of "phronesis". To us this suggests that Løgstrup's ethical demand might be a bit less silent than typically understood. The ethical demand is that we take care of whatever part of the other's life we hold in our hand with the sole intention of furthering the other's existence. Combined with the epistemological ideas of Rollin and Løgstrup described above this suggest to us that we do have access to understand not only that we are in an ethical relationship with other animals, but also some rule of thumbs about what "furthering the other's existence" could mean. Here Rollin's more explicit ideas about telos are worth mentioning in an Aristotelian context as this would mean that the ethical demand as a rule of thumb tells us to allow the being that we hold power over to unfold the kind of being it is. This can again be explicated through several virtues that should form the basis of the ethical relationship with animals and then, based on the specific kind of animal we are involved with and the context, incarnated using phronesis to identify the right virtues, in the right amount, at the right time, in the right balance to each other etc. as suggested by Hursthouse (2006).

Looking at what virtues might be relevant to bring into play we find that Løgstrup's distinction between use and misuse of nature as mentioned above and his claim that the unwarranted destruction of nature is not only stupid, as it harms ourselves, but also *shameless* in that we destroy that which we have no right to destroy (Løgstrup, 1995a), makes the classical virtue of *sophrosyne* (temperance/restraint) extremely relevant in the context of our ethical relationship with animals as also Hursthouse (2011) points to and we mention in Gjerris and Harfeld (2019). Obviously, it is extremely context-dependent what will be seen as misuse or unwarranted destruction in relation to our use of animals, but it seems very much in line with both a Løgstrupian and virtue ethics approach to leave the actual choice of action to the individual ethical agent's interpretation of the situation. However, if *sophrosyne* is combined with other virtues that seem relevant when discussing what kind of persons would be morally speaking best equipped to interact with animals, we find that the ethical agent is not left in darkness, but nor left with following certain unbreakable principles or methods of calculating welfare. Based on Hursthouse (2006, 2011) we have earlier suggested virtues like benevolence, compassion, and kindness (Gjerris and Harfeld, 2019). Here we would like to add other virtues like awe of the other, mercifulness, fairness, attentiveness and curiosity - the latter aimed at seeking deep insight into the telos of the other animals. A central component of such a virtue oriented approach is to consider the necessary epistemological moves behind the active characters traits. The role of Rollin's idea of the gestalt shift is, in this context, that the openness that makes any and all of the virtues alive in a human–animal setting, is, in itself, an ethical demand. It is both epistemological and ethical.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

"Doing" is central to ethical thinking, but it seems to us that even though much effort has been spend the last 50–60 years on figuring out what to do with animals, only little have changed. We hope that by focusing on what we see, before deciding what to do, might help bring about some of the change that is so desperately needed for billions and billions and animals without a voice in how they are bred, born, raised, and killed by what for them must be the most terrifying animal of them all: Us.

References

European Parliament, Directorate-General for Communication (2023). Attitudes of Europeans towards animal welfare. European Parliament, Brussels, available online at https://europa.eu/eurobarometer/surveys/detail/2996 (accessed 25 May 2024).

Gjerris, M. and Harfeld, J. (2019). The ethical demand and broiler chickens. In Vinnari, E. and Vinnari, M. (eds) Sustainable governance and management of food systems. Wageningen Academic, Wageningen, pp. 26–31.

Harrison, R. (1964). Animal machines. Vincent Stuart, London.

Hursthouse R. (2006). Applying virtue ethics to our treatment of other animals. In Welchman, J. (ed.) The practice of virtue. Hackett, Indianapolis, IN, pp. 136–155.

Hursthouse, R. (2011). Virtue ethics and the treatment of animals. In Beauchamp, T. and Frey, R.G. (eds) The Oxford handbook of animal ethics. Oxford University Press, Oxford, pp. 119–143.

Huth, M. (2016). Interanimality and animal encounters: The phenomenology of human–animal relations. Phainomena, 25, 155–177.

Knudsen, N.K. (2021). Fænomenologi og antropocentrisme. Religionsvidenskabeligt Tidsskrift, 71, 40–61.

Løgstrup, K.E. (1995a). Ophav og omgivelse. Betragtninger over historie og natur. Metafysik III (2nd edn.). Gyldendal, Copenhagen.

Løgstrup, K.E. (1995b). Vidde og prægnans. Sprogfilosofiske betragtninger. Metafysik I (2nd edn.). Gyldendal, Copenhagen.

Løgstrup, K.E. (2020). *The ethical demand* (trans. Rabjerg, B. and Stern, R.). Oxford University Press, Oxford.

Nagel, T. (1974). What is it like to be a bat? The Philosophical Review, 83(4), 435–450.

Pratchett, T. (2003) The wee free men. HarperCollins, New York, NY,

Rollin, B. E. (1992). Animal rights and human morality. Prometheus Books, New York, NY.

Rollin, B.E. (2006). Science and ethics. Cambridge University Press, Cambridge.

Singer, I.B. (1982). The collected stories of Isaac Bashevis Singer. Farrar Straus Giroux, New York, NY.

Preece, R. (1999). Animals and nature: Cultural myths, cultural realities. University of British Columbia Press, Vancouver, BC

Wolf, J. (1997). Etikken og universet. Anis, Copenhagen.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Institutional epistemic barriers to anti-speciesist knowledge

E.L. van den Brandeler
Philosophy Department, University of Basel, Steinengraben 5, 4051 Basel, Switzerland
E-mail: vandenbrandeler.emnee@unibas.ch

Abstract

This article explores how institutions play a pivotal role in shaping collective knowledge and ignorance concerning the human–animal relationship. It contends that institutions, by obstructing or facilitating the production and dissemination of knowledge, significantly influence societal perceptions of animals, and in turn, our treatment of them. Such epistemic processes lead to speciesist beliefs and behaviour, which I assume to be morally problematic. The discussion centres on the obstruction of collective moral knowledge related to the human–animal relationship. Specifically, my article identifies various 'corrupting conditions' within institutions which obstruct agents' epistemic functioning, and thereby, contribute to collective moral ignorance and consequent speciesist moral wrongdoings, including: (1) Lack of anti-speciesist alternatives or behaviours; (2) derogation of anti-speciesist processes or behaviours; (3) valorization of speciesist processes or behaviour; (4) re-branding of undesirable epistemic processes as commendable; (5) conditions increasing the costs of anti-speciesist inquiry; (6) conditions fostering indifference about animal issues; (7) policies mandating speciesist commitments. The article discusses how these conditions influence epistemic processes in detail. Furthermore, using the production of animal products as a case study, the article illustrates how political institutions, legal institutions, search engines and media, perpetuate moral ignorance regarding animals. It argues that these institutional corrupting conditions normalize speciesism, encouraging the widespread adoption of speciesist beliefs. I conclude that it is necessary to improve institutional epistemic environments to facilitate successful animal advocacy efforts, including widespread moral knowledge about animals and voting support for animal protection policies. The article lays the groundwork for discussing the epistemic responsibilities institutions bear in shaping perceptions of the human–animal relationship.

Keywords: corrupting conditions, institutional epistemic functioning, moral ignorance, speciesism, vice epistemology.

Speciesism and moral ignorance

During the last decade, animal ethicists have increasingly begun to discuss what interspecies justice entails, and what institutional reforms would be required to institutionalize human duties towards animals (Milligan, 2015). At minimum, it seems that justice for animals requires a commitment to 'anti-speciesism': i.e. it is morally impermissible to discriminate on the basis of species-membership (i.e. speciesism), because it violates the principle of equal consideration of interests (Horta, 2010). All things considered, human interests might permissibly outweigh animal interests, but everything being equal, human and non-human interests should be taken into consideration with equal moral weight, because species-membership is a morally irrelevant trait (Jaquet, 2019).

In order to combat widespread speciesist wrongdoings, arguably, 'anti-speciesist knowledge' must first become common knowledge — i.e. that humans have the moral obligation to not discriminate on the basis of species-membership. Arguably, much of the success of a pursuit of interspecies justice, depends on this knowledge to motivate anti-speciesist policy changes and voting behaviour. For arguments' sake, I confine my argument to knowledge that humans owe animals anti-speciesist moral duties, and omit know-how on what exactly anti-speciesist duties demand from people in their practical deliberations.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Our social and moral norms concerning animals are largely shaped by our social environment, and the structures that shape our social lives (Williams, 2008), and may obstruct a pursuit of interspecies justice (van den Brandeler, 2024). In this article, I will consider what role institutions play in shaping the public perception of the human–animal relationship as being just and fair, rather than speciesist and unjust. I do this in two steps. First, I discuss what 'corrupting conditions' institutions harbour and illustrate how these hinder people's epistemic behaviour, at the hand of an animal research case study. Second, I illustrate the interrelated epistemic functioning of several institutions and their combined corrupting epistemic effect on widespread moral knowledge concerning animals. Particularly, I describe how two corrupting conditions manifest across several institutions, relating to the case of meat production. I illustrate how the combined epistemic functioning of several institutions actively perpetuates widespread moral ignorance concerning animals' (im)moral treatment.

Speciesist corrupting conditions

The pursuit of interspecies justice, largely depends on the decision-making procedures of institutions. Taken together, several institutions have a major impact on what becomes common knowledge in society; i.e. political institutions, research institutions, education, media, think tanks, libraries, and search engines (Kurtulmus, 2020). These institutions influence what knowledge is deemed important and what is normalized, thereby greatly influencing democratic deliberations (Kurtulmus, 2020) — including democratic deliberations about the human–animal relationship.

Conversely, institutions have the power to obstruct knowledge. Particularly, 'corrupting conditions' denote which social conditions — including institutions — obstruct people to gather, keep, and share information (Kidd, 2020). According to Kidd (2020), corrupting conditions are conditions which cause one's epistemic character to be 'damaged due to one's interaction with persons, conditions, processes, doctrines, or structures that facilitate the development and exercise of epistemic vices' (Kidd, 2020: p. 71). The resulting faulty epistemic attitudes or behaviour obstruct one from reaching epistemic successes, such as knowledge, wisdom, or understanding — for instance, closed mindedness, laziness or dogmatic thinking obstruct epistemic agents to examine evidence critically and to form reliable beliefs (Cassam, 2018). Borrowing from Kidd's seven corrupting conditions, I identify similar corrupting conditions in institutions, which specifically obstruct moral knowledge about anti-speciesism.

1. Lack of anti-speciesist alternatives or anti-speciesist behaviour and/or processes within the institution
2. Derogation of anti-speciesist behaviour and/or processes
3. Valorization of speciesist behaviour and/or processes
4. Allowing for re-branding of bad epistemic behaviour and/or processes as good epistemic behaviour and/or processes
5. Establishment of conditions that increase the exercise costs of inquiry into anti-speciesism
6. Establishment of conditions that encourage indifference about animal-issues
7. Establishment of policies whose enactment requires speciesist commitments

These corrupting conditions hinder agents in their epistemic processes and in reaching epistemic successes — here; i.e. in knowing that we owe animals anti-speciesism. Such corrupting conditions, I suggest, can be present both in animal-related institutions (e.g. veterinary hospitals or research institutions) and in non-animal-related institutions (e.g. media or political institutions). Moreover, not all corrupting conditions—or any combination of these conditions—may be present in one institution, and they may play a role in varying degrees. As a last disclaimer, such institutional conditions most obviously affect institutional members (i.e. employees), however, they may likewise affect non-members (e.g. citizens outside institutions who are nonetheless impacted by its epistemic functioning).

Franck Meijboom and Patricia Brey (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

To illustrate how these conditions may manifest, imagine a medical research institute which uses animal experimentation and where structural animal welfare violations occur: animals are kept in cages with too little enrichments, without social contact, and are killed with unnecessarily harmful methods. This particular institute has no official place where employees can report mistreatment of animals or welfare violations, nor is there a confidential advisor to approach and with whom to voice concerns (corrupting conditions 5 and 6). When a researcher speaks up at her team's monthly meeting and tries to bring the issue to light, she is dismissed by her colleagues for being too caring and difficult to work with (corrupting condition 2) unlike others in the team who just get on with their work (corrupting condition 3). Moreover, a senior lab-technician assures the team that the slow improvement of the institute's cages is not due to an indifference to the animals' wellbeing or due to an unwillingness to make changes, but rather, because the institute is being prudent and that it is actually desirable to first meticulously consider what changes would actually be improvements both to animal welfare, as well as, to the research itself (corrupting condition 4). On top of that, the lab-technician stresses that the Research Safety Guidelines limit the possibility of cage enrichments (corrupting condition 7) and there is no better alternative available given the project's budget (corrupting condition 1).

Each of the seven corrupting conditions arguably require different solutions to facilitate reliable epistemic behaviour concerning the human–animal relationship. For current purposes, I merely identify these conditions across various institutions, in order to illustrate how institutions obstruct its members (and non-members) in being reliable epistemic agents and from reaching epistemic success; i.e. anti-speciesist knowledge. After having discussed the case of animal research to illustrate how corrupting conditions manifest, I now turn to discuss the case of meat production, to emphasize the interrelated nature of institutional epistemic functioning. Meat production presents a good example, since many different institutions are involved in its unquestioned continuation.

The case of meat production

To illustrate the influence of institutions' corrupting conditions on people's anti-speciesist knowledge, I consider the interplay of various institutions in the case of meat production, and particularly, illustrate how corruption condition 2 (i.e. derogation of anti-speciesist behaviour and/or processes) and corrupting condition 5 (i.e. establishment of conditions that increase the exercise costs of inquiry into anti-speciesism) are manifested in these institutions. For current purposes, I assume that eating meat is an instance of speciesism, and therefore, pro tanto morally wrong. I will argue that media, search engines, legal institutions, and political institutions combined, perpetuate moral ignorance regarding animals, thereby encouraging the widespread adoption of speciesist beliefs and continued injustices against animals.

Let us begin with corrupting condition 2 — i.e. the derogation of anti-speciesist behaviour and/or processes. The media offer a great example. First, the media uses derogatory language to describe vegetarians and vegans (veg*ns) as "killjoys" (Twine, 2014), or as unreasonable individuals with unempathetic and even hostile attitudes towards meat-eaters and over-demanding moral viewpoints (Cole and Morgan, 2011). Second, newspaper articles contribute the use of speciesist language. For instance, by using language such as "culling" instead of "killing", and to describe food by its product such as 'beef', rather than the animal its derives from such as 'cow' (Adams, 2018; Cairns and Johnston, 2018). Newspapers perpetuate speciesism either through crude language or with a subtler more deceptive style (Khazaal and Almiron, 2016). These epistemic practices reinforce the public's widespread attitude that eating meat is a natural, normal and necessary part of human diets and cultural traditions (Joy, 2020). All in all, the urgency of discussing animal welfare issues is downplayed, through use of speciesist or mocking language, which contributes to the lack of public interest in animal-related issues and deters people from developing anti-speciesist attitudes. Admittedly, various media outlets also openly question

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

our relationship with animals and contribute to public ethical debate. Nonetheless, I suggest, that media institutions generally offer a platform for a derogatory epistemic environment and thereby obstruct anti-speciesist inquiry and knowledge.

Second, consider corrupting condition 5 — i.e. establishment of conditions that increase the exercise costs of inquiry into anti-speciesism. To start, the media examples above can likewise be interpreted as meeting condition 5, because limited and biased information offered by the media makes it difficult for people to discern what happens to farmed animals, and whether this is morally reprehensible. Moreover, search engines may not prioritize or push news articles about animal (mis)treatment because of this lack of public interest, making inquiry more epistemically costly. Likewise, public officials rarely put animal welfare issues on their political agendas, unless it is already in line with mainstream opinion, such as in response to a public outcry or a political scandal (Jones, 1997). If parliaments do not discuss such issues at length, why would citizens do so on their own accord? Moreover, farm protection bills make it almost impossible to reveal information about what happens on farms (Broad, 2016; Lin, 2015; O'Sullivan, 2014), which decreases the chances of information reaching the public, the likelihood of public outcries developing, and in turn, the likelihood of it being discussed in parliament and reaching the wider public in that way.

In addition to the passive "reactionary" stance of the media, search engines and democratic parliaments, other political institutions such as central bureaus for statistics also harbour epistemic environments which increase the epistemic costs of inquiry into the human–animal relationship. For instance, the amount of broiler chickens in Switzerland are counted on one reference date each year. On the 1st of January 2023, 13.2 million broiler chickens were counted in Switzerland (Schweizerische Eidgenossenschaft Bundesamt für Statistik BFS, 2024). However, the lifespan of broiler chickens in Switzerland varies between 36 and 60 days (Schweizerische Eidgenossenschaft Bundesamt für Statistik BFS, 2021), which means that in the whole year 2023, the amount of chickens was likely 6 times higher (at minimum) which amounts to 79 Million chickens. Moreover, trends in farmed animals tend to be counted in 'livestock units' (LSU), rather than per individual animal. That is, 1 LSU equals one adult dairy cow or 0.007 broiler chickens (Eurostat Statistics Explained, n.d.). Making use of LSU, thus, further skews numbers in statistical reports on the absolute numbers of animals that are kept and killed domestically. This makes it incredibly difficult for a layperson to find out how many animals are kept (and killed)—increasing the epistemic costs of inquiry.

Additionally, it must be emphasized that the corruption of people's epistemic conduct does not lie solely in the corrupting conditions of institutions taken separately, but rather, in the interrelated epistemic functioning of institutions taken together. For instance, it would be too easy to only blame media institutions for perpetuating the speciesist status quo. Namely, institutions' epistemic actions directly influence the epistemic actions of other institutions: Derogation of people's anti-speciesist behaviour in veg*n-mocking and speciesist media coverage, begets low news coverage on animal (mis)treatment because of the nature of attention-seeking social media algorithms, begets a lack of public officials' interests to put animal issues on their political agenda, begets the unquestioned continuation of a human-biased legal system, begets the protection of farmers and invisibilization of animal (mis)treatment in farms, and all of this begets new algorithms which are built on existing speciesist media. Although this is no deliberate or coordinated action, the interrelated epistemic functioning of institutions does increase the costs of epistemic inquiry into animals' lives and our moral duties towards them. In this way, institutional corrupting conditions normalize speciesism and the adoption of speciesist belief.

In order to facilitate successful animal advocacy efforts in spite of this issue, I suggest that it is necessary to improve institutional epistemic environments and to facilitate collective moral knowledge about the human–animal relationship. Although I leave this discussion about what that entails exactly for another

Franck Meijboom and Patrick Bijsterveld, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

time, for now, I suggest that making this change should occur on three levels. First, institutions — taken individually — must reform their epistemic environments by eliminating corrupting conditions which obstruct anti-speciesist inquiry and knowledge building (both in its members, as well as, non-members). Second, institutions — taken together — must reform their epistemically interrelated processes, in an effort to eliminate their combined corrupting effect on epistemic agents. Third, improving widespread moral knowledge concerning animals, depends on the improved epistemic behaviour of individuals (and collectives). Namely, by focusing efforts on the epistemic character and behaviour of people themselves, this allows us to question how epistemic agents can (and should) be(come) more resilient against speciesist beliefs in the midst of a speciesist society and its corrupting conditions. For instance, one becomes more resilient against manufactured ignorance by habituating epistemic virtues such as epistemic humility, curiosity, and open-mindedness (Parviainen and Lahikainen, 2021). As such, my discussion in this article lays the groundwork for both envisioning institutional epistemic reform in the pursuit of interspecies justice, as well as, for discussing the epistemic responsibilities institutions bear in shaping perceptions of the human–animal relationship.

Conclusion

This article sketched different institutional conditions which corrupt the epistemic behaviour of its members (and non-members), and which specifically facilitate speciesist beliefs or attitudes and a moral ignorance about the anti-speciesist moral duties that humans owe animals. I conclude that success of animal advocacy efforts, in part, relies on the epistemic reform of both institutions (taken separately and taken together), as well as, on the improvement of individual and collective epistemic behaviour and resilience. Reform of our epistemic environments is required to resolve the (institutionally facilitated) corruption of people's epistemic behaviour and attitudes concerning nonhuman animals. In turn, this article springboards discussion on the epistemic responsibilities of institutions in shaping public perceptions of the human–animal relationship.

References

Adams, C.J. (2018). The sexual politics of meat. Routledge. Abingdon.

Broad, G.M. (2016). Animal production, Ag-gag laws, and the social production of ignorance: Exploring the role of storytelling. Environmental Communication, 10, 43–61.

Cairns, K. and Johnston, J. (2018). On (not) knowing where your food comes from: Meat, mothering and ethical eating. Agriculture and Human Values, 35, 569–580. DOI: 10.1007/s10460-018-9849-5

Cassam, Q. (2018). Vices of the mind: From the intellectual to the political. Oxford University Press, Oxford.

Cole, M. and Morgan, K. (2011). Vegaphobia: Derogatory discourses of veganism and the reproduction of speciesism in UK national newspapers. The British Journal of Sociology, 62, 134–153. DOI: 10.1111/j.1468-4446.2010.01348.x

Eurostat Statistics Explained. (n.d.). Glossary: Livestock unit (LSU). Available online at https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Livestock_unit_(LSU) (accessed 8 February 2024).

Horta, O. (2010). What is speciesism? Journal of Agricultural and Environmental Ethics, 23, 243–266.

Jaquet, F. (2019). Is speciesism wrong by definition? Journal of Agricultural and Environmental Ethics, 32, 447–458. DOI: 10.1007/s10806-019-09784-1

Jones, D.M. (1997). The media and policy decisions affecting animals. Anthrozoös, 10, 8–13. DOI: 10.2752/089279397787001210

Joy, M. (2020). Why we love dogs, eat pigs, and wear cows: An introduction to carnism – 10th Anniversary Edition. Red Wheel, San Francisco, CA.

Khazaal, N. and Almiron, N. (2016). An angry cow is not a good eating experience. Journalism Studies, 17, 374–391. DOI: 10.1080/1461670X.2014.982966

Kidd, I.J. (2020). Epistemic corruption and social oppression. Vice Epistemology, 69–85.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Kurtulmus, F. (2020). The epistemic basic structure. Journal of Applied Philosophy, 37, 818–835. DOI: 10.1111/japp.12451

Lin, D. (2015). Ag-gag laws and farming crimes against animals. In The Routledge International Handbook of the Crimes of the Powerful. Routledge, Abingdon, pp. 466–478.

Milligan, T. (2015). The political turn in animal rights. Politics and Animals, 1, 6–15.

O'Sullivan, S. (2014). 'Ag gag' laws: The battle for animal welfare is a battle over information. The Guardian, available online at https://www.theguardian.com/commentisfree/2014/may/05/ag-gag-laws-the-battle-for-animal-welfare-is-a-battle-over-information (accessed 5 May 2014).

Parviainen, J. and Lahikainen, L. (2021). Negative expertise in conditions of manufactured ignorance: Epistemic strategies, virtues and skills. Synthese, 198, 3873–3891. DOI: 10.1007/s11229-019-02315-5

Schweizerische Eidgenossenschaft Bundesamt für Statistik BFS. (2021). Geflügel im Trend—Das Nutzgeflügel in der Schweiz (07 Land- Und Forstwirtschaft) (BFS Aktuell). Available online at https://www.google.com/search?q=bundesamt+f%C3%BCr+statistik+h%C3%BChner&rlz=1C1GCEA_enCH1010NL1010&oq=bundesamt+f%C3%BCr+statistik+h%C3%BChner&gs_lcrp=EgZjaHJvbWUyCQgAEEUYORigATIHCAEQIRigATIHCAIQIRigAdIBCDU4NTdqMGo3qAIAsAIA&sourceid=chrome&ie=UTF-8 (accessed 25 January 2024).

Schweizerische Eidgenossenschaft Bundesamt für Statistik BFS. (2024). Nutztierbestand der Landwirtschaftsbetriebe, Entwicklung—1985-2023 | Tabelle. Bundesamt für Statistik. Available online at https://www.bfs.admin.ch/asset/de/30245948 (accessed 25 January 2024).

Twine, R. (2014). Vegan killjoys at the table — Contesting happiness and negotiating relationships with food practices. Societies, 4(4), 623–639. DOI: 10.3390/soc4040623

van den Brandeler, E. (2024). Towards an epistemology of 'speciesist ignorance'. Res Publica, DOI: 10.1007/s11158-024-09656-0

Williams, N.M. (2008). Affected ignorance and animal suffering: Why our failure to debate factory farming puts us at moral risk. Journal of Agricultural and Environmental Ethics, 21, 371–384.

Franck Meijboom and Patrick Baron (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Non-human animals in corporate social responsibility? Evidence from companies in the Nordic region

P. Pohjolainen[1,], M. Vinnari[1] and E. Vinnari[2]*
[1] Department of Economics and Management, Faculty of Agriculture and Forestry, University of Helsinki, Helsinki, Finland; [2] Faculty of Management and Business, Tampere University, Tampere, Finland
** Corresponding author, e-mail: pasi.pohjolainen@hesinki.fi*

Abstract

Corporations wield considerable influence over the lives and well-being of diverse non-human animal groups through practices like land and material utilization. Responding to burgeoning societal expectations, there is a heightened emphasis on incorporating Corporate Social Responsibility (CSR) into corporate actions and reporting, encompassing Environmental, Social, and Governance (ESG) considerations. However, the specific attention given to the lives and well-being of individual non-human animals within this framework remains relatively limited. This paper scrutinizes the quality and scope of representations of non-human animals and in sustainability reporting within the Nordic countries. These include discussions on the moral status of non-human animals, incorporating considerations of the degree of rights that animals are seen to possess as well as the system levels of such approaches. Additionally, it examines the diverse categories of animal groups under discussion. The analysis draws from annual or sustainability reports from the 30 largest corporations in the Nordic region in 2022, spanning six distinct business sectors: (1) Food Industry; (2) Natural Resources; (3) Trade and Well-being; (4) Energy and Fuels; (5) Industry and Construction; and (6) Communication and Transportation. The analysis shows how the intrinsic-level approaches are typically tied to system level framings concerning ecosystems and biodiversity, whereas welfare is discussed mostly by the Food industry in the context of farmed animals. Yet the instrumental approach is present across the sectors, where nature and non-human animals are generally seen as valuable human resources. Overall, the reports define the value of non-human animals almost completely on a system or species level instead of discussing individual animals' interests.

Keywords: interests, right, species, welfare

Introduction

Corporations hold significant sway over various non-human animals in using them as materials or through land and other resource use. To meet evolving societal standards, there's a growing focus on integrating Corporate Social Responsibility (CSR) into business practices, covering Environmental, Social, and Governance (ESG) factors. Nevertheless, the level of concern for the welfare or rights of individual non-human animals within this framework remains relatively low. There is also discussion suggesting non-human animals should be incorporated as business stakeholders to better take their perspective into account (Freeman and Ferrero, 2022). Prior studies have shown that a minority of large corporations recognize non-human animal aspects globally (Janssens, 2016), and that less than half of the major food companies have comprehensive animal welfare policies (Sullivan *et al*., 2017). Hence, the theme seems like an emerging one, but the potential expansion to mainstream has remained so far speculative.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

This article investigates the acknowledgment and framing of the role of non-human animals in society by corporations across various business sectors, examining their impact and responsibility in sustainability reporting within the Nordic countries. The Nordic region, renowned for its commitment to high-performance societies in environmental goals, social justice, and well-being, serves as a compelling regional context. This suggests that other realms of responsibility may also be pertinent.

Theoretical approach

Non-human animals have traditionally been classified in Western natural scientific tradition by their taxonomic position in biological and ecological contexts. A less well acknowledged viewpoint is to consider their proximity and interactions with humans and what that would imply and reveal regarding their moral and political status (e.g. Cochrane, 2018; Donaldson and Kymlica, 2011). Here non-human animals can be classified as being wild, liminal or domesticated, but these groups can also further be divided into various subsections. For example, domesticated non-human animals can include those used for food production, companions, utility, and entertainment, among others.

These various classifications can be positioned from moral and political perspectives in various ways. Typically non-human animals have been considered mostly as human property where certain cultural and juridical concepts of welfare have framed their treatment (Garner, 2013). Another, critical position has discussed animal rights, which typically include the idea that non-human animals have an inherent value to exist on their own, and hence their utilization by humans should be abolished and different interactions minimized overall (e.g. Milligan, 2015). This approach is also linked to the perspective of different interests and capabilities that non-human animals have, which define their interaction with humans (see e.g. Cochrane, 2018).

There seem also to exist both more individual and system centric approaches to discuss the position of non-human animals in the society. The former emphasizes the approach that has classically been deployed in the discussion of non-human animals' moral value, as exemplified above. In other words, this ethical approach acknowledges the moral value of each individual as a starting point for analysis in considering the moral worth of subjects. A rather different perspective, in turn, is taken in ecological approaches, where the moral unit of interest is not individuals but biodiversity that is manifested on three levels: genetic, species and ecosystems (see e.g. Palmer *et al*., 2023). In this context the individual worth of non-human animals is not seen as a point of interest as such.

To sum up, Figure 1 depicts the analytical framework through which we study how non-human animals are represented in the corporate reports. The framework is organized along two axes: the horizontal axis indicates whether non-human animals are discussed as part of a system, as species or as individual actors. The vertical axis indicates whether non-human animals are seen to possess instrumental or intrinsic value. Hence, the upper left-hand end in the figure indicates a deep ecological viewpoint, where the inherent value of non-human animal populations and species are acknowledged. The middle left-hand end suggests a 'shallow' ecological view that sees non-human animals as having value in sustaining species and populations and as providers of various ecosystem services. The upper right-hand end depicts an animal rights perspective that considers non-human animals as individual actors that have intrinsic value, while the middle right-hand end describes a welfarist view, where non-human animals are seen as individuals with interest and rights to certain welfare principles but still utilizable by humans. Lastly, the lower end on both left and right sides of the figure depicts nature and non-human animals as resources for human use where no other interests are taken into account.

Franck Meijboom and Patrick Bijsterveld, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

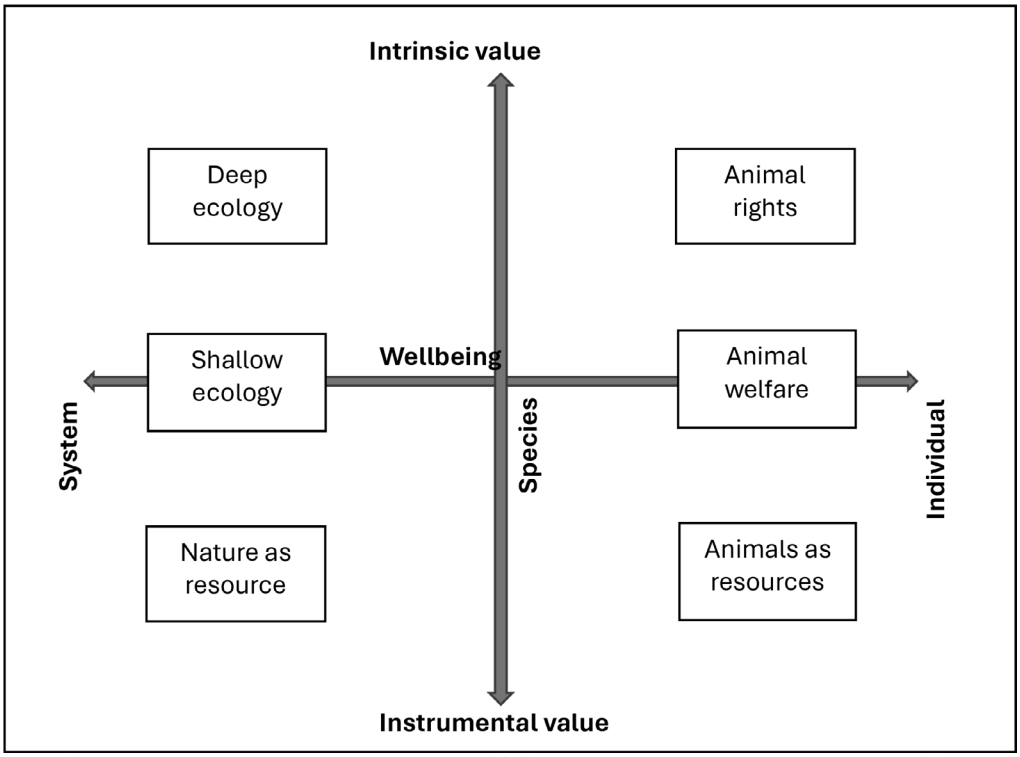


Figure 1. Framework for analysing the representation of animals in corporate reporting.

Data and methods

Sustainability reports of the 30 largest Nordic corporations within six different business sectors from year 2022 were included into the analysis. Their size was measured by annual operating revenue (turnover) in USD from the last available year. The data were acquired from the Orbis database. The business sectors were (1) Food Industry; (2) Natural Resources; (3) Trade and Well-being; (4) Energy and Fuels; (5) Industry and Construction; and (6) Communication and Transportation. With this sectoral approach, it was possible to include also corporations from the food sector that are typically smaller compared to, for example, those in the energy and industry sectors. The Banking and Investment sector was excluded from the data.

Ten corporations were part of larger international corporations or other corporations in our list, and were hence excluded from the analysis. Moreover, two corporations were excluded due to limited availability of reporting. The largest corporation was Fortum Oyj (annual revenue 200 billion USD), and the smallest Mowi ASA (annual revenue 5 billion USD). The number of corporations by country were: Sweden 11, Denmark 8, Finland 6, Norway 5, and Iceland 0. If a sustainability report was not available, an annual report was analyzed instead, which all included sections discussing sustainability.

The data were coded by looking for certain key words that would cover the frame of interest. Firstly, various classifications of fauna were sought on a general level (such as animals, fish, bird, mammal, cattle, livestock, pet) and in detecting specific species (such as cow, chicken, pig, and salmon). Regarding the

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

conceptual frame (Figure 1) for this study, both the intrinsic — instrumental and individual — system axes were approached by looking for the former words that would describe individual animal-centered perspectives (e.g. rights, integrity, respect for life, inherent value) and individual human-centered perspectives (e.g. welfare, health, wellbeing, pleasure, pain, meat, dairy, leather). For the latter axis the focus was on either framing the issue to certain animal species and individuals or on taking a more system level approach (biodiversity, ecosystems, habitats, organisms, wildlife).

Results

Instrumental value — Animals and nature as resources

The system level framing for instrumental values was found in statements where nature or biodiversity was seen as a business resource, framed in many cases through the ecosystem services that are seen as vital for the corporative actions. On the other hand, there were also cases where the companies outlined that since their own actions were not seen relevant in contributing to such phenomena as biodiversity loss, these discussion were considered as irrelevant concerning corporate responsibility.

From a more individual perspective, there is richer discussion of animals in the reports, which is mainly due to animal-based products being the core of business practices particularly in the Food Industry sector but also in the Trade and Well-being sector. The species mentioned were various experimental and farm animals and fish. Here animals are typically discussed though the economic utility they can produce.

Besides economic aspects, there was also a strong emphasis on environmental and public health targets and threats, where the interests of animals can be rather sidelined. On the other hand, these can be meshed, and also in ways where different animal species 'clash', so to speak. Yet in many cases the animals themselves were absent from the text, and the discussions focused merely on the products that they can provide. Further, one remarkable category of animals outside the farm animal classification featuring in this context were invasive wildlife species. Here animals are seen through the effect they can have on ecosystems.

Wellbeing — Shallow ecology and animal welfare

Regarding the interest of animals in one way or another featured in every corporate report where animals were directly used as resources. In this case it was more common to acknowledge the species level compared to mentions of individuals. In addition to discussions on welfare principles of specific species, such as cows and pigs, animal welfare was also discussed on a rather general level, which was also meshed with discussing the animal-based product categories.

In turn, other business sectors were discussing the topic on a more systemic level. Here the frame for the statements and actions was typically set by other stakeholders, hence positioning animal interests as something that should be acknowledged because the corporate playing field demands that a company should do so. However, this trait was also visible when discussing the development of plant-based products, where, despite them having a favorable effect on animal welfare, were not necessarily framed as such but instead through their (human) public health or environmental benefits.

Intrisic value — Deep ecology and animal rights

Discussions of intrinsic values were most commonly connected to protecting ecosystems and biodiversity, and featured across the business sectors. Here the framing can be such as to take into account some of the areas that were in close vicinity of the key business actions. Another featured approach was to focus

Franck Meijboom and Bonnie Rowe, Book, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

on the effects of pollutants that corporations produce. On the other hand, some corporations had more all-encompassing evaluations and programs to map and analyse the impacts that the companies have on ecosystems and biodiversity.

When certain species were discussed, birds and fish were the most typically mentioned, in addition to which pollinators and squirrels were featured on some occasions. However, this was done in the manner of discussing the benefits for species and ecosystem protection, and not for the individual animals' interest as such.

The corporations involved in processing or selling food seemed to have a more detailed, practical level approach in developing tools that would take into account the companies' effects on nature. However, this could also put the interests of farm animals in contrast to such aims, and particularly in the case of marine ecosystems the framing changes remarkably depending on the systemic level chosen.

Here developing and promoting more plant-based products to consumers was also seen as something that would promote the state of nature and ecosystems. Interestingly, however, the interests of the farm animals that such products could spare in changing consumption volumes were not discussed as such. It was also common to find these intrinsic, system level approaches meshed with more practical business interests simultaneously.

Much less discussion was found regarding approaches that would specifically value individual animals intrinsically so as to grant them rights that would not subject them in instrumental relationship to humans. However, there were some passages that could indicate such framings, yet, as these were often discussed in the context of biodiversity or other types of nature conservation targets, the framework could be interpreted to focus more on species conservation instead of individuals as such. For some species the tone of discussion was, however, more easily interpreted as taking also the interests of individual animals into account.

However, the closest examples of intrinsic framings were found in some occasions when pets were discussed in the reports. Though these were rather rare examples, they formed a unique approach to animals in the reports in that their framings came close to acknowledging animals even almost as equals to humans.

Discussion and conclusions

As discussed, it was not always straightforward to distinguish the species and individual level approaches based on the rhetoric and framings utilized in the reports. Additionally, demarcation between wellbeing and intrinsic dimensions was also hazy, as, among other things, the language used in the reports tended to be formulated so that it gave room to different interpretations. This in itself is not surprising, as these types of reports are typically aiming at delivering messages to various groups of stakeholders who may have differing values and expectations. This phenomenon can also at least partially explain why there often were different framings of animal positions even within single reports, as described above (see also e.g. Cho *et al*., 2015).

Overall, the analysis points out that the data tended to be richer in describing the system level framing of non-human animals in discussing nature and ecosystem conservation. This could often be seen as emphasizing the intrinsic value of nature or at least underlining the wellbeing approach. However, there were also evident instrumental elements in this discourse, where nature was seen as a source of resources or a provider of different ecosystem services to humans. This was also a discourse that focused heavily on wild animals and was found amongst those corporations whose main business was not related to food, medicine or clothing.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Other non-human animal groups, in this case various farm animals, were in turn often mentioned in these latter sectors. Here the framings were a mix of instrumental and wellbeing approaches. Even though the tone of discussion was here more towards individuals than systems, these animals tended to be represented more through the species level than as individuals as such. Examples of intrinsic and individual framings were much harder to find overall, and these tended to be found concerning either wild animals or pets and were mentioned only rather occasionally in the data.

Even though our main aim in this analysis was to detect different non-human animal classification and value framings from the data, it was also interesting to note how there were some reports were non-human animals did not practically feature at all, whereas others talk about them lavishly. This shows how non-human animals are not automatically seen as something that should be taking into consideration within CSR (see also Janssens, 2016).

References

Cho, C.H., Laine, M., Roberts, R.W. and Rodrigue, M. (2015). Organized hypocrisy, organizational façades, and sustainability reporting. Accounting, Organizations and Society, 40, 78–94.

Cochrane, A. (2018). The sentientist politics. A theory of global interspecies justice. Oxford University Press, Oxford.

Freeman, C.P. and Ferrero, E. (2022). Corporate disclosure initiative for animal welfare. In: Thomas, N. (ed.) Animals and business ethics. Palgrave Macmillan, London, pp. 131–155.

Donaldson, S. and Kymlicka, W. (2011). Zoopolis: A political theory of animal rights. Oxford University Press, Oxford.

Garner, R. (2013). A theory of justice for animals. Oxford University Press, Oxford.

Janssens, M. (2016). The ethical responsibility of companies toward animals: a study of the expressed commitment of the Fortune Global 200. The Journal of Corporate Citizenship, 63, 42–72.

Milligan, T. (2015). The political turn in animal rights. Politics and Animals, 1(1), 6–15.

Palmer, C., Fischer, B., Gamborg, C., Hampton, J. and Sandoe, P. (2023). Wildlife ethics. The ethics of wildlife management and conservation. Wiley Blackwell, Hoboken, NJ.

Sullivan, R., Amos, N. and van de Weerd, H. A. (2017). Corporate reporting on farm animal welfare: An evaluation of global food companies' discourse and disclosures on farm animal welfare. Animals, 7(3), 17. DOI: 10.3390/ani7030017

Franck Meijboom and Patricia Bons-Rovers, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

3.2 Animal welfare

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Simply the best? How the ranking argument prevents improvements in animal welfare law in the EU

C. Rodriguez Perez[1,], N.D. Müller[2], K. Persson[1,3] and D.M. Shaw[1,4]*
[1]Institute for Biomedical Ethics (IBMB) - University of Basel, Bernoullistrasse 28, 4056 Basel, Switzerland; [2]Philosophical Seminar - University of Basel, Department of Arts, Media, Philosophy, Steinengraben 5, 4051 Basel, Switzerland; [3]Institute for Animal Hygiene, Animal Welfare and Farm Animal Behaviour - University of Veterinary Medicine, Bischofsholer Damm 15, 30173 Hannover, Germany; [4]Care and Public Health Research Institute Maastricht University, Minderbroedersberg 4–6, 6211 LK Maastricht, the Netherlands.
** Corresponding author, e-mail: c.rodriguezperez@unibas.ch*

Abstract

It is often said that the European Union (EU) and its member states, along with Switzerland, have some of the strictest animal welfare regulations in the world. As we have shown elsewhere, such statements can lead to a type of fallacious argument we call the 'ranking argument' which runs as follows: Our animal welfare law ranks among the strictest in the world, therefore no improvements are called for. EU member states also have an additional strategic rhetoric at their disposal when using the ranking argument: Not only do they conclude that no improvements are called for at the top of the ranking, but they also claim that improvements would be counterproductive to the overriding goal of 'levelling' the bottom of the ranking to reach homogeneity within the EU. In this paper, we analyse how the ranking argument unfolds in the EU context focusing on examples from France. We explain why the ranking argument is a fallacy and how it makes use of competitive terminology to argue against animal welfare improvements. We then present how homogeneity is invoked to present improvements as counterproductive in the EU context. By doing so, we discuss how these arguments serve as a strategic defence of the status quo on animal welfare regulation. We conclude with some thoughts on how the ranking argument can and should be challenged.

Keywords: EU animal welfare legislation, fallacy, ranking argument, status quo defence, Swiss Animal Welfare Act

Introduction

It is often said that the European Union (EU) and its member states, as well as Switzerland, have some of the strictest animal welfare regulations in the world. On various occasions, this has been asserted by governments themselves (European Parliament, 2021, Swiss Federal Council, 2022). As we showed elsewhere, in Switzerland this kind of favourable international comparison or ranking can lead to a type of fallacy we call the 'ranking argument' (Rodriguez Perez *et al*., 2023). In the Swiss context, the argument tends to run as follows: Swiss animal welfare law ranks among the strictest in the world, therefore no improvements are called for.

But the use of the ranking argument is not exclusive to Switzerland. Any state claiming to be on top of the ranking (legitimately or not) might successfully use the ranking argument to strategically defend the status quo regarding its animal welfare regulations. In this regard, the EU is no exception. In fact, EU member states even proved to have an additional strategic rhetoric at their disposal when using the ranking argument: not only do they conclude that no improvements are called for in the top of the ranking, they also claim that improvements would be counterproductive to the overriding goal of

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (eds), ***Back to the future***
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_27, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

'levelling' the bottom of the ranking to reach homogeneity among animal welfare regulations within the EU.

In this paper we analyse how the ranking argument unfolds in the EU context with recent examples from France (i.e., French member of European Parliament and French Minister of Agriculture and Food). While we showed elsewhere that the ranking argument is also used by lobbies and private organizations (Rodriguez Perez *et al*., 2023), we will here focus on its use by representatives of the EU and its member states. We explain why the ranking argument is a fallacy and how it makes use of competitive terminology to argue against animal welfare improvements. We then discuss an additional aspect that is particular to the EU context, namely the use of homogeneity to qualify improvements as counterproductive. By doing so, we argue that these different uses of the ranking argument serve as a strategic defence of the status quo. We conclude with some thoughts on how the ranking argument can and should be challenged.

The ranking argument in the EU: a look at the French case

At the end of 2023, the European Commission issued some of its much-awaited revisions of the EU animal welfare legislation (European Commission, 2023a). The revisions' aim is 'to update EU animal welfare rules to increase the role of recent science-based analysis, broaden their scope and make them easier to enforce – generally increasing the level of animal welfare in the EU' (European Commission, 2023b). Among other topics, the revisions focused on the protection of animals kept for farming, on that of laying hens, broilers, pigs and calves, as well as on the transport and killing of animals.

In anticipation of these revisions, a French member of European Parliament stated that 'European farms have the strictest welfare regulations in the world'[1] (Chapuis, 2023). According to that member, since the EU (and France in particular) is not lagging behind in this area, what should rather be ensured is a homogeneous application between member states (Chapuis, 2023). Indeed, while the EU introduced animal welfare directives and conventions for many types of animal uses (e.g., Council Directive 98/58/EC of 20 July 1998), not every member state of the union applies them equally. Moreover, he claimed, 'we won't help countries that are already not ahead on these issues by imposing new, stricter rules on them.'[2] (Garnier, 2022). This instance represents well how the ranking argument unfolds:

> European (and French in particular) regulation is one of the strictest in the world regarding farm animal welfare.
> Therefore, no improvements are called for.

We will now start by defining why this argument is fallacious and how using terms like 'lagging behind'[3] or 'being ahead' serves it. In a second step, we will show how aiming at homogeneity (i.e., claiming that efforts should rather go into 'levelling' the bottom of the ranking) serves as an additional strategic rhetoric for status quo defence in the EU.

[1] Translated from French by the authors: 'Les élevages en Europe sont ceux qui appliquent la réglementation la plus stricte au monde en matière de bien-être.'

[2] Translated from French by the authors: 'Nous n'aiderons pas les pays qui ne sont déjà pas en avance sur ces questions en leur imposant de nouvelles règles plus strictes.'

[3] Translated from French by the authors: '(...) pas de retard dans ce domaine, notamment en France (...)'.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

A fallacy of relative privation served by competitive terminology

We defined the fallacy of the ranking argument elsewhere as follows:

> '(...) the ranking argument is a fallacy of relative privation, also known as the 'not as bad as' fallacy. This type of fallacy consists in using a comparison to a worse – thus, 'relatively deprived' – scenario to infer that the better scenario is beyond criticism. (...) in the case above, conclusion (2) does not follow from premise (1). (...) The fact that most other laws, or even all other laws, are less strict does not give any relevant information as to whether animal welfare is protected to an ethically justifiable extent. The ranking argument is thus an instance of the relative privation fallacy.' (Rodriguez Perez et al. 2023)

We continued by emphasizing that relative privation is an informal fallacy, not a formal one. In this sense, we argued there may be circumstances in which it is a perfectly sound inference since, under certain conditions, if something is better than all existing alternatives does imply that it is sufficiently good (and that no further improvements are called for). As we showed, competitive environments are good examples of this:

> 'If a football team is already sufficiently superior to all other teams in its league, and there is no goal over and above winning (such as perfecting the art of the game for its own sake), then this does indeed imply that the team is good enough and no further improvement is needed.' (Rodriguez Perez *et al*., 2023)

It is in this respect that the terminology used by the French member of European Parliament becomes highly relevant, as it actually serves the ranking argument. Stating that the EU, and France in particular, are not 'lagging behind' makes a clear reference to the idea of a competitive ranking. Other instances of such competitive terminology can be found in the EU context and France in particular. In 2022, the French Minister of Agriculture and Food visited Spain for a press conference following a meeting with his Spanish counterpart. At the time, Spain had just decided to make video surveillance mandatory in slaughterhouses, which was a first in Europe (Welfarm 2022). In reaction to that, the French Minister stated: 'Sometimes, we are less ahead, or lagging behind...'[4] (Welfarm 2022). Here again, the statement conveys the idea of competition.

But as we emphasized: 'animal welfare regulation is not a competition of this type – the goal is to protect animals, not just to protect them to a greater extent than other legislations' (Rodriguez Perez *et al*., 2023). This is indeed acknowledged by the European Parliament, which states that 'although European food production standards, including animal welfare criteria, are among the highest in the world, they still require improvement' (European Parliament, 2021). Nonetheless, we saw that the ranking argument is still used in the EU context. In fact, it is used in a slightly different way than in more independent countries. While more independent countries such as Switzerland compare their animal welfare laws to those of 'the world', EU states not only do that, but also compare their laws to those of other member states within the EU. By doing that, they even go one step further than merely suggesting that no improvements are called for member states at the top of the ranking, by arguing that such improvements would in fact be counterproductive to an overriding goal of homogeneity. Consider some examples in the next section.

[4] Translated from French by the authors: 'Parfois, on est moins en avance ou moins avancés...'

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Homogeneity: an additional strategic rhetoric for status quo defence in the EU

So far, we have focused on the use of the ranking argument and its serving competitive terminology. This is a part of the story that is similar in the Swiss context, and perhaps many others in which states (legitimately or not) claim to be on top of the animal welfare law ranking. What is particular about the EU context (and other union-like contexts) is the possibility to claim that improvements would in fact be counterproductive to an overriding goal: 'levelling' the bottom of the ranking to reach homogeneity within the EU.

As we have seen, the French member of European Parliament stated that further improvements regarding the EU regulation on animal welfare, which would also affect member states already at the top of the ranking (e.g., France), would have a negative impact on member states which are 'already not ahead' (Garnier, 2022). According to him what should rather be ensured is a homogeneous application between member states (Chapuis 2023). While it is unclear which countries are 'ahead' or 'lagging behind', a striking ethical issue arises in the EU context when homogeneity is placed as an overriding value: the logic of the argument implies that as long as homogeneity in application is not reached, no improvement should be pursued. But what would this negative impact on states at the bottom of the ranking be, if states at the top of the ranking further improve their animal welfare laws? The straightforward answer would be that 'lagging behind' even more could be daunting, or that requiring even more improvements than those already unhandled would put too much pressure on a state. But increasing pressure on those 'lagging behind' might facilitate rather than obstruct policy change, for instance by making animal welfare improvements easier to justify domestically. Moreover, the argument assumes a false dichotomy: Either we improve things at the bottom of the ranking, or we raise the standards at the top. But there is no reason for the two to be mutually exclusive. Regarding homogeneity, we could also ask why homogeneity in application should override heterogeneous improvements. While homogeneity within the EU might present advantages, homogeneity alone does not ensure ethical legal protection of animals. Imagine if all EU states agreed that animals do not deserve any protection whatsoever and abolish all their animal welfare laws, reaching homogeneity overnight. Of course, that is not the kind of homogeneity we want. Similarly, we can agree that an EU which homogeneously does not ensure animals the protection they deserve is worse than an EU which does, even if only in some countries (i.e., heterogeneously).

We argued elsewhere that the ranking argument serves as a strategic defence of the status quo (Rodriguez Perez *et al*., 2023). Building on the notion of 'norm antipreneurs' (i.e., agents who aim at preserving status quo norms and preventing norm change) from sociologist Alan Bloomfield, we have shown that this fallacy serves to deny that established norms give rise to any significant problems that would warrant norm change. This is one of the main strategies used by norm antipreneurs to defend the status quo, according to Bloomfield (Bloomfield 2016). The ranking argument is indeed used to deny the existence of problems with current norms, let alone problems that would warrant legal change. A second type of argument used by norm antipreneurs is to claim that newly proposed norms are counterproductive or otherwise unreliable as solutions to the alleged problems (Bloomfield, 2016). We have also shown that competitive framings, such as rankings, serve as a basis to create this second type of argument, for example when it is argued that stricter animal welfare laws in Switzerland would be counterproductive as they will simply displace animal use in other countries (which would protect animals less) (Rodriguez Perez *et al*., 2023). But such displacement effects could typically be mitigated by well-designed policies, so that a blanket appeal to counterproductivity due to displacement shows political unwillingness more than strategic foresight (see Müller, forthcoming).

In the EU context, the use of the ranking argument also serves these two types of strategic defence of the status quo by norm antipreneurs. First, by comparing their animal welfare laws to 'the world' or to 'the bottom of the EU ranking', EU states such as France successfully deny the existence of problems with

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

current norms. Why successfully, if it is in fact a fallacious argument unwarrantedly using competitive terminology? Because even if the argument is not sound, it takes very little to defend the status quo from the comfortable position of the norm antipreneur. As we argued before: '(…) while entrepreneurs must show both that the status quo leads into problems that are grave enough to warrant norm change, they must also show that their proposed new norms are a reliable alternative. Norm antipreneurs, in contrast, do not need to convince anyone of anything, because their desired norms are already established. They thus have the simpler task of sowing doubt.' (Rodriguez Perez *et al*., 2023).

Second, as we have just seen, the EU context also enables a counter-productiveness argument by placing homogeneity within the EU as an overriding objective. Quite literally, the French member of European Parliament stated that further improvements regarding the EU regulation on animal welfare would have a negative impact on member states which are 'already not ahead' (Garnier 2022). So not only the necessity for improvements was denied, such improvements were even described as counterproductive, completing the arsenal at the disposal of norm antipreneurs. While the discussion surrounding improvements in animal welfare laws should be based on what the animals deserve and the extent to which regulations ensure it, the use of the ranking argument in the EU context shifts the conversation to competition and homogeneity. Let us now discuss how the ranking argument can be challenged in the EU.

Challenging the ranking argument in the EU

We previously suggested two ways of challenging the ranking argument in public discourse to mitigate its effects (Rodriguez Perez *et al*., 2023). First, authorities should be publicly criticized for using fallacious arguments, as such arguments undermine their credibility and trustworthiness. Second, the conversation should be steered back to what the animals deserve and the extent to which regulations ensure it. These are also valid for the EU context. Moreover, the credibility of these rankings should also be publicly called into question. We showed elsewhere that regulations can be 'strict' in many ways, which creates a sense of vagueness around these rankings allowing multiple countries to proclaim themselves as the 'strictest' (Rodriguez Perez *et al*., 2023). Going back to the French case, it is therefore not surprising to see that according to some metrics they in fact rank among the worst in the EU: a 2023 study conducted by the non-profit CIWF on the number of farm animals housed in cages revealed that France ranked 16th among 27 EU states and the UK, with 66% of its farm animals housed in cages (CIWF France, 2023).

One additional aspect, specific to the use of the ranking argument in the EU context, should be challenged in our opinion: the evasive finger pointing inside the Union. Looking at the EU aims and values, we can notice that 'solidarity among EU countries' is put forward (European Union, 2024). When representatives of EU member states dodge discourses on the improvement of their countries' animal welfare laws by pointing the finger at other states considered as 'lagging behind', it does not seem to be aligned with the value of solidarity just presented. To be clear, we are not against all types of finger-pointing. In one sense, solidarity requires a shared responsibility, which means that members of the Union should be held accountable for their shortcomings. Therefore, respectful mutual comparison and criticism is possible. In this context, states which are 'ahead' could lead by example and create an incentive for other members to close the gap. But when it comes to evasive finger-pointing of the kind that merely serves to reject accountability and shift the blame, it should not be used.

All that being said, it is worth emphasizing that our point is not that authorities can never defend current animal welfare regulation. They can indeed defend the status quo, as long as they can point out respects in which animal welfare laws give animals what they deserve. What animals deserve, for example in terms of protection, is open for debate. Although animal ethicists agree on several aspects, they have historically disagreed on many others. The same is true for animal protection organizations. However, eliminating fallacious arguments can only make the debate more constructive. As we said elsewhere:

Franck Meijboom and Daniela Rosa Rocha, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

'Avoiding the ranking argument simply removes one fallacious rhetorical device from the defender's arsenal' (Rodriguez Perez *et al*., 2023).

Conclusion

In this paper, we analysed how the ranking argument unfolds in the EU context, using recent examples from France (i.e., a French member of the European Parliament and French Minister of Agriculture and Food). We explained why the ranking argument is a fallacy, how it makes use of competitive terminology to argue against animal welfare improvements, and how in the EU context homogeneity is used to present improvements as counterproductive to an overriding goal: 'levelling' the bottom of the ranking to reach homogeneity within the EU. By doing so, we showed how such arguments (i.e., denying that established norms give rise to any significant problems that would warrant norm change and claiming that newly proposed norms are counterproductive or otherwise unreliable as solutions to the alleged problems) serve as a strategic defence of the status quo on animal welfare regulation. Finally, we concluded with some thoughts on how the ranking argument can and should be challenged. In particular, we argued that governments (and their representatives) should stop using such fallacious arguments as they undermine their credibility and trustworthiness, and that EU states should not point the finger at each other to avoid discussing improvements in their animal welfare laws as it may compromise solidarity within the EU and prevent animals from receiving the protection they deserve.

References

Bloomfield, A. (2016). Norm antipreneurs and theorising resistance to normative change. Review of International Studies, 42(2), 322–324. DOI: 10.1017/S026021051500025X.

Chapuis, D. (2023). Castration, épointage des becs, cages… : le bien-être animal à l'agenda de l'Europe en 2023. Les Echos. Available online at https://www.lesechos.fr/industrie-services/conso-distribution/castration-epointage-des-becs-cages-le-bien-etre-animal-a-lagenda-de-leurope-en-2023-1911055 (accessed 5 March 2024).

Compassion in World Farming (CIWF) France (2023). Avec 2 animaux d'élevage sur 3 en cage, la France figure parmi les plus mauvais élèves des 27 pays de l'UE! Available online at https://www.ciwf.fr/presse/communiques/2023/03/en-france-2-animaux-delevage-sur-3-sont-en-cage (accessed 5 March 2024).

Council Directive 98/58/EC of 20 July 1998 concerning the protection of animals kept for farming purposes. European Commission. Official Journal of the European Union. Available online at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31998L0058 (accessed 5 March 2024).

European Commission (2023a). Revision of the animal welfare legislation. Food, framing, fisheries. Available online at https://food.ec.europa.eu/animals/animal-welfare/evaluations-and-impact-assessment/revision-animal-welfare-legislation_en (accessed 5 March 2024).

European Commission (2023b). Animal welfare – revision of EU legislation. Law. Available online at https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12950-Animal-welfare-revision-of-EU-legislation_en (accessed 5 March 2024).

European Parliament (2021). Report - A9-0296/2021: Implementation report on on-farm animal welfare. 2020/2085(INI). Available online at https://www.europarl.europa.eu/doceo/document/A-9-2021-0296_EN.html (accessed 5 March 2024).

European Union (2024). Aims and values. Available online at https://european-union.europa.eu/principles-countries-history/principles-and-values/aims-and-values_en (accessed 5 March 2024).

Garnier, A. (2022). Le Parlement européen veut harmoniser le bien-être animal dans l'Union européenne. Ouest France. Available online at https://www.ouest-france.fr/economie/agriculture/le-parlement-europeen-veut-harmoniser-le-bien-etre-animal-dans-l-union-europeenne-69a40074-8f28-11ec-91ef-c5100846ffb2 (accessed 5 March 2024).

Müller, N.D. (forthcoming). Why not phase out animal experimentation? Considering objections from freedom of inquiry and cross-border displacement. Cambridge Quarterly of Healthcare Ethics.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Rodriguez Perez, C., Müller, N.D., Persson, K. and Shaw, D.M. (2023). The ranking argument – challenging favourable comparative rhetoric about animal welfare law. LEOH - Journal of Animal Law, Ethics and One Health, 44–55. DOI: 10.58590/leoh.2023.004

Swiss Federal Council (2022). Votation populaire du 25.09.2022 - Initiative sur l'élevage intensif - Allocution du Conseil fédéral. Available online at https://www.youtube.com/watch?v=hAs3X1VOTKM (accessed 5 March 2024).

Welfarm (2022). Vidéosurveillance obligatoire dans les abattoirs espagnols: le ministre Marc Fesneau reconnaît le retard de la France. Available online at https://welfarm.fr/abattoirs-videosurveillance-fesneau-espagne/ (accessed 5 March 2024).

Franck Meijboom and Patrick Bons (eds), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Closing the gap (2): A decision-making council for animal welfare

S.S. Andersen,[1,] M. Gjerris,[1] M.P. Goddiksen,[1] S.V. Kondrup[1] and R.B. Mikkelsen[2]*
[1]Department of Food and Resource Economics, University of Copenhagen, Rolighedsvej 23, 1958 Frederiksberg C, Denmark; [2]Danish Board of Technology, Sorøgade 6, 2100 København Ø, Denmark
[*] Corresponding author, e-mail: soeren.stig.andersen@gmail.com

Abstract

This paper provides a concrete suggestion on how to address the gap pointed to by Andersen and Gjerris (2022) between, on the one hand, the wording of animal legislation in the EU and its member states and, on the other hand, administrative regulation and actual husbandry practices. Andersen and Gjerris suggested that to alleviate this gap, states should establish independent national councils empowered to make binding decisions on animal welfare matters that fall outside the scope of clear-cut legislation. An important aspect of this task would be to ensure better accordance between the application of the law, the intent behind the law and current societal and ethical values. In this paper, we narrow down the type of questions that would be suitable for such a council to address and compare its role with existing mechanisms with comparable functions. Furthermore, we seek to identify methodologies that the council could rely on, including the involvement of experts and citizen groups.

Introduction

Across Europe, animal welfare regulations typically hinge on broadly formulated principles. Andersen and Gjerris (2022) highlighted a notable disparity between these principles and the ethical norms they are supposed to reflect and commonplace practices of animal husbandry. Consider, for instance, the problem of keel bone fractures (KBF) in egg-laying hens within modern production systems, which adversely affect the welfare of these birds (Riber *et al*., 2018). A study conducted in Denmark revealed that over 80% of egg-layers across various production systems experience one or more KBF during their lifetime (Thøfner *et al*., 2021). Consistent with prior research findings (Toscano *et al*., 2020), Thøfner and colleagues emphasize hen size, age at onset of lay, and estimated daily egg weight at onset of lay as significant risk factors. On this basis, one could contend that current egg production practices contradict the overarching principle outlined in Council Directive 98/58/EC: 'No animal shall be kept for farming purposes unless it can reasonably be expected, on the basis of its genotype or phenotype, that it can be kept without detrimental effect on its health or welfare'. Not only actual husbandry practices, but also administrative rules, which often supplement the typically more general norms in statutory legislation, can also give rise to questions concerning their compliance with national statue law or EU legislation (Andersen, 2024) as exemplified below regarding tail docking of pigs.

To ensure better alignment between the general norms of animal welfare acts and their practical implementation and enforcement, Andersen and Gjerris (2022) suggested the formation of national councils for animal welfare. The idea of creating councils, advisory boards, or committees to provide advice to the legislature, government, or authorities on matters related to animal ethics is not new. For instance, the Review of the UK Animal Health and Welfare Policy Advisory Body Landscape offered by McCulloch and Reiss (2018) illustrates how the web of such boards etc. has already achieved a high degree of proliferation in countries such as the UK. However, in view of notably the powerful farming lobbies and the limited legal possibilities to represent animal's legal interests, we argue that advisory boards do not have the necessary power to gain effective influence. In this paper, we therefore elaborate on the idea of national animal welfare councils with decision-making competence and provide further reflection on what powers such an animal welfare council (AWC) should have. The findings apply to all EU jurisdictions, but for simplicity, we discuss Denmark as a case unless otherwise stated.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Tasks

Questions on interpretation of animal welfare provisions in parliamentarian acts and EU legislation arise in various situations. Firstly, the promulgation of administrative regulations may lead to questions regarding their compliance with the scope of the legal basis and the overarching principles of animal welfare (e.g. regarding respect of animals as sentient beings, anti-cruelty, fulfilment of the needs of animals, etc.). Secondly, public authorities' decisions on whether to intervene in certain practices may involve the interpretation of the underlying legal norms. Finally, adjudication on matters of animal welfare normally involves application, and hence interpretation, of animal welfare provisions.

The delimitation of types of questions that the AWC should decide on must reflect the resources that are available for the AWC. Furthermore, in line with the special role of the AWC, the questions should be of such a nature that they invite analyses and deliberations with significant ethical aspects. For instance, whereas the question of early separation of cow and calf raises fundamental ethical questions, the more precise requirements concerning the area available to the individual animal may not raise ethical questions of a similar nature. As a result, the AWC should primarily, if not exclusively, be tasked with deciding questions of a general, fundamental, or paradigmatic nature. For instance, the AWC could decide on practices relating to tail docking of pigs where the national Danish rules are interpreted to allow for a practice of tail docking of supposedly more than 99.5 % of conventional slaughter pigs (Krogsgaard, 2022). The overall legal question for the AWC to decide upon would be whether this practice and the administrative rules comply with national anti-cruelty rules as well as the EU requirement that member states shall ensure that tail-docking is not carried out routinely, cf. Annex I of Council Directive 2008/120/EC on minimum standards for the protection of pigs. Appreciating that there may not be a clear-cut answer to this question, the AWC should interpret the legal provisions in an ethical perspective to achieve, as far as possible, agreement between legal and ethical norms.

An important delimitation of the jurisdiction of the AWC concerns whether it should be limited to actual practices and administrative rules already in force or also include intended future practices and rules. In order not to function akin to an advisory board that advises the government on all kinds of initiatives, we argue that the AWC should focus on existing practices that raise serious or principled questions concerning their compliance with animal welfare rules and principles. However, if a planned initiative have far-reaching consequences — e.g. intensive large-scale insect production for food and feed — it may be desirable that the AWC makes an evaluation prior to implementation.

The decision-making authority of the AWC must adhere to constitutional requirements related to the separation of powers. Specifically, the parliamentary legislature's prerogative implies that the parliament would ultimately have authority, independent of the AWC, to amend or specify legislation to align with political objectives. This prerogative effectively would allow the legislature to override the AWC. Furthermore, in many jurisdictions, the adjudicative powers vested in the judiciary mean that the courts would be responsible for interpreting and applying animal welfare legislation, regardless of the AWC. This includes the possibility to refer preliminary questions on the interpretation of EU legislation on animal welfare to the Court of Justice of the EU.

The AWC should be free to decide not to process a concrete question even if it formally falls within its jurisdiction, e.g. due to limited resources and to prioritize other questions that it deems more important. Furthermore, in line with institutions such as the Danish Ombudsman, the AWC should be empowered to consider questions on its own initiative as well as on request from e.g. the public or public authorities.

Franck Meijboom and Pamela Ban, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Methodological approach

The proposed council would have the responsibility of determining the content of contentious legal norms, taking into consideration the current societal and ethical perspectives concerning animal welfare and the latest advancements in animal welfare research.

Legal perspective

The role of the AWC is to decide whether concrete administrative provisions or a given practice complies with animal welfare principles established by statute law and EU legislation. The conclusions of the AWC should not run counter to such principles and rules. Therefore, the ethical analysis must take place in constant dialogue with a legal analysis. Typically, the legal analysis will initially identify the legally possible outcome space for the conclusions, while also identifying different legal principles that may influence the outcome. For instance, the AWC should consider ethical-legal principles such as equality (e.g. whether the current breeding on laying hens can be accepted if breeding on certain dog races is prohibited due to genetically induced dysfunctions). Other principles include the upholding of a coherent normative system, i.e. that legal rules, principles, and decisions within a legal system form a consistent and harmonious framework (Schiavello, 2001). Additionally, in its balancing of concerned interests, the AWC need to consider the principle of proportionality as developed, *inter alia*, through EU law. This encompasses an assessment of whether a given interpretation of the animal law provisions in question is suited for achieving the underlying aims of the legislation, whether it is necessary in the sense that the goal cannot be achieved through less restrictive interpretations, and whether the benefits outweigh the harm or restriction imposed on concerned individuals (Kosta, 2019).

Ethical perspective

Given that no single ethical paradigm adequately accounts for the plurality of ethical values and theories in public and academic discussions on animal ethics, we suggest that the AWC does not subscribe to a particular moral theory (Sandøe and Christensen, 2008). Instead, the council should allow the analysis to remain open to arguments rooted in different ethical paradigms, both to allow the analysis to be flexible towards the requirements of any given case, and to ensure there is sufficient voice to the range of values represented in the public sphere. This allows the analysis to remain contextually sensitive, while also ensuring that the conclusions reached have public legitimacy. At the same time, the AWC should be guided by and adhere to the fundamental principles of the animal welfare legislation. In Denmark and many other European jurisdictions, that would include treating animals with respect as sentient creatures and/or with regard to their integrity or dignity.

As a central feature, the AWC should utilize information about prevalent ethical attitudes towards animals within the public and ensure that relevant moral, political, and cultural factors are considered in its findings. To this end, it needs to employ an empirical ethical approach as suggested by Mikkelsen, Sandøe and Gjerris (2021). The ethical analysis should give due consideration to and critically assess the embedded normativity that is often given in the particular context, e.g. through majority and minority positions as expressed through political/public discourse, and/or by stakeholders engaged in the practice under review. While these inputs can provide a starting point for the ethical analysis, further empirical analysis is required to reflect cultural, political, economic and other structural factors at play in the given context, which may influence the final recommendation. The empirical analysis will thereby lessen the risk that the conclusions of the AWC cannot realistically be implemented in real life. We will return to this point below in our example concerning tail docking of pigs.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Animal welfare research

The AWC's core focus would be animal welfare, which is a multidimensional concept and field of research interacting with a wide range of disciplines. For example, veterinary science, animal behaviour, psychology, biology, and physiology, are all important disciplines within animal science. They contribute with knowledge crucial for understanding animal health and well-being, and how animals experience their lifeworld, hence what conditions and environments they need to thrive. An ongoing responsibility for the AWC would be to stay informed about, evaluate and discuss relevant research within animal science when assessing specific animal welfare matters. If the available research points in different directions, the AWC will be faced with the dilemma of determining a scientific position as a basis for its decision on the matter at hand. Here, a principle of precaution in the sense that lack of scientific certainty shall not be used as a reason for risking seriously harming animals and their welfare would be relevant to implement as a basic feature of the work of the AWC (Birch, 2017). Further, as the AWC builds on a broad approach to animal ethics, it should not be limited to a traditional welfarist (Yeates *et al*., 2011) approach when assessing the well-being of animals. Instead, the AWC should incorporate a wider understanding of concerns such as questions of integrity and dignity regardless of the absence of animal science methodologies to quantify such concepts.

Example: Tail docking of pigs

Returning to the previously mentioned example, if the AWC was tasked with assessing whether the administrative rules and actual practices concerning tail docking of pigs conform to national anti-cruelty provisions and the EU's prohibition of routine tail-docking, the initial approach would involve a conventional legal interpretation involving relevant legal sources. Should this analysis fail to yield a definitive conclusion, an ethical examination becomes necessary. This ethical evaluation should encompass various theoretical ethical frameworks, societal attitudes towards animal treatment, and insights from animal welfare research, ultimately resulting in an ethically informed interpretation of the legal norms governing pigtail docking.

However, it would be imperative to consider the broader implications of tail docking within the context of animal welfare. Specifically, the correlation with tail biting in pig populations must be taken into consideration. From an animal welfare point of view, an ethically sound conclusion may be that a complete ban of tail docking should be implemented as well as a zero-tolerance policy on tail biting. Nevertheless, this could entail changes to current production systems that are so drastic that, upon further empirical analysis, it may be deemed neither politically nor economically feasible in the short term. In essence, such a requirement could face political and popular rejection, rendering it an impractical interpretation of the legal norms. While this finding in the empirical analysis does not alter the outcome of the ethical analysis, it should be integrated with the ethical conclusions to formulate a concrete and practical solution while bearing in mind that any conclusions must adhere to the minimum standards established by existing animal welfare legislation, based on well-established interpretations. Further, it would provide a clear description of the discrepancy between outspoken ideals in legislation and public opinion and accepted practices.

Composition

Previous experience with similar councils has shown that parliamentary appointment of members can lead to special interests dominating (Petracca, 1986, Rasmussen and Reher, 2023), thus limiting the council's effectiveness (McCulloch and Reiss, 2018). For the AWC to be sufficiently diverse in perspectives and have legitimacy as a decision-making body, we argue that the AWC should be composed of a representative group of citizens. In order to avoid the formation of internal, possibly partisan factions,

Franck Meijboom and Patrick Bottenberg, ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

it may be desirable that such citizen panels are formed *ad hoc* rather than constituted by permanent members.

Such a representative group of citizens may lack the necessary expertise within the fields mentioned above, i.e. law, ethics, animal welfare science and possibly other fields such as sociology, ethnography etc. Therefore, to carry out a sufficient analysis of a specific case, it would be necessary to support the AWC with an administration that provides knowledge curation and access to experts. How this knowledge should be curated in a justified way is outside the scope of this paper but should rely on established best practice (Dienel and Renn, 1995; Hendriks, 2005). The actual process of decision-making also falls outside the scope of this article, but it should be considered whether only the group of citizens should be responsible for expressing the decisions of the AWC, or whether subject matter experts should also participate in the decision-making process.

Overarching principles

The organization and the procedures of the AWC will have to be further contemplated and drawn up in a charter, which should also outline the fundamental principles and values on which the work of the AWC should be based. In Denmark, this would encompass the principles formulated in the Animal Welfare Act such as respect for animals as living and sentient beings. Further, whereas the AWC should not be tied up with certain ethical positions such as deontological or utilitarian positions, it could be useful to articulate foundational values and virtues as guiding principles for the undertakings of the AWC, e.g. prudence, humility, and compassion. Furthermore, in line with prevalent principles of administrative law the deliberations and arguments of the AWC should be transparent, e.g. concerning compromises between the interests of animals and human interests, such as economic considerations (Ministry of Economic Affairs, Agriculture and Innovation, 2011).

Conclusion

In this paper, we have argued that to ensure the best possible accordance between the principles underlying animal welfare legislation and the protection of animals it is necessary to establish an animal welfare council with the competence to make binding decisions on how to apply the law. To avoid that special interests dominate its work, we argue that it should be composed of a representative group of citizens supported by subject matter experts. We have delved further into some key issues that the establishment of such a council would give rise to.

References

Andersen, S.S. (2024). Animal Law in Denmark and the enforcement gap. In: Dalpane, F. and Baideldinova, M. (eds.) Animal law worldwide. T.M.C. Asser Press, The Hague, in press.

Andersen, S.S. and Gjerris, M. (2022). Closing the gap: the interface between animal law and animal ethics. In Bruce, D. and Bruce, A. (eds) Transforming food systems: ethics, innovation and responsibility. Wageningen Academic Publishers, Wageningen, pp. 489–494.

Birch, J. (2017). Animal sentience and the precautionary principle. Animal Sentience 16(1). DOI: 10.51291/2377-7478.1200

Council on Animal Affairs (2015). One Health: A Policy Assessment Framework. The Hague. Available online at https://english.rda.nl/publications/publications/2016/02/08/one-health (accessed 15 March 2024).

Dienel, P. and Renn, O. (1995). Planning cells: a gate to 'fractal' mediation. In: Renn, O., Webler, T. and Wiedemann P.M. (eds) Fairness and competence in citizen participation. Evaluating models for environmental discourse. Springer, Dordrecht, pp. 117–140.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Hendriks, C. (2005). Consensus conferences and planning cells. In: Gastil, J. and Levine, P. (eds.) The deliberative democracy handbook. Strategies for effective civic engagement in the twenty-first century. Jossey-Bass, San Francisco, CA, pp. 80–110.

Kosta, V. (2019). The principle of proportionality in EU Law: An interest-based taxonomy. In: Mendes J. (ed.), EU executive discretion and the limits of law. Oxford University Press, Oxford, pp. 198–219.

Krogsgaard, S. (2022). Hele grisehaler er ekstremt sjældne. Animal Protection Denmark. Available online at https://www.dyrenesbeskyttelse.dk/artikler/hele-grisehaler-er-ekstremt-sjaeldne (accessed 15 March 2024).

McCulloch, S.P. and Reiss, M.J. (2018). A proposal for a UK ethics council for animal policy: The case for putting ethics back into policy making. Animals, 8(6), 88.

Mikkelsen, R.B., Sandøe, P. and Gjerris, M. (2021). Empirical ethics is not a magic bullet for applied ethicists. In Schübel, H. and Walliman-Helmer, I. (eds) Justice and food security in a changing climate Wageningen Academic Publishers, Wageningen, pp. 381–386.

Ministry of Economic Affairs, Agriculture and Innovation (2011). Ethics in policy: Weighing values with sense and sensibility. Available online at https://edepot.wur.nl/266243 (accessed 15 March 2024).

Petracca, M.P. (1986). Federal advisory committees, interest groups, and the administrative state. Congress and the Presidency, 13(1), 83–114.

Rasmussen, A. and Reher, S. (2023). (Inequality in) Interest group involvement and the legitimacy of policy making. British Journal of Political Science, 53(1), 45–64.

Riber, A.B., Casey-Trott, T.M. and Herskin, M.S. (2018). the influence of keel bone damage on welfare of laying hens. Frontiers in Veterinary Science 5, 6.

Sandøe, P. and Christiansen, S.B. (2008). Ethics of animal use. Wiley-Blackwell, Oxford.

Schiavello, A. (2001). On "coherence" and "law": An analysis of different models. Ratio Juris, 14, 233–243.

Thøfner, I.C., Dahl, J. and Christensen, J.P. (2021). Keel bone fractures in Danish laying hens: Prevalence and risk factors. PLoS ONE, 16(8), e0256105.

Toscano, M.J., Dunn, I.C., Christensen, J.-P., Petow, S., Kittelsen, K. and Ulrich, R. (2020). Explanations for keel bone fractures in laying hens: Are there explanations in addition to elevated egg production? Poultry Science, 99, 4183–4194.

Yeates, J., Röcklinsberg, H. and Gjerris, M. (2011). Is welfare all that matters? A discussion of what should be included in policy-making regarding animals. Animal Welfare, 20, 423–432.

Franck Meijboom and Patrick Bova (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The history of animal welfare and its connection to ethics

J.L. Harfeld
Department of Culture and Learning, Aalborg University, Denmark

Abstract

This extended abstract explores the evolution of the concept of animal welfare from its ancient roots to its contemporary scientific and ethical framework. The discourse begins in ancient Egypt, with the Rhind Mathematical Papyrus offering early insights into animal husbandry practices that imply a nascent awareness of animal welfare. This historical thread extends to the philosophical inquiries of ancient Greece, where figures like Aristotle and Pythagoras engaged in early explorations of animal cognition and thriving, suggesting an understanding of animal well-being that transcends mere survival. The Enlightenment period marks a significant paradigm shift, with thinkers such as Frederik Christian Eilschov and later Jeremy Bentham advocating for the consideration of animal welfare on ethical grounds, independent of religious or utilitarian justifications. This era catalysed a departure from theological frameworks towards a secular, ethically grounded approach to animal welfare, emphasizing the intrinsic value of animals' experiences and their rights to live free from undue suffering. The modern concept of animal welfare crystallized around the turn of the 20th century, paralleling the rise of animal protection societies in Europe, notably among others the Royal Society for the Protection of Animals. Charles Westley Hume played a pivotal role in this development, founding the University of London Animal Welfare Society (later the Universities Federation for Animal Welfare (UFAW)). Hume's vision was to establish animal welfare as a legitimate field of scientific inquiry, integrating ethical considerations with rigorous scientific research. UFAW's mission attracted significant attention, despite initial challenges, setting the stage for the concept's gradual acceptance within the scientific community. The evolution of animal welfare reflects a complex interplay between ethical imperatives and scientific inquiry, demonstrating a consistent recognition of animals as sentient beings deserving of ethical consideration across cultures and epochs. This historical journey underscores the importance of conceptual awareness in animal behaviour and welfare sciences, as understanding the origins and trajectories of concepts like animal welfare can enrich scientific inquiry and ethical considerations, enhancing the well-being of animals under human care – and perhaps in the wild. The concept of animal welfare, young in its scientific application yet ancient in its ethical implications, continues to evolve, challenging us to reconsider our interactions with animals and our responsibilities toward both scientific enquiry and animal welfare.

Keywords: animal welfare, conceptual history, ethics, UFAW

Why conceptual history?

The inquiry into why professionals within the realms of animal behaviour science and animal welfare science should engage with conceptual histories is pertinent (Koselleck, 1989). For the majority, the immediate relevance to their professional undertakings may seem minimal. Yet, on a broader scale, this engagement holds significance. The conceptual frameworks employed within the natural sciences, including those pertaining to animal welfare, fundamentally shape our investigative processes. They delineate the scope of our inquiries and the nature of the answers we seek, thereby influencing the contours of scientific exploration.

Concepts, in essence, are not static; they evolve, shaping and being shaped by the scientific discourse. Hence, understanding their origins and trajectories can enrich our approach to scientific questions,

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

expanding the boundaries of what is knowable and askable. This intersection of conceptual history and scientific inquiry underscores the intricate relationship between language, thought, and the pursuit of knowledge.

So, there is a significance of conceptual awareness for scientists engaged in the study of animal behaviour and welfare. It is part of the nature of concepts that they are not static entities; they emerge, evolve, and occasionally, they may even become obsolete, fading from our scholarly and practical lexicon. This phenomenon of conceptual evolution is pivotal, as it reflects not only the deliberate engagement of scholars with the underlying ideas but also the inadvertent influences of those who employ these concepts in their practical applications without a direct intention to contribute to their theoretical development. The use of a concept such as 'animal fear' by an animal scientist, for instance, implicates them in a complex, almost dialectical process. This process involves the creation, sustenance, and transformation of the concept, influenced by both academic discourse and practical application. Through this engagement, scientists partake in a dynamic interplay that continually shapes and reshapes the concept, thereby influencing its trajectory over time. Acknowledging the historical evolution and practical usage of concepts like animal welfare is not merely an academic or philosophical exercise. It has tangible implications for the field of science and, importantly, for the well-being of animals. By fostering a deeper understanding of how concepts evolve and influence our work, we can enhance both the rigor of scientific inquiry and the ethical considerations underlying our interaction with animals. Thus, if the premise of conceptual dynamism and its implications for both science and animal welfare seem implausible or unengaging, it may be because I have no proof of the causal relations for all segments of the following. But I do believe that tendencies and trajectories emerge from which we could learn. This exploration into the nature of concepts and their impact is fundamental to our collective endeavour to advance the field of animal welfare science in a manner that is both intellectually robust and ethically informed.

Antiquity and Middle Ages

Our conceptual journey commences in ancient Egypt. Among the ancient Egyptian documents, the Rhind Mathematical Papyrus stands out as a fascinating artifact in this respect (Spalinger, 1990). This document is believed to be a type of a calculus textbook crafted for the tutelage of civil servants in the mathematical arts necessary for the administration of the Egyptian kingdom. It encompasses a wide array of mathematical problems and solutions that, while of particular interest to mathematicians for their historical value in understanding the mathematical knowledge of the time, also captivate the broader audience with their practical examples. These examples, clear and seemingly commonplace for their era, offer a window into the daily life and practices of ancient Egypt, particularly in the context of agriculture. Among these practices, the papyrus details methods concerning the rearing and feeding of geese, some of which may imply early instances of force-feeding alongside free-range farming. This insight into agricultural practices extends beyond mere cultivation techniques, hinting at a nuanced understanding of animal husbandry that considered the well-being and thriving of animals within these systems. From such ancient records, it becomes evident that the concept of animal welfare — though not explicitly named or defined as we understand it today — has necessary ancient roots. The notion that animals under human care, particularly within agricultural systems, could experience varying degrees of well-being was implicitly recognized. This acknowledgment by ancient farmers and administrators underlines the historical continuum of concern for animal welfare, challenging the perception of it as a purely modern ethos. Thus, through the lens of the Rhind Mathematical Papyrus and similar documents, we glimpse the longstanding human engagement with some version of the concept of welfare of animals within our care (see, for example, Collins, 2001).

Franck Meijboom and Patrick Bateson, Book, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The foundational texts on animal welfare – or, more precisely, on concepts akin to animal thriving and cognition – trace back to the ancient Greeks. The philosophers of antiquity, who engaged in a breadth of disciplinary inquiries far wider than the specialized domain occupied by contemporary philosophers, laid the groundwork for these discussions. Notably, Aristotle, often heralded as a forefather of biology, alongside his contemporaries, delved into multifaceted explorations that encompassed not just ethics but also the well-being of animals, suggesting an early recognition of animals' capacity for well-being and suffering (Connell, 2021). This era's philosophers were polymaths, simultaneously pioneering the fields of biology, astronomy, and more, while also contemplating the conditions under which animals live. Their inquiry into animal welfare, though not framed in the contemporary lexicon, marked a significant philosophical and ethical consideration that animals' lives could be characterized by states of well-being or its absence. Pythagoras, and later interpreters of his philosophy, emerges as a figure often associated with early notions of animal welfare, illustrating how these considerations were woven into the fabric of some types of ancient thought (Huffman, 2009). This thread of concern for animals' welfare, acknowledging their sentience and advocating for their humane treatment, continued through the Middle Ages, finding expression across diverse cultures and religious texts. It is sporadic, more than consistent and it is exceptional, more than widespread. The Persian scholar al-Rāzī, writing in the 9th and 10th centuries, offers a pertinent example (Adamson, 2012). His work, grounded in Islamic philosophy, articulates a clear stance against inflicting pain on sentient beings, thereby implicitly recognizing animals' capacity for suffering. al-Rāzī discusses the ethical use of animals, distinguishing between acceptable practices and those that constitute excessive or harmful use. His reflections, though not explicitly labelled as animal welfare, embody the essence of what today would be recognized as a concern for the well-being of animals — a consideration for their humane treatment and the conditions under which they thrive. This nuanced understanding of human-animal relationships, advocating for responsible and ethical stewardship, permeates many both Islamic and Christian medieval texts, illustrating a widespread engagement with the concept of animal welfare long before it was formally defined. These historical discourses highlight a consistent recognition of animals as sentient beings deserving of ethical consideration, shaping a legacy that informs contemporary perspectives on animal welfare.

Enlightenment

The discourse on animal welfare continued through the Middle Ages with notable consistency, until it encountered a transformative era with the Enlightenment and the intellectual fervour of the 18th century. This period witnessed a significant paradigm shift in the consideration of animals and their well-being, marked by the contributions of several prominent figures, among whom a Danish philosopher, very much an exemplar of this change, stands out. His name was Frederik Christian Eilschov, and he was a student of the famous Ludvig Holberg — and almost a James Dean of Danish philosophy in the 1700s, leaving an indelible mark on Danish philosophy in his time despite his premature demise at the age of 25. His seminal work, *Philosophiske Breve over Adskillige Nyttige og Vigtige Ting* (English: *Philosophical Letters Concerning Several Useful and Important Things*) (Eilschov, 1748; Figure 1) delves into an early-stage form of animal welfare science. Through this text, for example, he posits that animals communicate their emotional states to us, even attempting to transcribe these expressions into musical notations, distinguishing between sounds of contentment and distress in pigs.

Although the methodologies underlying his observations remain unknown, the parallels between his speculative assertions and contemporary animal welfare studies — particularly those concerning pigs — are striking. This endeavour, though emerging and methodologically unrefined compared to modern standards, nonetheless mirrors a burgeoning interest in understanding animal emotions and welfare that would flourish in subsequent centuries. The 18th century thus stands as a watershed moment, further propelled by the likes of Jeremy Bentham, whose philosophical influences extended into the 19th century, inspiring John Stuart Mill among others (Rollin, 2007). These thinkers radically diverged from

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0


§. 3.
Vil min Herre have et Exempel af Dyre-Sproget, da kand han
forestille sig følgende af Grisenes; naar disse sige: saa
ere de bedrøvede. Derimod giver tilkiende, at de ere glade.

Figure 1. Translation: "§. 3. If my lord would have an example of the language of animals, he can imagine the following of the pigs'; when these say (musical notation 1) then they are sad. On the other and (musical notation 2) indicates that they are happy" (Eilschov, 1748: p. 39)

traditional religious justifications for animal welfare, advocating instead for a consideration of animal well-being for its own sake. This marked a departure from theological frameworks towards a more secular, ethically grounded approach to animal welfare, emphasizing the intrinsic value of animals' experiences and their right to live free from undue suffering. The Enlightenment, therefore, not only revolutionized human thought across various domains but also sowed the seeds for a profound re-evaluation of our ethical responsibilities towards animals, setting the stage for the nuanced and increasingly sophisticated discourse on animal welfare that continues to evolve to this day.

Animal welfare is born

The genesis of the modern concept of animal welfare can be traced back on the cusp of the 20th century, emerging amidst a burgeoning network of animal welfare NGOs and associations. This period marked the proliferation of animal protection societies, notably in many European countries such as Denmark, Germany and England, including the famous Royal Society for the Protection of Animals. These societies, initially focused on animal protection, began to articulate the concept of animal welfare, albeit in its nascent form. The discourse around animal welfare, thus, was born from the grassroots activism of these organizations, intertwining from its inception with notions of public morality and activism against cruelty and suffering. Into this milieu stepped Charles Westley Hume, a figure of pivotal importance in the formalization and popularization of the modern concept of scientific animal welfare. Hume, initially trained in physics, was instrumental in founding the University of London Animal Welfare Society (ULAWS), now known as the Universities Federation for Animal Welfare (UFAW). Hume's approach to animal welfare was deeply rooted in ethical considerations, propelling the transition from a focus on ethics to a dedicated exploration of animal welfare (Hume, 1962). Despite a modest beginning, with merely one or two attendees at its inaugural meeting, UFAW under Hume's guidance sought to redefine animal welfare activism. Hume endeavoured to steer the organization away from the fringes of activism, particularly avoiding the label of anti-vivisectionist, aiming instead for a scientific and ethical examination of animal welfare. UFAW's mission was clear from the outset: to establish animal welfare as a legitimate field of scientific inquiry within the university system, deserving of the same objective study as any other academic discipline. This approach attracted early members from prominent positions in the academic society such as Julian Huxley, signalling the organization's serious intent to intertwine animal welfare with rigorous scientific research. However, UFAW's stance was also characterized by a discerning critique of prevailing scientific methodologies, particularly behaviourism, which they viewed as reductive in the study of animal welfare. The journey of animal welfare from a fledgling concept to a cornerstone of scientific inquiry has been gradual. The term "animal welfare" itself, as popularized by UFAW and associated with a scientific and ethical framework for understanding and improving the lives of animals under human care, has only recently become prevalent in scientific discourse. This evolution underscores the concept's relatively recent emergence and its ongoing development within

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

the scientific community. The last few decades have seen a marked increase in the use of the concept of animal welfare (see Figure 2) and thus a whole new degree of development due to use in different scientific and common usages. Such heavy development increases the likelihood of a concept becoming a contested concept even among closely related groups such as among scientists. One example of this is the attempt - based on both ethical and scientific reasons – to try and move the concept away from a negative definition, i.e. absence of pain, absence of stereotypical behaviour, absence of hunger etc. and toward including more extensive areas of fulfilment of potentiality and agency. Such a reconceptualization is ongoing presently in the creation of the concept of "positive animal welfare" (Rault *et al*., 2022) which can potentially be seen either as the future of the concept of animal welfare or as a new and competing concept of animal welfare.

In conclusion, the concept of animal welfare, while young in its scientific and popular usage, carries deep ethical roots and is inextricably linked to a broader discourse on animal ethics and activism. Its development over the past century reflects a complex interplay between ethical imperatives and scientific inquiry, situated within a framework that, historically, has focused predominantly on animals within human care. As this concept continues to evolve, it challenges us to consider the broader implications of our interactions with all animals, both in human contexts and in the wild, thereby continually reshaping our understanding of animal welfare.

Use of Generative AI

ChatGPT 3.5 was used for translating parts of the extended abstract from Danish to English as well as for English proof reading of the text in its entirety.

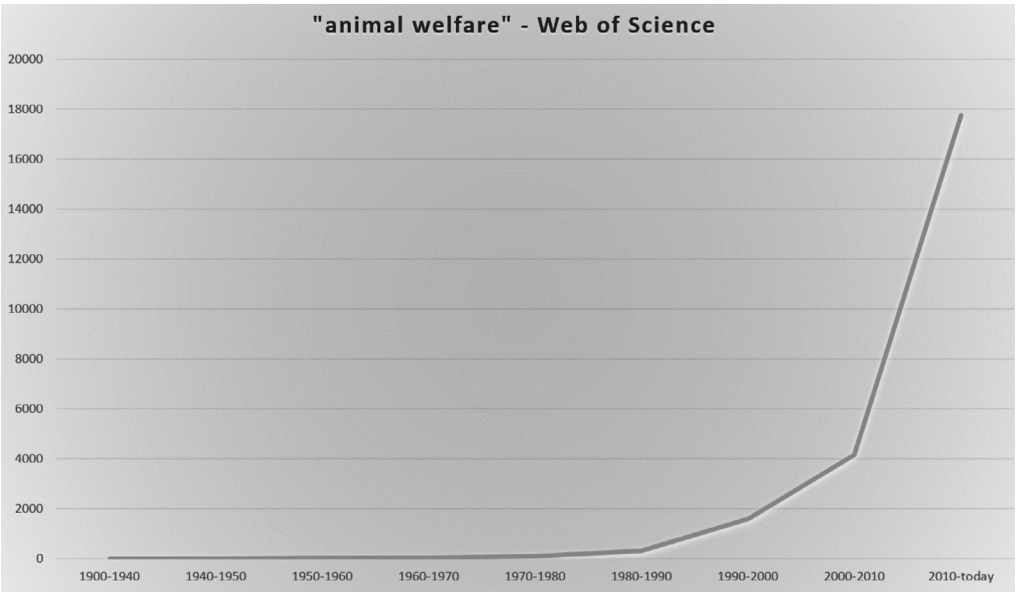


Figure 2.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

References

Adamson, P. (2012). Abū Bakr al-Rāzī on Animals. Archiv für Geschichte der Philosophie, 94(3), 249–273.

Collins, B.J. (2001). A history of the animal world in the ancient near east. BRILL, Leiden.

Connell, S.M. (2021) Animal cognition in Aristotle. In: Connell, S.M. (ed.) The Cambridge companion to Aristotle's biology. Cambridge University Press, Cambridge, chapter 12.

Eilschov, F.C. (1748). Philosophiske Breve over adskillige nyttige og vigtige Ting. Printed by Christoph Georg Glasing, Copenhagen.

Huffman, C. (2009). The Pythagorean conception of the soul from Pythagoras to Philolaus. In Frede, D. and Reis, B. (Ed.), Body and Soul in Ancient Philosophy. De Gruyter, Berlin, pp. 21–44.

Hume, C.W. (1962). Man and beast. UFAW, Wheathampstead.

Koselleck, R. (1989). Social history and conceptual history. International Journal of Politics, Culture, and Society, 2, 308–325.

Rault, J.-L., Sandøe, P., Sonntag, Q. and Stuardo, L. (2022). Positive animal welfare: Bridging the gap or raising inequalities worldwide? Frontiers in Animal Science, 3, 825379.

Rollin, B.E. (2007). Animal mind: Science, philosophy, and ethics. The Journal of Ethics, 11, 253–274.

Spalinger, A. (1990). The Rhind mathematical papyrus as a historical document. Studien zur altägyptischen Kultur, 17, 295–337.

Franck Meijboom and Patrick Bateson | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Good animal welfare in a sustainable food system

H. Bjørkhaug[1] and M. Thorseth[2]
[1] Department of Sociology and Political Science, NTNU, Edvard Bulls veg 1, 7491 Trondheim, Norway;
[2] Department of Philosophy and Religious Studies, NTNU, Edvard Bulls veg 1, 7491 Trondheim, Norway

Abstract

Debates on animal welfare have increased in quantity and intensity. This applies particularly to animal welfare issues in food production, positively and negatively. Polarization is a diagnosis that describes an increased distance between what can be understood as ecocentric and anthropocentric extremes and viewpoints on what good animal welfare is. It is not only those who are in direct relation to animals who are engaged, actors and activists who are not connected to, for example, livestock production, are also involved. In this paper, we explore what animal welfare means in a sustainable food system and ask if animals can be integrated into communication on how good animal welfare can be achieved. What is best for animals? Research on animal welfare started with ethical concerns about the quality of life of animals (Fraser *et al*., 1997, Tolo and Kittelsen, unpublished data). But how can ethics be integrated into human-animal communication? While acknowledging Habermas' (1995) divide between human and non-human agents in communicative action, we are inspired by Hendlin and Otts' (2016) and Nowak *et al*.'s (2022) revision of Habermas' anthropocentric theoretical foundation and practical discourse and add Nussbaum's (2022) capability approach, to allow for the inclusion of a discussion of the moral importance, wellbeing, and functioning as ascribed to animals. With this, we are extending the discourse community beyond human communication. Through the inclusion of both non-human and human agency, we discuss how we can achieve good animal welfare in a sustainable food system.

Keywords: extended discourse, farming, human–animal communication, polarization

Introduction

A brief historical analysis of journal articles (the Scopus search 'Animal Welfare' returned a match on 41 527 articles from 1918–2024) on animal welfare takes us back to 1908 and the title Science and Sentimentality (Bell, 1918). This first recorded article on animal welfare problematizes the effect of morally initiated resistance to using animals in experiments to improve human health. The article calls for a 'better and more effective type of humanness which balances sentimentality for animals and appreciation and understanding of the benefits of biological and sanitary science'. Since then, more than 40 000 titles have been published on animal welfare, most after 1980 and with near exponential growth. Veterinary science and agricultural and biological science account for almost two-thirds of the titles, while humanities and social sciences account for five percent. Palmer and Sandøe (2011: p. 2) argue that 'Assessments of animal welfare rely on assumptions regarding what matters, ethically speaking, in our dealings with animals': Ethics is (yet) a topic in (only) 10% of the titles. Given society's demand for moral and ethical clarification about sustainability and animal welfare in meat production, one could expect the share to be higher.

Societal exposure to bad animal welfare practices in livestock production provokes politicization (Hårstad and Vik, 2022; Vogeler, 2019). In Norway, and responding to Parliament's requirement (2022), the Government is preparing a white paper on animal welfare, evaluating the animal welfare Act. According to then Agriculture and Food Minister Borch (2021a), Norwegian livestock production aims to be 'world-leading in animal welfare' and bad animal welfare practices do not fit within this narrative.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

What is perceived as good animal welfare changes over time, morally, in terms of animal welfare as a scholarly field, and practically, from animals' protection against violence, to animals' right to live a good life, and to the safeguarding of animals' intrinsic value (Tolo and Nafstad, 2022). The legal framework for Norwegian Animal Welfare has evolved, from being the Act for *protection* from unnecessary suffering to the current Animal Welfare Act (from 2009). Its purpose is 'promoting good animal welfare and respect for animals' (section 1). This change reflects changing perceptions, and utilization, of animals in history, and more recently represents a move from focusing on the human relationship with animals to the interests of the individual animal and its situation (Tolo and Nafstad, 2022: p. 47) In this paper section 3 is important, the: 'General requirement regarding the treatment of animals: Animals have an intrinsic value irrespective of the usable value they may have for man. Animals shall be treated well and be protected from the danger of unnecessary stress and strains.' The Act further and explicitly stresses that animal keepers shall ensure good welfare on criteria of species and individual needs, natural behaviour, and good health, and contribute to animals' safety and well-being (section 23). From this, we deduce that all animals hold sole rights independent of what the animal can express itself and that animal keepers shall, as a general requirement, respect the intrinsic value of the animals. How animal agency is represented to achieve sustainable food production remains unexplored.

Good animal welfare in an ethically sound animal livestock production system is a basic premise of a sustainable food system. Societal values and attitudes have an important influence on food production and any shift in social attitudes about animal welfare provides both significant risks and opportunities for sustainability. One significant change is to involve animal agency in communication on welfare. The paper proceeds with introducing animal agency into the discourse approach. Results from the GoodAnimal research project are presented to give insight into changing perceptions of animal welfare and animal welfare is explored in a sustainability context. Finally, the moral status of animal agency is discussed in the discourse on animal welfare in a sustainable food system.

Animal welfare in a sustainable food system — a discourse approach

Theories of justice are outdated if they do not pay attention to global unfairness and do not incorporate justice for future generations and non-human actors (Dryzek and Pickering, (2019). Justice in a modern world require the *representation* of silenced actors in public discourse. The domination of humans over animals as objects allows for, according to Nussbaum (2022, 2023), inconsiderate suffering and cruelty for animals, factory animals in particular. Her capability approach 'says that justice entitles all animals to a set of capabilities and opportunities to choose in corresponding to their species' form of life.

This paper examines the value of extending the discourse community on good animal welfare in a sustainable food system beyond human communication and includes animal agency. A conservative reading of Habermas' theory of communication and discourse ethics will require a distinction between human and non-human moral agency in the discourse community. While acknowledging Habermas' (1995) divide between human and non-human agents in communicative action, Hendlin and Otts' (2016) revision of Habermas' anthropocentric theoretical foundation allows for considering nonhuman moral agency in the practical discourse. Further, Nowak *et al*. (2022: p. 15) acknowledge a change in the animal agency concept, and that 'the chance for proper representation of the animals' "best interests" by humans (or the chance to harmonize animal and human interests) is developing alongside increasing scientific and normative awareness'. This might allow us to play out the analogy to environmental rights and future generations: those who can speak for themselves vs environments and animals who cannot speak for themselves (Alvarez and Thorseth, 2019) into Habermas' framework and in line with Nussbaum's (2022, 2023) emphasis on animals' moral status and argument that animals have the capability of expressing themselves.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Another route is to assign rights to and approve of animals to be represented in this discourse, 'as individuals in their own right' (Nowak *et al*., 2022: p. 15).

Human perceptions of animal welfare

We observe increased polarization in perceptions of animal welfare in knowledge communities and society about the positioning of the animal in the conversation, between what can be labelled ecocentric and anthropocentric perspectives. Whose domain is the discourse on animal welfare? Those who deal with animals, farmers, and veterinarians? Their opponents might be found in philosophical disciplines and civil society, i.e. animal rights organizations and activist groups. Between these, legislators, policymakers, and administrators are situated. Everyone speaks in favour of the animals, but did anyone ask the animals?

Animal welfare is a topic in Norwegian media. As for research publications, the number of media texts incorporating animal welfare has increased exponentially since the turn of the millennia (from 25 in 2000 to more than 7000 in 2021, Norwegian figures). A media study revealed that two public discourses were delivered: One by authorities, politicians, and the livestock production industry in a legitimizing discourse, arguing that animal welfare in Norway is good enough whereas the other by animal welfare and animal rights organizations in a critical counter-discourse of animal welfare not being good enough in Norwegian livestock production (Syversen, 2022). Few posts were found to oppose the two.

The GoodAnimal projects survey of Norwegian farmers revealed a divergence between farmers prioritizing animal welfare aspects of health and basic feelings, and a smaller group prioritizing animals' natural needs. A rural-urban distinction and gender effect was also found between farmers, in that farmers with an urban background and women farmers emphasized animals' natural needs more than rural farmers (Logstein and Bjørkhaug, 2023). Tangen (2022: p. 66) found in the same survey that farmers concerned with modernization and cost-efficient production were more concerned with animal welfare, which can be seen in connection with the fact that healthy animals give better results for the farmer.

The GoodAnimal project's survey of Norwegian *citizens* revealed a 'remarkable stability' in Norwegians' opinions on animal welfare issues. Kjærnes *et al*. (2022) found small differences among groups of people (but gender and age) and an increasing rural-urban divide, where urban dwellers were more critical towards the status of animal welfare than rural dwellers. Johansen (2022) identified in the same survey that citizens value animals along an anthropocentric vs. ecocentric scale: "Ecocsists" want to abandon farming animals, eat meat, and use fur/wool. Haugen (2023) found in an in-depth study of Norwegian animal rights actors' deep concerns about animals' autonomy and inherent value as beings and acted in accordance with Dryzek and Pickering (2019) formative agents, through 'active redefinition of the concept of animal justice' (Haugen, 2023: p. 62).

A deliberation (Ruralis/NTNU, 2023) on animal welfare in a Norwegian mini-public produced a list of principles for good animal welfare and recommendations on how to achieve these. While the mini-public emphasized that animal welfare captures animals' basic health and functioning, affective state, and natural living (cf. Fraser, 2008), the two first principles defined, revealed an animal-centric perspective: 'Animal welfare is about welfare from the animal's perspective' and 'Humans do not control, but look after (monitor) animals' (Bjørkhaug *et al*., forthcoming). In conjunction with the principles, advice was developed on how these could be achieved in sustainable food production. This involves balancing economic, social, and environmental considerations, and establishing the link between good animal welfare and sustainability.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The missing link between sustainable development and good animal welfare

Sustainable development (SD) is a necessity. Gro Harlem Brundtland, former Prime Minister of Norway, defined SD as: 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (Our Common Future; Brundtland, 1987). This definition involves the 'Triple bottom line': Economic sustainability, which aims to ensure a just economy, reduce extreme poverty, and guarantee fair paid employment for all; Ecological sustainability, which aims to protect environmental health, the natural balance of the planet, while limiting the impact of human activities on the environment; and Social sustainability, which aims to guarantee social well-being, access to basic resources and services for all. Sustainable meat production implies securing the triple bottom line and good animal welfare should be a requisite to achieve all. 'Good animal welfare is a common societal good' (Borch, 2021b). Tole and Nafstad (2022) emphasize that conflicts may arise between achieving goals of good animal welfare and other societal goals and that attention to and acknowledgment of these goal conflicts are often neglected. In 2015, the UN called to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. The 2015 UN Sustainability Development Goals (SDG) program operationalized sustainability goals in 17 different areas. Goal 12 is particularly relevant for animal welfare: Responsible consumption and production, with target 12.2: By 2030, achieve the sustainable management and efficient use of natural resources, ...' and to steer us away from overconsumption, waste, and ecological harm to a more prosperous and sustainable future.' (SDG Knowledge Hub, 2024). Hence, the relationship between farm animals, good animal welfare, and a sustainable food system must be established.

A review of studies of sustainable agriculture and animal production for meat found that common elements included resource efficiency, profitability, productivity, environmental soundness, biodiversity, social viability, and ethical aspects (Olesen *et al*., 2000). How do these elements apply to sustainable animal welfare? Keelin *et al*. (2019) found in an analysis of animal welfare and the 17 SDG's potential positive effects on animal welfare with goal achievements of 'better education', 'reduced inequality', 'gender equality', and 'enhanced partnerships', while better animal welfare would help 'reduce hunger'. Mutual reinforcing effects were found with better animal welfare and more 'responsible consumption' and 'improved food production on land and in waters'. Visseren-Hamakers (2020) suggests that the definition of SD must be broadened to include the interest of the individual animal and that the best way to do so is an 18th SDG on animal health, welfare, and rights.

Vinnari *et al*. (2017: p. 253) argue that the rights of farmed animals are a missing objective in the traditional framing of SD. Objectives of sustainability are overlooking the interests of farm animals, hence SD, is ill-equipped to take ethical and moral concerns in advancing animals' rights and increasing animal welfare. Verniers (2021) suggests that the sustainable development concept and framework is a good candidate for integrating animal welfare, both concerning a global animal welfare law and for the potential entrenchment of animal welfare at the national level. Establishing 'a sustainable livestock production' would, according to Verniers (2021: p. 11) 'be an example employed to advance both animal welfare and sustainable development'.

How can good animal welfare be achieved in a sustainable food system?

The 'GoodAnimal' project aims to acquire knowledge that mitigates threats and increases opportunities for good animal welfare in sustainable meat production. Norwegian legislation has responded to societal expectations that animals' intrinsic value must be considered irrespective of the usable value they may have for man. When animal welfare is a topic in the media or explored as an attitude, there seems to be a dominant perception that animal welfare in Norwegian meat production is good enough, while there is a counter-discourse that animal rights are not adequately safeguarded. In this discourse, there is also

Franck Meijboom and Patrick Bottenberg, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

a position that demands that animal farming for meat must cease. When animal welfare was placed at the centre of deliberation, the participants agreed that the intrinsic value and agency of animals must be a recurring principle in Norwegian meat production and that it is the task of humans to facilitate this. However, achieving sustainability with good animal welfare also requires attention to the measures that must be taken to ensure that the animal keeper can 'survive' economically and socially.

In line with Dryzec and Pickering (2019) and Nussbaum (2022), we have emphasized animal justice in the animal welfare debate and the need for animals' rights to be heard. According to Nussbaum (2022), the moral status of animal rights is followed by animals' freedom and self-determination. We have shown that when animal welfare was the focus, the deliberative dialogue produced awareness of animal agency. Nevertheless, we recognize that there is a dominant discourse that Norwegian meat production has good animal welfare when the animals' basic needs are met. This may reflect a discourse community in which only human moral agency is represented (cf. Habermas, 1995). The intrinsic value of animals and their right to live their life to their natural needs is a competing discourse, however, there are formative agents (cf. Dryzec and Pickering, 2019) whose mission is to lift the animal's moral agency into the discourse community. We conclude that there is a need to further develop theories and methods to strengthen animal agency in the discourse community on good animal welfare in meat production.

References

Alvarez, A. and Thorseth, M. (2020). Intergenerational justice and obligations to future generations: Towards environmental rights in land-use policy: In Bjørkhaug, H., McMichael, P, Muirhead, B.(eds.) Finance or Food? The role of cultures, values, and ethics in land use negotiations. University of Toronto Press, Toronto, ON, pp. 243–269.

Bell, J.C. (1918). Science and sentimentality. Journal of Educational Psychology, 9(4), 226–227.

Bjørkhaug, H. Logstein, B. and Burgess, M. (forthcoming). Deliberating animal welfare.

Borch, S. (2021a). Available online at https://www.regjeringen.no/no/aktuelt/svar-pa-skriftlig-sporsmal-om-dyrevelferd/id2916657/

Borch, S. (2021b). Available online at https://www.stortinget.no/globalassets/pdf/innstillinger/stortinget/2021-2022/inns-202122-130s-vedlegg.pdf

Brundtland, G.H. (1987). Our common future: Report of the World Commission on Environment and Development. Genève. FN-Dokument A/42/427.

Dryzec, J.S. and Pickering, J. (2019). The politics of the Anthropocene. Oxford University Press, Oxford.

Fraser, D. (2008). Understanding animal welfare. Acta Veterinaria Scandinavica, 50(1), 1–7.

Fraser, D., Weary, D.M., Pajor, E.A. and Milligan, B. N. (1997). A scientific conception of animal welfare that reflects ethical concerns. Animal Welfare, 6, 187–205.

Habermas, J. (1995). Justification and application: Remarks on discourse ethics. Polity Press, Cambridge.

Hendlin, Y.H. and Ott, K. (2016). Habermas on nature. Environmental Ethics, 38(2), 183-208.

Hårstad, R.M.B and Vik, J. (2022). Political parties' framing of farm animal welfare: A fragmented picture. European Policy Analysis, 1–18.

Haugen, A.H. (2023). Den norske dyrerettighetsbevegelsen. En sosialkonstruktivistisk analyse av rettferdiggjøring og meningsskapelse blant aktivister. MA Thesis, NTNU, Trondheim.

Johnsen, L.T. (2022) Polarisering i dyrevelferd – fører sosiale medier til sterkere holdninger? MA Thesis, NTNU, Trondheim.

Keeling, L., Tunón, H., Anttillón, G.O. Berg, C., Jones, M, Stuardo, L., Swanson, J. Wallenbeck, A. Winckler, C. and Bloikhus, H. (2019). Animal welfare and the United Nations Sustainable Development Goals. Frontiers in Veterinary Science, 6, 336.

Kjærnes, U., Borgen, S.O. and Thorjussen, C.B.H. (2022). Behind a fluttering veil of trust: The dynamics of public concerns over farm animal welfare in Norway. Sociologia Ruralis, 62, 763–781.

Logstein B, and Bjørkhaug, H. (2023). Good animal welfare in Norwegian farmers' context. Can both industrial and natural conventions be achieved in the social license to farm? Journal of Rural Studies, 99, 107–120.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Nowak, E., Cierszko, K., Dluzewicz, A. and Napiwodzka, K. (2022). Challenging Habermas' practical discourse to justify the rights of animals. Advance 1. DOI: 10.31124/advance.19070465.v1

Nussbaum, M.C. (2022) Justice for Animals. Simon and Schuster, New York, NY.

Nussbaum, M. (2023) What humans owe animals. Available online at https://time.com/6244086/martha-nussbaum-animal-justice-overdue/

Olesen, I., Groen, A.F. and Gjerde, B. (2000). Definition of animal breeding goals for sustainable production systems. Journal of Animal Science, 78, 570–582.

Palmer, C and Sandøe, P. (2011). Animal ethics. In Appleby, J.A. Mench, I., Olsson, A.S. and Hughes, B.O. (eds) Animal welfare. 2nd edn. CAB Internaional, Wallingford, pp. 1–12.

SDG Knowledge Hub (2024). Available online at https://sdg.iisd.org/.

Syversen, M. (2022). Kampen om konsensus debatten om husdyrvelferd i norske medier. MA thesis, OsloMet, Oslo.

Tangen, H.S. (2022). Intensiv og lykkelig - er det mulig? MA, NTNU, Trondheim.

Tolo, E. and Nafstad, O. (2022). Fra vern mot vold til et liv verdt å leve, in Gezelius, S. and F. Veggeland (eds). Forvaltning av dyrevelferd i Norge: Hvordan få lovverk til å virke? Cappelen Damm Akademisk, Oslo, pp. 45–80.

Verniers, E. (2021). Bringing animal welfare under the umbrella of sustainable development: A legal analysis. Review of the European Commission on International Environment Law, 30, 349–362.

Vinnari, M., Vinnari, E. and Kupsala, S. (2017). Sustainability matrix: Interest groups and ethical theories as the basis of decision-making. Journal of Agricultural and Environmental Ethics, 30, 349–366.

Visseren-Hamakers, I.J. (2020). The 18th sustainable development goal. Earth System Governance, 3, 1–5.

Vogeler, C.S. (2019). Why do farm animal welfare regulations vary between EU Member States? A comparative analysis of societal and party political determinants in France, Germany, Italy, Spain and the UK. Journal of Common Market Studies, 57(2), 317–335.

Franck Meijboom and Patrick Bottenberg, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The challenge of nature-inclusive farming systems — A collection of potential dilemma's for veterinarians

A. van der Aa and J. van Herten*
Ethical committee Royal Veterinary Association of the Netherlands, De Molen 77, NL-3995 AW Houten
** Corresponding author, e-mail: as.vanderaa@gmail.com*

Abstract

In an ever changing world, the role of veterinarians has evolved over the years. Not only do they care for the health and welfare of animals but they also have an integral role in the world's food production. There's a societal wish for nature inclusive food production systems, There's however no clear definition of nature inclusive farming systems yet. The current political and societal discussion around those systems are adding yet another layer to the complex framework in which veterinarians have to work every day. In this paper we examine potential dilemmas that veterinarians can face in the transition to nature inclusive farming systems within the context of the core values stated in the European Veterinary Code of Conduct (FVE, 2019). These core values of the Code cover, amongst others, the relation of veterinarians with animals, clients, society and the environment. All of those can result in a multitude of practical dilemmas but also in more philosophical dilemmas when transitioning to more nature inclusive farming systems. Practically speaking, the restricted use of certain medicines, an increased exposure of animals to vector-borne diseases and wildlife can cause dilemmas for veterinarians when performing their work. Moreover, There's also a lack of knowledge on how the transition to those farming systems eventually will affect animal health and welfare. From a more philosophical point of view, veterinarians may need to develop new skills as a 'systems based' expert. In traditional farming systems There's usually one 'isolated' production goal e.g. milk. In more nature inclusive systems this changes into a more system based approached in which the whole farm functions as an eco- system that contributes to food production and nature management. This might require veterinarians to rethink some of their personal values providing care to their patients. They may also face uncertainties due to requirements form legislation and quality assurance systems. To get further insights into the potential dilemma's we used the nominal group technique in a focus group of 9 veterinarians interested in nature inclusive farming systems. In conclusion, the move towards nature-inclusive farming systems presents veterinarians with diverse challenges that require timely evaluation and discussion. Since veterinarians are an integral part of safeguarding food production their dilemma's concern all of us.

Keywords: nature inclusive food production, veterinary code, veterinary profession

Farming for the future — The societal wish for nature inclusive systems

By many nature inclusive farming systems are seen as a possible way forward for agriculture into a sustainable future. This is also described in the European Greendeal (2019). The Dutch ministry of agriculture, nature and food quality describes nature inclusive farming system as: 'a transformative concept that recognizes the interdependence between agriculture and the natural environment. It includes the use of nature-based solutions to promote productivity or to prevent or control a pest or disease' (Dutch ministry of agriculture, nature and food, 2023a). The ministry has published its vision about nature inclusiveness in the 'Agenda Natuurinclusief 2.0' (Dutch ministry of agriculture, nature and food, 2023b).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Nature-inclusive farming systems cover a range of farming practices that focus on (Van Doorn *et al*., 2016):

1. Focus on preserving biodiversity in agricultural landscapes and managing natural areas, including care for specific species.
2. Emphasize the utilization and maintenance of ecosystem services through functional agrobiodiversity practices at the plot and farm levels.
3. Strive for reduced environmental impact through efficient resource use and lower emissions.

Nature-inclusive farming can be described as a 'boundary concept' rather than a strictly defined one, likely to get positive attitudes from most people (Runhaar, 2017). Organic farming can be seen as a form of nature inclusive farming, although it is more defined by European (EU, 2023) and national law, regulations and private quality standards. Organic certification is common practice.

Transitioning from one type of food production to another not only demands new knowledge and practical skills but also necessitates a shift in mindset and cultural change among all involved stakeholders. Veterinarians play diverse roles in food production systems irrespective of the system. However, the challenges and dilemmas they encounter can differ across systems.

Veterinary responsibilities

The veterinary profession contributes in many different ways to society. Animal health and welfare, public health and food safety and the protection of the environment are core responsibilities for vets in practice, research, industry, policy making and other working fields such as education (FVE, 2021; KNMvD, 2022).

To support vets in their professional choices the Federation of Veterinarians of Europe has published a European Veterinary Code of Conduct (FVE, 2019). This Code covers the norms and values on how veterinarians should relate to animals, clients, colleagues, authorities, society and the environment. While those norms and values are highlighted individually, There's limited information on how to balance these values against each other. For example, actions necessary for public health may adversely affect animal welfare.

Regarding the environment, the guidelines outline how veterinarians can minimize unnecessary pollution, but they do not address how to prioritize various environmental interests within nature-inclusive systems. For example, the code mentions 'animals under the care' of veterinarians. Does this include wild animals in a nature-inclusive system?

The Code of conduct of the Royal Veterinary Association of the Netherlands has been reviewed in 2022 and is aligned to the European Code. The Dutch Code states that for ethical professional practice and the protection of animal health, animal welfare, public health and the environment the current legal framework constitutes the minimum. On top of the legal framework veterinarians retain their own responsibility when weighing different interests in different situations. The interest of the animal should be central when considering various interests (KNMvD, 2022). Out of these potential conflicts of interests ethical dilemmas can arise.

Potential conflicts of interest for veterinarians working in nature inclusive farming systems

Balancing high standards of animal health, welfare and economic pressures can be difficult for veterinarians in all areas of veterinary practice.

Franck Meijboom and Pamela Rose Jordt, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Below we summarize some potential dilemma's that veterinarians might face when working in nature inclusive farming systems in relation to the core values stated in the European Veterinary Code of Conduct (FVE, 2019).

Animals in contact with nature

One of the requirements for nature inclusive farming systems is that animals have (unlimited) access to an outdoor living space.

For this reason, animals in nature inclusive farming systems have potentially more contact with wildlife and a higher risk of exposure to infectious disease (Spoolder, 2007), e.g. African Swine fever.

There's also an increased risk for infections vector borne diseases e.g. transmitted by insects, zoonotic diseases and contact with predators (e.g. re- introduction of the wolf).

When advising farmers, veterinarians need to balance conflicting interests e.g. the benefit for animal welfare of being outside against the risk of infectious diseases and the possibilities of successful treatment of these diseases.

Animal needs and management

Transitioning to nature-inclusive farming systems may necessitate a different approach to animal management, including the use of different breeds and different feeding requirements (Escribano, 2018; EU organic action plan, 2021). Consequently, farmers require specific knowledge, particularly in the transition period when shifting from conventional to nature-inclusive practices. Such changes can potentially impact animal health negatively. When production animals are not provided with a well-balanced diet they are at risk to develop nutritional deficiencies and hence metabolic diseases. Veterinarians then need to find solutions compatible with nature-inclusive farming methods. This might involve updating their knowledge on areas not typically covered in the standard veterinary curriculum, such as specific regulations and the potential effects of different feed sources, like herb-rich grassland, on animal health.

Dilemmas can arise from differences in opinion with clients, authorities and society. These conflicts evolve around the question what is acceptable for animal health and welfare for both livestock and different animal species living in nature on the farm? These differences may stem from varying needs, potentially conflicting laws and regulations, quality standards, or different ethical views. Practical examples of these kind of conflicts are: creating safe havens for hedgehogs with heaps of twigs and leaves on a farm may compromise farm hygiene and biosecurity, potentially attracting undesirable visitors such as rats. Similarly, animals grazing in nature reserves which do not receive the regular health checks they require, potentially leading to welfare issues during events like birthing or injuries, especially if they are not accustomed to handling.

Treatment of disease

Limiting the use of antibiotics to combat antimicrobial resistance in both veterinary and human medicine is a common worldwide goal and part of Dutch policy (Groot *et al*., 2021). This also applies to antiparasitic drugs as more gets known about their persistence in nature and their impact on soil life (Moermond *et al*,. 2019; Souza and Guimaraes, 2022). Within the organic farming philosophy the use of antibiotics and other conventional medicines is not desirable and seen as a last resort. Therefore organic quality standards may promote other ways of supporting the health and resilience of animals.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Veterinarians might not have this knowledge available or question treatment options such as homeopathy because these are not seen as evidence-based. They need to weigh the impact of e.g. using an antiparasitic drug to safeguard the welfare of one (herd of) animal(s) compared to the impact the use of this drug may have on the soil life and land management on a nature inclusive farm.

Here also a shift in mindset is required, as the traditional approach of evidence-based animal medicine tends to focus on pathogen eradication. This view sometimes conflicts with a more complex systems based approach where health of an ecosystem is more a question of balance and resilience. Research from other disciplines may need to be linked to veterinary scenario's and perhaps empirical evidence should be taken more into account and further research conducted form there.

Source of income

In conventional farming, the main goal is to maximize yield for a single product like milk, meat, or crops. In nature-inclusive systems, diverse crops, animals, and ecological processes are integrated, leading to a wider range of income sources. This may include selling products directly on the farm or engaging in eco-tourism, potentially increasing human-animal contact and consumption of items like raw milk. Managing public health and zoonotic concerns is an important task for veterinarians, which can sometimes conflict with economic interests of farmers. This challenge is potentially more present in nature-inclusive systems due to their diverse revenue models.

Focus group discussion on potential ethical dilemmas for veterinarians working with nature inclusive farming systems

To get more insight whether the potential dilemmas we identified are in line with experiences of practising veterinarians, we organized a focus group. For this empirical research we used the nominal group technique (O'Neil and Jackson, 1983) within a group of 9 veterinarians with an interest in nature inclusive farming systems.

Initially, each participant took 5 minutes to write down potential dilemmas they perceived. This was followed by several rounds where participants named one dilemma in 2-3 words per round, until no new dilemmas were identified. Following this, each participant spent 5 minutes allocating points to create their personal top 5 list. They assigned 5 points to the dilemma which they felt was most crucial and 1 point to the least significant among their top 5. After this, the different topics were summarized into categories such as animal welfare, public health, and revenue models.

The area where veterinarians saw the most potential dilemma's was animal welfare (23 points), followed by medication/therapy options (19 points), specific knowledge within the veterinary profession (15 points), rules and regulations (14 points), hygiene and management (11 points).

Dilemmas concerning animal welfare mainly arise from the possibility of animals experiencing suffering due to certain treatments being delayed (e.g. a strong focus on antibiotic-free) or preventative strategies not being sanctioned by quality systems, different management systems such as piglet mortality in free farrowing units, inadequate feeding strategies, or animals unsuitable for the system. Animals in nature reserves may not receive health checks and medical assistance frequently or promptly enough. The prejudices and polarized discussions within society regarding farming methods were also identified as potential animal welfare dilemmas.

Franck Meijboom and Patrick Bos, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Regarding treatment options, There's uncertainty about what is precisely required by regulations, and quality standards both for conventional medicine and for the use of herbal products and other natural products or alternative therapies.

Knowledge of rules and regulations, as well as familiarity with options such as herbal products (as animal feed or medicinal product) and the time required to acquire such knowledge compared to the potential revenue to be generated from it, are identified as potential dilemmas for veterinarians.

One of the main potential dilemmas concerning rules and regulations, in addition to those described above, is the uncertainty about how rules and regulations from different areas of policymaking can be aligned with each other. An integrated legal framework that covers nature inclusive farming, animal health and -welfare, environmental and public health issues is essential for farmers and veterinarians.

The primary potential dilemma regarding hygiene and management is that nature-inclusive approaches may sometimes be interpreted as a 'carte blanche' for untidiness and unhygienic conditions. Operational blindness could be rationalized within the system itself. Moreover, on small farms, disease monitoring may not be carried out sufficiently if they are not subject to mandatory monitoring systems.

What may help veterinarians in dealing with these dilemmas?

After the evaluation there was an open discussion in the focus group, during which each participant described what they believed was necessary to address these dilemmas. If other participants wished to contribute, they did so after the initial speaker had finished.

There was a general consensus that both farmers and veterinarians require additional knowledge and an open mindset that allows for shifting perspectives rather than adhering to 'but this is how we have always done it.' Clarity on requirements from rules, regulations, and quality systems, as well as a clear long-term political strategy inclusive of commercial models for farmers and veterinarians, were identified as highly beneficial. Practical tools, such as easy-to-use and objective monitoring systems, benchmarking, and accreditation for veterinarians with specialized knowledge, would be helpful in achieving and maintaining high standards in animal health, welfare, and public health.

Greater societal openness, rather than polarization, would facilitate a more productive climate for agricultural transition. Tools to facilitate this could include mandatory lessons on agriculture from primary schools onward and agricultural internships in high school or beyond.

Pharmaceutical companies could contribute by addressing the potential impact of medicinal products on biodiversity when communicating with clients about their products.

Discussion and conclusion

The ethical dilemmas of veterinarians working in nature inclusive farming system can be largely attributed to dilemma's inherent to the system.

For example, dilemma's regarding animal welfare in organic systems have been described in literature and it has been argued that the definition of animal welfare in organic systems differs from its definition in conventional systems (Lund, 2006). It is argued that 'naturalness' and 'regeneration' are terms that are used additionally in organic systems to commonly used terms and definitions of animal welfare (Lund, 2006; Leeb, 2011). However, including these concepts in the definition of animal welfare can easily lead to inherent conflicts between other values. A practical example of an ethical conflict arising from these

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

principles would be predation, which can be considered a part of a healthy natural system but can also be detrimental to the welfare of the preyed-upon animal.

Treatment options for animals in nature-inclusive systems are directly influenced by the principle of 'naturalness.' For example, the use of antiparasitic drugs may be severely regulated or forbidden for animals grazing in nature reserves. What ethical reasoning underlies such regulations? Is the potential damage to soil health, biodiversity, and the development of resistance more important than the health and wellbeing of the grazing animals? Or is it considered part of 'naturalness' that some animals will experience disease and potential death, as this occurs in nature?

In addition to the dilemmas arising from the system itself there are also dilemmas arising from people's attitudes towards the system. For example, farmers may switch to nature-inclusive systems for various reasons. They may do so due to moral convictions and a belief that these farming systems are sustainable, while for others, it may simply be a viable business model. This can lead to various conflicts of interest. In the former scenario, the danger is that the system is used as justification or excuse for undesirable situations, whereas in the latter scenario, economic reasoning can lead to decisions outweighing animal welfare.

Therefore, potential solutions to dilemmas in nature-inclusive farming systems should consider the ethical principles behind these systems and the consequences they entail for all stakeholders. To do this successfully, clear frameworks need to be established, involving explicit choices and long-term policies on the EU and national levels. Policies for nature inclusive farming could benefit from a systematic approach in which the different interests of animals, public health and environment are clearly aligned to each other and possible conflicts are identified and clearly described. Regarding veterinarians, further investigation and prioritization of potential dilemmas concerning veterinary care in nature-inclusive systems should be actively encouraged by veterinary professional bodies. They can support veterinarians and facilitate societal debate about the dilemmas veterinarians face. For individual veterinarians it will be difficult to establish system change. Their main concern is the actual health and welfare of the animals on farm level. However, professional organizations of veterinarians can address the dilemmas that are inherent to nature inclusive farming more easily because of their network and influence in policy making and public opinion. In conclusion, changes in food production systems will potentially put veterinarians in vulnerable positions as they will face dilemmas that are system-made rather than solvable by an individual veterinarian. The different core values stated in the European Veterinary Code of Conduct (FVE, 2019) can provide some direction but still leave the individual veterinarian to figure out how to balance different (public) interests. To establish clear ethical frameworks that highlight areas of potential conflicts on a system-based level, veterinarians need the support of policymakers and professional bodies.

References

Dutch ministry of agriculture, nature and food. (2023a). Exploring nature inclusive farming agrospecials. Available online at https://magazines.rijksoverheid.nl/lnv/agrospecials/2023/01/introduction (accessed 29 November 2023).

Dutch ministry of agriculture, nature and food. (2023b). Agenda natuurinclusief 2023. Available online at https://open.overheid.nl/documenten/ef4ae588-f750-4259-b8e9-338634788d09/file (accessed 29 November 2023).

Escribano, A. (2018). Organic feed: A bottleneck for the development of the livestock sector and its transition to sustainability? Sustainability, 10, 2393. DOI: 10.3390/su10072393.

European Greendeal. (2019). Available online at https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/agriculture-and-green-deal_en (accessed 29 November 2023).

European Union (EU) organic action plan. (2021). Available online at https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/696182/EPRS_BRI(2021)696182_EN.pdf (accessed 29 November 2023).

Franck Meijboom and Patrick Bova, [ISBN 978-90-04-71550-9]
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

European Union (EU) EU organic farming. (2023). Available online at https://agriculture.ec.europa.eu/farming/organic-farming/organics-glance_en

FVE. (2019). European Veterinary Code of Conduct. Handout.

FVE. (2021). Federation of Veterinarians of Europe Strategy 2021–2025. Handout.

Groot, M., Berendsen, B. and Cleton, N. (2021). Next step to further decrease veterinary antibiotic applications: Phytogenic alternatives and effective monitoring; the dutch approach. Frontiers in Veterinary Science, 8, 709750. DOI: 10.3389/fvets.2021.709750

KNMvD. (2022). Code voor de Dierenarts. Handout.

Leeb, C. (2011) The concept of animal welfare at the interface between producers and scientists: the example of organic pig farming. Acta Biotheoretica, 59(2), 173–183.

Lund, V. (2006) Natural living — a precondition for animal welfare in organic farming. Livestock Science, 100(2–3), 71–83.

Moermond, C., Lahr, J., Montforts, M., Derksen, A., Bondt, N., Puister-Jansen, L., de Koeijer, T. and Hoeksma, P. (2019). Diergeneesmiddelen in het milieu Een synthese van de huidige kennis. Rapport Ministerie Volksgezondheid , welzijn en sport. Ministerie Volksgezondheid , welzijn en sport, The Hague.

O'Neil, M.J. and Jackson, L. (1983) Nominal group technique: a process for initiating curriculum development in higher education. Studies in Higher Education, 8, 129–138.

Runhaar, H.(2017). Governing the transformation towards 'natureinclusive' agriculture: insights from the Netherlands. International Journal of Agricultural Sustainability, 15(4), 340–349. DOI: 10.1080/14735903.2017.1312096.

Spoolder, H. (2007). Animal welfare in organic farming systems. Journal of the Science of Food and Agriculture, 87(15), 2741–2746. DOI: 10.1002/jsfa.2999.

Souza, R.B. and Guimaraes, J. (2022). Effects of avermectins on the environment based on its toxicity to plants and soil invertebrates — A review. Water Air Soil Pollution Journal, 233(7), 259. DOI: 10.1007/s11270-022-05744-0.

Van Doorn, A., Melman, D., Westerink, J., Polman, N., Vogelzang, T. and Korevaar, H. (2016). Natuurinclusieve landbouw. Food voor thought. WUR report. WUR, Wageningen. DOI: 10.18174/401503.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Breakfast on the farm: farm tour impacts on public perceptions of dairy cow welfare and sustainability

A.M.C. Smid[1], S.M. Roche[2], H.W. Barkema[1], W. Ruiter[3] and B.A. Ventura[4]
[1]Faculty of Veterinary Medicine, University of Calgary, Calgary, AB, Canada; [2]ACER Consulting, Guelph, ON, Canada; [3]Department of Farm Animal Health, Faculty of Veterinary Medicine, Utrecht University, Utrecht, The Netherlands; [4]Department of Life Sciences, University of Lincoln, Lincoln, UK

Abstract

The need to better understand societal expectations for sustainable dairy farming is critical if the sector is to fulfil and maintain its social licence to produce. Concurrently, as the livestock sectors seek to engage with the public about practices, it is important to clarify the impact of different communication approaches. We used mixed-method surveys to document how farmer-guided farm tours impacted visitors' perceptions of the Canadian dairy industry, with a secondary aim to assess whether outcomes are affected by tour delivery style (one-way education vs. a more open approach focused on inviting questions and discussion). Farmers trained in one of two styles (n=30, half in each) gave farm tours on 3 commercial dairy farms (Alberta, Canada) during 'Breakfast on the Farm' events in June 2022, with visitors (n=301) completing pre- and post-tour surveys about their perceptions of cow welfare and environmental stewardship. Of these, 138 also returned a two-week follow-up survey. Preliminary analysis has focused on descriptive summaries, with qualitative data processed via thematic analysis. Directly after the farm tours, almost half of participants reported more positive perceptions of cow welfare, whereas under 10% reported downward shifts in welfare perceptions. However, two weeks later nearly one third had reverted to more negative welfare perceptions, with concerns focused on cow-calf separation and lack of outdoor access. Similar trends were observed with environment perceptions, with concerns focused on emissions. Tour style did not have a clear impact on perception outcomes, which may be due to the challenges imposed by attempting dialogues during a walking farm tour. This study highlights the need to understand how, why, and what influences perceptions beyond the farm tour, as well as best practice for facilitating lasting engagement.

Study context

As most Canadians are at least 2 generations removed from farming (Rotz, 2018), it is not surprising that a disconnect exists between societal values and practices commonly employed in the Canadian dairy industry. One example is the relatively low use of pasture access for lactating cows on Canadian dairy farms (i.e., approx. 29% of Canadian dairy farms; Smid *et al.*, 2023), a situation which conflicts with public preferences for more naturalistic housing of dairy cows in Canada (Schuppli *et al.*, 2014; Ventura *et al.*, 2016) and throughout much of the world (e.g., The Netherlands: Boogaard *et al.*, 2008; United States: Cardoso *et al.*, 2016; Brazil: Cardoso *et al.*, 2019; Hötzel *et al.*, 2017; United Kingdom: Jackson, 2020). Conflicting views between society and industry on what constitutes a good dairy farm present challenges for the future resilience of the dairy industry (Jackson, 2020).

Amongst a segment of those working within the livestock sectors is the assumption that the public is uneducated, unaware and/or misinformed on modern farming practices (reviewed by Clark *et al.*, 2016). These assumptions often lead those in the dairy industry to adopt a 'deficit model' approach: an assumption that public concerns about certain topics are due to deficits in public understanding (Hansen *et al.*, 2003). Therefore, a common response of the dairy industry in attempting to improve public perception of dairy farming is through educational efforts designed to increase public exposure

EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_32, © Brill | Wageningen Academic 2024
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

to and acceptance of why dairying is done the way it is (Ventura *et al*., 2016), for example during open farm days with farmer-guided farm tours.

However, such efforts are challenged by the reality that increasing knowledge about a particular issue does not consistently lead to linear improvements in perception (Hansen *et al*., 2003), as people's attitudes are shaped by factors beyond information. For example, education may fail to satisfy public concerns as the information shared may conflict with deeply held values (Hansen *et al*., 2003), and may even result in increased polarization of views (Hart and Nisbet, 2012). For example, an earlier study by our group on this topic (Ventura *et al*., 2016) demonstrated that amongst the studied population (largely suburban/urban residents who were attending a Slow Food sponsored event), perceptions of dairy farming became more negative for one third of the participants, despite most also coming away with improved knowledge. Segmentation of public perceptions (i.e., divergence in responses upon exposure to the same set of information) toward animal farming after virtual and in-person farm visits has been reported elsewhere (Hötzel *et al*., 2017; Schütz *et al*., 2022), although others have reported that educational efforts may indeed meaningfully alleviate public concerns about the topic in question (e.g., exposure to educational brochures and videos reducing concerns about antibiotic residues in milk; Redding *et al*., 2021).

As such, the influence of educational efforts and other communication strategies on public perceptions toward contentious topics for the dairy sector (e.g. animal welfare, environment) needs to be better understood. An alternative approach to public engagement is one that rests on a genuine attempt by farmers to listen to public concerns, seek to understand the root of those concerns, and identify shared values (Buddle *et al*., 2021; Ventura and Fjæran, 2021). Such practices may help create non-judgmental spaces for open dialogue**,** allowing people to interact in ways that establish trust through establishment of a shared sense of purpose (Falk and Kilpatrick, 2000). Construction of such spaces may help build better relationships between dairy farmers and the public, in turn improving the dairy sector's ability to anticipate and respond to societal concerns and maintain its social license to produce (see Bolton and von Keyserlingk, 2021). However, to our knowledge the effect of differing communication approaches during farm tours has not yet been evaluated, nor are we aware of studies evaluating whether perceptions captured immediately after a farm tour remain stable over time.

Objectives and methods

Our primary objective was to understand the effects of farmer-guided farm tours on public knowledge and perception of the Canadian dairy industry. Our secondary aim was to assess whether these outcomes might be modulated by training farmer tour guides to deliver tours using either a more traditional tour approach (where farmers deliver information to visitors via 'one-way education') or with a more open approach focused on inviting questions, identifying shared values, and exploring opportunities for conversation and discussion ('dialogue').

Farm tours and training

The "Breakfast on the Dairy Farm" events, organized annually by Canadian dairy farmers, provided the platform for this study. In brief, public visitors to the farms were treated to a complimentary breakfast before joining farmer-led tours of the farm facilities, which aimed to showcase various stages of dairy production and farm management practices. These tours, lasting between 30 minutes to an hour, were followed by leisure activities such as children's games and ice cream or cheese samplings. This study focused on three events held at different farms located in Alberta, Canada over a week in June 2022.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

In preparation for the farm events, 30 Canadian dairy farmers were recruited and trained by the research team to conduct farm tours using either a one-way educational ("A") (n=15) or dialogue ("B") (n=15) approach. In brief, "A" farmers were instructed to take a traditional approach wherein they followed a list of talking points and answered visitor questions as they arose, whereas "B" farmers were instructed to build rapport with visitors, asking questions and eliciting feedback with a goal to establish and identify commonalities between themselves and the public throughout the tour. Training sessions covered study objectives, tour expectations, and communication styles. "A" farmers received approximately 40 minutes of training, while "B" farmers underwent an additional hour of training involving self-reflection exercises to identify their values around several farming practices and role-playing scenarios.

Surveys

We used a pre- and post-tour mixed-method survey to document how farmer-guided farm tours impacted visitors' knowledge and perceptions of the Canadian dairy industry. Specifically, a 7-question 'knowledge quiz' assessed visitors' knowledge on basic dairy husbandry practices; perception questions aimed to assess visitors' perceived quality of life of dairy cows and the environmental responsibility of dairy farmers. In addition, two weeks after the farm visits, links to a third and final follow-up survey were emailed to participants who provided their email addresses in the post-tour survey. Questions in this survey aimed to understand the longer-term effects of the farm tour on perceptions on dairy farming. Here, quantitative survey responses are presented descriptively; qualitative responses were processed using thematic analysis and preliminary themes are described below.

The University of Calgary Conjoint Faculties Research Ethics Board approved this study (REB22-0444). Participant quotations are shared below with anonymous identifiers in parentheses to designate different individuals.

Preliminary results

A total 301 visitors filled out both the pre- and post-tour survey; 138 of these also filled out the 2-week post-tour survey.

Knowledge

Overall, visitors' performance scores on a knowledge 'quiz' about dairy farming increased by 30% immediately after the farm tour, regardless of communication approach.

Perceptions toward animal welfare

A total of 41% of participants became more positive in their perceptions toward dairy cow welfare immediately after the tour, whereas 8% became more negative, with no differences between communication methods. However, 2 weeks after the event, 27% had become more negative in their perceptions about dairy cow welfare. The most frequent post-tour concerns focused on early cow-calf separation and the lack of outdoor access. For example, one respondent shared "The cows do not have an option of grazing freely on green pastures and the calves do not get to stay with moms in the first few days/months of their lives, that's why their quality of life is not very good but moderately good." (P1209). Another mentioned: "The mother cows do not seem to form relationships with their babies as right after birth they are removed from one another to reduce the spread of disease. Are the mothers okay with this? Is there an alternative to this?" (P1247).

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Perceptions toward environmental responsibility

Immediately after the farm tour, a total 44% of respondents became more positive and 5% more negative in their perceptions towards environmental responsibility of dairy farmers. However, two weeks later, 35% became more negative in their perceptions on dairy farmer environmental responsibility. The most frequent post-tour concerns focused on the environmental impacts of dairy farming through greenhouse gas production, although these concerns were less frequently mentioned than animal welfare related concerns. One of the participants shared: "My concerns are about whether it can be done without releasing significant greenhouse gases and still be profitable and competitive with other countries." (P1390).

Implications

Although farm tours increased public knowledge about dairy farming, several concerns about dairy farming remained in a selection of the participants, a result in line with Ventura *et al*. (2016). Participants' concerns mainly encompassed concerns about dairy cattle welfare and focused on early cow-calf separation and the lack of outdoor access, practices that can be seen as 'unnatural'. Public concerns about animal welfare often focus on the ability of animals to engage in natural behaviours and live under natural conditions (e.g., Cardoso *et al*., 2019), whereas farmers often emphasise the importance of the animals' biological functioning (e.g., Balzani and Hanlon 2020; Fraser *et al*., 1997; Smid *et al*. 2021). Environmental concerns mainly involved the contribution of dairy farming in the production of greenhouse gases. However, environment-related concerns were shared less often than animal welfare-related concerns, a similar observation was made by Jackson *et al*. (2020).

Interestingly, 2 weeks after the farm tour, 27% of participants had become more negative in their perceptions about dairy cow welfare, and 35% had become more negative in their perceptions on dairy farmer environmental responsibility. It is possible that the 'reciprocity' phenomenon may help explain the comparatively positive public response immediately after the farm tours: uninvited favours often elicit a feeling of 'indebtedness' in the recipient, resulting in people wanting to repay a psychological debt (Fehr and Gächter, 2011). In other words, the free event may have made participants feel obligated to provide more positive feedback than they felt. It is also a possibility that in the weeks after the tour, participants may have had more time to reflect, possibly with others who may have offered more critical perspectives, which may have contributed to this effect.

Tour guide communication treatment did not have a clear impact on perception outcomes, which may be due to the challenges imposed by attempting dialogues during a walking farm tour, in combination with limited training of farmers. Farmers were trained in an approx. 2-h Zoom workshop; a new communication style likely takes longer to successfully adopt.

As public education does not necessarily lead to improved public perception of dairy farming, it may be important for the dairy industry to continue exploring alternative approaches to build better relationships between dairy farmers and the public. As the perception of what constitutes good animal welfare inherently involves one's values (Fraser *et al*., 1997), it may be important that conversations between farmers and the public focus more directly on exploring these values, enabling better communication and through that, understanding of the potential discrepancies between each other's views. Our results also highlight the challenge of a one-point-in-time engagement. More work is needed to better understand the effects of public engagement on longer-lasting perceptions of dairy farming. It also highlights the need for longer term and deeper connections with the views and expectations of either side. Overall, alternative approaches (other than one-way education) to public engagement may help the dairy industry

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

build and maintain public trust and determine what factors are important for a socially sustainable future.

References

Balzani, A. and Hanlon, A. (2020). Factors that influence farmers' views on farm animal welfare: A semi-systematic review and thematic analysis. Animals, 10, 1–25. DOI: 10.3390/ani10091524

Bolton, S.E. and von Keyserlingk, M.A.G. (2021). The dispensable surplus dairy calf: Is this issue a "wicked problem" and where do we go from here? Frontiers in Veterinary Science, 8, 1–12. DOI: 10.3389/fvets.2021.660934

Boogaard, B.K., Oosting, S.J. and Bock, B.B. (2008). Defining sustainability as a socio-cultural concept: Citizen panels visiting dairy farms in the Netherlands. Livestock Science, 117, 24–33. DOI: 10.1016/j.livsci.2007.11.004

Buddle, E.A. (2019). Australian meat consumers ' understandings of farm animal welfare. Dissertaiton, School of Humanities, University of Adelaide, Adelaide, SA.

Buddle, E.A., Bray, H.J. and Ankeny, R.A. (2021). "Of course we care!": A qualitative exploration of Australian livestock producers' understandings of farm animal welfare issues. Journal of Rural Studies, 83, 50–59. DOI: 10.1016/j.jrurstud.2021.02.024

Cardoso, C.S., Hötzel, M.J., Weary, D.M., Robbins, J.A. and von Keyserlingk, M.A.G. (2016). Imagining the ideal dairy farm. Journal of Dairy Science, 99, 1663–1671. DOI: 10.3168/jds.2015-9925

Cardoso, C.S., von Keyserlingk, M.A.G. and Hötzel, M.J. (2019). Views of dairy farmers, agricultural advisors, and lay citizens on the ideal dairy farm. Journal of Dairy Science, 102, 1811–1821. DOI: 10.3168/jds.2018-14688

Clark, B., Stewart, G.B., Panzone, L.A., Kyriazakis, I. and Frewer, L.J. (2016). A systematic review of public attitudes, perceptions and behaviours towards production diseases associated with farm animal welfare. Journal of Agricultural and Environmental Ethics, 29, 455–478. DOI: 10.1007/s10806-016-9615-x

Falk, I. and Kilpatrick, S. (2000). What is social capital? A study of interaction in a rural community. Sociologia Ruralis, 40, 87–110. DOI: 10.1111/1467-9523.00133

Fehr, E. and Gächter, S. (2011). Fairness and retaliation: The economics of reciprocity. Advances in Behavioral Economics ,14, 510–532. DOI: 10.2139/ssrn.229149

Fraser, D., Weary, D.M., Pajor, E.A. and Milligan, B. (1997). A scientific conception of animal welfare that reflects ethical concerns. Animal Welfare, 6, 187–205.

Hansen, J., Holm, L., Frewer, L., Robinson, P. and Sandøe, P. (2003). Beyond the knowledge deficit: Recent research into lay and expert attitudes to food risks. Appetite, 41, 111–121. DOI: 10.1016/S0195-6663(03)00079-5

Hart, P.S. and Nisbet, E.C. (2012). Boomerang effects in science communication: How motivated reasoning and identity cues amplify opinion polarization about climate mitigation policies. Communication Research, 39, 701–723. DOI: 10.1177/0093650211416646

Hötzel, M.J., Cardoso, C.S., Roslindo, A. and von Keyserlingk, M.A.G. (2017). Citizens' views on the practices of zero-grazing and cow-calf separation in the dairy industry: Does providing information increase acceptability? Journal of Dairy Science, 100, 4150–4160. DOI: 10.3168/jds.2016-11933

Jackson, A. (2020). Is it just about grazing ? UK citizens have diverse preferences for how dairy cows should be managed. Journal of Dairy Science, 102, 3250–3263. DOI: 10.3168/jds.2019-17111

Rotz, S. (2018). Drawing lines in the cornfield: an analysis of discourse and identity relations across agri-food networks. Agriculture and Human Values, 35, 441–456. DOI: 10.1007/s10460-017-9838-0

Schuppli, C.A., von Keyserlingk, M.A.G. and Weary, D.M. (2014) Access to pasture for dairy cows: Responses from an online engagement. Journal of Animal Science, 92, 5185–5192. DOI: 10.2527/jas2014-7725

Schütz, A., Kurz, K. and Busch, G. (2022). Virtual farm tours — Virtual reality glasses and tablets are suitable tools to provide insights into pig husbandry. PLoS ONE, 17, 1–23. DOI: 10.1371/journal.pone.0261248

Smid, A.M.C., Inberg, P.H.J., de Jong, S., Sinclair, S., von Keyserlingk, M.A.G., Weary, D.M. and Barkema, H.W. (2021). Perspectives of Western Canadian dairy farmers on providing outdoor access for dairy cows. Journal of Dairy Science, 104, 10158–10170. DOI: 10.3168/jds.2021-20342

Smid, A.M.C., Boone, V., Jarbeau, M., Lombard, J. and Barkema, H.W. (2023). Outdoor access practices in the Canadian dairy industry. Journal of Dairy Science, 106, 7711–7724. DOI: 10.3168/jds.2023-23344

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Ventura, B.A. and Fjæran, E.H. (2021). From stakeholder education to engagement, using strategies from social science. In Sommerville, R. (ed.) Changing human behaviour to enhance animal welfare. CAB International, Wallingford, pp. 35-47.

Ventura, B.A., von Keyserlingk, M.A.G., Wittman, H. and Weary, D.M. (2016). What difference does a visit make? Changes in animal welfare perceptions after interested citizens tour a dairy farm. PLoS ONE, 11, e0154733. DOI: 10.1371/journal.pone.0154733

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Breakfast on the farm: dairy farmer experiences in delivering tours to members of the public

B.A. Ventura[1], S.M. Roche[2], A. Schaafsma[3], H.W. Barkema[4], W. Ruiter[3] and A.M.C. Smid[4]
[1]Department of Life Sciences, University of Lincoln, Lincoln, UK; [2]ACER Consulting, Guelph, ON, Canada; [3]Department of Farm Animal Health, Faculty of Veterinary Medicine, Utrecht University, Utrecht, The Netherlands; [4]Faculty of Veterinary Medicine, University of Calgary, Calgary, AB, Canada

Abstract

Public farm tours are a popular practice in the dairy industry and may help improve transparency and reduce public distance to livestock farming. However, tours are often approached through an 'agvocacy' lens in which the aim is to educate visitors to increase acceptance of farming practices. Previous research has explored impacts on public visitors but relatively little has attended to farmers' experiences. Here, we explore how Canadian dairy farmers (n=26) experienced touring visitors on 'Breakfast on the Farm' public tours, with a secondary aim to describe differences based on how farmers self-selected and were trained to guide tours in one of two styles ("A" - one-way education vs. "B" - dialogue approach focused on identifying shared values). Four focus groups (approx. 90 min, 4–8 farmers/group) were conducted on Zoom, transcribed, and processed using reflexive thematic analysis. Here we focus on two primary themes: (1) how farmers experienced the events; and (2) their views toward the public. Farmers described overwhelmingly positive feelings toward the events, sharing that tours went well and they enjoyed the opportunity to connect with and/or educate visitors to the farm. Importantly, these events allowed their community to come together to share their pride in their field. Farmers expressed both positive (e.g., public as curious and engaged) and critical (e.g., public as misinformed) views and felt that public concerns focused most on cow welfare, antibiotic and hormone usage, and net zero goals. "A" farmers emphasized the importance of public education and maintained beliefs that this would alleviate public concerns. While "B" farmers also shared beliefs in the importance of education, they more readily framed public concerns as something important for them to learn from as well. With a new appreciation for the others' perspective, farm tours may present a useful opportunity to align industry and public interests toward shared goals for the future of food.

Study context

Much of the scientific literature suggests that the public's conception of dairy cattle welfare often differs from that of farmers (Rovers *et al*., 2017a,b; von Keyserlingk *et al*., 2009). Members of the public are often cited as emphasizing the importance of natural conditions and behaviours (Cardoso *et al*., 2019; Rovers *et al*., 2017a), while farmers often focus on their practical responsibilities for animal care via provision of biological health and functioning (Smid *et al*., 2021; Sumner *et al*., 2018). Such discrepancies can lead to conflicting agendas on desired practices and can potentially threaten the livestock sectors' social license to operate (Hampton *et al*., 2020; Martin and Shepeard, 2012). Factors such as the figurative and literal distance of most of society from the day to day occurrence of farming are believed to compound this issue in part by exacerbating public misunderstandings about how and why farming practices are performed (Benard and De Cock Buning, 2013; Berkes and Mergenthaler, 2021; Boogaard *et al*., 2006, 2008; Cardoso *et al*., 2019; Ellis *et al*., 2009; Jackson *et al*., 2022). Perhaps not surprisingly then, a belief that the gap between public and industry expectations can be rectified by educating the public seems to be fairly common amongst those working in the dairy sector (including farmers (Smid *et al*., 2021) and veterinarians (Ventura *et al*., 2023)).

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (eds), ***Back to the future***
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_33, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

In response, the dairy and other livestock sectors have sought ways to close this gap by exposing the public to the farming world through several avenues, including the hosting of open farm days whereby members of the public are invited to tour farms and learn the 'hows and whys' behind farming. However, the impacts of such events may not consistently improve public acceptance of farming practices even as they improve public understanding; for example, Ventura *et al.* (2016) demonstrated that public perceptions of dairy farming became segmented based on whether the information learned aligned with visitors' values around animal welfare. Therefore, public farm events could be an important opportunity for members of the public to feed back their expectations and concerns to farming communities, provided farmers are able and willing to engage with such concerns. Indeed, several have suggested that provision of space for diverse parties to engage in two-way conversations where ideas are exchanged and shared values identified may be critical in helping resolve public concerns, in part by highlighting farming practices in need of change (Benard and de Cock Buning, 20; Bolton and Von Keyserlingk, 2021; Buddle *et al*., 202113; Hötzel, 2016; Rovers *et al*., 2017b). However, handling such conversations may be confronting for farmers who may experience critiques of farming practice as attacks on their identity, expertise, and/or way of life.

To our knowledge, little research has addressed the experience of the communicators at such events, yet to improve the outcome of such events, both visitors and farmers should benefit. As the livestock sectors seek ways to improve public acceptance of farming practices, it is thus important to better understand how different communication approaches impact public perceptions as well as farmers' own experiences and perceptions of public engagement. Investigating farmer experiences may also help pilot different strategies to more meaningfully engage with the public, which could support future efforts to bridge gaps between industry and society.

Objectives and methods

This study sought to describe dairy farmers' experiences of delivering tours to visitors during open farm days, with a secondary aim to examine how training and delivery of tours in one of two communication approaches (one-way education versus dialogue approach) mediated their perceptions of the experience.

Farm tours and training

The "Breakfast on the Dairy Farm" events, organized annually by Canadian dairy farmers, provided the platform for this study. In brief, public visitors to the farms were treated to a complimentary breakfast before joining farmer-led tours of the farm facilities, which aimed to showcase various stages of milk production and farm management practices. These tours, lasting 30 minutes to an hour, were followed by leisure activities such as children's games and ice cream or cheese samplings. This study focused on three events, with a total of 301 participants in the tours, held at different farms located in Alberta, Canada, over a week in June 2022.

In preparation for the farm events, 31 Canadian dairy farmers were recruited and trained by the research team to conduct farm tours using either a one-way educational ("A") or dialogue ("B") approach. In brief, "A" farmers were instructed to take a traditional approach wherein they followed a list of talking points and answered visitor questions as they arose, whereas "B" farmers were instructed to build rapport with visitors, asking questions and eliciting feedback with a goal to establish and identify commonalities between themselves and the public throughout the tour. Training sessions covered study objectives, tour expectations, and communication styles. "A" farmers received approximately 40 minutes of training, while "B" farmers underwent an additional hour of training involving self-reflection exercises to identify their values around several farming practices and role-playing scenarios.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Farmer focus groups

Focus groups were conducted over Zoom approximately two months after the farm tours. Four focus groups were held (n=4–8 farmers per group, n=26 participants total), two with farmers from the "A" tour style and two with farmers from the "B" tour style. Groups were moderated by a single trained facilitator (WR) and joined by BV, SR and AMS, following a semi-structured guide where participants were first invited to share their experiences from the event. The research team then presented preliminary results on how the tours had impacted visitor knowledge and perceptions (see this meeting's abstract from Smid *et al*., 2024), and participants were invited to reflect and share their views on study results. Audio files were transcribed and reflexive thematic analysis (Braun and Clarke, 2006) was used to process the data. Analysis is ongoing but below we present preliminary themes to describe farmers' experiences with the events and their views toward the public, with differences noted between the "A" and "B" groups where relevant. Participant quotations are shared below with anonymous identifiers in brackets to designate individuals.

All participants provided informed consent and received $100 CAD compensation for their involvement, including serving as a tour guide. The University of Calgary Conjoint Faculties Research Ethics Board approved this study (REB22-0444).

Preliminary results

Farmers' experiences of the tours

Overall, farmers expressed positive sentiments toward the farm events, widely reporting that they enjoyed the opportunity to deliver tours and engage with visitors. Farmers employing the "A" (educational) tour approach focused on positive outcomes related to educating the public and a renewed sense of pride in their community, for example sharing "It seemed like people learned stuff that were on my tours and that they left the tour having a better understanding of the dairy industry" and "I was actually proud to be able to do that and to speak well of my fellow dairy farmers. So, if it changed anything it made me… prouder to be a dairy farmer…" (P7). While they also shared a sense of pride in the farming community, farmers delivering the "B" (dialogue) approach also emphasized the importance of learning from visitors: "Really look to see, hey, what do you see in our industry? How do you think we should change?" (P6). These views were accompanied by a desire to more readily reflect on the state of practices within the dairy industry, as summarized by one farmer: "If we have a hard time answering certain questions to the public or we're uncomfortable answering certain questions that the public asks, then maybe our practices do need to change, and I think we have to be mindful of that." (P3).

Farmers' perspectives toward the public

Farmers trained to employ a more educational tour guide style ("A") shared that visitors were genuinely interested but also seemed to be overwhelmed, as visitor perceptions were seen to be shaped by media. For example, one farmer shared, "I have the feeling that they were so overwhelmed about the sizes of the animals, the sizes of the barns, the amounts of material we work with, that they completely lost the reality. Because what you see on TV is a nice little farm with a few cows grazing." (P5). As a result, discussions amongst the "A" farmers often focused on addressing misinformation. In contrast, farmers trained to use the dialogue ("B") approach described the public as motivated to learn, noting that specific visitor demographics seemed especially engaged. "B" farmers also shared that they engaged in richer discussions on topics of public concern compared to events they'd participated in previously: "…Comparing it to other tours that I've done before…cow-calf separation was a big issue…and then outdoor access a little bit. But those were the real discussion issues that were brought up and what I found from my groups."

Franck Meijboom and Bernice Bovenkerk | 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

(P15). Overall, while both groups felt that public engagement had been a positive experience, "B" farmers shared a particularly nuanced understanding of visitor demographics and interests, which allowed the fostering of deeper discussions during the tours.

Implications

Our study suggests that employing a communication style which aims to understand the public may help support dairy farmers in cultivating appreciation and connection to different perspectives, including from the public. In addition, the pride and sense of community reported by farmers in both groups highlights that open farm days represent not only an important opportunity for farmers to connect with members of the public, but also likely function as opportunities to promote social cohesion and support within farming communities. Overall, our results indicate that open farm events were experienced positively by dairy farmers. Opportunities exist to further explore how the dairy industry and public can work together towards realizing common goals for the future of food production. We note, however, that the communication training was unlikely to be solely responsible for the differences highlighted in our preliminary thematic analysis, as the personalities and readiness of farmers to engage with the aims of the study may have played a strong role.

References

Benard, M. and de Cock Buning, T. (2013). Exploring the potential of Dutch pig farmers and urban-citizens to learn through frame reflection. Journal of Agricultural and Environmental Ethics, 26, 1015–1036. DOI: 10.1007/s10806-013-9438-y

Berkes, J. and Mergenthaler, M. (2021). Attitude changes through speed-dating conversations between farmers and citizens. In Proceedings in System Dynamics and Innovation in Food Networks, pp. 118–125

Bolton, S.E. and von Keyserlingk, M.A.G. 2021, April 14 the dispensable surplus dairy calf: Is this issue a "wicked problem" and where do we go from here? Frontiers in Veterinary Science, 8, 660934.

Boogaard, B.K., Oosting, S.J. and Bock, B.B. (2006). Elements of societal perception of farm animal welfare: A quantitative study in The Netherlands. Livestock Science, 104, 13–22. DOI: 10.1016/j.livsci.2006.02.010

Boogaard, B.K., Oosting, S.J. and Bock, B.B. 2008 Defining sustainability as a socio-cultural concept: Citizen panels visiting dairy farms in The Netherlands. Livestock Science, 117, 24–33. DOI: 10.1016/j.livsci.2007.11.004

Braun, V. and Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3, 77–101. DOI: 10.1191/1478088706qp063oa

Buddle, E.A., Bray, H.J. and Ankeny, R.A. (2021). "Of course we care!": A qualitative exploration of Australian livestock producers' understandings of farm animal welfare issues. Journal of Rural Studies, 83, 50–59. DOI: 10.1016/j.jrurstud.2021.02.024

Cardoso, C.S., von Keyserlingk, M.A.G. and Hötzel, M.J. (2019). Views of dairy farmers, agricultural advisors, and lay citizens on the ideal dairy farm. Journal of Dairy Science, 102, 1811–1821. DOI: 10.3168/jds.2018-14688

Ellis, K., Billington, K., McNeil, B. and Mckeegan, D. (2009). Public opinion on UK milk marketing and dairy cow welfare. Animal Welfare, 18, 267–282.

Hampton, J.O., Jones, B. and McGreevy, P.D. (2020). Social license and animal welfare: Developments from the past decade in Australia. Animals, 10, 1–11. DOI: 10.3390/ani10122237

Hötzel, M.J. (2016). September 1 Letter to the editor: Engaging (but not "educating") the public in technology developments may contribute to a socially sustainable dairy industry. Journal of Dairy Science, 99(9), 6853–6854.

Jackson, A., Doidge, C., Green, M. and Kaler, J. (2022). Understanding public preferences for different dairy farming systems using a mixed-methods approach. Journal of Dairy Science, 105, 7492–7512. DOI: 10.3168/jds.2022-21829

Martin, P. and Shepheard, M. (2011). What is meant by the social licence. In: Williams, J. and Martin, P. (eds) Defending the social licence of farming: Issues, challenges and new directions for agriculture. CSIRO Publishing, Collingwood, VIC, pp. 3–11.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Rovers, A., Christoph-Schulz, I., Brümmer, N. and Saggau, D. (2017a). Trust no one? Citizens' concerns regarding the pork and dairy supply chain. In Proceedings in Food System Dynamics, pp. 87–93.

Rovers, A., Mergenthaler, M., Wildraut, C., Sonntag, W.I., Von Meyer-Höfer, M. and Christoph-Schulz, I. (2017b). Roundtable on hotspots in livestock production-A mixed-methods-approach for a better understanding of farmers' and consumers' views 'Towards Sustainable Agri-food Systems: Balancing Between Markets and Society'. Proceedings of the XV EAAE Congress, 261286.

Smid, A.M.C., Inberg, P.H.J., de Jong, S., Sinclair, S., von Keyserlingk, M.A.G., Weary, D.M. and Barkema, H.W. (2021). Perspectives of Western Canadian dairy farmers on providing outdoor access for dairy cows. Journal of Dairy Science, 104, 10158–10170. DOI: 10.3168/jds.2021-20342

Smid, A.M.C., Roche, S.M., Berkema, H.W., Ruiter, W. and Ventura, B.A. (2024). Breakfast on the farm: farm tour impacts on public perceptions of dairy cow welfare and sustainability. Proceedings EurSafe 2024, pp. (212–217).

Sumner, C.L. and von Keyserlingk, M.A.G. (2018). Canadian dairy cattle veterinarian perspectives on calf welfare. Journal of Dairy Science, 101, 10303–10316. DOI: 10.3168/jds.2018-14859

Ventura, B.A., von Keyserlingk, M.A.G., Wittman, H. and Weary, D.M. (2016). What difference does a visit make? Changes in animal welfare perceptions after interested citizens tour a dairy farm. PLoS ONE 11: e0154733. DOI: 10.1371/journal.pone.0154733

Ventura, B.A., Weary, D.M. and von Keyserlingk, M.A.G. (2023). How might the public contribute to the discussion on cattle welfare? Perspectives of veterinarians and animal scientists. Animal Welfare, 32, e69. DOI: 10.1017/awf.2023.88

von Keyserlingk, M.A.G., Rushen, J., de Passillé, A.M. and Weary, D.M. (2009). Invited review: The welfare of dairy cattle-key concepts and the role of science. Journal of Diary Science, 92(9), 4101–4111.

Franck Meijboom and Patrick Bos, Leiden, [2024] ©2024 | DOI:10.1163/9789004715509-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

US public attitudes on farm animal welfare during a disease outbreak and pandemic preparedness

R. Anthony
University of Alaska Anchorage, Anchorage, AK, USA
E-mail: rxanthony@alaska.edu

Introduction

At the time of writing, the US Centers for Disease Control and Prevention (CDC) and other intergovernmental organizations like the World Health Organization (WHO) and the World Organization for Animal Health (WOAH) are closely monitoring cases of highly pathogenic avian influenza (HPAI) A/H5N1 viruses, for fear it could evolve into the next pandemic, and further disrupt farming operations, livelihoods and wildlife ecosystems, and result in widespread economic hardship and loss of animal life. 'Bird flu' does not only threaten wild bird flocks and domesticated poultry. Within the US it has also been detected in at least 11 dairy cow herds and infected three human dairy farm workers (CDC, 2024; USDA, 2024). The CDC reported the first human positive test for bird flu in the US in 2022, an inmate who was involved in depopulating infected poultry (CDC, 2022). The latest case where the patient had upper respiratory symptoms, a deviation from just conjunctivitis found in the earlier two cases, hints at a dangerous inflection point to human health.

Globally, while H5N1 has been known to spread among wild birds and poultry for more than 25 years and no human-to-human spread of avian flu has emerged to-date (Rigby and Tétrault-Farber 2023), it has resulted in the deaths of millions of domesticated poultry worldwide, due to either depopulation to curb the spread or from the disease. This recent bout of HPAI has infected mammal species like seals and sealions (resulting in over tens of thousands dead), otters, mink, and foxes (Dewar *et al*., 2023; Plaza *et al*., 2024). It has also claimed the lives of two children in Cambodia, once in 2023 and again in 2024 (Reuters, 2023; Cheang, 2024).

The alarming recalcitrance and increase in frequency of HPAI invites rethinking of human-animal co-vulnerability, how animals are farmed, facilities design, farm management and animal movement, biosecurity and containment procedures, antimicrobial use, the effectiveness and acceptability of depopulation methods, and general opposition to vaccines to control the spread of emerging infectious disease, especially those with zoonotic potential. The pervasiveness of these outbreaks is compounded by fears that once a virus like HPAI becomes endemic, the likelihood of it mutating and spilling over to humans will only heighten.

Due to the severity of recent transboundary outbreaks like HPAI, government officials from the food sector and public health, human and veterinary healthcare and emergency response professionals, farmers, ranchers, agricultural companies, and citizen-consumer groups must work together to prevent further lethal cross-species and mammal-to-mammal spread (Burrough *et al*., 2024). Since disease management and control programs are multidimensional and infused with conceptual assumptions and values that impact the relative merits of solutions to prevent or 'stamp out' an outbreak, it is important for these stakeholders to (1) investigate and develop sustainable approaches to manage emerging and transboundary animal diseases that go beyond disciplinary silos, and (2) embrace the positive roles values and ethics play in governance, practice, and science. Doing so would improve problem framing at the intersection of food systems-public health-disease management, identification of common objectives and support for emergency decision-making by both the public and emergency response personnel.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Besides considering how agricultural animals are housed, managed, and moved (Cohen, 2024), it is also important to reimagine the overall ways in which the public at large (at local, national, and global levels) relate to and are connected to workers within the food-agriculture value chain, animals, and the environment. Infectious disease emergencies can escalate into disasters as we have witnessed with the SARS-CoV-2 pandemic. Animal disease outbreaks like HPAI and ones that have an animal origin, as for instance, responsible for the COVID-19 pandemic, highlight the importance of acknowledging the interconnectedness of species and centering animal-related issues in emergency and disaster management and risk reduction plans. They also challenge those working at the intersection of public health, the food system and disaster management to come together to identify both systemic issues and deliberative frameworks with common purpose to forge effective and sustainable solutions (Kaiser *et al* 2021). Here, systems thinking through an holistic approach, like One Health, guided by the global mission of public health, veterinary services (e.g., Sachs *et al*., 2022; WOAH; USDA APHIS (https://www.aphis.usda.gov/veterinary-services); Netherlands Council on Animal Affairs on One Health) and ethics play a central role in (inter)governmental strategies for advancing zoonotic disease preparedness and emergency management (Anthony *et al*., 2024). Global public health and food system resilience require such an interdisciplinary and multifactorial approach (Meijboom and Nieuwland, 2018), to re-envision the kinds of cross-disciplinary research and scholarship necessary to develop innovative scientific and technological solutions and just and effective institutions.

Method

Against this backdrop, this presentation will discuss results from Phase 2 of the WellAnimal project that centered US public attitudes towards farm animal welfare during a novel disease outbreak and future pandemic preparedness. The central question motivating the WellAnimal project can be captured as follows: "When preparing for novel zoonotic biologic disasters, how should disaster management programs improve evidence-based decision-making about animal welfare, and create pathways to help and support emergency response personnel and incident command programs?" Responses to this question has implication for ensuring US food security and helping animal disease emergency managers, farmers, veterinarians, food supply chain actors, policy makers and the public prepare for future novel pandemics and zoonoses, including allocate resources effectively to humans and animals who need them most.

The objective of Phase 2 is two-fold: (1) to identify and understand key factors (e.g., beliefs, attitudes, and norms) associated with improving human and animal welfare in the unlikely event of another disease pandemic (which may be impacted by existing surveillance, biosecurity and biocontainment plans and emergency readiness strategies, activities and risk assessment; screening, safety, treatment and training procedures for at-risk human populations; or high density housing and transport protocols of certain species of animals), and (2) explore barriers to communication and sources of misinformation regarding animal welfare during a novel pandemic. Results from a national survey are currently being analyzed and will be presented at the conference. A representative sample (n=1868), based on age, race/ethnicity and geographic area, was administered by Qualtrics after obtaining IRB (Institutional Review Board) approval.

The representative sample of the US population was tasked with answering questions about their: (1) experiences during the COVID-19 disease pandemic, including from animal owners (e.g., how the pandemic both impacted their approach to animal care/husbandry and veterinary care, and shaped their ethical responsibilities towards their animals); (2) beliefs and attitudes regarding both human-animal interactions and conflicts during the COVID-19 disease pandemic, including the morality of killing animals (3) views on the role of government policies to protect agricultural workers, livestock and poultry during an emerging infectious disease, especially those with zoonotic potential; and (4) attitudes

Franck Meijboom and Pamela Rae Heck, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

about sources of trust and information. Expected outcomes include a deeper understanding of the US's public's views of the moral status of and responsibilities towards animals during a disease outbreak and challenges involved in communicating science and values-based priorities during a public health crisis. In the latter case, the results will help public health officials confront their own motivated reasoning and biases and build trust and minimize resistance to emergency response activities. It is expected to identify how public health officials can better manage and communicate about contingencies and offer clear, unbiased, trustworthy risk communication, including what they should focus on to advance the collective good in tandem with, as is practicable, respect for the interests and needs of individual citizens. Trustworthy communication also involves sharing actionable information in a timely manner, including which animals are likely to become ill, how to protect domesticated animals from getting infected or care for sick ones, whether an outbreak threatens human health or how dangerous is the illness to other animals for which humans are responsible, whether and when people should avoid animals and animal products until an outbreak ends, and what are the viable containment strategies and their risks to control an outbreak. In the case of HPAI, for example, the public may be interested in the impact of developing an effective vaccine for poultry that could reduce the health risks to those susceptible to the virus, economic harm from outbreaks (Peyre *et al* 2008) and general food safety and security burden.

Impact

Together with Phase 1 results (highlighted at Eursafe Edinburgh), this work will form the basis for the development of a collaborative agenda for values-aware practice and research for animal welfare science and ethics within One Health. An integrated ethics for transdisciplinary disease management is currently lacking in US disaster management frameworks, like the National One Health Framework to Address Zoonotic Diseases and Advance Public Health Preparedness (Anthony *et al*., 2024). A collaborative agenda within One Health that integrates scientific evidence with values-aware or public health ethical analysis is important for several reasons. First, it aims to make transparent the values that are operative in a particular animal disaster management plan and offer a more inclusive engagement to address transboundary animal disease threats; one that considers animal welfare, and which supports collaborative, continuous multiagency and interdisciplinary disease management efforts. Second, a collaborative agenda like the one proposed is essential to nurture a shared 'big picture' management or response strategy to a zoonosis or pandemic to address long-term and systemic goals and deficiencies and minimize harms to animals seen in disasters occur repeatedly. For example, repeated depopulation of domesticated poultry has exacted immeasurable financial and psychological toll on farmers and emergency personnel and contributed to the global food crisis. A more forthright approach that inextricably marries ethics to an interdisciplinary and interspecies framework like One Health can help disease/disaster management and health decision makers and responders to both consider their ethical commitments in public health risk assessment and recommendations, including when evaluating the warning signs of a novel zoonosis and in preventing and controlling infectious diseases, and analyze how nontrivial risks of national and global vaccination strategies pose fundamental questions at the interface between science, ethics, public health, food security and global trade. Third, it sets the stage for a more equitable presentation and discussion of the "tradeoffs" for affected humans, animals, and the environment (Anthony *et al*., 2024), where time constraints, resource limitations, practical realities, uncertainty, and when differing expectations by various stakeholders can magnify the potential for disagreements and ineffectual decision-making. Lastly, it can serve as a procedural blueprint to support the creation of impactful policies that provide first responders and different publics with clear procedures to follow. For example, having a systematic structure for understanding conflicting and commensurate values underlying policies and their implications at the intersection of zoonotic disease preparedness and animal welfare can help to strengthen surveillance in settings where humans and animals interact, and advance societal support for zoonotic disease control efforts. It can also encourage the development of ethics-oriented decision-making tools to prepare emergency personnel tasked with managing zoonoses

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

in a cloud of uncertainty, knowledge deficits, conflicting interests as well as multi-level and multi-actor effects. Supporting disaster management plans that are well-structured as above can inform how professional services (e.g., veterinary, civil defense, public health) minimize conflicting courses of action, including aspects of animal welfare during emergency killing, and act with trustworthiness, competence, and effectiveness.

References

Anthony, R., Miller, D.S., Hoenig, D.E., Millar, K.M., Goodwin, J., Dean, W.R., Grimm, H., Meijboom, F.L.M., Murphy, J., Persico Murphy, E., Scott, H.M. and De Paula Vieira, A. (2024). Incorporate ethics into US public health plans. Science 383, 1066-1067. DOI:10.1126/science.adn7640

Burrough, E.R., Magstadt, D.R., Petersen, B., Timmermans, S.J., Gauger, P.C., Zhang, J., Siepker, C., Mainenti, M., Li, G., Thompson, A.C., Gorden, P.J., Plummer, P.J. and Main, R. (2024). Highly Pathogenic Avian Influenza A(H5N1) Clade 2.3.4.4b Virus Infection in Domestic Dairy Cattle and Cats, United States, 2024. Emerging Infectious Diseases, 30(7), 1335–1343. DOI: 10.3201/eid3007.240508

CDC. (2022). U.S. case of human avian influenza A(H5) virus reported. Available online at https://www.cdc.gov/media/releases/2022/s0428-avian-flu.html (accessed 4 April 2024).

CDC. (2024). CDC confirms second human H5 bird flu case in Michigan; Third case tied to dairy outbreak. Available online at https://www.cdc.gov/flu/avianflu/spotlights/2023-2024/h5n1-response-053124.html (accessed 31 May 2024).

Cheang, S. (2024). Cambodia reports country's first avian flu death of 2024. Available online at https://www.pbs.org/newshour/world/cambodia-reports-countrys-first-avian-flu-death-of-2024#:~:text=PHNOM%20PENH%2C%20Cambodia%20(AP),Cambodia's%20Health%20Ministry%20said%20Monday (accessed 1 March 2024).

Cohen, J. (2024). Bird flu may be spreading in cows via milking and herd transport. Available online at https://www.science.org/content/article/bird-flu-may-be-spreading-cows-milking-and-herd-transport. DOI: 10.1126/science.zt2kajy

Dewar, M., Wille, M., Gamble, A., Vanstreels, R.E.T., Bouliner, T., Smith, A., Varsani, A., Ratcliffe, N., Black, J., Lynnes, A., Barbosa, A. and Hart, T. (2023). The risk of highly pathogenic avian influenza in the Southern Ocean: a practical guide for operators and scientists interacting with wildlife. Antarctic Science, 35(6), 407–414. DOI: 10.1017/S0954102023000342

Gamarra-Toledo, V., Plaza, P.I., Gutiérrez, R., Inga-Diaz, G., Saravia-Guevara, P., Pereyra-Meza, O., ... Lambertucci, S.A. (2023). Mass mortality of sea lions caused by highly pathogenic avian influenza A(H5N1) virus. Emerging Infectious Diseases, 29(12), 2553–2556. DOI: 10.3201/eid2912.230192

Kaiser, M., Goldson, S., Buklijas, T., Gluckman, P., Allen, K., Bardsley, A. and Lam, M.E. (2021). Towards post-pandemic sustainable and ethical food systems. Food Ethics 6, 4. DOI: 10.1007/s41055-020-00084-3

Leguia, M., Garcia-Glaessner, A., Muñoz-Saavedra, B., Juarez, D., Barrera, P. ... Lescano, J. (2023). Highly pathogenic avian influenza A (H5N1) in marine mammals and seabirds in Peru. Nature Communications, 14(1), 5489. DOI: 10.1038/s41467-023-41182-0

Meijboom, F.L.M. and Nieuwland, J. (2018). Manifold health: The need to specify one health and the importance of cooperation in (bio)ethics. In: Springer, S. and Grimm, H. (eds) Professionals in food chains, Wageningen Academic, Wageningen, pp. 266–271. DOI: 10.3920/978-90-8686-869-8_41.

Netherlands Council on Animal Affairs on One Health. (2015). One health: A policy assessment framework. Raad voor Dierenaangelegenheden, The Hague.

Plaza, P.I., Gamarra-Toledo, V., Rodríguez Euguí, J., Rosciano, N. and Lambertucci, S.A. (2024). Pacific and Atlantic sea lion mortality caused by highly pathogenic Avian Influenza A(H5N1) in South America, Travel Medicine and Infectious Disease, 59, 102712. DOI: 10.1016/j.tmaid.2024.102712

Peyre, M., Fusheng, G. Desvaux, S., and Roger, F. (2009). Avian influenza vaccines: A practical review in relation to their application in the field with a focus on the Asian experience. Epidemiology and Infection, 137(1), 1-21. DOI: 10.1017/S0950268808001039

Franck Meijboom and Patrick Bos, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Puryear, W., Sawatzki, K., Hill, N., Foss, A., Stone, J.J., … Runstadler, J. (2023). Highly pathogenic avian influenza A(H5N1) VIRUS OUTBREAK in New England seals, United States. Emerging Infectious Diseases, 29(4), 786–791. DOI: 10.3201/eid2904.221538.

Reuters. (2023). Cambodia tests more people for bird flu after death of 11-year-old girl. Available online at https://www.reuters.com/world/asia-pacific/cambodia-reports-death-11-year-old-girl-bird-flu-2023-02-24/ (accessed 23 March 2024)

Rigby, J. and Tétrault-Farber, G.. (2023). Risk to humans from H5N1 bird flu remains low but we must prepare. Available online at https://www.reuters.com/world/risk-humans-h5n1-bird-flu-remains-low-we-must-prepare-who-2023-02-08/ (accessed 14 December 20240

Sachs, J.D., Abdool Karim, S.S., Aknin, L., Allen, J., Brosbøl, K., Colombo, F., … Michie, S. (2022). The Lancet Commission on lessons for the future from the COVID-19 pandemic, The Lancet, 400(10359), 1224–1280. DOI: 10.1016/S0140-6736(22)01585-9

USDA. (2024). USDA confirms highly pathogenic avian influenza in dairy herd in New Mexico. Available online at https://www.aphis.usda.gov/news/agency-announcements/usda-confirms-highly-pathogenic-avian-influenza-dairy-herd-new-mexico (accessed 4 April 2024).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

3.3. Human–animal relationships

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The shame of being human: On the critical use of shame in human-animal relations

T. Kainberger[1,] and H. Grimm[2]*
[1]Independent Researcher, Auhofstraße 130/10, 1130 Vienna, Austria; [2]Unit of Ethics and Human-Animal-Studies, Messerli Research Institute, University of Veterinary Medicine, Vienna, Veterinärplatz 1, 1210 Vienna, Austria
** Corresponding author, e-mail: thomas.kainberger@gmx.net*

Abstract

Shame has many faces. On the one hand, it contributes to social cohesion and seems to be indispensable to human morality. A liability to shame is widely regarded as a virtue, while shamelessness is considered morally reprehensible and dysfunctional. On the other hand, shame has shown to be associated with (self-)destructive behaviours and various negative psychological conditions. Moreover, in enforcing norms and values, shame often exhibits a dangerous normalizing function. In this article, we want to inquire into the nature of the relation between shame and power. The aim of this article is to answer the question, whether shame can also have a different, critical relation to power. Drawing on Gilles Deleuze's engagement with Primo Levi, we will show that shame, rather than functioning as an instrument of oppression, can take on a critical role with regard to normative infrastructures. In using ethical-human animal issues, particularly dietary norms, to prove this thesis, our article also responds to Crary and Gruen's call for an approach to animal ethics that is more sensitive to oppressive social and political structures than traditional approaches, since our argument shows how shame can play an important role in a critical animal theory.

Keywords: animal ethics, critical theory, critical animal studies, moral emotions, shame

Introduction: '*Animal Crisis*' and structures of oppression

In their recent book *Animal Crisis. A New Critical Theory* (2023), Alice Crary and Lori Gruen argue that human-animal relations are in a deep crisis. Although the prominent strands in animal ethics, being preoccupied with suffering or with rights, have made important contributions, They argue that they have not paid enough attention to oppressive structures afflicting animals but also humans and the environment. Focusing on this ideological dimension at the heart of the animal crisis, Crary and Gruen propose a 'new *critical animal theory*' (Crary and Gruen, 2023: p. 4), which seeks to bring into view the often-invisible socio-political structures sustaining the oppression of animals and the marginalization of humans. According to this theory, one way of dealing with these issues is by learning to properly attend to the world in such a way as to resist ideological distortions, which help to sustain oppressive structures.

Part of how ideology works is by means of normalizing the very beliefs, practices and institutions that shore up the dominant system of power, while creating pressure against or otherwise sanctioning deviations from the corresponding norms. We want to stress that emotions play a significant role in this process (cf. Freeden, 2022; Jaggar, 1985). In this article, we discuss the relations between moral shame and normativity. First, we will draw attention to how moral shame functions as a vital mechanism in enforcing dominant norms and values. This is not necessarily bad, as shame in this way, e.g., contributes to social cohesion. However, in its normalizing and conservative function, shame can take on a dangerous and oppressive shape. After briefly discussing these two functions, we will raise the question, whether shame cannot have a different relation to normativity. We will present an argument for a third, so

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

far mostly underacknowledged, function of shame which is nascent in Deleuze's engagement with Primo Levi (1988) and which demonstrates its critical potential vis-à-vis the dominant normative infrastructures. Using the context of human-animal issues as a litmus test, we argue that, in contrast to a politically and morally conservative use of shame, such shame is progressive and emancipatory, taking at its object of critique shameful norms, institutions and practices. Thus, we conclude that, in line with Crary and Gruen's critical animal theory, it can play an important role in addressing the current animal crisis.

Shame's constitutive role for social cohesion

The idea that (a sense of) shame is indispensable for human social life because it ensures social cohesion has a long history. Already as early as in Plato's *Protagoras*, shame is said to be an essential condition for the political body's organization. Prometheus equipped humans with the technical means to survive. However, they still lacked political *techné*. Fearing that humankind would annihilate itself, Zeus sent Hermes to distribute to every human *dikē* (justice) and *aidōs*, which can be translated as shame (cf. 322 b–c). Political life is declared by the *Protagoras* to be possible only on condition of these gifts, which serve as principles for the cooperative organization of cities and of friendships. Accordingly, to be without a sense of shame, i.e. to be shameless, is to be ill-fit for cultural and civic life. In fact, Zeus even gives Hermes the order to lay down a law that those who cannot share in *dikē* and *aidōs* are to be killed as a plague for the community (cf. 322 d–e).

As this myth suggests, a sense of shame allows for cooperation and shared projects through ensuring that every community member respects and follows the established rules, norms and values. From this perspective, a sense of shame can be seen as a safeguard against unchecked egotism and private interests that would be destructive for common social projects and for political life in general. If an individual wants to be a member of a community, they have to play the community's game, no matter whether they have an intrinsic interest in following the norms or not. For, if one transgresses the norms of one's community, one will be met with sanctions either way. In this picture, shame appears to have a predominantly (or purely) heteronomous nature: One's motivation for acting pro-socially and in conformity with the dominant norms is explained by the fear of being ostracized in case of noncompliance. On this 'naturalistic view' (cf. Thomason, 2018), shame results from transgressing dominant norms and via its external expression it communicates to others that one regrets this (cf. Maibom, 2010).

While influential, this view cannot account for a number of cases such as Scheler's famous case of the nude model, who is suddenly struck by shame when the painter's gaze reveals to her that she is no longer just an artistic but a sexualized object (Scheler, 1987: p. 15f). More importantly, it cannot account for when or why we *should* feel shame (cf. Thomason, 2018: p. 49). In other words, is there something in virtue of which we *ought* to morally value shame? Trying to answer this question, Krista K. Thomason argues that the reasons that make shame a moral emotion are twofold. Firstly, our 'liability to shame is partially constitutive of our respect for others as moral agents' (Thomason, 2018: p. 155). On her view, the fact that we are able to respect other moral agents comes with the fact that we are liable to shame. Respect is not equal to a liability to shame; it is a much more complex and comprehensive phenomenon. But Thomason goes as far as to say that 'a liability to respect and a liability to shame are two sides of one coin' (Thomason, 2018: p. 156). Secondly, to possess a liability to shame means to 'accept the limits of our self-conception'; in other words, it is 'part of a moral commitment to humility' (Thomason, 2018: p. 157). It is in virtue of these features – which the shameless person lacks — that shame constitutes a valuable moral emotion.

Franck Meijboom and Patricia Paperon, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Although Thomason's argument for the moral value of shame gives us reasons to believe that we are better off with shame than without it, shame may also be dangerous not just because of its link to, for example, violence and aggression and other psychologically (self-)destructive conditions. Thomason's argument is mindful of and compatible with these phenomena. In the following, we want to highlight a different danger of shame, which she does not directly address: its connection to power.

Synchronic shame and synchronizing power

We have already seen that shame's socially cohesive function comes with a sanctioning coercive power. Zeus' order to have those killed who will not or cannot share in *dikē* and *aidōs* is perhaps only the most extreme expression of it. Severson relates this use of shame to power's 'move to synchronize': 'This movement to apply shame and force it to appear among those who do not demonstrate it, is the move to synchronize. Those who refuse to conform to this synchronization will often find themselves ostracized, treated as scapegoats, imprisoned, or even killed' (Severson, 2018: p. 63). The kind of shame that corresponds to this synchronizing power Severson calls 'synchronic shame' (Severson, 2021: p. 148). Although, as he suggests, some of its manifestations are good, such as when laws and customs exert a centripetal force in the name of inclusion, integrating people into the community and protecting them from exclusion, synchrony is dangerous and can 'quickly and easily turn poisonous' (Severson, 2021: p. 148). It is then that shame becomes an instrument of oppression in the name of the ruling power to enforce moral synchronization, rendering shameful and thus stigmatizing and excluding whoever does not conform: 'Synchronic shame is a tool of control; those who are far from the centre, from the norm, are abnormal, untimely and shameful' (Severson, 2021: p. 148).

At this point, we want to stress that synchronic shame is enforced not just in 'racism, sexism, (and) ableism' (cf. Severson 2021: p. 149). The synchronizing, normalizing power behind it is operative also when it comes to dietary norms, where non-conformity may result in getting shamed. For example, in a culture where the consumption of animal products is considered 'normal, natural and necessary' (cf. Joy, 2010), vegans may be perceived as deviant and veganism as a threat, not the least because food culture is closely linked to personal identity. However, in contrast to Severson's identification of synchronic shame as an exclusive instrument of hegemony, one needs to see that shaming may also be used in the opposite direction, as when alternative dietary norms are sought to be established and enforced. Shaming, for example, fur wearers (cf. Dieck and Grimm, 2021) or meat-eaters is a common tactic among animal activists. However, as Thomason argues, shaming is not just respectless and morally 'unjustified' (cf. Thomason, 2018: p. 207), but, as Aaltola argues, it can also be counterproductive, as it 'can reduce morality into battles between identities as the ashamed seek to reaffirm their own sense of 'self' as acceptable and non-affected, with the result that the message of animal liberation is, quite simply, lost' (Aaltola, 2017: p. 253). Similar doubts are raised by Abbate (2020). For example, 'chanting 'meat is murder' in restaurants and grocery stores, may paint vegans as socially deviant, making it less likely that CFRM (consumers of factory raised meat; T.K./H.G.) will be inspired to become vegan' (Aaltola, 2017: p. 412). Moreover, Abbate argues that the dominant dietary culture exerts a 'cultural pressure', even a 'social duress', on people to the effect that consumers of factory farmed products are only partially responsible and thus not fully blameworthy for engaging in a morally problematic or unjustified practice. The important conclusion he draws is that one should blame the culture and not the non-blameworthy (cf. Abbate, 2020: p. 411). In the following, we will argue that shame can function precisely in such a productive way.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Shame's critical and morally progressive function

Earlier on, we have presented Thomason's argument for shame as a valuable moral emotion. Although we agree with its conclusion, her argument does not capture everything that makes shame morally valuable. Similarly, while Severson contrasts synchronic shame with good, salutary 'diachronic shame' – understood as 'the presence of another person, the need of the other, in the very constitution of the self' (Severson, 2021: p. 156) — what makes diachronic shame good in his view is simply that it exposes one to the suffering of and responsibility for the other. In this way, there is an asymmetry between synchronic and diachronic shame: Even though the latter is presented as an antidote to the former – a 'break-up of the synchronic march of time' (Severson, 2018: p. 67) – it is not clear that it fulfils this role, as it fails to address the very essence of synchronic shame: power. In the following, we will sketch an argument for shame's moral value that addresses this issue. By locating its value in a critical function with regard to an established normative infrastructure, our argument points to a different relation between shame and power. Whereas synchronic shame and shaming are directed at individuals in the name of a given norm, we argue that shame becomes productive and morally useful precisely as a response to shameful norms and institutions themselves. As we will show, it is in Gilles Deleuze's engagement with Primo Levi where such a concept of shame comes to the fore.

Shame is rather elusive in Deleuze's oeuvre. According to Bewes, this might be the case because 'Deleuze's shame is an event—inexpressible and unnameable, a shame that is discontinuous with its naming and conceptualization' (Bewes, 2011: p. 172). Shame is not developed into a concept in Deleuze, but it is certainly present in his writings as a motive – in the sense of *movens* – which, in being expressed, is productively transformed. It is perhaps in Deleuze's engagement with holocaust-survivor Primo Levi's writings on his experiences of shame that one can get the clearest sense of his understanding of shame. According to Deleuze, it is not

> only in the extreme situations described by Primo Levi that we experience the shame of being human. We also experience it in insignificant conditions, before the meanness and vulgarity of existence that haunts democracies, before the propagation of these modes of existence and of thought-for-the-market, and before the values, ideals, and opinions of our time. The ignominy of the possibilities of life that we are offered appears from within. We do not feel ourselves outside of our time but continue to undergo shameful compromises with it. This feeling of shame is one of philosophy's most powerful motifs. We are not responsible for the victims but responsible before them. And there is no way to escape the ignoble but to play the part of the animal (to growl, burrow, snigger, distort ourselves): thought itself is sometimes closer to an animal that dies than to a living, even democratic, human being. (Deleuze and Guattari, 1994: p. 107f)

What Deleuze and Guattari call the 'shame of being human' does not only occur in states of exception. Rather, it is bound up with a 'shame of the world' (Levi, 1988), which is a response to what is shameful in the contemporary everyday world (cf. Deleuze, 1995: p. 172f). Deleuze's examples of what causes such shame are set in the context of complicity: Shame is the realization that, since one is part of the current mode of the existence or state of the world, one *cannot* but undergo shameful compromises with it. Shame is intimately bound up with being connected to the *present*, both temporarily and spatially. This is what Deleuze means when he writes that 'we do not feel ourselves outside of our time' and that 'the ignominy of the possibilities of life that we are offered appears from within' (Deleuze, 1994: p. 107).

It is a typical feature of accounts of shame that it is understood to be concerned with one's *self* rather than one's actions, which have more to do with guilt. For instance, Thomason (2018) argues that shame expresses a tension between one's self-conception and one's identity: In shame, one feels overshadowed

Franck Meijboom and Dennis Rasmussen, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

by a part of one's identity that one does not (want to) see as part of oneself. We can see here again shame's relation to time. Hawthorne's novel *The Scarlet Letter* (2008) nicely illustrates how (synchronic) shame via the other's judgement threatens to enclose one in an eternal present, nailing down one's identity once and for all. For Deleuze, similarly, shame is the realization that something inevitably belongs to one's identity even though one does not want to assume it. However, in contrast to typical accounts, what constitutes the intolerably shameful in Deleuze are aspects of the state of the world that one finds oneself to be part of. Deleuze is not concerned with shame insofar as it is a personal affair or as a blemish that sticks to the self. Rather, he is interested in shame as an affect that sets in motion critical processes of becoming regarding the status quo. For Deleuze 'shame is directed against being, and towards becoming' (Bewes, 2011: p. 33). This is what makes shame an affect (in Deleuze's use of that term): What makes shame 'one of philosophy's most powerful motifs' (Deleuze, 1994: p. 108) is that it is an event, an encounter with intensities at a bodily level that allows us to see things in a different and new light. Through an affective encounter, one enters into what Deleuze calls 'a becoming'. In the quote above, he writes about escaping the ignoble by playing the part of the animal and about thought sometimes being closer to an animal than to a human being – a veritable becoming-animal. This is not the place to discuss the concept of becoming and the relation between affect and thought in Deleuze in any detail. Suffice it to say that, for Deleuze, proper thought originates in affective encounters; in events that throw the mind out of its natural stupor (cf. Deleuze, 1994). Born from an encounter, critical thought has an intimate connection to processes of becoming, like the becoming-animal referred to above. In a sense, these becomings always express a critical relation to *being* and to the status-quo, at the same time as they allow one to see what is intolerable in it.

Thus, insofar as shame relates to such an encounter, it constitutes a way of *seeing* what is intolerable in the world (cf. Kainberger, 2023; O'Donnell, 2017). In this way it contrasts with typical accounts of shame that conceive of it as response to being *seen* or judged by an imaginary or real other. But how does shame afford such a vision? Deleuze argues that we normally perceive the world in terms of clichés: 'Bergson says, we do not perceive the thing or the image in its entirety, we always perceive less of it, we only perceive what we are interested in perceiving, or rather what it is in our interest to perceive, by virtue of our economic interests, ideological beliefs and psychological demands. We therefore normally perceive only clichés' (Deleuze, 1989: p. 20). If ordinary perception is always already imbued with ideology, then shame can be an important instrument in ideology critique, precisely insofar as it 'suspends and precludes the ready invocations of clichés and explanations' (O' Donnell, 2017: p. 7). In other words, the shame Deleuze has in mind does not operate in the name of ideology or power; it does not normalize like synchronic shame and thus bears no relation to the practice of shaming. Rather, what it reveals as shameful pertains to the perceptual filters, practices, norms and institutions that underwrite and enable unjust or morally problematic actions. In allowing to *see through*, for example, speciesistic clichés, the latter become themselves part of what shame reveals as problematic, insofar as they act as ideological filters that make the intolerable in the world appear normal. In shattering these filters, shame allows to register some state of the world as shameful. In this way, shame has as its object of critique not individuals *simpliciter* but the shameful institutions and norms that enable unjust practices, covering their intolerability under the cloak of normalcy. Thus, in the context of human-animal issues, the shame of being human may appear as the reflexive disclosure of living in a world in which, every year, humans cause the avoidable suffering and death of billions of animals. Shame responds to a shameful state of the world, and so to feel shame before such a tragedy is to gain clarity about one's relation to the world (cf. Hutchinson, 2008: p. 147). It is in this way that shame plays an important role for a critical animal theory.

Conclusion

We have shown that Deleuze's engagement with Primo Levi bears a conception of shame according to which it is a morally and politically valuable emotion. Such a shame stands in a peculiar relation to power

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

– one that is rarely recognized. Rather than functioning as an instrument of oppressive, synchronizing power, its value lies precisely in its critical function with regard to the dominant normative infrastructure, insofar as the shattering of normal ways of perception effectuated through shame reveals these structures as a morally problematic aspect of the world. Thus, shame's critical element is connected to shameful modes of being. It reflexively discloses what is shameful in the normal and everyday. In this way, one can see that shame's moral and political value has nothing to do with shaming individuals or enforcing on them certain norms. To feel the shame of being human before the suffering and death inflicted on animals by humans is to feel complicit with the shameful things that humans do (cf. Smith, 2007: p. 47). Thus, shame reveals oneself to be part of a state of the world that is intolerable and shameful and thus warrants shame as a morally desirable response. In shattering 'normal' and ideologically imbued ways of perception, shame in its critical function reveals the intolerability of the horrors currently visited on animals, and, in doing so, also functions as a precursor to future ways of relating more ethically to animals. Moreover, in demonstrating shame to fulfil these functions, our account helps to substantiate Crary and Gruen's critical animal theory, since the latter seeks ways to resist ideological distortions in order to make visible oppressive structures determining human-animal relations.

References

Aaltola, E. (2017). Shame: From defensive fury to epistemological shifts and political change. In: Woodhall, A and da Trindade, G.G. (eds) Ethical and political approaches to nonhuman animal issues. Palgrave Macmillan, Cham, pp. 247–273.

Aaltola, E. (2021). Defensive over climate change? Climate shame as a method of moral cultivation. Journal of Agricultural and Environmental Ethics, 34(1), 1–23.

Abbate, C. E. (2020). Meat eating and moral responsibility: Exploring the moral distinctions between meat eaters and puppy torturers. Utilitas, 32(4): 398–415. DOI: 10.1017/S0953820820000072.

Bewes, T. (2011). The event of postcolonial shame. Princeton University Press, Princeton, NJ.

Crary, A. and Gruen, L. (2022). Animal crisis: A new critical theory. Polity Press, Cambridge.

Deleuze, G. (1989). Cinema 2. The time-image. University of Minnesota Press, Minneapolis, MN.

Deleuze, G. (1994). Difference and repetition. Columbia University, Press, New York, NY.

Deleuze, G. (1995). Negotiations. Columbia University Press, New York, NY.

Deleuze, G. and Guattari, F. (1994). What Is Philosophy? Columbia University Press, New York, NY.

Dieck, K. and Grimm, H. (2021). Coating moral misconduct – the motivational function of shame in ethical debates. In: Schübel, H. and Wallimann-Helmer, I. (eds) Justice and food security in a changing climate. Wageningen Academic, Wageningen, pp. 387–393.

Freeden, M. (2022). Emotions, ideology and politics. In: Freeden, M. (ed.) Ideology studies. New advances and interpretations. Routledge, New York, NY, pp. 115–124.

Hawthorne, N. (2008). The scarlet letter. Oxford University Press. New York, NY.

Hutchinson, P. (2008). Shame and philosophy. An investigation in the philosophy of emotions and ethics. Palgrave Macmillan, New York, NY.

Jaggar, A.M. (1989). Love and knowledge: Emotion in feminist epistemology. Inquiry, 32(2), 151–176.

Joy, M. (2010). Why we love dogs, eat pigs and wear cows. An introduction to carnism. Conari Press, San Francisco, CA.

Kainberger, T. (2023). Shame and animal ethics: On moral shame's critical functions regarding human-animal issues. Master's Thesis. University of Veterinary Medicine Vienna, Vienna.

Levi, P. (1988). The drowned and the saved. Summit Books, New York, NY.

Maibom, H. (2010). The descent of shame. Philosophy and Phenomenological Research, 80, 566–594.

O'Donnell, A. (2017). Shame is already a revolution: Yhe politics of affect in the thought of Gilles Deleuze. Deleuze Studies, 11(1), 1–24. DOI: 10.3366/dls.2017.0249.

Plato (2002). Protagoras. Oxford University Press, Oxford.

Scheler, M. (1987). Person and self-value. Martinus Nijhoff, Dordrecht.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Severson, E.R. (2018). A time for shame: Levinas, diachrony and the hope of shame. In: Ladson, H. and Willemsen, H. (eds) Temporality and shame. Perspectives from psychoanalysis and philosophy. Routledge, New York, NY, pp. 57–73.
Severson, E.R. (2021). What lies beneath. Shame, time and diachrony. In: Ladson, H. and Willemsen, H. (eds) Shame, temporality and social change. Ominous transitions. Routledge, New York, NY, pp. 141–161.
Smith, D. (2007). Deleuze's ethics of reading: Deleuze, Badiou, and Primo Levi. Angelaki: Journal of Theoretical Humanities, 12(3), 35–55. DOI: 10.1080/09697250802041020
Thomason, K.K. (2018). Naked. The dark side of shame and moral life. Oxford University Press, New York, NY.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

What Tbilisi street dogs and their human patrons can teach us about animal agency and multispecies care

Y. Kisora[1,2,], B. Bovenkerk[1] and C. Driessen[2]*
[1]Philosophy chair group, Wageningen University, Droevendaalsesteeg 4, 6708 PB Wageningen, The Netherlands; [2]Cultural geography chair group, Wageningen University, Droevendaalsesteeg 4, 6708 PB Wageningen, The Netherlands
** Corresponding author, e-mail: kisoray@gmail.com*

Abstract

Free-roaming dogs are often identified as a societal, ecological and welfare issue that has to be dealt with by the reduction of their populations and, eventually, their complete disappearance. In opposition to lethal or displacement methods, Collect, Neuter, Vaccinate, Return (CNVR) promotes social and spatial connections that result from returning dogs to the same area. This paper focuses on investigating the role of canine agency and human caretaking in establishing a more harmonious co-existence within local communities by looking into a case study of street dogs in Tbilisi, Georgia, and a system of patronage that supplements a CNVR programme. Methodologically, the paper is based on interviews with caretakers and observations of different packs, but we use here an example of one of them, Bukia dogs, named by local residents after a city square they have been inhabiting for over 10 years, Bukia garden. Studying those connections reveal agential capacities of dogs themselves that enable them to establish social connections, effectively communicate with familiar and unfamiliar humans and navigate urban environments. At the same time, a system of patronage allows willing humans to act as caretakers, mediators and ambassadors for the dogs, while giving them space for self-determination. We suggest that one of the solutions to the 'issue' of free-roaming dogs could be a committed yet limited caretaking by humans, all the while taking canine agency seriously through engaging in multispecies care.

Keywords: care ethics, CNVR, free-roaming dogs

Introduction

As common as a homed status of domestic dogs might appear from a Western point of view, over 70% of the world's dog population, estimated to be between 700 million to 1 billion, consists of free-ranging dogs (Belsare and Vanak, 2020). These dogs live their lives under no strict control and/or ownership of humans and vary largely in terms of their level of dependency and social contact with humans. They are often considered marginal beings whose existence outside of human households compromises their wellbeing, due to malnutrition, disease, abuse, traffic accidents and resulting high mortality (Jackman and Rowan, 2007). They may also cause disturbance to local humans and other species and are seen as a problem associated with public health, safety and wildlife conservation risks (Arluke and Atema, 2017; Mota-Rojas *et al*., 2021).

Approaches to deal with free-roaming dog populations in cities vary from mass killings and deportations to controlling reproduction, education on responsible ownership, legislation, and animal registration (Alkan, 2016; Howell, 2015; Pencea and Bradatan, 2015). Collect, Neuter, Vaccinate, Return (CNVR) programmes, specifically, have been gaining popularity in the countries of the global South, operated by local governments (Jackman and Rowan, 2007). Amongst the cited benefits of the programme are smaller and more stable populations (Leney and Remfry, 2012) with lower levels of stress of the dogs (Jackman and Rowan, 2007).

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (eds.), *Back to the future*
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_36, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

However, the effectivity of the programme remains contested (Salgirli Demirbas *et al*., 2019) since it does not guarantee returned dogs' wellbeing or peaceful co-existence with local human populations. Most studies, cited above, frame free-roaming dogs as a nuisance located outside of communities and highlight their negative framing by the local humans and resulting negative social impacts, such as 'decreased quality of life because of dog nuisances, lack of safety, and disturbing encounters with injured, dead, or suffering dogs; weakened or fractured social ties; and economic losses from reduced tourism, livestock predation, and disease management' (Arluke and Atema, 2017: p. 112). The way both dogs and humans shape their co-existence is rarely investigated, although it is mentioned that communities with caretaking human individuals result in more sociable free-roaming dog populations (Arluke and Atema, 2017: p. 112).

This paper focuses on investigating the role of canine agency and human caretaking in establishing a more harmonious co-existence within local communities by looking into a case study of street dogs in Tbilisi, Georgia, and a system of patronage that supplements a CNVR programme. Methodologically, the paper is based on interviews with 12 patrons and observations of 6 different packs, but we use here an example of one of them, Bukia dogs, named by local residents after Bukia garden, a city square they have been inhabiting for over 10 years.

Theoretically, we adhere to an approach of 'doing' ethics by investigating actual practices and building on them as inspiration for creating bigger societal structures and alternative visions for better co-existence. In those practices we are looking for agency of other species because it is through embodied action rather than through discourse they are able to express their desires and ideas for living in a better world. Here, we understand agency as 'the capability of a subject to influence the world in a way that expresses her desires and will' (Meijer and Bovenkerk, 2021). As such, animal agency can be species-specific (defined by biologically and genetically predetermined capacities), but is also something that emerges in a process of relating to other agential beings. Animal agency therefore is 'something that can be enacted, performed, and that emerges in interactions and relations. Animal agency then is relational and plural' (Ampumuza and Driessen, 2021: p. 1606). This connects to care ethics, which is focused on the value and quality of relationships and the conditions that are necessary to build and sustain those relationships (Taylor, 2014). We thus follow Westerlaken's call to investigate multispecies care ethics by identifying 'the positive ingredients of more desirable practices not as end- goals, but as traces that are already enacted, and thus already exist' (Westerlaken, 2020: p. 524).

Bukia street dogs and their patron

Due to the current governmental CVNR programme of Animal Monitoring Agency (AMA), unowned dogs in Georgia are allowed to live on the streets if they are vaccinated, neutered and registered in a city-wide system with a unique number on an ear tag. With the tag a dogs gains a status that translates from Georgian as 'attached to the wall', meaning that they are officially living on the streets. A dog who is 'attached to the wall' is not required to have an owner. However, people who take care of them often volunteer to become their patrons. In that case, a number from the tag is entered in the system together with personal and contact details of their patron and it helps to challenge the conditions on which street dogs are relocated and possibly killed. Some patrons have up to 20 dogs assigned to them.

In this brief article I discuss a particular pack of street dogs that is known in their neighbourhood and on Facebook as Bukia dogs. It all started in 2014, with a broken piece of a fence forming a palisade in Bukia park at the metro stop Technical university. A couple of unowned dogs occupied the palisade, sleeping on patches of grass in the muddy area, and 'hanging out' on the square. They were able to get along with other canines and humans, and gradually built their own networks of social and spatial connections and established routines. A couple of local humans would feed and socialise with them.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

They installed makeshift homes in the palisade for the dogs to hide from the elements. They maintained the palisade neat by regularly swiping and cleaning the area to not upset the neighbours. They started a public Facebook group 'to protect the dogs by advertising them' and would post daily updates and anecdotes about the life of the pack. In 2015–2016 they tagged, vaccinated and neutered the dogs, acquired passports for them and enrolled as their patrons. Over the years, some members of the Bukia dogs have disappeared, some have passed away, some were adopted. People who were taking care of them became friends, and then some of them have moved away, while others stayed behind. We here describe the pack as the first author got to know it in February and October 2022 — consisting of four permanent canine members called Misho, Chorna, Kusa, and Maximus and their main caretaker and patron N.

Not being constrained by limits of a household allows the Bukia dogs to establish rich and robust networks in the city that develop over time. These connections are often place-based and build on the readiness of the dogs to seek and give affection together with the repeated acts of kindness shown to the dogs by humans. The Bukia dogs get excited for no one as much as they get for N, which seems to suggest a strong emotional bond they've developed with her. Yet their connections are not limited to that. Kusa's network spans over the distance of a couple of square kilometres and includes street peddlers, various yards' residents, small kiosk owners, street cleaners etc. In winter, she frequents a local woman M to spend cold nights inside sleeping on a chair. Misho has a favourite street peddler S and always looks for his attention, but also is often approached and petted by strangers. His feature on Google maps as a local sightseeing point might play some role in that. In building their connections, the Bukia dogs are proving to be excellent communicators who are not only able to get their needs satisfied but who also respond to social cues received from a human they are interacting with.

Daily actions of the dogs, especially their ability to build relations and communicate help them establish a wide network to feed themselves. Staff and customers of restaurants and cafes often give leftovers to dogs who stick around or even pass by. The same goes for small shop owners, neighbourhood residents and people who hang out on the Bukia square. Sometimes a mere presence of a dog is enough to solicit food from strangers. On top of that, the city offers innumerable opportunities for scavenging — even though dogs might not be able to get into bins that are quite high, there is often edible waste that is dropped near a bin or simply thrown on the street for an appreciative nose to sniff out. Of course, it makes the dogs prone to poisoning at the hands of those who are unhappy to have them around. But the long period that the Bukia dogs have lived on the streets (8 years) shows that they possess a distinctive ability to distinguish between good and bad food items.

The dogs' ability to navigate and make sense of the environment and the dangers thereof can be demonstrated by multiple ways they deal with busy roads in the city. While traffic incidents are named as one of the main reasons of death and injuries for street dogs, the Bukia dogs have learned to not only cross them safely, but also engage with them for their own ends and purposes. The dogs are proficient in dealing with roads and adapt to daily rhythms of the city. They cross the road freely only if very few cars are present. During the rush hours, they use the underground passage or wait on the crossing with people for the green sign to cross. Moreover, for some members of the pack — Chorna and Maximus — roads also seem to serve a special purpose. They can be regularly observed to bark at and chase cars, however, only in presence of their caretakers like N or M. While we might be tempted to interpret it as following their hunting instinct, this behaviour seems to be socially motivated and thus probably plays a role in a relationship the dogs have with their caretakers. It also demonstrates their agility and skill in chasing a car just close enough not to get hit.

In general, the dogs show an astute ability to self-determine and organise their lives in order to meet their needs. In contrast to a heavily regulated human-homed pet life where humans decide when and

Franck Meijboom and Dorothy Barthelmess, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

where a dog is allowed to relieve themselves, what and when to eat, whom to socialise with, and where to go, the Bukia dogs are free to make those choices by themselves. They decide whether to eat or refuse N's food, whether to stay in one place or go looking for another, whether to go scavenging or make a plea to a passer-by, whether to return to a familiar café or look for a new one. Obviously, those choices have consequences that are limited by other dogs' and humans' choices but nevertheless there are choices that the dogs get to make to "determine the direction of their life" (Wilcox, 2021).

The patron system seems to prioritise limited responsibility over control as in case of homed dogs. It relies on three elements: baseline feeding and medical care, extensive advocacy and occasional mediation in conflicts. The Bukia dogs' patron, N, feeds and walks them regularly and feels responsible for their health and overall wellbeing. Irrespective of how late she went to bed, N wakes up at 6am every morning to feed the Bukia dogs. She boils a helping of liver and adds it on top of store-bought kibble. A couple of times a week she also supplements the meal with bones from the local butcher. In feeding the dogs, N is guided by considerations of the dogs' wellbeing: she wants to make sure that 'they have eaten well at least once a day'. Daily feedings establish a routine and offer a possibility for connection. N talks to and caresses the dogs before, during and after the feeding. If she notices any irregularities in their behaviour or appearance she attempts to examine their bodies. She goes on a walk with her own dog and invites the Bukia dogs to join, but they are not always up for it and she does not pressure them. N does not allow herself to have holidays or days off - she feels she has to be there for the dogs every day, which puts both time and financial pressure on her shoulders. The manner of care she provides has to do with the ways in which dogs themselves allow (or not) this care to be provided. Her caretaking is limited by the time of the day she is able to spend with them and by their own willingness to make themselves available for caretaking and socialising. The fact that the dogs are free to choose how to spend their time means that those who care for them are always worried about their wellbeing. As Chorna chases cars in the morning, N sighs — 'he's an idiot, I can't watch'. There is nothing she can do about it, so it comes down to accepting the choices the dogs make for themselves while trying to do your utmost best to provide them with care.

She also acts as their ambassador in often heated discussions whereby their right to be in a place is questioned. Through installing makeshift homes and then replacing them with the 'official' ones provided by AMA, N has been materially reinforcing the dogs' belonging to the square. Not surprisingly, when neighbours were protesting against them, it was the dog houses that they would destroy. The Facebook group serves the same purpose of presenting the dogs as a part of the community and turning them into recognisable characters rather than nameless figures one should be afraid of. When explaining why she and a couple of local residents started the Facebook page to facilitate the acceptance of the Bukia dogs, N said: 'They are settled here. It's their territory and they should have a normal life'.

She also tries to mediate daily interactions with other humans and dogs when she happens to be present. During the daily walk, if joined by Bukia dogs, she attempts to discourage them from chasing cats and engaging in barking stand-offs with neighbouring packs. After the walk, N comes back to the square and is greeted enthusiastically by the part of the pack that stayed behind. As she sits down to have a coffee with T, an elderly man famous for his everyday routine of feeding pigeons and cats, Kusa, Misho, Chorna and Maximus lay down around them. As it often happens, unfamiliar dogs are passing, sometimes with humans and sometimes without, and N tries to stop the dogs from barking or attacking them by distracting, shouting or literally holding them back. Most of the times she fails to influence their behaviour in any way, and quite often she also complains about other people or dogs who are passing by without knowing it's 'Bukia's dogs' territory'. N might be taking responsibility for their actions through assuming the position of a mediator in conflicts, but in no way is she able to control the choices they make to shape a life for themselves and even space around them.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Multispecies ethics of care and canine agency

So how can the case of Bukia dogs help us develop an understanding of multispecies ethics of care? It is based on a certain institutional arrangement — specifically, the CNVR programme and the patronage system – but comes to life due to the daily actions, practices and routines of dogs and humans in the active process of relating and taking care of themselves and each other. What are the main dimensions/qualities of this care?

First of all, multispecies care is indeed deeply ambivalent (Westerlaken, 2020). The case of the Bukia dogs lays bare the complexities of navigating the choices of relational entanglements between urban residents. Caring more for resident Bukia dogs means caring less for animals that are slaughtered for their feed, in certain ways prioritising them over dogs that pass by the square, or even over the wellbeing of people who do not feel comfortable having the dogs around. Furthermore, caring for the street dogs deepens already existing inequalities when it comes to gendered labour divisions embedded in Georgian society. Just like N, most patrons are female and carry the burden of taking care of the dogs as the third shift, after working a full-time job and taking care of the home and kids. At the same time, their association with dogs makes them subject to ridicule and marginalisation since caring for other than human persons is seen as less important in an anthropocentric and largely religious society.

Secondly, multispecies care is multidirectional. Contrary to the standard positioning of human caretakers as providing care to non-human recipients of care, multispecies care acknowledges the agency that the dogs have in the process. Dogs carry on the emotional labour of companionship (Coulter, 2016) for their patrons and contribute to the affective sphere of the square by freely offering their contact and affection to those who seek it. Even more importantly, they are not only taken care of, but they take care of themselves by making sure their needs are met through scavenging, socialising and exploration. That ensures in their overall wellbeing which, again, contributes to their positive perception by humans and the overall more harmonious co-existence.

Thirdly, multispecies care is territorial and highlights the role of place in forming connections. Being able to stay in one place for an extended period of time gives the dogs a chance to establish a territory by forming long-lasting connections with other dogs and humans around them, as well as building their skills in navigating the challenges of the urban environment around them. This results in them being able to take better care of themselves. For patrons, territory can be better conceived as an area of perceived responsibility. They are familiar with resident dogs and provide care for them, but they will also attempt to provide assistance to dogs who are passing by or dogs (often puppies) who are dumped in their territory because people are aware of the care local people provide to dogs in the area.

Finally, multispecies care is response-able in a way that it is constantly changing depending on the needs of the subjects involved in it. For patrons, although the overall ideal they share is a completely street-dog free city, where every dog is homed and loved, the way they take care of the dogs acknowledges the idiosyncratic needs of the dogs rather than the ideal of getting them homed at any cost. Patrons modify their efforts based on the personality of a dog they encounter and the boundaries to care that the dogs establish themselves: Bukia dogs need different types of care than puppies dropped at the square or an adult dog passing by. This care is therefore reliant on interspecies communication and interpretation of boundaries while letting go of pre-conceived ideas of what domesticated animals need. They offer it willingly, but they do not enforce it upon the dogs. In this case the understanding of multispecies care is akin to how Westerlaken (2020) elaborates it as being not a pre-determined (by humans) set of rules but something that is worked out in daily practices of care.

Franck Meijboom and Patrick Bos, Leiden, 2024 | DOI:10.1163/9789004715509_014
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Conclusion

Free-roaming dogs are often identified as a societal, ecological and welfare issue that has to be dealt with by the reduction of their populations and, eventually, their complete disappearance. In opposition to lethal or displacement methods, CNVR promotes social and spatial connections that result from returning dogs to the same area. In case of the Bukia dogs, a pack of street dogs from Tbilisi, studying those connections reveals agential capacities of dogs themselves that enable them to establish social connections, find sustenance and navigate urban environments. In combination with a system of patronage that allows willing humans to act as caretakers, mediators and ambassadors for the dogs, it creates context-specific practices of multispecies care. Enabling urban street dogs to exercise their agency then requires curious and affective commitment on the side of humans to be responsible for their wellbeing while relinquishing control. We suggest that one of the solutions to the 'issue' of free-roaming dogs could be a committed yet limited caretaking by humans all the while taking canine agency seriously and giving individual dogs space for self-determination.

References

Alkan, A. (2016). Deportation as an urban stray dogs management policy: Forest dogs of Istanbul. Lex Localis, 14(3), 613–635.

Ampumuza, C. and Driessen, C. (2021). Gorilla habituation and the role of animal agency in con-servation and tourism development at Bwindi , South Western Uganda. Environment and Planning E: Nature and Space, 4(4), 1601–1621.

Arluke, A. and Atema, K. (2017). Roaming dogs. In The Oxford handbook of animal studies Oxford University Press, Oxford, pp. 112–134.

Belsare, A. and Vanak, A.T. (2020). Modelling the challenges of managing free-ranging dog populations. Scientific Reports, 10(1), 1–13.

Coulter, K. (2016). Beyond human to humane: A multispecies analysis of care work, its repression, and its potential. Studies in Social Justice, 10(2), 199–219.

Howell, P. (2015). At home and astray. University of Virginia Press, Blacksburg, VA.

Jackman, J. and Rowan, A. (2007). Free-roaming dogs in developing countries: The benefits of capture, neuter, and return programs. In Salem, D.J. and Rowan, A.N. (eds) The state of the animals 2007. Humane Society Press, Washington, DC, pp. 55–78.

Leney, J. and Remfry, J. (2012). Dog population management. In Macpherson, C.N., Meslin, F.X. and Wandeler, A.I. (eds), Dogs, zoonoses and public health. CAB International, Wallingford, pp. 299–331.

Meijer, E. and Bovenkerk, B. (2021). Taking animal perspectives into account in animal ethics. In Keulartz, J. and Bovenkerk, B. (eds), Animals in our midst. The challenges of co-existing with animals in the Anthropocene. Springer, Dordrecht, pp. 49–64.

Pencea, R. and Brădățan, T. (2015). Stray dogs in Romania — Policies, legal framework and solutions. Friedrich-Ebert-Stiftung, Bucharest.

Salgirli Demirbas, Y., Saral, B., Safak, C.E. and Graça Da Pereira, G. (2019). Population control of free-ranging dogs in Turkey: Never kill strategy. Journal of Applied Animal Ethics Research, 1(2), 209–215.

Taylor, S. (2014). Interdependent animals: A feminist disability ethic-of-care. In Adams, C.J. and Gruen, L. (eds) Ecofeminism: Feminist intersections with other animals and the earth. Bloomsbury, London, pp. 109–126.

Westerlaken, M. (2020). What is the opposite of speciesism? On relational care ethics and illustrating multi-species-isms. International Journal of Sociology and Social Policy, 41(3–4), 522–540.

Wilcox, M. G. (2021). The intrinsic value of liberty for non-human animals. Journal of Value Inquiry, 55(4), 685–703.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Implementing animal care ethics through the arts of visual thinking strategies

M. Rooijakkers, B. Bovenkerk and J. Jacobs*
Wageningen University, Hollandseweg 1, 6706 KN Wageningen, the Netherlands
**Corresponding author, e-mail: marsha.rooijakkers@wur.nl*

Abstract

Most humans, in particular in Western societies, have a cultural belief that they can use animals to satisfy their desire for meat and this is expressed in the most detrimental way in intensive animal farming. Even though many consumers are worried about these harmful practices, they still want to eat meat, causing them to experience cognitive dissonance, known as the meat paradox. In order to alleviate this tension they (sub)consciously apply coping strategies to fit or change their beliefs and justify their actions. Consumers find a way to down play or deny that animals are harmed trough their meat-eating behaviour. In order to keep this belief they are likely to avoid information about what happens in the meat industry. The industry is aware of this and makes sure the suffering of the animals happens behind closed doors. However, in order for consumers to be able to make an informed moral decision on their meat-eating behaviour we feel that they need to know what is going on behind these doors. According to care ethicists sympathy will give them the guidance they need in making that decision. When consumers see what these animals are going through they will sympathise because they recognize and can relate to their suffering. We will argue that the intervention method called Visual Thinking Strategies can encourage sympathy in consumers by using images as an invitation to pay attention to and reflect on the suffering of animals through dialogue. We believe this will not only challenge their current beliefs about the treatment of animals in intensive animal farming, but may also counter the coping strategies they apply in order for them to justify their meat-eating behaviour.

Keywords: absent referent, dialogue, image selection, intensive animal farming, meat paradox

Introduction

One of the most common and closest interactions between humans and non-human animals (from here on referred to as animals) happens on the dinner plate. Most humans feel that they can use animals to satisfy their desire for meat and this is expressed in the most detrimental way in intensive animal farming. Chickens, for example, have to endure the painful process of debeaking and experience severe health problems, such as osteoporosis and keel bone fractures, mainly as a result of overcrowding, breeding conditions and barn design. Keel bone fractures cause reduced mobility (Riber *et al.*, 2018). Most pigs never see grass or mud, instead they live in bare pens with concrete or metal floors surrounded by their own excrement. As many as 70% of these animals have pneumonia at the time of their slaughter (Engster, 2006). In order for veal calves to produce pale meat the iron content of their food is purposefully kept low. As a result of this iron deficiency they risk anaemia which can cause reduced consciousness (European Food Safety Authority, 2023). There are many different definitions of animal welfare used by scientists and ethicists, but the examples mentioned above violate every definition. We deprive these animals of their basic needs, restrict them in the development of their capabilities and inflict unnecessary pain upon them (Engster, 2006).

Even though many consumers are worried about these harmful practices, they still want to eat meat. This causes them to feel morally conflicted about their own meat-eating behaviour, known as the meat

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (eds.) ***Back to the future***
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_37, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

paradox. In psychology, this tension is called 'cognitive dissonance' and it is an undesirable state that people want to leave or avoid (Loughnan *et al*., 2012). Vegetarians avoid this state by changing their behaviour and excluding meat from their diet (although they may still experience cognitive dissonance when eating other animal-source foods). Others alleviate this tension by (sub)consciously employing coping strategies to fit or even change their beliefs to justify their actions. Next to coping strategies applied to *reduce* or *accept* dissonance, the *oppression* of dissonance turns out to be very effective (Nijland, 2019). Therefore for the purpose of this paper we will focus on the latter. Consumers find a way to downplay or deny that animals are harmed as a results of their meat eating, by for example fooling themselves into believing that the animals have lived a good life. They depict or imagine the suffering of animals in intensive animal farming in a way that deviates from reality or they emotionally distance themselves by denying that animals can experience harm (Loughnan *et al*., 2012; Nijland, 2019). In order to keep these beliefs consumers do not want to be confronted with the harms their meat-eating behaviour causes and are likely to avoid information about what happens in the meat industry (Ioannidou *et al*., 2023). The meat industry is aware of this and makes an effort not to confront consumers with their harmful practices. The animals live and suffer behind closed doors in factory farms and so the animal becomes the absent referent (Adams, 2015). Literally because animals have to die for meat to exist, but also in definition. Dead bodies are renamed before consumers participate in eating them. We do not say we are eating a baby animal, we say we are eating veal. This absence causes consumers not to develop a relationship with the food they eat. They forget about the animal as an once present, independent entity (Adams, 2015). In everyday life consumers are not reminded of the fact that animals are suffering in order to produce the meat they eat and are therefore not challenged to think about their current beliefs regarding the treatment of these animals. Moreover, these beliefs are so deeply rooted that the meat paradox rarely enters the focus of their attention (Loughnan *et al*., 2012). In our Western society meat is a regular and accepted part of the diet.

Care ethicists feel that consumers need to know about the suffering of these animals in order for them to make an informed moral decision on whether their meat consumption is still compatible with their own moral values. If not, they need to call on those primarily responsible for the suffering of these animals by refusing to purchase meat from these companies (Engster, 2006). In this paper we will argue that the intervention method called Visual Thinking Strategies (VTS) can support consumers in their decision making process. In VTS images are used as an invitation to pay attention to and reflect on the suffering of animals in intensive animal farming through dialogue. We believe this will challenge the entrenched beliefs of consumers on meat production and counter coping strategies applied to justify their meat consumption. We will explain why we believe it is necessary to adopt the animal care ethical point of view to support consumers in their ethical decision making process and how VTS is supported by this view.

Sympathy in animal care ethics

All animal ethical approaches reject the way animals are treated in intensive animal farming. Utilitarians contend that the suffering of these animals is not proportionate to the pleasure humans experience when eating meat. Animals are sentient beings who, just like us, can feel pain and pleasure and we should not inflict unnecessary pain upon them. If a course of action will lead to more suffering than pleasure for all those affected by that action, that action will be ethically impermissible (Singer, 1975). The animal rights view contends that humans do not have the right to use animals at all to satisfy their own desires and animal farming in itself should be abolished. Animals have inherent value, meaning their lives matter to them, and that is why they have rights. Humans have an absolute ethical responsibility where all animals with the same capacities have the same rights (Regan, 1984). In these leading ethical approaches everyone involved should be treated equally and fairly (Donovan, 2006; Engster, 2006). Care ethicists oppose this view; many of them believe humans do not have any natural absolute obligation to care for animals. Even though two animals might have similar capacities, if human emotional relations to the animals

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

differ, their ethical responsibilities will differ too (Engster, 2006). Not all animals necessarily depend upon us for care, but in intensive animal farming they do, heavily. We actively brought these animals into a relationship of power and dependency where they rely on us for their well-being, functioning and survival. And because we are responsible for putting these animals in a vulnerable position, we are obligated to care for them insofar as we are able (Engster, 2006). Although animal capacities are not irrelevant to moral decision-making and provide a good basis for moral status, these capacities are not enough, in themselves, to give comprehensive guidance about how we should act (Palmer and Sandøe, 2011).

According to care ethicists sympathy gives us guidance on how we should act (Donovan, 1996; Palmer and Sandøe, 2011). We know animals are sentient beings who can feel pain, however we can only truly know their suffering by sympathising. Like us, their lives can go better or worse for them and so we sympathise with them in their attempts to satisfy their needs and wishes (Donovan, 1996). Compared to empathy, where one loses oneself in the animal's feelings, sympathy requires a certain distance to accurately and imaginatively assess the situation of the animal to understand it not only emotionally but also intellectually. To sympathise means figuring out and imagining how the suffering animal in intensive animal farming is feeling and not, as in empathy, project oneself into the animal's situation as if one were in the animal's place (Mercer, 1972). It is about reflecting on and critically thinking about the animal's situation in order to recognise their suffering and relate to the animal (Donovan, 1996). One feels moved to ask the question: 'why is this animal suffering?', which requires a different epistemology on animals (Donovan, 2006). Where utilitarian and rights views opt for an objective base for ethical reasoning care ethicists include a subjective epistemology. This means we have to go from theorizing about the animal as an object to be known to caring about what the animal is telling us and act on that (Donovan, 2006). The subjective epistemological question is how we know what the animal is feeling or thinking. We use much of the same mental and emotional activities in reading the attitudes and feelings in an animal as we do in reading a human, like eye movement, body language, facial expression and tone of voice (Donovan, 2006). If we want to imagine how the animal is feeling we just have to pay attention to the signs (Donovan, 1996).

Including a subjective epistemology in the ethical decision making process requires humans to shift from a monological to a social and dialogical mode of ethical reasoning, wherein humans listen to and pay emotional attention to animal communications (Donovan, 2006). Monological reasoning starts from one's own human-based preconceptions and mainly consists of rationalistic deliberations based on the human experience of animals and on human practices. The system in Western societies is designed to make animals instrumental to human use to maximize production and to generate high profits and cheap food (Engster, 2006). We rather adjust the animals to the system than adjust the system to the animals. A dialogical ethic for the treatment of animals would consider the animal's feelings most important and not dismiss those desires as irrelevant to the argument (Donovan, 2006). The awareness that the animal has feelings means that we can no longer see the animal as an object and disengage from the current situation in intensive animal farming (Donovan, 1996).

Even though in most Western societies people do not need to eat meat for their survival, not all care ethicists agree on the point of vegetarianism. The hard question is whether raising animals for slaughter and consumption is consistent with care ethics at all. Some care ethicists feel that if we take the communicated desires and wishes of the animal seriously, it is apparent that no animal would opt for the slaughterhouse (Donovan, 2006). Nevertheless all care ethicists agree that the way in which intensive animal farming is currently carried out is not consistent with caring for animals insofar as we are able and should therefore be abolished (Engster, 2006). Even though many animals resist and escape harmful practices, animals in intensive animal farming are not able to share their critical views with other animals or to organise resistance, so human advocates are required to articulate the standpoint of these animals

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

(Donovan, 2006). However, for consumers to resist, they need to be aware of and sympathise with the suffering of these animals. We believe Visual Thinking Strategies can educate this sympathy in consumers.

Caring to dialogue

When Philip Yenawine developed educational programs for the Museum of Modern Art in New York he noticed that many visitors asked the tour guide 'why' questions about the complex and strange looking art pieces. However, after the tour, when asked about the answers given to these questions he noticed that the visitors did not remember the ideas, facts and anecdotes told by the tour guide. He discovered that when looking at art visitors did not need answers. Instead they needed to be challenged to think for themselves and give their own meaning to what they observe. Learning is not about what you know, it is about how to use what you know: the learning process (Yenawine, 2013). Therefore in the early 90's, together with psychologist Abigail Housen, Yenawine developed Visual Thinking Strategies (VTS). In VTS images are used as an invitation to pay attention to and reflect on a subject through dialogue. The VTS protocol consists of careful image selection and open ended discussions led by three research-tested questions guided by a facilitator (Yenawine and Miller, 2014).

The images have to meet two important requirements. First, the image should be relevant to the subject discussed. We would like to raise awareness on animal suffering in intensive animal farming and so we believe the image should (literally) bring back the absent referent for consumers to be reminded that the meat on their dinner plate once was an animal. Secondly, the image should serve the purpose of the VTS dialogue. We would like to encourage sympathy in participants for the suffering animal. Therefore the image should inspire participants to figure out how the animal is feeling. The VTS dialogue motivates participants to express their own thoughts and feelings about the image and to listen and respond to and reflect on the (different) image interpretations of others, which will then again encourage them to critically think about and reflect on their own thoughts and feelings. We believe this will raise participants' awareness of and challenge their own preconceptions embedded in their beliefs about the treatment of animals in intensive animal farming. The more open the image is to different interpretations, the more there is to think about and discuss. Therefore the image selection in VTS requires that the image is familiar, intriguing, ambiguous and with a narrative character (Yenawine and Miller, 2014).

To guide the dialogue the facilitator follows three non-steering, open questions:
1. What is going on in this image? This question encourages participants to attend to and to try to interpret and understand the image, for example the (body) language of the animal.
2. What do you see what makes you say that? This question encourages participants to take a closer look, think about their interpretation and to back it up with evidence.
3. What more can we find? Through this question participants are encouraged to think about and respond to the interpretations of others or to come up with new interpretations.

After the first question the facilitator will go back and forth between the second and the third question, until no new observations and interpretations are shared (Yenawine, 2013). By talking about the suffering animal the absent referent is also brought back in definition which makes participants even more aware of the fact that the meat on their plate once was an animal. In order to link the observations and interpretations of the suffering animal discussed to the meat-eating behaviour of the participants there are several possibilities to direct the dialogue, such as adding extra information and asking the third question again or by adding a reflective question after the VTS dialogue. However, the participants might be given the impression that the facilitator is suggesting that in their role of consumer they are held accountable for the suffering of these animals. Maybe they do not even have the feeling that they can directly change the situation and instead of looking at their existing coping strategies and behaviour another coping strategy to oppress cognitive dissonance may be applied, such as shifting the responsibility of the animal

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

suffering to the meat industry (Nijland, 2019). One of our research questions is whether the sympathy participants experience during the VTS dialogue actually leads to changes in attitude and behaviour. So we think, in addition to the VTS sessions, it is also important to give participants the possibility to think about what they càn do to alleviate animal suffering by for example discussing the viable alternatives to eating meat from animals in intensive animal farming.

Compared to other intervention methods VTS is designed to avoid socially desirable answers. Another strength of a VTS dialogue is the open and non-judgemental character of the discussion. Consumers tend to fall back into rationalisation and neutralisation processes by applying coping strategies when being confronted with factual or logical arguments about the harmful practices the animals in intensive animal farming have to deal with. However, participants in a VTS dialogue are not occupied with trying to convince each other of their own beliefs on animal suffering through rational arguments. They are just listening to, considering and responding to the input of others. For the participant it would not feel like the image, facilitator or other participants have imposed their beliefs on them. If participants change their beliefs during or after the dialogue it is because they have convinced themselves.

Conclusion

We have argued that Visual Thinking Strategies can support consumers in making an informed moral decision on their meat-eating behaviour. Through careful image selection and three questions guiding the dialogue participants are invited to pay attention to and reflect on animal suffering in intensive animal farming. By attending to and thinking about the language of the suffering animal in the image participants will be able to figure out how the animal is feeling. We believe this will raise sympathy required for making an ethical decision. Moreover, by listening to the image interpretations of others, participants are encouraged to think critically about and reconsider their own interpretations and the interpretations of others on animal suffering and preconceptions embedded in their beliefs about the treatment of animals in intensive animal farming. We believe that by challenging these entrenched beliefs of consumers on meat production they will have to counter their coping strategies applied to oppress cognitive dissonance and start thinking about changing their behaviour. They have to decide whether their current meat-eating behaviour is still compatible with their (changed) beliefs and (new) moral values.

References

Adams, C.J. (2015). The sexual politics of meat: a feminist-vegetarian critical theory. Bloomsbury Academic, New York, NY.

Donovan, J. (1996). Attention to suffering: a feminist caring ethic for the treatment of animals. Journal of Social Philosophy, 27, 81–102.

Donovan, J. (2006). Feminism and the treatment of animals: from care to dialogue. Journal of Women in Culture and Society, 31, 305–329.

Engster, D. (2006). Care ethics and animal welfare. Journal of Social Philosophy, 37, 521–536.

European Food Safety Authority (2023). Welfare of veal calves. EFSA Journal, 21(3), e07896. DOI: 10.2903/j.efsa.2023.7896

Ioannidou, M., Lesk, V., Stewart-Knox, B. and Francis, K.B. (2023). Feeling morally troubled about meat, dairy, egg, and fish consumption: dissonance reduction strategies among different dietary groups. Appetite, 190, 1–10.

Loughnan, S., Bratanova, B. and Puvia, E. (2012). The meat paradox: how are we able to love animals and love eating animals. In-Mind Italia, 1, 15–18.

Mercer, P. (1972). Sympathy and ethics: a study of the relationship between sympathy and morality with special reference to Hume's treatise. Oxford University Press, Oxford.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Nijland, H.J. (2019). On the uttering of coping strategies to deal with cognitive dissonance regarding eating animals. In: Vinnari, E. and Vinnari, M. (eds.) Sustainable governance and management of food systems. Wageningen Academic Publishers, Wageningen, The Netherlands: 176-181.

Palmer, C. and Sandøe, P. (2011). Animal ethics. In: Appleby, M.C., Mench, J.A., Olsson, I. and Hughes, B.O. (eds.) Animal welfare. CAB International, Wallingford, pp. 1–12.

Regan, T. (1983). The case for animal rights. University of California Press, Berkeley, CA.

Riber, A.B., Casey-Trott, T.M. and Herskin, M.S. (2018). The influence of keel bone damage on welfare of laying hens. Frontiers in Veterinary Science, 5, 1–12.

Singer, P. (1975). Animal liberation, a new ethics for our treatment of animals. Random House, New York, NY.

Yenawine, P. (2013). Visual thinking strategies: using art to deepen learning across school disciplines. Harvard Education Publishing Group, Cambridge, MA

Yenawine, P. and Miller, A. (2014). Visual thinking, images and learning in college. About Campus, 19(4), 2–8. DOI: 10.1002/abc.21162

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Fur-ever comfort: the role of normative professionalism in animal hospice and palliative care

E. Deelen[*] and F.L.B. Meijboom
Centre for Sustainable Animal Stewardship, Division of Animals in Science and Society, Department of Population Health Sciences, Faculty of Veterinary Medicine, Utrecht University, Utrecht, The Netherlands
[*] Corresponding author, e-mail: e.deelen@uu.nl

Keywords: end-of-life decision-making, qualitative research, veterinary ethics

Introduction

In the final stages of an animal's life, questions arise about the care that is necessary for an animal in this crucial phase of life. The care activities can focus on 'curing' if an animal suffers from a treatable illness. In addition, palliative interventions can be implemented to support the animal during treatment, such as pain medication or custom-tailored nutrition. If curing is not possible or (no longer) desirable, care can also be purely focused on 'palliation' (Springer and Flammer, 2021). Palliation can encompass both palliative care as well as hospice care. Although the definitions of both palliative care and hospice care are continuously debated and refined in the literature (Downing *et al*., 2011; Selter *et al*., 2022; Shanan and Shearer, 2023; Villalobos, 2011), two key aspects incorporated in palliative care can be deduced. First, optimisation of the patient's comfort and minimising the patient's suffering throughout all stages of the disease based on the goals of medical care as prioritized in consultation with the animal's caregiver(s), and second, attending to the social, emotional, and spiritual needs of both the animal patient and the caregiver(s), alongside the treatment of animal's physical discomfort (Shanan and Shearer, 2023). As these key aspects show, palliative care can be provided throughout all disease stages. In contrast, hospice care is specifically focused on and provided during the terminal stage of illness near death. Because of the life stage in which hospice care is provided, the key aspects of palliative care naturally extend beyond enhancing an animal's quality of life during illness to encompass the entire dying process.

As the two key aspects of animal hospice and palliative care show, the chosen care is tailored to the (perceived) needs of the animal and those needed by the animal caregiver(s). When selecting interventions that best suit the needs of both the animal and the animal caregiver, animal-specific and animal-caregiver-specific characteristics are taken into consideration (August, 2023). Relevant animal-specific characteristics include but are not limited to, the patient's symptoms, the tolerability of possible side effects of medication or other treatments, and the temperament of the animal considered in conjunction with the acceptability of the provided care. When considering the animal caregiver(s), relevant characteristics can be related to practical and personal aspects. Practical aspects include but are not limited to, the feasibility of providing care and the caregiver's capabilities, such as finances. Personal aspects encompass the challenges associated with caregiving, involving resilience required when caring for an animal reaching the end of life. Additionally, it includes personal beliefs about animal welfare and animal death.

Like animal caregivers, professional animal care providers such as veterinarians and veterinary nurses have their own perspectives, beliefs and resilience when delivering end-of-life care. An example of such a belief could be the professional's stance on whether euthanasia or hospice-supported natural death is considered the most suitable option (Shanan and Shearer, 2023). Such an end-of-life-related belief can vary among professionals and may differ for each professional depending on the situation. These

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (eds), ***Back to the future***
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_38, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

kinds of personal beliefs of professionals influence the care provided. Building upon the example of a professional's stance on whether euthanasia or hospice-supported natural death, it is likely that a veterinarian who passionately believes that euthanasia is a preferable option for animals over hospice-supported natural death will advise in favour of euthanasia. Depending on the professional, it may even be the case that the alternative of hospice-supported natural death is hardly discussed or considered to be entirely out of the question. This indicates that the beliefs and perspectives of veterinarians and veterinary nurses play a significant role in how animal hospice and palliative care are discussed and provided in veterinary practice.

The concept of normative professionalism

As part of professionalism, experts practice their profession not only by adhering to established standards or executing learned skills. The actions of professionals are influenced by what has been referred to as 'the soul of the professional', which 'colours' their practice in a unique way (Bakker and Coppoolse, 2022). The professional's experiences, personal values, and beliefs shape this' soul'. When elaborating on the example of euthanasia versus hospice-supported natural death, a professional's stance may be influenced by religion, which convinces the professional that ending the life of any living being belongs not in our hands. Also, individual experiences, such as a hospice-support natural death of a family member, can shape the professional's soul.

The impact of the professional's soul on the professional's view on what is seen as 'good practice' and consequently their professional behaviour has been discussed in various disciplines. Literature suggests that professionals are generally unaware of how their experiences, values and beliefs influence their professional practice. The process of becoming aware of how personal experiences, values, and beliefs shape one's professional perspective on 'good practice' and consequently their professional practice, is captured in the concept of 'normative professionalism' (Bakker and Coppoolse, 2022). In addition to addressing the influence of the professional's soul on their perception of 'good practice' and their professional behaviour, the concept also delves into how a professional navigates in the context of the profession (Bakker and Coppoolse, 2022). Numerous factors, such as the applicable legal framework, professional standards, and the interaction with peers within the same profession and professionals of other professions shape this context.

Applying this to the field of veterinary practice shows that empirical insights into the experiences, values and beliefs of professional animal care providers are limited. One of the few available sources is the book 'Blue Juice' by Patricia Morris. In this book, Morris provides an in-depth insight into how veterinarians in small animal practice experience euthanasia of animals. Specifically, Morris addresses the question of how practitioners weigh the needs of their clients and their patients when it comes to the ending of animal lives (Morris, 2012). Although the scope of 'Blue Juice' is specifically on euthanasia experiences and the weighing of needs, the book encompasses several observations of veterinarians' experiences, values and beliefs related to end-of-life care.

This makes this book an interesting start to understanding veterinarians' end-of-life-related experiences, values and beliefs. However, it also shows the need for a more thorough investigation is needed to understand how this affects professionals' perspective on 'good practice' within animal hospice and palliative care. Therefore, the current study aims to discuss the steps towards a more complete perspective by exploring the following additional themes: (1) a multi-stakeholder perspective of both veterinarians and veterinary nurses, (2) palliative care and hospice care, including euthanasia and (3) a focus on the professionals' perspective on 'good practice' and their practice in relation to their experiences, values and beliefs.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Obtaining these insights could serve three main purposes. On the level of the veterinary profession and the profession of veterinary nurses, the findings can help to reflect on ideas of 'good practice' within animal hospice and palliative care. Additionally, on the level of the individual veterinarian or veterinary nurse, the insights could help to better understand potential ethical problems and dilemmas professional animal care providers may experience when providing end-of-life care. Last, the obtained knowledge can help to understand what support could be provided to veterinarians and veterinary nurses to navigate situations that include ethical problems and dilemmas. To achieve these purposes, the following question is central in this study: how do veterinarians' and veterinary nurses' experiences, values, and beliefs influence their perception and execution of 'good practices' in providing animal hospice and palliative care?

Research method

Study design

The study design will be exploratory by nature. Empirical knowledge of the concept of normative professionalism among veterinarians and veterinary nurses within animal hospice and palliative care is limited. In this study we propose a mixed-method approach to investigate the research subject (the professional), aiming for an in-depth exploration. The mixed method approach ensures data triangulation by making use of three research methods: interviews, observations and a literature study (Patton, 1999). Insights from the literature study will form the basis for developing a part of the interviews (see section Semi-structured interviews).

First of all, in-depth semi-structured interviews will be used. Interviews enable the exploration of themes that are personal and sensitive. Moreover, interviews are used to research participants' experiences and the meanings they attribute to them (Tong *et al*., 2007). Besides in-depth semi-structured interviews, observations will be embedded. Observations can be used to study social phenomena in their natural setting (Lopez and Whitehead, 2013). By combining these research methods, the main pitfalls of interviews and observations are addressed: the potential for socially desirable answers during interviews and the limitation of reflecting on the situation during observations. As a result, an in-depth understanding of the phenomena can be reached.

Participants

To explore the research question, the following inclusion criteria for participant recruitment are determined: veterinarians and veterinary nurses working in general practice in the Netherlands, providing palliative care or hospice care. These two types of professionals are chosen as both are involved in providing palliative and/or hospice care, however, the kind of involvement in the care differs. Whereas veterinarians are predominantly engaged in determining the type of care required, veterinary nurses are more often involved in providing the care itself or supporting the caregiver in giving the care. Consequently, differences may be expected in their experiences, values, and beliefs regarding 'good practices' in animal hospice and palliative care.

Aiming to discover a diversity of responses and potential patterns in the data, the following criteria will be used to purposefully select eligible participants: (1) variety in years of working experience; (2) geographically spread throughout the Netherlands; and (3) employed in different general practices, except for cases where a veterinarian and a veterinary nurse working at the same practice. Eligible participants will be approached by email, for face-to-face interviews and workplace observations. The number of participants will be based on data saturation, i.e. when no new information is discovered.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Semi-structured interviews

The study encompasses two semi-structured interviews per participant. At the start of the study, a two-part interview will focus on the general experiences, values, and beliefs of veterinarians and veterinary nurses regarding 'good practices' in providing animal hospice and palliative care. First of all, vignettes will be presented to the participants. Vignettes, also described as fictional cases, are a common qualitative method to research attitudes, perceptions, beliefs and norms of participants about a sensitive topic (Hughes and Huby, 2002). The vignettes will invite participants to reflect on the presented case, exploring how different considerations are relevant in their perspective on the case.

To develop the vignettes, existing literature in the field of end-of-life decision-making as well as animal hospice and palliative care will be used. In addition, vignettes concerning palliative and hospice care in human medicine will be explored when constructing the fictional cases (van Delden *et al*., 2011). Once the vignettes are developed, pilot interviews with three representatives of the target participants will be held to evaluate the vignettes. Based on the feedback about the formulation and accuracy the vignettes will be adjusted to come to a final version that will be used during the interviews.

Next to the vignettes, participants will be asked to share two situations related to animal hospice or palliative care: one situation in which their experiences, values, and beliefs affected their professional position in a positive manner and one situation where they were confronted with a dilemma because of their experiences, values, and beliefs. By sharing these narratives, participants provide insight into how the participants experience the effect of their experiences, values, and beliefs on their perceptions of 'good practices' and their professional behaviour.

In addition to the interview conducted at the start of this study, another interview will be held as a follow-up to the observations. The main purpose of this interview is to specifically reflect on the situations during the observations. This reflection will focus, on the one hand, on how the professionals' perspective of 'good practice' relates to their practice experience, and on the other hand, on the potential problems or dilemmas that they may experience as a result.

Observations

As mentioned, observations can be used to study social phenomena in their natural setting (Lopez and Whitehead, 2013). In this study, the aim of the observations is, as with the interviews, to obtain information on how the experiences, values, and beliefs of veterinarians and veterinary nurses influence their perception and execution of 'good practices' in providing animal hospice and palliative care. Therefore, veterinarians and veterinary nurses will be observed during their consultations in practice. Important criteria for the selected consultations are that (1) the animal patient receives palliative or hospice care; (2) the provided care is discussed during the consultation; (3) the animal caregiver(s) consent to the observation; and (4) the interaction between the veterinarian/veterinary nurse and animal caregiver(s) is expected to occur at least two more times in the coming three to six months. Important to note is that participating animal caregivers will be informed about the research and the research aims.

For this study, a 'complete observer' setup is chosen (Lopez and Whitehead, 2013). In this type of observation, the observer does not participate in the interaction with the participants but solely observes (Lopez and Whitehead, 2013). In practice, this means that the observer is in the room during the consultation. During the consultation, there is no interaction between the observer, the veterinarian/veterinary nurse and the animal caregiver(s). In total, three consultations per participant will be observed.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

In addition to these observations, permission is asked to audio record the consultation for data analysis. Audio recording is preferred over video recording as the latter may create an unsafe environment and influence the natural character desired for observations. If a participant objects to audio recording, this recording will be omitted.

During the observations, the observer will focus on the veterinarian/veterinary nurse's verbal and non-verbal communication. Regarding verbal communication, the focus will be on how the veterinarian/veterinary nurse discusses their experiences, values, and beliefs regarding end-of-life care in general or concerning the current situation. Additionally, any questions from the veterinarian/veterinary nurse towards the animal caregiver's experiences, values, and beliefs on end-of-life care will be observed. Regarding non-verbal communication, the veterinarian/veterinary nurse's gestures and mimics will be observed as well as those of the caregiver.

Conclusion

The current paper proposes a mixed-method approach to explore the concept of normative professionalism among veterinarians and veterinary nurses involved in animal hospice and palliative care. By exploring this concept within veterinary practice, this planned study aims to: (1) stimulate reflection with both professions on ideas of 'good practice' within animal hospice and palliative care; (2) create a better understanding of potential ethical problems and dilemmas professional animal care providers may experience when providing end-of-life care; and (3) provide insight into the kind of support that could be provided to professional animal care providers in navigating in situations that include ethical problems and dilemmas.

References

August, K. (2023). Balancing efficacy of treatments against burdens of care. In Shanan, A., Pierce, J. and Shearer, T. (eds) Hospice and palliative care for companion animals: Principles and practice. Wiley, Chichester, pp. 62–75.

Bakker, C. and Coppoolse, R. (2022). Op zoek naar de ziel van de professional: Levensbeschouwelijke vorming in beroepsopleiding en professionalisering. Hogeschool Utrecht, Utreecht.

Downing, R., Adams, V.H. and McClenaghan, A.P. (2011). Comfort, hygiene, and safety in veterinary palliative care and hospice. Veterinary Clinics: Small Animal Practice, 41(3), 619–634.

Hughes, R. and Huby, M. (2002). The application of vignettes in social and nursing research. Journal of Advanced Nursing, 37(4), 382–386. DOI: 10.1046/j.1365-2648.2002.02100.x

Lopez, V. and Whitehead, D. (2013). Sampling data and data collection in qualitative research. In Nursing and midwifery research: Methods and appraisal for evidence-based practice, Elsevier Mosby, Maryland Heights, MO, pp. 123–140.

Morris, P. (2012). Blue juice: euthanasia in veterinary medicine. Temple University Press, Philadelphia, PA.

Patton, M.Q. (1999). Enhancing the quality and credibility of qualitative analysis. Health Service Research, 34(5 Pt 2), 1189–1208.

Selter, F., Persson, K., Risse, J., Kunzmann, P. and Neitzke, G. (2022). Dying like a dog: the convergence of concepts of a good death in human and veterinary medicine. Medicine, Health Care and Philosophy, 25(1), 73–86.

Shanan, A. and Shearer, T. (2023). What is animal hospice and palliative care? In Shanan, A., Pierce, J. and Shearer, T. (eds) Hospice and palliative care for companion animals: Principles and practice. Wiley, Chichester, pp. 6–15.

Springer, S. and Flammer, S.A. (2021). Shifting from 'cure'to 'care'–theoretical considerations of small animal hospice and palliative care. In Schübel, H. and Wallimann-Helmer, I. (eds), Justice and food security in a changing climate. Wageningen Academic, Wageningen, pp. 242–247.

Tong, A., Sainsbury, P. and Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. International Journal for Quality in Health Care, 19(6), 349–357. DOI: 10.1093/intqhc/mzm042

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

van Delden, J.J.M., van der Heide, A., van de Vathorst, S., Weyers, H. and van Tol, D.G. (2011). Kennis en opvattingen van publiek en professionals over medische besluitvorming en behandeling rond het einde van het leven Het KOPPEL-onderzoek. Available online at https://projecten.zonmw.nl/nl/project/onderzoek-naar-kennis-en-overtuigingen-van-burgers-en-professionals-op-het-gebied-van

Villalobos, A. E. (2011). Assessment and treatment of nonpain conditions in life-limiting disease. The Veterinary Clinics of North America. Small Animal Practice, 41(3), 551–563.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

3.4 Novel technologies and responsibilities

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Animal-centred AI: On the need of value-sensitive innovation in the context of animal production

M.F. Giersberg
Animals in Science and Society, Department Population Health Sciences, Faculty of Veterinary Medicine, Utrecht University, Yalelaan 2, 3584 CM Utrecht, The Netherlands
E-mail: m.f.giersberg@uu.nl

Abstract

Within the current, transformative developments of the agricultural sector, animal welfare plays an important role. Societal acceptance of using animals in food production systems is no longer a given. The present understanding of animal welfare goes beyond a mere prevention of harm and focuses on enabling positive experiences and an overall 'good life'. At the same time, the development and application of Artificial Intelligence (AI)-based methods in animal production is advancing faster than a comprised socio-ethical assessment of these technologies. This approach may favour short-term improvements of certain production variables. However, it is not sustainable in the long-term, for instance if the actual aims of technology use, the responsibilities for achieving these aims and the duty towards the animals subjected to the technologies are unclear. A mismatch between the values implied in the applied AI-based methods and the values implied in people's visions on animals may lead to increased societal concerns and a rejection of technology use in animal production or animal production in general. In this paper, I argue why there is a need to develop and apply AI-based methods which align with people's visions on animals, which enable a 'good life' for animals in food production systems and which support farmers to sustainably transform their production. This includes a shift from monitoring variables that can be monitored with AI-based methods towards monitoring variables that are actually meaningful for (1) implementing people's visions on animals into practice; (2) improving animals' lives; and (3) supporting farmers to meet societal demands regarding animal production. Using AI in a way that is in line with people's values concerning animals can be a major driver for transformative developments in the animal agricultural sector which will contribute to its public acceptance and long-term sustainability. To reach this aim, I propose a collaborative approach involving experts from the fields of animal ethics, ethics of technology, computer science and animal welfare science. Moreover, these efforts can only be successful if partners from the relevant animal industries are already involved in the design-phase of innovations.

Keywords: automatic monitoring, animal welfare, public values, transdisciplinary collaboration

Introduction

The agricultural sector is facing major challenges, such as climate change, limited natural resources and biodiversity loss. As a response to these challenges, several transformative developments are currently taking place, including a shift towards more circular food production systems. Within these developments, animal welfare plays an important role, since societal acceptance of using animals in food production systems no longer depends on economic, environmental or public health criteria only (Kanis *et al*., 2003). At the same time, the development of AI-based methods in animal agriculture is outpacing the socio-ethical assessment of these technologies. While AI-based methods could lead the way in meeting the increasing demand for animal welfare monitoring, they also come with their own challenges (e.g. Tuyttens *et al*., 2022).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Adopting a welfarist perspective, I first argue why the currently parallel developments of more complex concepts of animal welfare and more advanced technologies in animal agriculture need to be reconciled in order to facilitate a transition towards humane livestock farming through meaningful, animal-centred welfare monitoring. Second, I elucidate the assumptions and scenarios on which my argument is based. I close by proposing a collaborative approach that involves relevant stakeholders right from the design-phase of innovations to realise animal-centred, value-sensitive AI methods for animal agriculture.

Two parallel developments in animal agriculture

The growing emphasis on animal welfare in animal agriculture is accompanied by the adoption of more diverse and complex concepts of animal welfare in academia and society (e.g. Arndt *et al*., 2022; Weary and Robbins, 2019). Recent initiatives like 'Dierwaardige veehouderij' (humane livestock farming) on a national level in the Netherlands (RDA, 2021) and 'End the cage age' on a European level (Rodenburg *et al*., 2020), illustrate that the present understanding of animal welfare goes beyond a mere prevention of harm. What these novel views on animal welfare have in common is that they focus on enabling positive states and experiences (Mellor, 2015) and an overall 'good life' for animals in food production systems (Edgar *et al*., 2013).

These developments make animal welfare monitoring in practice increasingly important but also increasingly challenging. Important because society demands that the level of animal welfare increases and that academic and public perspectives on animal welfare are realised in the field. As animal welfare is not directly reflected in the characteristics or the quality of animal products, it is essential to assess how an animal is faring during its lifetime. Animal welfare monitoring is therefore the basis for all public information strategies, such as labels or certification schemes, regardless of whether these rely on direct consumer control or trust. Animal welfare monitoring is also in the producers' interest as it allows them to intervene in time, to adapt their management strategies and to check the effects of these adaptations. Finally, animal welfare monitoring is the only way of 'asking' the animals themselves how they experience their situation. This knowledge about animal experiences and conditions is the basis for developing and implementing meaningful strategies to improve animal welfare in practice. What makes animal welfare monitoring challenging from this more complex perspective on animals in food production systems, is that it requires more sophisticated and more frequent assessments. Routinely collected indicators, such as mortality rates or antimicrobial use do not provide sufficient information on how an animal experiences its living conditions and is able to adapt to them.

By exceeding human observing capacities in terms of accuracy and continuity, AI-based methods could be a promising step towards a novel monitoring approach that accounts for more complex concepts of animal welfare. Indeed, such technologies are emerging rapidly in the field of animal agriculture, and their proponents promise, in addition to various other benefits, an improvement of animal welfare (Vranken and Berckmans, 2017). However, these two developments — the adoption of complex concepts of animal welfare and the application of AI-based methods in animal agriculture – are parallel phenomena rather than a concerted initiative to improve the living conditions for animals in food production systems. On the one hand, initiatives like 'Dierwaardige veehouderij' and 'End the cage age' correspond to several aspects of people's visions on animals, and thus pave the way for a transition towards humane livestock farming. At the same time, these initiatives tend to ignore the technological advances emerging in the sector. On the other hand, the development of AI-based methods in animal agriculture is advancing faster than a comprised socio-ethical assessment of these technologies. This tension is not sustainable in the long-term, for instance if the actual aims of technology use, the responsibilities for achieving these aims and the duty towards the animals subjected to the technologies are unclear. A mismatch between the values implied in the applied AI-based methods and the values implied in

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

people's visions on animals may lead to increased societal concerns or even a rejection of technology use in animal agriculture or animal agriculture in general.

To make full use of the potential of AI-based technologies for animal welfare monitoring in a sustainable way, they must be responsive to publicly shared views on concepts of animal welfare. To develop and apply such technologies, we need to better understand the underlying values of scientific animal welfare concepts and explore ways to implement these values into the proposed AI-based monitoring solutions. For this, we do not need to start from scratch but can build on recent innovations, for instance regarding computer vison- or sensor-based animal behaviour monitoring (e,.g. Stygar *et al*., 2021). These existing technologies offer unique opportunities for analysing their implicit values. Are the behaviours monitored for instance indicators for the fulfilment of species-typical desires, such as foraging? In this way, existing technologies can serve as building blocks for an integration with animal welfare concepts. Using AI in a way that is in line with people's values concerning animals can be a major driver for transformative developments in the animal agriculture sector which will contribute to its public acceptance and long-term sustainability.

Three assumptions in the context of animals and AI-based technologies

My argument is based on the following assumptions and scenarios. First, animals will be part of future food systems. It is beyond question that the per capita consumption of animal proteins must be radically reduced to be considered sustainable. The urgent societal goals for the agricultural sector to be future-proof include a transition towards circular and climate-neutral food production systems. Within these systems, animals play an important role. This is due to their ability to convert leftovers from the food industry and sources of raw fibre that are not suitable for human consumption into nutritious, high-quality proteins. Second, animal welfare is important and a goal in itself. Animals in food production systems are more than roughage or leftover converting units. They are recognized as sentient beings who can interact and build relationships with other animals and humans. Therefore, it becomes increasingly important to provide animals with the capacities, the abilities and the opportunities to adapt to their social and physical environment in a way that they themselves experience as rewarding. Finally, AI-based technologies have the potential to transform animal welfare monitoring. As animals lack direct self-reporting capacities, their conditions and experiences can only be assessed by using (behavioural-) indicators. Complex concepts of animal welfare require more detailed indicators and more sophisticated methods to monitor these in order to ensure that animals are leading a 'good life' in practice. Deployed properly, AI-based technologies can exceed human observing capacities in terms of accuracy and continuity. These technologies make it possible to collect, analyse and process large amounts of information on animals over long periods of time without binding human labour.

It should be noted that adopting alternative assumptions or scenarios will obviously lead to different conclusions regarding the use of AI-based technologies for animals. If for instance future food systems will be animal free, AI-based welfare monitoring systems will be obsolete, at least in the context of farm animals. Similarly, if animal welfare was not important and at most an instrumental goal, there would be no interest in an AI-based animal welfare monitoring system, as it does not directly increase production performance or product quality.

One approach to realise animal-centred AI in animal agriculture

As argued above, the adoption of complex concepts of animal welfare makes a radical chance in animal welfare monitoring practices inevitable. In terms of accuracy, reliability and continuity of data collection and analysis, only AI-based technologies have the potential to meet the demands of these novel monitoring approaches. However, if current developments continue and AI methods are mainly

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

used for production-oriented workflows, neglecting important societal values regarding animals, societal concerns will increase and technology use in animal agriculture and animal agriculture in general will be rejected. There needs to be a shift from monitoring variables that can be monitored with AI-based methods towards monitoring variables that are actually meaningful for (1) implementing people's visions on animals into practice; (2) improving animals' lives; and (3) supporting farmers to meet societal demands regarding humane livestock farming. Initiating this shift requires the expertise of disparate academic fields, such as animal ethics, ethics of technology, computer science and animal welfare science. To ensure that AI-based monitoring technologies are socially robust and offer real solutions to the challenges stakeholders face in practice, it is essential to also involve partners from industry and public organisations from the start.

The monitoring of animal welfare is more than just a technical challenge. As normative choices are inevitable in the context of animal welfare, it is important to make them as explicit as possible, to discuss them with relevant stakeholders and to analyse them through the animal welfare ethics literature. Traditional approaches in animal ethics focus on individual animals, whereas AI-based methods may also or only be relevant on a group or a population level. Traditional approaches also tend to centre on welfare or rights, whereas with AI for animals, questions of care and responsibility may become more prominent. Therefore, building blocks of an animal ethics that can deal with the dynamics and broad range of ethical dimensions of AI in the context of animal agriculture need to be defined. In addition, approaches of animal ethics need to directly interact and be compatible with insights from ethics of technology, which is currently still being neglected. One possibility of integration would be to use the Design for Values framework (Kroes and van de Poel, 2015) to translate people's values regarding animals and animal welfare into design specifications for AI-based animal welfare monitoring technologies. The design requirements need to be specified in a way that they operationalise the overall aim of creating AI-based methods which enable animals to lead a 'good life' and support farmers to sustainably transform their production. These considerations should serve as guidance for the practical development of AI-based technologies for animal welfare monitoring.

For the practical development of AI-based technologies, expertise from the fields of computer science and animal welfare science is necessary. This includes knowledge on defining soft- and hardware requirements, on establishing a data pipeline and on the biological relevance of certain animal welfare indicators. Obviously, technologies developed in this way need to be used and valued by farmers and their advisors, and they need to act based on the systems' outputs. Therefore, farmers and their advisors need to know how to use the system and how it benefits their animals and their business. To realise this, farmers should be involved in the design-phase of novel AI-based technologies, for instance by inviting them to training workshops. These trainings should not be limited to the one-sided sending of information by the technology developers or providers, but should be focussed on moments of reflection in which farmers can contribute first experiences with for instance the user friendliness of the technology. The technology developers should use this input to further advance and improve the AI-based monitoring technologies and thus encourage their broader adoption.

To ultimately mitigate societal concerns about animal agriculture and technology use by implementing AI-based methods for animal welfare monitoring which are coherent with people's values, society needs to know about these technologies and value them. This can be realised — at least for a group of people from the broader society — by organising expedition activities on collaborating farms. During these activities, people explore the technologies in an interactive way. They may for instance get the chance to experiment with parts of the technology, such as trying out activity sensors on themselves. Through this activity, people can learn about the practical functions of the technology, but also take the perspective of the animals for which it is developed. This is a starting point for reflection on the values implemented in AI-based technologies for animal welfare monitoring. In order to communicate the use of AI-based

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

monitoring technologies to the general public, it can be indicated on the packaging of animal products, as for instance the use of green energy in agriculture is currently explained on milk packages of some companies. In the long-term, the use of the monitoring technologies can also be linked to established labels that consumers trust.

Collaboration among these diverse stakeholders in research projects or other initiatives does not happen spontaneously. If we take transdisciplinary collaboration seriously, additional efforts are needed to develop integrated knowledge from science and society, which has the potential to bring about change and real societal impact. What is needed is a strong facilitation programme to ensure an integration of knowledge and methods from the different disciplines and branches involved. This integration should be understood as mutual learning moments, which means that academic partners should not only present their initial findings to other stakeholders and ask for their feedback, but that reliable and socially robust knowledge is created together. These mutual learning moments are important, as they allow for a 'reality-check' of assumptions and results and also enable to take stakeholder experiences seriously and integrate them into further efforts of development and innovation.

Conclusions

In this paper, I argued that the currently parallel adoption of more complex concepts of animal welfare in science and society and the development of advanced AI-based technologies in animal agriculture need to be reconciled in order to facilitate a transition towards humane livestock farming through meaningful, animal-centred welfare monitoring. I further explicated the assumptions and scenarios which underlie my argument. In practice this implies that a) the development of AI-based technologies for animal welfare monitoring should be characterised by a strong theoretical underpinning and a close interaction with agricultural practice and society, b) the expertise of various academic fields, industries and public organisations is necessary to achieve this, and c) continuous, thorough facilitation is essential to establish mutual trust and collaboration among a diverse group of stakeholders.

Acknowledgement

I would like to thank the AI4GoodLife consortium for valuable previous discussions on this topic.

References

Arndt, S.S., Goerlich, V.C. and van der Staay, F.J. (2022). A dynamic concept of animal welfare: The role of appetitive and adverse internal and external factors and the animal's ability to adapt to them. Frontiers in Animal Science, 3, 1–21. DOI: 10.3389/fanim.2022.908513

Edgar, J.L., Mullan, S.M., Pritchard, J.C., Mcfarlane, U.J.C. and Main, D.C.J. (2013). Towards a 'good life' for farm animals: Development of a resource tier framework to achieve positive welfare for laying hens. Animals, 3(3), 584–605. DOI: 10.3390/ani3030584

Kanis, E., Groen, A.B.F. and De Greef, K.H. (2003). Societal concerns about pork and pork production and their relationships to the production system. Journal of Agricultural and Environmental Ethics, 16(2), 137–162. DOI: 10.1023/A:1022985913847

Kroes, P. and van de Poel, I. (2015). Design for values and the definition, specification, and operationalization of values. In Handbook of ethics, values, and technological design, Springer, Berlin, pp. 151–178. DOI: 10.1007/978-94-007-6970-0_11

Mellor, D.J. (2015). Positive animal welfare states and reference standards for welfare assessment. New Zealand Veterinary Journal, 63(1), 17–23. DOI: 10.1080/00480169.2014.926802

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

RDA. (2021). Dierwaardige veehouderij. Available online at https://www.rda.nl/binaries/raad-voor-dierenaangelegenheden/documenten/zienswijzen/2021/11/18/zienswijze-dierwaardige-veehouderij/RDA+2021.076+Dierwaardige+veehouderij+DEF.pdf

Rodenburg, T.B., van Gerwen, M.A.A.M., Meijer, E., Tobias, T.J., Giersberg, M.F., Goerlich-Jansson, V.C., Nordquist, R.E., Meijboom, F.L.B. and Arndt, S.S. (2020). End the cage age: Looking for alternatives Overview of alternatives to cage housing and the impact on animal welfare and other aspects of sustainability. Policy Department for Citizens' Rights and Constitutional Affairs Directorate-General for Internal Pol (Issue November). DOI: 10.2861/77801

Stygar, A.H., Gómez, Y., Berteselli, G.V., Dalla Costa, E., Canali, E., Niemi, J.K., Llonch, P. and Pastell, M. (2021). A systematic review on commercially available and validated sensor technologies for welfare assessment of dairy cattle. Frontiers in Veterinary Science, 8, 1–15. DOI: 10.3389/fvets.2021.634338

Tuyttens, F.A.M., Molento, C.F.M. and Benaissa, S. (2022). Twelve threats of precision livestock farming (PLF) for animal welfare. Frontiers in Veterinary Science, 9, 1–12. DOI: 10.3389/fvets.2022.889623

Vranken, E. and Berckmans, D. (2017). Precision livestock farming for pigs. Animal Frontiers, 7(1), 32–37. DOI: 10.2527/af.2017.0106

Weary, D. M., and Robbins, J. A. (2019). Understanding the multiple conceptions of animal welfare. Animal Welfare, 28(1), 33–40. DOI: 10.7120/09627286.28.1.033

Franck Meijboom and Patrick Bos, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Animal pain as a matter of technology: Ethical aspects of using automated pain detection for farmed animals

L.N. Bossert[1] and M. Ryan[2]
[1]University of Vienna, Universitätsstraße 7, 1001 Vienna, Austria; [2]Wageningen University and Research, Droevendaalsesteeg 4, 6708 PB Wageningen, The Netherlands

Abstract

Artificial intelligence (AI) applications are increasingly influential across various socio-ecological domains, including agriculture, where ethical concerns are paramount. One critical area involves using AI for automated pain detection (APD) in farmed animals, a technology aimed at supposedly improving animal welfare by identifying pain through methods such as facial recognition. This short paper addresses the ethical implications of APD, noting its current use and potential expansion in agriculture. Despite its promise, APD's effectiveness and validity remain contentious, with significant ethical issues stemming from data quality, algorithm reliability, and the deep ties between APD development and the animal agriculture industry. Moreover, fundamental philosophical questions about the nature of pain and the limitations of detecting it automatically pose intrinsic ethical challenges. These include the risk of oversimplifying animal welfare. The paper calls for comprehensive ethical evaluations of APD technologies before implementing them increasingly in agriculture.

Keywords: animals, animal agriculture, artificial intelligence

Introduction

Artificial intelligence (AI) spans many different fields of application, AI-based modelling, inferencing, and decision-making will have a major impact across all socio-ecological domains (e.g., agriculture, energy, transport, and health). At the same time, AI comes with various ethical issues, which has resulted in many different operationalisation and regulation efforts. Despite the (potentially enormous) impact AI will have on all socio-ecological domains, the discussion of the impact of AI on the nonhuman world is still underexplored – in the ever-growing field of AI ethics, as well as in sustainability and animal ethics. This under-exploration may prove catastrophic to nonhuman animals, ecosystems, and the environment. AI technologies are already having a massive impact on nonhuman animals worldwide, and their importance will continue to grow in the future. In this short paper, we address a particular use of AI on nonhuman animals, which is being developed for use in the food and agricultural sectors, namely, the ethical impacts of using AI for automated pain detection (APD) in farmed animals.

APD technologies are already used for certain animal species in agricultural practice (McLennan and Mahmoud, 2019; Neethirajan, 2021), with animal facial recognition being the most common method (Roberts, 2023). Note that these technologies are also increasingly used in companion animals (Feighelstein *et al*., 2022, 2023), e.g., in connection with so-called wearables for companion animals that constantly measure various body characteristics to derive if the nonhuman animal is (presumably) feeling well or in pain (Leininger, 2024). While these applications of APD are also interesting and important to analyse from an ethical perspective, the focus of this paper will be on the use of APD on farmed animals. Despite our focus on the use of APD on farmed animals, many of the same issues that arise from our research overlap with the use of APD in non-farmed animals as well (cf. Coghlan and Quinn (2022) for ethical aspects). Despite the overlap of more fundamental ethical questions regarding nonhuman

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

animals, we nevertheless think it is worth discussing it separately because the socio-economical contexts of farmed and companion animals are very different.

APD technologies are promoted as having great potential to improve animal welfare in the context of animal agriculture. However, the effectiveness and validity of these technologies, regarding animal pain and welfare, are still relatively untested and debatable (DeSario *et al*., 2023; Werner *et al*., 2022). Furthermore, the use of APD is also accompanied by many ethical issues (see below). In this short paper, we examine various ethical aspects of APD technologies. Therefore, we first clarify which premises and assumptions we build on when discussing the topic (see Animals count morally: Premises we build on). We then briefly touch upon the more philosophical questions linked to the automated detection of pain (see The normativity of pain), such as if this endeavour is at all possible in any meaningful sense of feeling pain. We think it is essential to keep them in mind when discussing APD on a more application-focused level, among other reasons because they are linked to the actual validity and effectiveness of using APD. Afterwards, we introduce and discuss different ethical challenges of applying APD technologies in the context of animal agriculture (see Ethical aspects in the context of farmed animals), such as, among others, the effectiveness of the technology (linked to data and algorithm quality) and the close linkage of technology research and development to the animal agricultural industry. We conclude by providing a first step on how such technologies could be responsibly used, and whether they are an ethically sound innovation for the agricultural context. In so doing, we discuss important ethical issues of a currently ever-increasing technology application while also addressing a blind — or at least highly underexplored — spot in AI and animal ethics.

Animals count morally: Premises we build on

In this short paper, we build upon the assumption that nonhuman animals count morally and therefore must be included in ethical evaluations of actions and social practices, such as technology use. Including nonhuman animals in AI ethics is relevant insofar as (at least sentient)[5] animals have interests that should not be ignored in ethical technology assessments when they are affected by the technological system. Failure to consider their interests leads to an incomplete consideration of the interests of those affected. Note that an important line of reasoning in animal ethics argues that taking animals interests seriously must lead to not using them within agriculture anymore, thereby making the discussion about a responsible use of APD technologies within this context obsolete. While we are sympathetic to this view, we nevertheless think it makes sense to discuss the ethical challenges of APD in the animal agricultural context, as the technology is currently applied on farmed animals. Thereby it impacts their lives and wellbeing which is of moral significance.

Further, we build on normative concepts of harm and wellbeing — both closely related to pain, as pain often harms individuals and sets back their wellbeing —, which are normatively demanding in a sense that they go beyond an understanding of harming or of wellbeing that is only linked to what is measurable. There are, of course, aspects important for wellbeing, or for reducing harm, but are very difficult to measure, e.g., existing relationships to other individuals. Only linking harm or wellbeing to measurable units seriously risks perpetuating a simplified perspective on animal wellbeing or harm to animals (Bossert, 2023). While we acknowledge the great importance of measuring various body characteristics to assess the wellbeing, and harm to, individuals; we propose that this type of approach is limiting and needs to be supplemented with a relational approach. Therefore, our understanding of

[5] Sentience is seen as a prerequisite for having interests. Drawing the line between sentient and non-sentient animals is notoriously difficult and needs to be supported by scientific research. While there is agreement that at least all vertebrate animals are sentient, it is controversially discussed for cephalopods (such as octopuses and squids), insects and crustaceans (Crump et al., 2022; Elwood, 2011: pp. 175–184).

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

wellbeing and harm is closely linked to empirical research on animal wellbeing and harm (for many cf. Fraser 2008); but it goes beyond a pure focus on empirical studies.

Philosophy and ethics of using automated pain detection

The normativity of pain

The use of APD technologies on humans and nonhuman animals raises highly controversial philosophical questions regarding the normativity of pain and if it is at all possible to detect pain automatically. Thomas Nagel's prominent article 'What Is It Like to Be a Bat?' (1974) opened the doors for discussing the subjectivity of individuals' mental states. Nagel argued that attempts to explain consciousness by objective, reductionist means are undermined by the subjective nature of consciousness. According to him, consciousness cannot be fully explained by ignoring the subjective character of experiences, and he argues that every subjective experience relates to a 'single point of view', so that no conscious experience can be seen as 'objective'.

In the context of the paper's topic, it follows that making objective statements about pain is difficult, if not impossible, since pain is a particular mental state and very subjective. If we, as fellow humans, are unable to make substantial claims about how a certain mental state (pain) feels for a fellow human, then automated pain detection seems not to be possible in any meaningful sense. Nagel's point of view has been opposed (e.g., Dennett 1991), and it is not the goal of this short paper to take a stand on that complex discussion. We nevertheless think it is essential to keep this discussion in mind when debating ethical issues of APD because these technologies are accompanied by the risk of taking a (too) reductionist perspective on the wellbeing of other individuals. When focusing on nonhuman animals only (for APD in humans, cf. for many Cascella et al. 2023) other questions exist that are more philosophical (rather than ethical) in nature. These relate to the difficulty of interspecies comparability, species specifics, and the need to be critical of scientific-empirical research results that propose to be objective but implicitly build on normative assumptions.

Interspecies comparability refers to the discussion already mentioned. While Nagel discusses interspecies comparability (regarding the bat's use of echolocation that is not accessible for us humans), the discussion mainly refers to the difficulty of comparing mental states between different humans. If having to compare between different species, it becomes even more difficult. If humans develop and program the algorithms to assess other animals' pain, are there not too many obstacles for such an endeavour to work properly?

Relevant species specifics are, e.g., that certain individuals of certain animal species are evolved to, if possible, never reveal their pain because if they do, they reveal themselves as 'easy prey'. This aspect can be seen as analogous to cultural aspects when discussing APD in humans since, within specific human cultures, people are also culturally trained not to reveal pain.

The last aspect relates to the broader debate about the objectivity of scientific research. While scientists often claim that their research results are neutral, many scholars argue that the researcher's worldview is often implicitly embedded in scientific research questions. In the case of animal pain, worldviews may also influence research questions (e.g., if a researcher holds to an animal-human dualism and believes that nonhuman animals can be used for human purposes or if a researcher opposes such a view). Thus, scientific research on animal pain does not reveal 'true states' but often reflects the dominant worldview of the culture in which the research is conducted.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Ethical aspects in the context of farmed animals

The difficulties mentioned above in reliably determining another individual's pain should be kept in mind. They are closely linked to the actual validity and effectiveness of APD in the first place. Additionally, various ethical issues are associated with applying APD technologies to farmed animals. As Fred Roberts (2023: p. 2) highlights regarding facial recognition (that can be replaced by APD): 'Just as with humans, the issues we discuss stem from numerous cause: the way in which data used in facial recognition are obtained, the quality of that data, the quality of the facial recognition algorithms, the technology that is used to obtain the data and reach decisions, and the procedures for making decisions using the data.' We are not able to discuss all these issues here. The ethical aspects we will briefly address here are (1) the effectiveness and validity of the technology (linked to data and algorithm quality); (2) the close connection to the animal agricultural industry; (3) the risk to perpetuate a simplified perspective on animal pain and wellbeing. This is by no means exhaustive, and we invite ethicists and other scholars, as well as politicians and practitioners, to engage further with the topic. To differentiate between challenges that currently exist but can be overcome and challenges inherent to the technology, we split the ethical issues into extrinsic and intrinsic ones.[6]

We first discuss the extrinsic ethical challenges. These include the scarcity of databases. The effectiveness and validity of APD technologies, with respect to animal pain and welfare, is still relatively untested and debatable (DeSario *et al*., 2023; Werner *et al*., 2022). Much depends on the quality of the data and of the algorithms. It is highly important to consider the potential for error and inaccuracy in pain assessment models, because relying on inaccurate models could lead to inappropriate decisions regarding the affected individual. Regarding the underlying data and the algorithms of the APD technologies questions need to be addressed such as who is developing the algorithms with what intentions or who decides on which data to use? Are the best available options being used or the cheapest ones? Is there enough data to address species specificity or even individual specificity? For example, a young animal may experience pain in a different way than a healthy adult animal. Additionally, differences in sex or age require validation across large data sets (DeSario *et al*., 2023). Therefore, it needs to be investigated whether a 'universal' approach can be meaningfully adopted or whether models not only for each species, but for the categories of age and sex within each species need to be developed (DeSario *et al*., 2023).

Another serious ethical issue is the close connection of research and development of APD for farmed animals with the industry that gains profit from farmed animals. This is accompanied by the risk of power influence, as well as the risk of developing technologies which results might be more in the interests of animal agriculture stakeholders than in the interests of the affected farmed animals. The consequences of this connection on the validity and efficacy of APD require much more research and investigation. At this point, we simply want to highlight the existence of this connection and the need to include them in ethical evaluations of APD for farmed animals.

In addition to the extrinsic ethical issues, there are two ethical challenges regarding APDs that are more related to the fundamental question of whether there is a need to limit their use, to which we refer as intrinsic ethical challenges. First, the risk of applying an oversimplified perspective about the pain of others, which could lead to them experiencing a great deal of pain, must be taken seriously. Animal pain

[6] Thanks to an anonymous reviewer for pointing towards this. Also, please note that we do not discuss these issues from the point of view of any specific ethical theory. Consequentialists would evaluate ethical issues in the context of APD in farmed animals differently than care ethicists, and deontologists have a different stand on it as virtue ethicists. This short paper does not aim to investigate the issues from any specific ethical perspective, but to highlight that these ethical challenges exist and need to be considered in AI research, development, and use, as in AI ethics.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

may include facets of pain that are not measurable or not easily measurable. Therefore, a machine trained to recognise only measurable aspects of pain will not recognise these.

Second, APD technologies in animal agriculture leads to an increased automation of this industry. This could be accompanied by an even greater distance between people and the nonhuman animals whose 'products' they consume, which is problematic for different reasons, e.g., because it prevents more respectful human-animal relations, and it distances people from what they eat. One might want to object that it is the goal of APD technologies for farmed animals to prevent them from experiencing pain, thereby demonstrating some 'care' for these animals. Also, one could object that APD, as a form of AI-based 'surveillance' technology, has no interest in hiding the farmed animal's pain and, therefore, could be more honest than human workers. However, as we discussed above, the development and use of APD are closely connected to the industry. In practice, there are various cases of intra-industry documentation of farmed animal mistreatment, but these very rarely have real consequences in favour of the animals (Bülte, 2018). Similar results must be expected if AI-based systems were to reveal that the animals experience pain through the industry's standard practices. It also makes the industry more profitable, while ethical and ecological concerns instead call for a reduction of animal agriculture (Kemmerer, 2015; Weis, 2013) and a shift to more plant-based food systems and agriculture that supports them to be able to address current global crises such as climate change and biodiversity loss (Twine, 2021).

Conclusion

As we discussed here, the philosophical underpinnings of APD regarding the normativity of pain make it challenging to claim if this technology can be used in a responsible way on farmed animals or not. For it being responsible in any meaningful understanding of the term, its effectiveness should be proven. However, regardless of its effectiveness it looks like the technology is going to be used in animal agriculture and its use will rather increase. Therefore, we proposed a — non-exhaustive — number of ethical issues that must be addressed to use APD as responsible as currently possible, such as the quality of the underlying data and algorithms, the necessity that the APD works sensitively regarding species, age, and sex, as well as the risk of perpetuating an oversimplified perspective on animal pain and animal welfare. These ethical issues need to be further considered in science, ethics, and policymaking to spark discussions on this new technology that poses to have a huge impact on the lives and welfare of farmed animals.

References

Bossert, L.N. (2023). Benefitting nonhuman animals with AI: Why going beyond "do no harm" is important. Philosophy and Technology, 36, 57.

Bülte, J. (2018). Zur faktischen Straflosigkeit institutionalisierter Agrarkriminalität. In: Goltdammer's Archiv für Strafrecht, 165, 35–56.

Cascella, M., Schiavo, D., Cuomo, A., Ottaiano, A., Perri, F., Patrone, R., Migliarelli, S., Bignami, E.G., Vittori, A. and Cutugno, F. (2023). Artificial intelligence for automatic pain assessment: research methods and perspectives. Pain Research and Management, 6018736. DOI: 10.1155/2023/6018736

Coghlan, S. and Quinn, T. (2022). Ethics of using artificial intelligence (AI) in veterinary medicine. AI and SOCIETY. DOI: 10.1007/s00146-023-01686-1

Crump, A., Browning, H., Schnell, A., Burn, C. and Birch, J. (2022). Sentience in decapod crustaceans: A general framework and review of the evidence. Animal Sentience, 32(1). DOI: 10.51291/2377-7478.1691

Dennett, D. (1991). Consciousness Explained. Little, Brown and Company, Bosotn, MA.

De Sario ,G., Haider, C., Maita, K., Torres-Guzman, R., Emam, O., Avila, F., Garcia, J., Borna, S., McLeod, C., Bruce, C., Carter, R. and Forte, A. (2023). Using AI to detect pain through facial expressions: A review. Bioengineering, 10(5), 548. DOI: 10.3390/bioengineering10050548.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Elwood, R.W. (2011). Pain and suffering in invertebrates? ILAR Journal, 52(2), 175–184. DOI: 10.1093/ilar.52.2.175.
Feighelstein, M., Shimshoni, I., Finka, L., Luna, S., Mills, D. and Zamansky, A. (2022). Automated recognition of pain in cats. Science 12:9575. DOI: 10.1038/s41598-022-13348-1
Feighelstein, M., Henze, L., Meller, S., Shimshoni, I., Hermoni, B., Berko, B., Twele, F., Schütter, A., Dorn, N., Kästner, S., Finka, L., Luna, S.P.L., Mills, D.S., Volk, H.A. and Zamansky, A. (2023). Explainable automated pain recognition in cats. Scientific Reports, 13, 8973. DOI: 10.1038/s41598-023-35846-6
Fraser, D. (2008). Understanding animal welfare. Acta Veterinaria Scandinavia, 50, S1. Available online at https://actavetscand.biomedcentral.com/articles/10.1186/1751-0147-50-S1-S1 (accessed 4 March 2024)
Kemmerer, L. (2015). Eating earth. Environmental ethics and dietary choice. Oxford University Press, Oxford.
Leininger, M. (2024). Pets and wearable tech. ASPCA pet health insurance. Available online at https://www.aspcapetinsurance.com/resources/pets-and-wearable-tech/ (accessed 4 March 2024)
McLennan, K. and Mahmoud, M. (2019). Development of an automated pain facial expression detection system for sheep (*Ovis aries*). Animals, 9, 196.
Nagel, T. (1974). What is it like to be a bat? The Philosophical Review, 83(4), 435–450. DOI: 10.2307/2183914
Neethirajan, S. (2021). The use of artificial intelligence in assessing affective states in livestock. Frontiers in Veterinary Science, 8, 715261. DOI: 10.3389/fvets.2021.715261
Roberts, F. (2023). Socially responsible facial recognition of animals. AI and Ethics. DOI: 10.1007/s43681-023-00344-y
Twine, R. (2021). Emissions from animal agriculture – 16.5 % is the new minimum figure. Sustainability, 13, 6276.
Weis, T. (2013). The ecological hoofprint. The global burden of industrial livestock. Zed Books, London.
Werner, P., Lopez-Martinez, D., Walter, S., Al-Hamadi, A., Gruss, S. and Picard, R. (2022). Automatic Recognition Methods Supporting Pain Assessment: A Survey. IEEE Transactions on Affective Computing, 13(1). 530–552.

Franck Meijboom and Patrick Bos, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Ethical responsibilities of veterinarians in the context of genetic testing for degenerative myelopathy in dogs

S. Aerts[1,2,], B. Broeckx[3] and S. De Vliegher[2,4]*
[1]Ethology and Animal Welfare Research Group, Ghent University, Heidestraat 19, 9820 Merelbeke, Belgium; [2]IRED, the Institute for Law and Ethics in Veterinary Medicine, Ghent University, Ghent, Belgium; [3]Animal Genetics Lab, Ghent University, Heidestraat 19, 9820 Merelbeke, Belgium; [4]Department of Internal Medicine, Reproduction and Population Medicine, Salisburylaan 133, 9820 Merelbeke, Belgium
** Corresponding author, e-mail: Stef.Aerts@ugent.be*

Abstract

This paper explores the veterinarians' ethical responsibilities when confronted with a pup with a possible complex genetic condition where genetic testing reveals both parents carry the Degenerative Myelopathy (DM) allele. It is based on a case report of a young puppy brought to the attention of vets by the breeders, who are also the current owners.

Beyond the direct care for the clinically diseased puppy, the vets can prioritise the 'no-harm' principle with regard to different stakeholders (current and future owners and future pups) by proposing genetic screening, coherent with the adagium 'primum non nocere'. In this context, this seems the only possible action towards the most important stakeholders for veterinarians, the animals. By explaining the use of genetic testing in responsible dog breeding the vets also adhere to the principle of autonomy (informed consent), in so far as the owners/breeders understand the consequences of possible test results. This also connects to the concept of trustworthiness as the owners cannot claim to be 'lured' into testing the animals. The informed consent, and the vet's primary duty (to care for animals), ethically outweigh the harm to the breeders resulting from the test results on the (economic) value of the pups.

When the test results are known, it seems the only responsibility for the vets is to provide the owners with sufficient information to ensure the proper care for all pups into their adult life, thereby trying to improve their wellbeing (or at least minimize the amount of harm).

Vets may feel it is ethically right to inform the pups future owners of the animals' (possible) genetic heritage. Nevertheless, there are practical and deontological barriers preventing them to do so. On the one hand, they will probably not know who the future owners are, but more importantly, they remain bound to professional confidentiality. Without any immediate threat to the animals' health, veterinarians cannot break this confidentiality, and therefore we do not consider it the responsibility of the veterinarians to inform the future owners.

Introduction

This paper discusses the ethical responsibilities of veterinary practitioners in the context of genetic testing. The exploration is based on a case referral to the University of Ghent (Belgium) veterinary clinic specialised in molecular genetic testing of pets, in particular for the diagnostics of hereditary diseases.

Case description

In this case the referral concerned an allergy-related issue in a pup of a brachycephalic breed. The young puppy was brought to the attention of the university veterinarians by the breeders, who still own the animal. The puppy is destined to be sold to new owners when old enough.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Such allergy cases can be due to a complex genetic condition involving genetic mutations Genetic testing is therefore relevant to identify the proper care for the pup, and it will provide information about the possible health status of litter mates and possible further offspring of the sire and dam.

In this case, the genetic testing revealed that the animal carried a mutation causing Degenerative Myelopathy. As explained by Boeykens et al. (2020), canine degenerative myelopathy (DM) is a late-onset, progressive, neurodegenerative disorder with a fatal outcome, occurring in a vast number of dog breeds across the world. When DM emerges the animal experiences difficulty coordinating its back legs and shows weakness due to nerve issues in the spine. This progresses to complete paralysis of all four limbs and problems in the brainstem. Normally, dogs only begin to suffer from the condition later in life (eight years old, or more), but not every homozygous dog develops the disease (and heterozygous animals do not).This particular case was complicated by two issues. First, only after the sire was found to carry the gene, the dam was tested and found to be a carrier as well. Secondly, and most importantly, the pup brought to the clinic came from an allegedly unplanned litter, but the dam was found to be pregnant again before the test results were available.

Importantly, there is no causal link between the brachycephaly and the mutation. The breeding of brachycephalic dogs certainly presents significant ethical challenges (see e.g. Fawcett *et al*., 2019), but these are independent from (although inextricably entangled with) the issues raised by the discovery of the genetic problems in this dog. Therefore, in this paper we will not discuss these issues, although we acknowledge that in practice veterinarians will have to address both issues simultaneously.

Analysis framework

We identified different human and non-human stakeholders in this case: the pups from the current litter(s), pups from possible future litters, the current and future owners, and the veterinarians. In this paper we focus on the ethical responsibilities of the veterinarians, but we will also touch upon the responsibility of the breeders-owners.

We use the 'four principles approach' or principlism of Beauchamp and Childress (2001) as the analysis framework with its four prima facie principles: non-maleficence, beneficence, justice and respect for autonomy, and – where relevant – we refer to the Veterinary Code of Conduct drafted by the Belgian Federal Council of Veterinarians (Hoge Raad van de Orde der Dierenartsen, 2024)).

The principlist approach emerged from medical ethics and aims to combine different ethical theories in a practical analysis framework, and has been introduced in agricultural and veterinary ethics by Mepham in the 1990s in his Ethical Matrix (Mepham, 1996). In short, the principles could be defined as follows. The non-maleficence principle is an obligation not to inflict evil or harm on others. The principle of beneficence refers to actions for the benefit of others, thus to actively contribute to their welfare. Respect for autonomy is the obligation to value autonomous choices and actions. It refers to self-governance, meaning at minimum being free from paternalist influences and from information deficiency, hindering intentional action and making responsible choices. This clearly needs to be redefined or reinterpreted for use with respect to animals. Finally, respect for justice is the moral demand for a fair access to and distribution of services and goods. It requires that equal cases are treated equally.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Vets' responsibilities before all test results are available

Before any tests

At the time a clinically diseased pup such as the one in this case report enters the clinic, there are more animals to be considered than the pup itself. Indeed, the condition implies a possible genetic background, and therefore the parents and the rest of the litter should also be taken into account. Certainly, the first concern is the welfare of the pup in the direct care of the veterinarians. On could say by taking direct health measures the veterinarians abide by Article 15 of the Code of Conduct, stating that the first duty of a veterinarian is to 'ensure the protection and welfare of the animals', and hereby they cover the non-maleficence and beneficence principles with regard to this pup.

In order to ensure the longer-term welfare by identifying the underlying mechanism for the allergy, genetic screening is relevant. One could do such analysis on the pup that is brought to attention, but if a genetic disorder is present, this will normally have resulted from the genetic background of the parent animals. This means that in such case, not only the allergy-stricken pup should be considered, but also the parents, and current and future siblings. By that reasoning, a genetic screening of the sir and dam is most relevant. In the case under scrutiny, this is exactly what was proposed to the animal's owners.

When also future animals are considered, we are looking at the longer-term perspective. In the case under review, the vets have prioritised the 'no-harm' principle with regard to future pups, current and future owners by proposing the screening — coherent with the adagium 'primum non nocere'. Generalising, this seems the correct course of action, and the only possible action towards possible future animals, normally the most important stakeholder for veterinarians (between future pups, current and future owners). Of course, there is some debate whether preventing the future existence of animals is better than an existence with possible suffering, but if the four principles are prioritized in the sequence mentioned above (in which non-maleficence is the first), than preventing the birth of diseased animals is the preferred choice. For the current and future owners too, knowledge about the genetic background of the breeding animals will offer the possibility to avoid bringing diseased animals into existence, thereby avoiding additional costs (to name only the effect they will directly experience).

The principle of autonomy is most readily applicable here in the interaction between the veterinarians and the breeders/owners. It is usually understood in such cases as adherence to informed consent. This is also a deontological duty as outlined in Article 17 para. 2 of the Code of Conduct (Hoge Raad van de Orde der Dierenartsen, 2024). By explaining the relevance of such a test in the context of the case in point, and in responsible dog breeding in general, the vets can leave the decision on the medical course of action with the owners. In so far as the owners understand the consequences of possible test results, one could consider this principle 'covered'. This is also the best way for the veterinarians to remain trustworthy – an elusive concept, extensively discussed by Meijboom *et al.* (2006) — as the owners cannot claim to be 'lured' into testing the animals if they are duly informed.

Looking from the perspective of the veterinarians, their primary duty is towards animals, and by seeking informed consent they have fulfilled their ethical responsibilities. This means that, in our opinion, prioritizing the (future) animals' welfare in combination with informed consent ethically outweigh the harm to the breeders resulting from the test results on the (economic) value of the pups.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

After the DM allele is identified in the sire

The analysis and conclusions with regard to the longer term still applies after the sire's test results become known. Indeed, there is a significant difference between the expected percentage of progeny with a problematic genome when only the sire is affected, compared to the situation in which both parents carry the defective allele. Therefore, also testing the dam is the preferred next step, and by proposing this to the owners, the veterinarians in the proposed case have further fulfilled their responsibilities to the future animals.

With hindsight, having both parents tested simultaneously would have been better in this case. It would not have changed the situation for the first litter, but it may have decreased the likelihood of a second litter.

Vets' responsibilities after all test results are known

When all results are known, it seems the only remaining responsibility for the vets is to provide the owners with sufficient information to ensure the proper care for the pups into their adult life (the referral as well as the rest of the litter), thereby trying to improve their wellbeing (or at least minimize the amount of harm). We would consider this the further application of the beneficence principle — and the application of Article 15 of the Code — to the animals that may (or will) develop symptoms.

As we have stated above, preventing further births of animals carrying the defective allele is a way to prevent additional suffering in the future (a form of non-maleficence). The most effective way of reaching this goal, is to prevent reproduction by two carriers. In the case under review, both sire and dam are carriers, and it appears the owners are not able to prevent unplanned litters. Statistically, in any future litter a significant number of puppies would suffer from DM, and many would carry the defective allele. Preventing reproduction, i.e. to neuter the sire and dam, would be the most effective measure. This is not something veterinarians should do without the consent of the owners. Whatever the result, the vets should at least inform the owners (again) about the statistical percentage (and thus numbers) of animals that may be born with problematic genomes when further breeding occurs, and the potential suffering that may result. By this, they may persuade the owners to have the sire and/or dam neutered.

There is one more party that in involved in this case: the future owners of the puppies. In the case where they acquire one of the animals carrying the defective allele, there is a real risk they will encounter veterinary costs beyond those typical for the breed. The vets originally bringing this case under our attention feel it is ethically right to inform the pups future owners of the animals' (possible) genetic heritage. We concur. All four ethical principles seem better served when the future owners are informed of their puppy's (possible) genetic background. Ideally, of course, this would mean that all puppies too are tested for possible genomic deficiencies.

The autonomy of the potential future owner is only respected when they are informed that (at least the possibility exists that) their puppy carries a defective allele, and may develop problems later in life. When duly informed, they can consent to the responsibility that such a puppy will bring, or they can decline.

This would also be the most just (or fair) approach with regard to the animals. Only when the owners are informed that the animal is likely to develop problems, they can provide the necessary preventive and curative measures. Indeed, it is only just to create the circumstances in which the right care can be given, when this information is available ahead of time.

Franck Meijboom and Patrick Bos, Ethics, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

There is no direct, immediate effect on the wellbeing of the puppies, and it may seem the beneficence principle is not at play in this instance. Nevertheless, it is when the longer term is considered: early knowledge of possible problems in the hands of owners that knowingly consented to provide that better and earlier care will be given, thereby improving the animals' wellbeing.

Finally, non-maleficence. Again, informing future owners prevents people from encountering (medical and other) costs they are not willing (or able) to carry. Although it may not be possible to prevent suffering (some animals will develop problems), additional suffering is avoided when the animals are with people willing to provide the necessary care.

Unfortunately, there are two elements that prevent the veterinarians from informing future owners. The first, and very practical element, is a lack of knowledge. It is relevant to note that — at least under Belgian law — there is no obligation to document hereditary diseases in animal passports. In that situation, the breeder-dog side of the veterinary triangle (see Figure 1) essentially serves as a wall between the vet and the new owners in the diamond-shaped situation that emerges in the current case. It prevents the vets from knowing the new owners. It is clearly impossible to inform people that one does not know.

A second pressing issue, is the legal obligation of professional secrecy. Professional secrecy applies under criminal law under Article 458 of the Belgian Penal Code (Anonymous, 1867): '(...) all other persons who, by virtue of their state or profession, have knowledge of secrets entrusted to them and disclose them except when called upon to appear before a court (...) and, except where the law, decree or ordinance obliges or permits them to disclose those secrets, shall be punished with imprisonment for one to three years and a fine of one hundred euros to one thousand euros or with one of those punishments alone.' This clearly also applies to veterinarians.

This means veterinarians are bound to professional confidentiality. It has been argued that there are situations in which a breach of this confidentiality (Aerts *et al*., 2023) can be ethically defensible, but as there is no immediate threat to the animals' health in the case under review, none of these reasons apply.

It is therefore our opinion that it is the current owners' ethical responsibility to inform future owners about the (possible) condition of the puppies. Whether this is a realistic expectation, is beyond the scope of this paper.

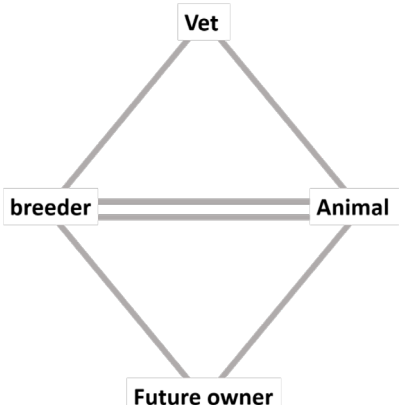


Figure 1. Diamond shape, emerging in the situation where veterinarians are called upon to treat animals that will be sold to a third party. The breeder-animal side of the primary triangle serves as an information wall between the veterinarian and the future owners.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Conclusion

Starting from this case we conclude that there are important ethical responsibilities for veterinarians beyond the care (and interests) of the animal brought to their attention when confronted with a patient that is likely to suffer from a condition that is due to a genomic defect. The most important of these are the responsibilities towards the other animals in the litter, and other future progeny of the parental animals. In our view, the ethical principle of non-maleficence (or "no harm") calls for genetic tests to identify the presence of the defective allele(s) in the parents.

The second most important principle in this case is the principle of autonomy. This plays an important role in the relation with the dogs' owners. When genetic testing and possible further steps (such as neutering) are called for, this can only be done with informed consent from the owners.

Finally, we conclude that important ethical responsibilities remain with the breeders, and not with the veterinarians. Not only are the current owners the party that is able to prevent future litters (e.g. by consenting to neutering), but it is also their duty to inform future owners of the (possible) genomic background of their new animal.

Bibliography

Aerts, S., Burgelman, L., Christiaenssen, P., De Ruyver, C., De Vliegher, S., Geutjens, C., Godfroid, A., Hendrickx, T., Landuyt, C., Moons, C., Van Cauteren, M., and Weyens, P. (2023). Balancing professional obligations and animal welfare: the ethics and legal framework surrounding reporting of animal neglect and abuse by veterinarians in Belgium. In Proceedings Veterinary Ethics Conference. Vienna, 27 Sep 2023–29 Sep 2023, pp. 79–81.

Anonymous (1867). *Strafwetboek (Penal Code)*. June 8, 1867. BS 09-06-1867, p 3133. Available online at www.ejustice.just.fgov.be/eli/wet/1867/06/08/1867060850/justel8

Beauchamp, T.L. and Childress, J.F. (2001). Principles of biomedical ethics, fifth edition. Oxofrd University Press, Oxford.

Boeykens, F., Peelman, L., Bhatti, S. and Broeckx, B.J.G. (2020). Genetic insights in canine degenerative myelopathy. Vlaams Diergeneeskundig Tijdschrift, 89, 253–260.

Fawcett, A., Barrs, V., Awad, M., Child, G., Brunel, L., Mooney, E., Martinez-Taboada, F., McDonald, B. and McGreevy, P. (2019). Consequences and management of canine brachycephaly in veterinary practice: perspectives from Australian veterinarians and veterinary specialists. Animals, 9, 3.

Hoge Raad van de Orde der Dierenartsen. (2024). Code der plichtenleer. Editie 2024. (Deontological Code. Edition 2024). Hoge Raad van de Orde der Dierenartsen, Brussels.

Meijboom, F.L.B., Visak, T. and Brom, F.W.A. (2006). From trust to trustworthiness: why information is not enough in the food sector. Journal of Agricultural and Environmental Ethics, 19, 427–442.

Mepham, B. (1996). A framework for the ethical analysis of novel foods: the ethical matrix. Journal of Agricultural and Environmental Ethics, 12(2), 165–176.

Franck Meijboom and Patrick Pouw, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Change to conserve? Genome editing threatened species

H. Winther and B.K. Myskja*
Norwegian University of Science and Technology – NTNU, Department of Philosophy and Religious Studies, Dragvoll alle 40, 7491 Trondheim, Norway
** Corresponding author, e-mail: hannah.winther@ntnu.no*

Abstract

Genome editing could be used for saving threatened species or even reviving extinct species, preventing or reversing biodiversity loss, for instance by altering their capacities and making them fit a changing climate. This may be considered a paradoxical endeavour: artificially preserving wild species that are considered valuable due to their independence of human intervention. Can our responsibility to ensure the continued existence of threatened species be fulfilled in this paradoxical way? To examine this moral challenge, we take as point of departure Cora Diamond's notion of animals as our *fellow creatures*. The significance of the otherness of animals pointed to by this term opens up a space for a virtue-based analysis of recent projects using genome editing to save threatened species from extinction. In particular, we elaborate on Hursthouse's proposal that wonder and respect could be considered new moral virtues in environmental ethics. Using these virtues as a lens to examine the case of genome editing threatened animals, we bring Hursthouse in dialogue with Iris Murdoch's concept of attention, which is concerned with proper moral perception of reality, and which implies a recognition of the otherness of animals. Changing basic characteristics of wild animals to preserve them as a species means altering that which made wonder and respect appropriate virtues. We conclude with discussing whether these virtues can be expressed by ensuring that interventions considered necessary are as minimally invasive as possible.

Keywords: animal ethics, conservation, de-extinction, virtue ethics

Introduction

In a famous scene in *Jurassic Park*, the mathematician Ian Malcolm takes a stance against the park creator, John Hammond: The genetic experiment of re-creating dinosaurs to live in an entertainment park seems to him morally inconsistent with treating nature with respect and humility: 'Your scientists were so preoccupied with whether or not they could, they didn't stop to think if they should', Dr. Malcolm exclaims.

Although the kind of scenarios that are portrayed in Jurassic Park are not currently on any tables, Dr. Malcolm's urge that we should consider the ethical aspects of using genetic technologies on animals is gaining a new relevance as such applications are becoming reality. A more pressing question than whether we should re-introduce animals that have already gone extinct, however, is whether new genetic tools could and should be used to save species that are currently threatened by extinction (Adams and Redford, 2021).

Using genome editing to save threatened species may be considered a paradoxical undertaking if the reason is that the value of these species is that they are beings independent of humans, as captured in the expressions 'pristine' or 'wild nature'. We intervene in nature to keep it 'untouched', but haven't we by this very act already lost what we aimed to save? As Clare Palmer has put it, facilitated adaptation of threatened species can be understood as a 'loss of wilderness' that is ethically worrying (Palmer, 2016). The aim of this article is to discuss whether we are obliged to intervene to ensure the continued existence of threatened species, and, if so, whether this moral duty can be fulfilled in this paradoxical way.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Our point of departure is the notion of animals as our *fellow creatures* (Diamond, 1978). Central to this understanding is that the concepts of human beings and animals are not simply handed down to us by biology; they are works of moral thought and imagination, derived from human practices (Winther and Myskja, 2023). We propose a virtue ethical reading of Diamond, according to which our treatment of animals should be determined on the basis of what a virtuous treatment of them would look like in different contexts. Diamond suggests virtues like charity, fairness, respect for independence and pity (Diamond, 1978: pp. 474–475). Rosalind Hursthouse, however, argues that when dealing with environmental issues, we ought, in addition to expanding on such established virtues, to consider new ones, and she suggests that 'wonder' and 'respect for nature' would be appropriate (Hursthouse, 2007). Following Hursthouse, we argue that wonder in particular sheds light on the paradox above, because wonder is something we experience towards wild nature in part because it is independent from us. In addition, wonder is a concept that is mobilized, both directly and indirectly, in de-extinction and conservation efforts to defend the use of genetic technologies, since these species might otherwise be lost. A virtuous display of wonder for animals as our fellow creatures involves appreciating their independence from us, which we ought to respect. In the following, we first give a brief overview over the current field of using genomic technologies to save threatened species before we proceed to discuss how the virtues of wonder and respect can address this issue.

Resurrection, conservation, and the role of ethics

Discussions of how we should direct conservation efforts are gaining traction as species go extinct in a pace that is being described as the sixth mass-extinction (Ceballos *et al*., 2015), with the percentage of threatened species amounting to 28% of all species on some accounts (Kaiho, 2022: p. 1) and estimates stating that between 15–40% will effectively be extinct by 2050 as a result of climate change (Thomas, 2013: p. 485). While some species may adapt to these changes on their own, others will need help in order not to disappear (Palmer, 2016: p.234).

Conservation biologists disagree on the purpose of conservation in these contexts. While some argue that we ought to accept the inevitable species extinction and reduce meddling to interventions in other aspects of ecosystems, others argue that habitat preservation is not sufficient to protect species, and that we need more interventionist methods to ensure their survival (Palmer, 2016: p. 234). There are different methods to achieve the resurrection and re-introduction of a species into an environment, including back-breeding, cloning, and genome editing. In this article, we focus on the latter, though in some cases, cloning might be combined with genome editing. This can involve the use of genome editing to alter the capacities of animals, for example by making them fit a changing climate (Campbell and Whittle, 2017; Sherkow and Greely, 2013; Thomas, 2013). In some cases, it is not sufficient with simple mitigation efforts such as feeding or artificial insemination to preserve a species in an environment where the animals have been unable to survive since the causes of their threatened status still exist. One way of doing this is the adaptation of genes in order to increase resilience to climate change (Kosch *et al*., 2021), giving better physiological tolerance against higher temperatures or better resisting diseases (Thomas, 2013: p. 486). Such research is now at beginning stages, with ongoing projects investigating for example how to increase disease fitness in the Australian southern corroboree frog (Kosch et al., 2021: p. 366) or make a malaria-resistant honeycreeper (Samuel *et al*., 2020). In all likelihood, more projects will follow in the years to come. Since assessment of morally acceptable uses of CRISPR should proceed on a case-by-case basis (Winther *et al*.. 2023), the ethical conversation must keep up with this development.

There are various ways in which we can respond to the problem of disappearing animals. One, of course, is to do nothing. Animals have, after all, gone extinct since before human activity had anything to do with it. On the other hand, there is one pragmatic, anthropocentric reason for saying that we ought to save them: Some extinct and many threatened species serve important roles in ecosystems humanity

Franck Meijboom and Patricia Brey (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

rely upon (Kasperbauer, 2017: p. 1). In addition, one can hold that animals have value in themselves, and that we therefore should do what we can to ensure their survival. An even more compelling reason is that our current collective activities are the direct cause of endangering a number of the species now, assuming that we have strong negative duties to prevent harm. If it is in our power to save species directly threatened by climate change and habitat loss caused by collective human actions, we have a strong duty to use any morally acceptable means to do so. There are two problems shared by these three lines of argumentation: The current mass extinction means that we can only save or resurrect a fraction of the species in question. How do we choose which species to prioritize? And is it morally acceptable to change a wild species into a partly human creation — arguably undermining its status as 'wild' — in order to save it? Below, we consider the latter question from a virtue ethical point of view.

Wonder as virtue

Hursthouse has argued that there are two ways in which virtue ethics can be applied to environmental ethics. First, we can try to use the established virtues and vices, such as humility and greed, and ask what these virtues can tell us about how we ought to treat nature (Hursthouse, 2007: pp. 155–156). Considering old virtues and vices in new contexts can give us new understandings of what is involved in them (Hursthouse, 2007: p. 158). This, she holds, is how ethics advances on a virtue ethical account – we revise and reconfigure our understandings of what virtues and vices involve based on situations that may challenge our initial understanding of them. However, Hursthouse also asks whether new virtues could be brought into play. This is suggested on the basis that the reconfiguration of familiar virtues and vices require radical change in our ways of thinking about the natural world, something which could perhaps, Hursthouse proposes, be achieved by introducing a new virtue (Hursthouse, 2007: p. 160). Hursthouse gives two suggestions: 'Respect for nature' (Hursthouse prefers to call it 'being rightly oriented to nature', wishing to avoid deontological implications. We find this to be less problematic today and will use 'respect') and 'being rightly disposed with respect to wonder'. On our reading of Hursthouse, we understand these virtues to be two sides of the same coin, both concerned with a proper attitude to nature.

The virtue of wonder could involve, Hursthouse suggests, 'being disposed to feel wonder the right way, towards the right objects, for the right reasons, to the right degree, on the right occasions, in the right manner, and to act accordingly' (Hursthouse, 2007: p. 161). At a first glance, wonder might seem a strange place to look for a sense of direction on how we should act with regards to nature, particularly when it comes to questions like whether or not we should use genome editing technologies on animals. However, wonder is a particularly relevant emotion to consider precisely in this case, because it sheds light on the paradox mentioned above concerning how we ought to think about the human conservation of animals that are valued in part because of their independence of humans. Wonder, as an emotion, is such a crucial component of reasoning behind both de-extinction and conservation projects (Greely, 2017: p. 35; Minteer, 2015: p. 13). For instance, it has been suggested that the sense of awe and wonder that could come with seeing a revived woolly mammoth could 'increase interest in and optimism about conservation' (Rohwer and Marris, 2018: pp. 138–139). The question is to what extent wonder can be considered a virtue rather than merely a spontaneous emotion.

Liezl van Zyl has argued that wonder can be understood in two different senses: As 'surprise-wonder' and as 'appreciative wonder'. The first one, she writes, is what Kant refers to as *Verwunderung*: our immediate reaction of surprise and amazement when we see something unexpected or new (van Zyl, 2021: p. 77). This is the kind of wonder, we can imagine, one could experience when visiting Australia and happening upon a kangaroo for the first time. Van Zyl contrasts this kind of wonder with a form of wonder she calls 'appreciative wonder'. This is the kind of wonder that does not dissipate as the moment of surprise and novelty wears off (van Zyl, 2021: p. 77). Wonder in this sense, she writes, is what Rachel Carson has

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

in mind when she describes its role in environmental ethics. For Carson, wonder involves the capacity to *see* in a certain way (Moore, 2005), a point we will return to below. Kathleen Moore has pointed out that this involves a kind of 'attitude of openness' that leads a person to search for meaning beyond oneself (Moore, 2005). As Carson puts it: 'I believe that the more clearly we can focus our attention on the wonders and realities of the universe about us, the less taste we will have for destruction' (Moore, 2005: p. 28). Appreciative wonder, then, involves careful attention to and interest in something that has elicited wonder. In this case, van Zyl argues, it does make sense to talk about being rightly disposed with regards to it.

Arguably, something like the virtue of wonder in the second sense van Zyl is proposing can be involved in coming to recognize animals as fellow creatures. For Diamond, this involves a recognition of a fellowship with animals, which is based on our understanding that they, despite sharing with us some often surprising similarities, are also so alien, leading lives that are almost completely different from us. As Diamond puts it, animals are 'beings so like us, so unlike us, so astonishingly capable of being companions of ours and so unfathomably distant' (Diamond, 2008: p. 61). In a sense, it is precisely because they are so close to us that their difference from us elicits awe or wonder. The kind of appreciative wonder van Zyl describes could be understood as involving precisely a recognition of animals as our fellow creatures. Appreciative wonder involves a deeper, more sustained form of attention to that which we may not understand, but sense is important (van Zyl, 2021: p. 81). In the case of animals, their relatedness to us makes this respectful wonder at their 'otherness' even more morally significant, evoking also traditional virtues of charity and pity for the individual animals.

What does this mean for the question of genome editing animals

Having argued that wonder is relevant to environmental ethics and can be thought of as a way of coming to recognize animals as our fellow creatures, a crucial question still remains: What kind of guidance can this recognition give us concerning genome editing of animals to save them from extinction? Van Zyl states that an obvious objection to understanding wonder as a virtue is that it can be misdirected: 'We can feel wonder in response to a beautiful sunset, but remain oblivious to the fact that it was created by air pollution. We can wonder at the complexity and mystery of a termite mound, but in the process of satisfying our curiosity end up destroying it' (van Zyl, 2021: p. 76). Similarly, the fact that wonder motivates the resurrection of extinct species like the woolly mammoth or the dodo, doesn't mean in itself that this is something we should do. Wonder can also be biased in a way contrary to virtue (van Zyl, 2021: p. 80). De-extinction projects tend to prioritize animals that are charismatic or cool (Molhuizen, 2021; Sherkow and Greely, 2013). There are thousands of species still to be discovered and learned about — what conservation efforts should be undertaken for their sake is an even more difficult question to answer. Van Zyl's distinction between surprise-wonder and appreciative wonder is useful to answering these objections. As she correctly argues, wonder in the former sense can hardly be understood as a virtue at all — surprise and fascination as immediate emotions does not in themselves entail any recommendable actions. However, sustaining wonder after the initial reactions wear off requires us to pay attention to animals beyond our immediate fascination. Understanding wonder as a virtue, as we propose following Hursthouse, means paying attention to animals and considering what it means to treat them with respect.

A term that may be fruitfully brought in dialogue with Hursthouse new virtues, is Iris Murdoch's concept of attention. According to Murdoch, attention is a moral faculty that involves considering reality with 'a just and loving gaze' (Murdoch, 2001: p. 33). In other words, it involves seeing reality in a certain way, as Carson describes. Part of this moral faculty involves setting aside our own desires and prejudices ('the fat, relentless ego', as Murdoch terms it), which translated to the case of animals means considering what is required of us to do in respect to them independently of the uses we may have of them, whether it be the

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

roles they play in ecosystems we rely upon or the value we place on not losing them. Crucially, Murdoch brings out the connection between moral perception and action, arguing that 'I can only choose within the world I can see' (Murdoch, 2001: p. 36). Proper attention to reality, which can brought about by wonder, involves recognition of what a respectful treatment of others requires. The question remains, however, what morality requires from us with regards to the survival of threatened species when the act that formerly meant being respectful, namely staying away, only ensures that these species will meet their end, precisely on account of other human activity.

There are several virtue-based reasons for altering our way of life, as well as for engaging in mitigating activities. Here we have considered how wonder, understood as moral attention to nature, can inform our understanding of what it means to treat nature respectfully. What can it mean to intervene in animals' lives to conserve the species, but in such a manner that expresses wonder and respect in the right way? As stated in the introduction, we hold that this question must be answered on a case-by-case basis. Crucial questions to be asked, are what kind of intervention is required, what it will achieve, how it will impact the surrounding ecosystems, and what the alternatives are. Too often, human efforts to conserve species start when the time for alternatives that are not invasive has run out. We hold that there are interventions that perhaps is the virtuous choice for such wicked problems, though this will always be a matter of degree. An example of what we have in mind here is the condor recovery program, which was undertaken in 1987 and involved capturing the remaining 27 Californian condors for a breeding program. After these efforts had proved to be successful, birds were released into the wild again. Today, there are more than 500 condors. Although this program undoubtedly also involved a loss of wilderness, it was a minimal intervention aimed at repairing damages we have caused the planet. In the extreme cases of threatened species required for the continued existence of unique ecosystems, more invasive measures may be appropriate, including genome editing enhancing their disease resilience or adaptation to changing climate. But changing basic characteristics of the animals surrounding us using means like genome editing to preserve them as a species, means that we change and intervene in what elicited our wonder to begin with, namely their otherness. Interfering in these animals' capacities to make them fit into ecosystems they are no longer capable of surviving in, ignores that wilderness hinges on otherness, and that this otherness is diminished with every human intervention in their awe-inspiring form of life. What kind of intervention that is expressive of wonder and respect, must be decided in each particular case. Arguably, the more their continued existence is a human accomplishment, the less likely it is that these interventions should be considered virtuous. In many cases, the virtuous act would be to let the species go extinct.

References

Adams, W.M. and Redford, K.H.. (2021). Editing the wild. Conservation Biology, 35, 1701–1703.

Campbell, I.D. and Whittle, P.M.. (2017). Resurrecting extinct species: Ethics and authenticity. Palgrave Macmillan, Basingstoke.

Ceballos, G., Ehrlich, P.R., Barnosky, A.D., García, A., Pringle, R.M. and Palmer, T.M. (2015). Accelerated modern human-induced species losses: Entering the sixth mass extinction. Environmental Sciences, 1, 1400253.

Diamond, C. (1978). Eating meat and eating people. Philosophy, 53, 465–479.

Diamond, C. (2008). 'The difficulty of reality and the difficulty of philosophy'. In Philosophy & animal life. Columbia University Press, New York, NY, pp. 43–89.

Greely, H.T. (2017). Is de-extinction special?' Hastings Center Report, 47, S30–S36.

Hursthouse, R. (2007). Environmental virtue ethics. In Walker, R.L. and Ivanhoe, P.J. (eds) Working virtue. Virtue ethics and contemporary moral problems. Oxford University Press, New York, NY, pp. 155–172.

Kaiho, K. (2022). Extinction magnitude of animals in the near future. Scientific Reports, 12, 19593.

Kasperbauer, T.J. (2017). Should we bring back the passenger pigeon? The ethics of de-extinction. Ethics, Policy & Environment, 20(1), 1–14.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Kosch, T.A., Waddle, A.W., Cooper, C.A., Zenger, K.R., Garrick, D.J., Berger, L. and Skerratt, L.F. (2021). Genetic approaches for increasing fitness in endangered species. Trends in Ecology and Evolution, 37(4), 332–345.

Minteer, B.A. (2015). The perils of de-extinction. In Jennings, B. (ed.) Minding nature. Center for humans and nature, Libertyville, IL, pp. 11–17.

Molhuizen, T. (2021). Why raise the dead? An empirical analysis on how and why species candidates are chosen for de-extinction projects. Utrecht University, Utrecht.

Moore, K.D. (2005). The truth of the barnacles. Rachel Carson and the moral significance of wonder. Environmental Ethics, 27(3), 265–277.

Murdoch, I. (2001). The idea of perfection. In The sovereigny of good. Routledge, New York, NY, pp. 1–44.

Palmer, C. (2016). Saving species but losing wildness: Should we genetically adapt wild animal species to help them respond to climate change? Midwest Studies in Philosophy, 40(1), 234–251.

Rohwer, Y. and Marris, E. (2018). An analysis of potential ethical justifications for mammoth de-extinction and a call for empirical research. Policy & Environment, 21(1), 127–142.

Samuel, M.D., Liao, W., Atkinson, C.T. and LaPointe, D.A. (2020). Facilitated adaptation for conservation – Can gene editing save Hawaii's endangered birds from climate driven avian malaria? Biological Conservation, 241, 108390.

Sherkow, J.S. and Greely, H.T. (2013). What if extinction is not forever? Science, 340(6128), 32–33.

Thomas, M.A. (2013). Gene tweaking for conservation. Nature, 501, 485–486.

Van Zyl, L. (2021). Wonder and environmental virtue. In Pettigrove, G. and Swanton, C. (eds) Neglected virtues. Routledge, Abingdon, pp. 75–94.

Winther, H., Blix, T., Holm, L., Myhr, A.I. and Myskja, B. (2023). A social and ethical game-changer? An empirical ethics study of CRISPR in the salmon farming industry. Environmental Values, 1–19.

Franck Meijboom and Patrick Baron (eds), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

What should we breed cattle for? Results of Public Engagement with a Democs card game

D. Bruce[1] and A. Bruce[2]
[1]Edinethics Ltd., 1 Peinsoraig, Uig, Isle of Skye IV51 9YD, UK; [2] The University of Edinburgh, Old Surgeons' Hall, High School Yards, Edinburgh EH1 1LZ. UK

Abstract

Selective breeding of livestock has been practised for millennia, but the application of genomic information in the past 40 years has greatly widened the scope of what traits may be bred for. Decisions and directions are generally made by breeders, farmers and the food industry with little input from citizens. As part of an EC BovReg project on advanced cattle genomics we have engaged publics through a specially created Democs card game. Participants were asked how important they considered 5 breeding goals, questions about ethical limits to selection, on resilience and on genome editing, and how much extra they might be willing to pay for dairy or beef products produced from cattle bred for particular goals (disease resistance, reduced methane, animal welfare and resilience). We present some of the findings from playing games, mostly in the UK, Finland and the Netherlands. Resistance to disease was the most frequently cited breeding goal, with both cattle welfare less antibiotic use in livestock, and potential avoidance of anti-microbial resistance in humans among the reasons given. Views varied on the importance of breeding for reduced methane emissions from cattle, with caveats about addressing other sources of climate change, reducing numbers of animals, and possible adverse effects on cows. Many thought it more important to breed for increased resilience against present and future environmental challenges than to breed for elite, potentially less resilient cattle, but some saw a place for both. Productivity was still important factor but not at the expense of animal welfare. People were more willing to pay for meat and dairy products from cattle that were pasture fed and products from healthier animals, and less willing to pay more for products from cattle with reduced methane emissions.

Keywords : Democs, ethics, genomic selection, public engagement

Introduction

Selective breeding of livestock has been practised for millennia, but the application of genomic information in the past 40 years has greatly widened the scope of what traits may be bred for. Decisions and directions are generally made by breeders, farmers and the food industry with little input from citizens. Selective breeding has been seen as relatively unproblematic, compared with genetic modification. A literature review by Coles *et al.* (2015) similarly compared genomics to genetic modification. But the increasing application of biotechnology has led to more ethical questions being raised about selective breeding (Nuffield, 2022). Little research has been published on the ethics of genomics selection, mainly focused on welfare (Mark and Sandøe, 2010). Comparatively little engagement with publics has been done. Naab *et al.* (2021) conducted focus groups in Northern England and found that people were in general more positive about genomic technologies than techniques such as gene editing. Lund *et al.* (2022) also found little evidence of widespread concern around genomic selection. In the EC BovReg Project on advanced cattle genomics, a work package was dedicated to reviewing ethical and societal issues, explored from expert perspective by Kramer and Meijboom (2022) and engaging lay publics by means of a Democs card game, entitled 'Cattle Breeding: What shall we do next?'. Some early results were presented at EurSafe 2022, and we now present the findings from the full number of games.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Method

The Democs card 'game' is a tool for semi-structured small group discussion which uses cards as the medium aimed at informal grassroots groups. It uses different sets of cards to enable people with no previous knowledge to learn about new technologies and discuss their ethical and social implications. The concept was first developed in 2002 has been widely used in numerous games on many issues and in many languages (PlayDecide, 2004). Players select from the cards which issues to discuss and form their own views. Story cards introduce the subject through case studies of people involved. Information Cards provide necessary factual information. Issue Cards present ethical issues and varied viewpoints. The outputs are group opinion statements, written on Cluster Cards, based on the cards the group members have chosen to discuss, and individual votes by each player on priorities and questions in cattle breeding, with their reasons in their own words. The game is intended to be used without experts or facilitation. One person acts as 'dealer', who has read the instructions but knows no more than anyone else about the issues to be discussed. The 'expert' is the cards. The cards were written in a detailed iterative process drawing upon the technical, ethical and Democs game expertise, described at EurSafe 2021 and 2022 (Bruce *et al.*, 2021, Meijboom *et al.*, 2022). As part of the BovReg project the focus was on aims and priorities in cattle breeding, exploring the complex range of interrelated issues, involving genomic selection, cattle production systems, animal health and welfare, climate change, land use, biodiversity, genome editing, as well as societal and cultural aspects.

A total of 20 games were played between July 2021 and August 2023, mostly in the UK, Finland and the Netherlands. Following established Democs practice, people to play the game were identified using 'convenience sampling', finding existing groups who were willing to put aside 1–2 hours and find 4–8 people to play the game. These included a social organisation for retired people, non-animal breeders in academic institutions, and non-bioscience students, and were played in urban and rural locations. The relatively small number of players and the self-selecting nature of the groups mean that the data reflect the sample of the people playing the game and cannot simply be extrapolated to wider publics.

Results

The outputs from the game also give some quantitative and qualitative data, helping us to understand how players expressed their views. Each group was asked to make collective statements from their discussions, and in addition individual responses were invited from players on how important they considered five breeding goals, questions about ethical limits to selection, on genome editing and on breeding for resilience, and how much extra they might be willing to pay for dairy or beef products produced from cattle bred for particular goals (disease resistance, reduced methane, animal health and resilience)

The five breeding goals were : Improving how efficiently cattle use feed for growth and milk production; Breeding cows to be more resistant to common diseases; Breeding for cows that emit less methane, to reduce the agricultural impact of global warming; Increasing a cow's productive lifetime by selecting dairy cows that have a better fertility, less lameness and good health while having high milk yields; Adapted to different types of environment, focusing on factors to make future cattle more adapted to different local and climatic environments.

In the sample of people we reached with the Democs game over 60% of respondents rated all the proposed objectives as very or quite important. Most identified increasing disease resistance as a high priority for cattle breeding, with both cattle welfare and less antibiotic use in livestock, and potential avoidance of anti-microbial resistance in both humans and animals among the reasons given. Increasing a cow's productive lifetime and adaptability to different environments were also well supported. Production efficiency in terms how cattle use feed, and reduced methane emissions had lower support. A factor in

Franck Meijboom and Patrick Bottenberg, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

the support for breeding for improved productivity was to reduce the environmental impact of cattle, using less animals, but only on condition that animal welfare was respected.

Views on selecting for longevity in dairy cattle were also varied. Some saw it as a positive thing for productivity and animal welfare, but others saw it as an expression of instrumentalisation of cattle, of a tendency to regard cattle as if they were machines. These views were interesting in how they connect with responses to the ethical question : 'Are there moral limits to how far we should adapt cattle by breeding for our own purposes? If so where would you want an ethical line drawn?'

Most players thought there were moral limits. Over half cited animal welfare, health or well-being, but some suggested that humans had already gone too far in breeding. Some respondents drew parallels with natural processes to guide ethical practice, in respecting the cow's natural lives, perhaps with lifespan as a yardstick, in selecting cattle well adapted to their local natural environment, and in the need to maintain a diversity of breeds. Others emphasised the need to ensure mutual benefits to cattle as well as to humans, to avoid using animals just for human gain. 'Cows are animals not machines' wrote one player.

Reflections on the goal of selecting for cattle with lower methane emissions were varied and nuanced. One view was that the impact of cattle methane on climate change has been exaggerated compared with other sources. For example, one remarked, 'Other methane sources may have bigger impact. Too much 'cow talk' around.' Another critique was that other methods to reduce methane would be more effective than breeding, including changes to feed, or that reducing numbers of cattle would reduce emissions more than from the cows themselves. Some also said any such changes should not harm the cattle. The variation in the responses on methane emissions was also reflected in that this category also elicited the highest 'Don't Know' vote and also received the lowest willingness to pay more score. This may suggest that this was a subject players felt less able to respond to than others, with only a relatively small amount of information which the game could provide.

A second general question was asked : 'Should we aim to breed elite highly productive cattle, which depend on stable conditions, or aim for less efficient cattle more robust to varied situations?' This received mixed responses. Many considered that resilience against present and future environmental challenges was preferable. Some, however, preferred elite potentially less resilient cattle, on the basis of reducing the number of animals and hence reducing climate impact. But some respondents also saw a place for both in cattle breeding.

Although genome editing was not a primary focus of the BovReg project, genomic selection opens a possibility to find genetic targets which might be a future focus of genome editing initiatives. The subject is also high in current debate in the EU. Players were asked : 'Is it a good idea to use genomic information in cattle to make desirable changes quickly by genome editing, instead of slowly by cross-breeding?'

A few respondents were strongly against genome editing on the various grounds like unnaturalness, risk or lack of human knowledge. But overall there was cautious but conditional support, with arguments referring to the urgency needed to deal with climate change and speeding up genetic improvements. Some did not perceive an ethical difference between genome editing and traditional methods of breeding. Support came with caveats about ensuring animal welfare and functioning, and effective regulation, and depend on the application being considered. The hornless cattle application received some support.

A minority of respondents expressed strong negative views on cattle breeding. For them no cattle breeding objectives were acceptable and cattle production itself was viewed as not acceptable, in large part due to concerns about the environmental impact of cattle but also due to strongly held views on the ethics of cattle production.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Another way of exploring the importance people put on different breeding options was in the third category of questions, asking players willingness to pay extra for meat and dairy products from cattle with more 'ethical' traits, if this meant that the products were also more expensive. The products evaluated were high value beef (steak) and dairy (specialist cheese) and more ordinary products, beef mince and milk. The breeding objectives were lower cattle methane emissions, cattle produced from healthier cattle, more disease resistant cattle, and from pasture fed cattle. For each food product and each breeding objective, players were asked to tick one option of paying a 0, 2, 10 or 25% higher price.

Based on expressed willingness to pay 10–25% more, over 70% of respondents were inclined to pay more for products from healthier, disease resistant cattle and pasture fed cattle. All these indicated a strong support. Products from cattle with lower methane emissions gained the least strong support (57%) and this was the breeding objective which elicited the highest (15%) unwillingness to pay anything extra.

This exercise was done not to find indicative quantitative economic data, but simply to help focus priorities and preferences in cattle breeding goals against a concrete criterion. It showed that the strongest breeding preference was for healthier animals and pasture fed cattle, and less for products from cattle with reduced methane emissions. These findings are broadly consistent with the qualitative data discussed above.

Discussion

European citizens do not usually have a voice at the tables around which the breeding goals are decided, and which underlie much of the dairy and beef products they consume. Their insights are therefore all the more interesting. The general degree of support for the objective of productivity was reflected also in Naab *et al.* (2021) in relation to global population growth. Support for increasing productivity in our research was predicated, however, on good animal health and welfare. The strong support for pasture fed animals may be linked to perceptions of good welfare, but also to the underlying ethical perception that this is more natural for the animals. More study would be needed to explore what underlies this perception, and how this relates to levels of productivity. The discussion on whether to breed cattle that are more robust to changing environments or more productive 'elite' cattle reflects another conflict of breeding goals, but the support by some for both approaches, depending on circumstances, represented a nuanced perspective on which breeders might profitably reflect.

The high regard for animal welfare in this study, also found in that of Naab *et al.* (2021), prompts the question: why such a strong emphasis? It obviously reflects a humane attitude towards the animals whose products we eat, but for some participants in the game, it reflected concerns about the welfare implications of current production practices with cattle. Some of the cards in the game explicitly sought to reflect that in recent decades, breeding goals in dairy have shifted away from primarily increasing milk production to a greater emphasis on animal health. Notwithstanding this, a clear outcome from the Democs game is that cattle breeding should be for the benefit of the animal as well as humans, and the related notion expressed by some that there are limits to how far we should 'push' cattle in breeding for human goals if this does not benefit the animals. This was also reflected in that healthier cattle were highly valued in people's expression of willingness to pay extra, and the strong support indicated for breeding for increased disease resistance, especially in relation to antibiotic resistance in humans and animals, and zoonotic diseases.

Naab *et al.* (2021) found that mitigation of environmental problems by the use of genomic technologies was supported. But in our study, while climate change mitigation was recognised, selection for cattle with reduced methane emissions did not have as strong support as might therefore have been expected, and

Franck Meijboom and Patrick Bova (eds), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

is worthy of more exploration. One reason given for this was that the contribution of cattle to climate change was over-emphasised and thus it would be more effective to reduce other methane sources.

Genome editing received cautious and conditional acceptance but a strongly negative opinion was also expressed by some. As stated, there were a minority of the respondents for whom livestock production as a whole is unacceptable.

The subject of cattle breeding is not a current 'hot topic'. It proved somewhat challenging to get people to take part in the games. Possibly there was a measure of self-selection of those interested enough to take the time to play the game. But the Democs approach is based on sampling the views of real groups in society, and provides useful insights provided the results are not extrapolated to whole populations, which would need far larger samples and variety.

Conclusions

The Democs game on cattle breeding priorities and directions has proved successful in its primary aim in the BovReg project, to engage publics in discussion about a still relatively unexplored subject. But it has also yielded some useful insights from the responses to the questions put to players. A few players, while willing to play a game on cattle breeding priorities, expressed their view that cattle should not be bred for food. But for the clear majority, the general tenor was in support of cattle breeding, that using genomics selection should be done with a high value given to cattle welfare, that cattle breeding should be for the benefit of the animal also and not just for the benefit of humans, and that disease resistance, pasture feeding and breeding for more resilient, robust cattle were strongly supported goals.

This Democs game has highlighted a number of public perceptions of questions that are worthy of further investigation and confirmation in larger populations. From this engagement exercise, it also suggests that similar public engagement exercises in other fields of livestock breeding, such as pigs, poultry, sheep and fish, would be valuable, and yield similarly useful insights from publics.

Acknowledgements

We are grateful for the almost 120 people who were willing to give time to take part in this game. Thanks to Franck Meijboom and Koen Kramer and other members of the BovReg consortium for helping to refine the Democs cards, to Franck Meijboom, Terhi Iso-Touru, Johanna Vilkki and the several other people who helped recruit groups to play the game in different locations, and to Perry Walker who created the Democs game concept. The Democs games were created, played and analysed within the BovReg Project which is a diversity collaborative Project funded from the European Community's Horizon Programme H2020-SFS-2018-2, project number 815668.

References

Bruce, D.M. (2022). Bringing animal ethics down to earth? Playing a Democs card game on cattle breeding. Abstract 6 in Transforming food systems: ethics, innovation and responsibility, Programme Book, p.39. DOI: 10.3920/978-90-8686-939-8_45

Bruce, D.M. and Bruce, A. (2021). What should we breed cattle for? Engaging publics in a Democs card game. Broadening the debate on breeding innovations. In Justice and food security in a changing climate, EurSafe 2021. Wageningen Academic, Wageningen, pp. 295–300. DOI: 10.3920/978-90-8686-915-2_45

Coles, D., Frewer, L.J. and Goddard, E.(2015). Ethical issues and potential stakeholder priorities associated with the application of genomic technologies applied to animal production systems, Journal of Agricultural and Environmental Ethics, 28, 231–253. DOI: 10.1007/s10806-015-9529-z

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Kramer, K. and Meijboom F.L.B. (2022). The ethics of innovations in genomic selection: On how to broaden the scope for discussion. Journal of Agricultural and Environmental Ethics, 35, 7. DOI: 10.1007/s10806-022-09883-6.

Lund, T. B., Gamborg, C., Secher, J. and Sandøe, P. (2021). Danish dairy farmers' acceptance of and willingness to use semen from bulls produced by means of *in vitro* embryo production and genomic selection. Journal of Dairy Science, 104(7), 8023–8038. DOI: 10.3168/jds.2020-19210.

Lund, T.B., Sandøe, P, Secher, J. and Gamborg C. (2022). Danish milk consumers are critical of advanced breeding methods in dairy production, but only 1 in 5 is unwilling to drink milk from dairy cows bred with semen derived from such methods. Journal of Dairy Science, 106, 1695–1711. DOI: 10.13168/jds.2022.22249.

Mark, T. and Sandøe, P. (2010). Genomic dairy cattle breeding: risks and opportunities for cow welfare. Animal Welfare, 19(S), 113–121.

Meijboom, F.L.B., Bruce, D.M., Kramer, K. and Bruce, A. (2022). Broadening the debate on breeding innovations – on public engagement and the role of the Democs Game. In Bruce D. and Bruce A. (eds) The transforming food systems: ethics, innovation and responsibility. Wageningen Academic, Wageningen, pp. 295–299.

Naab, F.Z., Coles, D., Goddard, E. and Frewer, L.J. (2021). Public perceptions regarding genomic technologies applied to breeding farm animals: A qualitative study. BioTech, 10, 28. DOI: 10.3390/biotech10040028.

Nuffield Council on Bioethics (2021). Public dialogue on genome editing in farmed animals. Available online at https://www.nuffieldbioethics.org/assets/images/Nuffield-BBSRC-Sciencewise-dialogue-topic-guides-Oct2022.pdf (accessed 2 April 2024).

PlayDecide (2004). Available online at https://playdecide.eu/ (accessed April 2004).

Franck Meijboom and Patrick Bottenberg, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Attitudes towards genome editing in farmed animals: An interview study

L. Borgdorf and F.L.B. Meijboom*
Utrecht University, Faculty of Veterinary Medicine, Centre for Sustainable Animal Stewardship, Yalelaan 2, 3584 CM Utrecht, The Netherlands
** Corresponding author, e-mail: l.borgdorf@uu.nl*

Abstract

The ethical debate about genome editing in animal breeding lacks disciplinary diversity and public engagement. This paper aims to address both issues by presenting 23 interviews with stakeholders from animal breeding, animal advocacy, and animal farming, which covered human-animal relations, breeding technologies, and the future of farming. Six distinct patterns of argumentation were identified: technology is neutral, an already-existing issue, a dystopian future, consumer capitalism, playing God, and a technological fix. Distinguishing between these six lines of argumentation improves the understanding of the diversity of views in the public debate on the use of CRISPR Cas9 in animal breeding. This is an essential step for further research into public attitudes and public dialogue on novel techniques in animal breeding.

Keywords: CRISPR Cas9, genome editing, livestock, narrative, semi-structured interviews

Introduction

As has been reported in the literature, the use of genome editing in animal breeding results in ethical questions (de Graeff *et al*., 2019; Eriksson *et al*., 2018; NCOB, 2021). This literature shows that the main societal and ethical themes include question and concerns related to efficiency, human health, potential risks, public acceptability, environmental impacts, animal welfare, and animal dignity (cf. de Graeff *et al*., 2019). Being part of a Horizon 2020 project on genetic innovations in pig and poultry breeding, this study starts in the existing literature, but focuses on stakeholder views with regard to genome editing in livestock breeding. This has added value because the current debate is lacking disciplinary diversity and a proper inclusion of the public, not taking the animals sufficiently into account, and for lacking systematic comparisons (de Graeff *et al*., 2019: p. 9; Middelveld *et al*., 2022).

This research aims to address these shortcomings by investigating the perception of genome editing among representatives of animal breeding, animal advocacy, and animal farming. Breeders and geneticists are relevant as they are involved in the development and application of the technologies. Similarly, farmers work with the modified animals and depend on the public acceptance of the end-product. Finally, animal advocates represent the interests of animals, who are directly affected by genome editing. Aside from broadening the debate by adding animal advocates' perspectives, this research investigates the perception of different applications of genome editing, but also human-animal relations, the way they are influenced by technologies, and possible future visions of animal farming.

Methods

This research draws on critical empirical ethics, which builds on an iteration of empirical and normative processes (Rehmann-Sutter *et al*., 2012). While the interview guide was informed by philosophical theory, such as Ihde's (1990) postphenomenology, pragmatism and democratic principles require to

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

consider different prevalent perspectives. Furthermore, the interviews are analyzed in the form of narratives, which follows the methodology of a Dutch study about the public perception of genome editing in farmed animals (Middelveld *et al*., 2022).

Participants

Between June and September 2022, 23 participants were interviewed. They were recruited via convenience sampling starting in the network of the consortium partners of the related Horizon 2020 project. 12 participants were associated with the breeding sector, 6 with animal advocacy/protection, 4 with animal farming, and one participant with neuroscience. There were 13 males and 10 females, whose age ranged from 22-66 years with a median of 33 years. 9 German, 6 French, 3 Dutch, 1 Italian, 1 Danish, 1 British, 1 US-American, and 1 Canadian/US-American respondent participated in total.

Materials and procedure

Respondents were invited via e-mail or personal approach to participate in the interview. Before conducting the interviews, they received a letter of information and signed an informed consent form. All interviews were conducted in German or English by LB, a native speaker of German, and, if applicable, translated into English. The interview guide consisted of six parts, including demographics, introductory questions, human-animal relations, breeding technologies, the future of animal farming, and a round-up sessions. As these were semi-structured interviews, the researcher occasionally asked follow-up questions.

The introductory questions covered the participant's motivation for their work and what they liked or disliked about it and were designed to engage them. Subsequently, human-animal relations were discussed, and participants indicated how they perceived animals in general. The questions on breeding technologies covered the extent of familiarity with and attitudes towards breeding-related technologies, and an evaluation of animal farming. Moreover, two questions referred to the influence of technologies on human-animal relations and breeding goals. The focus of this section was the evaluation of genome editing for the breeding goals of allergen-free food, disease resistance, welfare improvements by making amputation redundant, feed efficiency, and productivity. The questions on the ideal future of animal farming invited the participants to assess five different scenarios based on previous qualitative research (Middelveld *et al*., 2022). Ways to close the gap between ideal future and the status quo were discussed. Finally, participants were asked to add important ideas not covered in the interview.

Data analysis

Audio data from the 7 in-person interviews and video data from the 16 online interviews were recorded. 2 respondents disagreed with recording the interview but still wanted to participate. In these cases, interview data were generated by the researcher taking notes while interviewing. Most interviews lasted between 60 and 90 minutes. All interviews were analyzed based on manual transcripts, which were digitalized and completed based on the recordings. Subsequently, they were coded and placed into existing narratives, which they resemble. To anonymize the interviews, the participants were ascribed codes consisting of the sector (B for breeder, A for animal advocate, F for farmer, and O for other) and the number of the interview conducted. Thus, the first interview with a breeder was coded as B1.

Results

The answers given by the interviewees resemble six reoccurring narratives regarding the ethical implications of genome editing in farm animals.

Franck Meijboom and Bettina Bock (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The neutrality hypothesis: Technology is just a tool

The first narrative was that genome editing is inherently neutral and its normative implications only lie in its application or in other words: "The technology is neutral, but the context can be good" (B2). The same thought was formulated more negatively by another respondent: "The tool is not the problem, the people are" (B5). Many interviewees stated that they regard genome editing in an instrumental way and the purpose makes the technology ethical or unethical (B2, B5, B6, B7, B8, B9, B12, A6, F1). Three breeders (B4, B7, B8) compared genome editing with nuclear energy, which could be used as a sustainable source of energy, but also for bombs (B4). Thus, genome editing as well can and should be used for good purposes, but there is the danger of abuse. As one respondent put it: "It is problematic to use the technology only for your own profit. It should only be used for the benefit of the animals like in castration (to make it redundant)" (B2). Especially breeders were theoretically in favor of applying genome editing to increase animal welfare if done carefully (B2, B3, B4, B5, B6, B7, B8, B9, B11, B12), but more stakeholder expressed this view (A2, A3, A5, A6, F1, F2, F3, F4). Still, some respondents criticized the neutrality hypothesis. When interacting with genetic data tables, a breeder stated that "many people forget that the number is an animal" (B8). This refers to an objectification inherent in the technology regardless of how it is used and contradicts the idea of technology being neutral. Another breeder provided a similar argument against precision farming: "the animal is seen as a production unit but not as a living being. We are losing the link between humans and animals" (B3).

The ethical issue ascribed to genome editing issue already exists

As a second narrative, several interviewees reported that the ethical issues associated with genome editing are not new but in line with previous technology. An animal advocate said that "there is no big difference between genome editing and selective breeding" (A1). Similarly, a farmer stated that "genome editing is not new: it improves, accelerates, and refines existing technologies. The moral questions are not different than before" (F1). Although the farmer suggests that the moral questions remain the same, it does not mean that there are no moral questions. As an expert in animal genetics put it: "the relation between human and animal is not different from before. Still, we are harming the integrity of animals. Is it the right thing to do? However, we already crossed the line by domesticating animals. We decided that it is acceptable to use this tool" (B9). Simultaneously, the same respondent observed that "people are reluctant to reevaluate previous decisions. New technologies open up these decisions. (…) There is a fear of an open ethical discussion" (B9).

Genome editing paves the way to a dystopian future

A third narrative is that genome editing paves the way to a dystopian future, which took the form of slippery slope arguments or a reference to Pandora's box. Some respondents referred to Huxley's "Brave New World" (B9, F1). Pessimists might interpret the previous arguments that genome editing is not new or that "we already crossed the line" (B9) as indices that Pandora's box is already opened. This idea was related to the danger of abuse. As one participant warned: "You can do what whatever you want and also things you don't know can occur, so it's like opening Pandora's box from (…) and letting companies and profits driv(e) this is not a good solution. (…W)e cannot totally allow this technology for everything" (B6).

A slippery slope argument concerned the possible use of genome editing in humans: "At one point, the daughter will ask her parents: why do I have brown eyes instead of blue eyes?" (B1). Similarly, a farmer posed the question of "What if humans apply it at themselves? What is possible in pigs is also possible in humans" (F1). When asked about the moral difference between genetically modifying humans or animals, he responded that "the human has another rank than the animal. We must not blur the line

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

between humans and animals. Usually this leads to a devaluation of humans rather than an elevation of animals" (F1). An animal advocate asked the same question but emphasized the arbitrariness he perceives in the distinction between humans and animals: "why is it unethical in humans but not in animals? This is pretty revealing as it shows us how humans perceive animals. (...) Why don't we create humans eating grass? This would be considered unethical, but why can we then create animals?" (A4). Finally, another slippery slope mentioned was the idea of creating non-sentient animals (A5).

Consumer capitalism: Greed is good

A fourth narrative is consumer capitalism, which refers to incentives provided by the economic system. This idea recurred in the discussion of the distribution of risks and benefits from the technology, but also in the topic of farming itself. When discussing ethical issues in the context of animal farming, many interviewees criticized the price pressure and the lack of willingness of consumers to pay higher prices for higher welfare or quality (B1, B2, B5, B6, B7, B10, B11, F1, F2, F3, F4). Simultaneously, some breeders mentioned that there are consumers, especially in the nonwestern world, who simply cannot afford more expensive products (B7, B10).

The industry's aims for low prices, while generating profit were regarded skeptically. A breeder stated: "The extreme focus on gain in money bothers me. Therefore, I am happy not to work in production" (B4). Also, animal advocates criticized the entanglement of economic purposes and animals: "I think it's horrific that beings are used for monetary value. I think it should not be possible that pain or suffering can have a certain worth expressed in euros. I don't think that's okay at all. So I think that any product that can experience pain is not something that can be used for commercial purposes." (A1). What the animal advocate suggests is that farm animals are not respected as individuals but regarded as products. Instrumentalization and objectification were named as ethical issues in the context of breeding and farming by various participants (B2, B4, B8, B11, A2, F2). A breeder stated that "animals are regarded as products or as kilos of meat rather than as an individual" (B4). A farmer made similar experiences during her vocational education. When asked about whether selecting bulls from a catalogue influences her relationship with animals, she reported that "It is like shopping: the animal seems like a product, but I never saw it that way. I think about the calves. My former boss regarded bulls as a product. You could see it in his language: he described the cow as a tool or as a performance product" (F2). Therefore, it was said that regulation is necessary as otherwise only prices matter (B5). Another breeder warned: "Don't let it be done for profit" (B6).

In line with this idea, most participants opposed improvements merely serving economic purposes. Concerning the increase of productivity, a breeder stated: "It is unethical because it benefits us at the cost of animals" (B2). Similarly, a farmer stated that "increasing efficiency leads to strange outcomes" referring to animal health issues (F1), while another one highlighted that breeding for productivity or allergen-free food should only be done if there are no side-effects and no animals are harmed through experiments in the research and development phase (F2). Most participants, especially breeders and animal advocates regarded the efforts to make animal products allergen-free as disproportional since consumers could eat other products.

Playing God, dominating nature, and side effects

Another narrative was that humans should not play God or dominate nature. A breeder argued that genome editing is morally problematic as "we are losing respect for nature and evolution" (B1) and "we think that we can do everything" (B1). Another breeder stated that she was "not a big fan of high tech. It is unnatural. We should not be altering nature. It is okay to change with things you already have in nature (...) Respect of nature is important" (B10). A similar argument was given by an animal advocate:

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

"humans think they rule over nature. Why do we need that many technologies? I need to think about that quote from Jurassic Park: 'just because we can doesn't mean we should'" (A4). Finally, another argument related to nature is the lack of traceability of what has been done (B3, B4). One breeder said about genome editing: "should we not leave any trace? It is difficult to distinguish the artificial from the natural then. If we cannot prove it was made by humans, it should not be patented" (B3).

While such arguments relate to a specific attitude towards technology or nature, and resemble a sort of hybris, the concerns are often related to unforeseen side effects. To quote a breeder: "nature as it is offers enough. Side-effects are unforeseeable. We will never fully understand nature and should be humbler" (B1). When asked about using genome editing to make milk or eggs allergen free, a breeder mentioned that certain genes might have important unknown functions. "(...) there might be unknown side effects as the gene responsible for making the food allergic might have some important function in the animal that we don't know yet. Therefore, we should be careful" (B2). With regards to potential side-effects, an animal advocate drew an analogy with genetically modified corn: "A farmer told me that GMO corn is good as it does not require pesticides and fungicides, but what does GMO corn cause in us? We don't know. People are only concerned with benefits. Then, farmers apply it, but they know the least about such technologies" (A4). The animal advocate reasoned in the same manner against genome editing. He raised questions such as "what happens with the animal's body when altering such genes?" or "what does it do to humans to eat such cows?" (A4).

Therefore, some participants proposed to only apply genome editing to create breeds that already exist to reduce side effects: "polled cattle already exist in nature. We can use genome editing for cases already present. For new mutations, we have a strong responsibility and have to care for side effects" (B3). In contrast, a breeder argued that genome editing is redundant if such animals can also be bred using other techniques. "We have other possibilities. Genome editing is expensive and inefficient. People want to make money with it. Theoretically, it is an interesting field, but take the example of cows: the polled gene is known for 15 years. We don't need genome editing anymore. The gene is even dominant" (B1). Another side effect mentioned was that microorganisms change and adapt faster than the corresponding animal when increasing resistance towards diseases (B1, B5, B7, B8, B9, F3). Moreover, the respondents mentioned the dangers of rebound effects when increasing the feed efficiency or productivity of animals. As a farmer put it: "Increasing feed efficiency is interesting, but difficult. Ultimately, it might lead to even more animals in stables. I would only accept it if there were enough welfare regulations" (F2). After being confronted with potential rebound effects, two respondents changed their initially positive opinion about increasing productivity (A3, O1).

The technological fix

Finally, respondents provided answers that link to a technological fix narrative, which refers to the danger of maintaining or sustaining an unjust system by fixing parts of the problem with a technology. Such arguments were provided by animal advocates, farmers, and breeders, although the ultimate goals of the respective groups differed (B1, B4, B5, B6, B9, B10, B11, B12, A1, A2, A3, A4, F2). A breeder said that he wants to "eat meat without feeling guilty" (B6), while animal advocates, but also some breeders advocated a world without slaughter (B8) or entirely without animal farming (B12, A1, A2, A3, A4, A5, A6, O1).

Regarding polled cattle, a breeder argued that "we should keep animals in conditions where this is not a problem. Breeding such animals removes the symptoms but not the problem" (B11). Another breeder mentioned the conflict between moral standards and economic feasibility in such questions: "From a production perspective I would say yes (to polled cattle), but from an animal's perspective, I would say: no! Change the system!" (B4). Instead of pursuing technological fixes, arguments were made for

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

changing the conditions under which animals live: "disease resistance can better be achieved via housing, vaccines, management, and feeding" (B1). However, some animal advocates were concerned that welfare improvements justify and maintain animal farming, which causes more harm to animals in the long run than abolishing it earlier without such welfare improvements (A1, A2, A3).

Discussion

In this study, we scrutinized professional breeders', farmers' and animal advocates' perception of genome editing in farmed animals. Six different narratives were identified in the responses given by the participants, namely the neutrality hypothesis, the existing issue, the dystopian future, consumer capitalism, playing God, and the technological fix. The technological fix, consumer capitalism, and playing God replicate findings of previous research (Middelveld *et al*., 2022). Overall, most participants were open towards applying genome editing for animal welfare, while productivity or allergen-free animal products were mostly opposed. Moreover, the participants raised concerns about side effects, abuse due to economic powers, humans overestimating themselves, and the inhibition of potentially more desirable future scenarios.

A strength of this study was the theoretically informed methodology that allowed the inclusion of contextual factors, such as human-animal relations and future scenarios of animal farming, which helped figure out the ultimate goals of different stakeholders that influence their view on gene editing. However, limited recruitment resources caused a lack of diversity in stakeholders, for example, all farmers were Germans. Second, the future scenarios lacked specificity as the vision without animal farming contained cultivated meat which makes use of animal cells and was rejected even by some animal advocates (A1, A3). Also, there was no vision about insect farming, although this was mentioned in some interviews (F1, O1). Based on this research, two recommendations for future research emerge. First, after consulting experts and animal advocates, the general public should be involved as well given the current lack of public engagement (de Graeff *et al*., 2019, p.9), which is an important constituent of a democratically legitimated decision-making process. Second, cultural dimensions might play an important role. Especially the French respondents (B3, B10) linked food and culture.

Acknowledgements

This paper is part of the GEroNIMO project that has received funding from European Union's Horizon 2020 research and innovation program under Grant Agreement No 101000236. This publication reflects the views only of the authors, and not the European Commission (EC). The EC is not liable for any use that may be made of the information contained herein.

References

de Graeff, N., Jongsma, K.R., Johnston, J., Hartley, S. and Bredenoord, A.L. (2019). The ethics of genome editing in non-human animals: a systematic review of reasons reported in the academic literature. Philosophical Transactions of the Royal Society B, 374(1772), 20180106.

Eriksson, S., Jonas, E., Rydhmer, L. and Röcklinsberg, H. (2018). Invited review: Breeding and ethical perspectives on genetically modified and genome edited cattle. Journal of Dairy Science, 101(1), 1–17.

Ihde, D. (1990). Technology and the lifeworld: From garden to earth. Bloomington, IN, Indiana University Press.

Middelveld, S., Macnaghten, P. and Meijboom, F. (2022). Imagined futures for livestock gene editing: Public engagement in the Netherlands. Public Understanding of Science, 32(2), 143–158.

NCOB. (2021). Genome editing and farmed animal breeding: social and ethical issues. Nuffield Council on Bioethics. Available online at https://www.nuffieldbioethics.org/assets/pdfs/Genome-editing-and-farmed-animal-breeding-FINAL-WEB-PDF.pdf (accessed 27 May 2024).

Franck Meijboom and Pamela Pow-Anpo | 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Rehmann-Sutter, C., Porz, R. and Scully, J.L. (2012). How to relate the empirical to the normative: toward a phenomenologically informed hermeneutic approach to bioethics. Cambridge Quarterly of Healthcare Ethics, 21(4), 436–447.

Franck Meijboom and Bernice Bovenkerk - 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

3.5 Animal experimentation

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Handle with care: The relational matrix of veterinary medicine

C.J. Rademaker
Aretè – Ethisch advies, onderwijs & onderzoek, Zandkuilweg 2, 4033 AL Lienden, The Netherlands
E-mail: corne.rademaker@gmail.com

Abstract

Mainstream animal ethics has been preoccupied with arguing that animals have moral status. This has reduced the scope of relevant ethical concerns in our dealings with animals and operates mainly as an external critique of human–animal practices. Here, I draw on care-ethicist Frits de Lange's 'relational matrix', developed in the context of human–human care professions, to broaden our scope. The relational matrix is built up of two axes that cross each other in the middle. The vertical axis represents symmetrical versus vertical asymmetrical relations, while the horizontal axis represents informal versus formal relations. This results in four different types of relations and associated ethical discourses: (1) symmetrical, informal relationships represent *friendship* relations; (2) asymmetrical, informal relationships represent relations of *solicitude*; (3) asymmetrical, formal relations refer to relations of *professional expertise*; and (4) horizontal, formal relations refer to relations of *obligation*. I consider the relational matrix of veterinary medicine. In the relational matrix of veterinary medicine, animals are encountered as patients on which veterinarians 'exercise' their expertise, but in the context of solicitude with the needy animal. To some extent (under Dutch law) there is symmetry in the veterinarian–animal patient relationship in so far animals have a right to veterinary care under emergency circumstances and veterinarians have a corresponding duty to provide this care. Whether we can talk of friendship, implying symmetry, at the face-to-face level of the human–animal encounter in veterinary practice, proves to be the hardest question to answer. A focus on friendship and recognition is warranted to connect the personal with the impersonal in discourse on the institutional access of animals to veterinary care and beyond.

Keywords: animal ethics, human–animal relationships, moral status, recognition, relational matrix

Introduction

Mainstream animal ethics has been preoccupied with arguing that animals have moral status. On a utilitarian theory, for animals to have moral status means to deserve consideration of one's interests equal to those of humans. In contrast, on a deontological theory for animals to have moral status means to be accorded equal inherent worth and accompanying moral rights, such as the right to bodily integrity. However, what unites utilitarian and deontological theories in animal ethics is that they first want to establish whether an entity properly belongs to the class of entities which are protected by certain moral rules specified in either theory, before it actually considers those entities as of moral importance (Hursthouse, 2006).

Animal care ethics (plural) however, point to the importance of moral experience and existing care relations (Donovan and Adams, 2007; Engster, 2006; Jochemsen, 2013, Midgley, 1983). It regards the imputation of moral status to animals on the basis of some property or capacity as too simplistic to account for our moral experiences and the need for situated moral decision-making. Even more, because animals are in a position of relative powerlessness vis-à-vis humans, the imputation of moral status to animals by human beings itself presupposes a caring attitude (compare Webb, 1998).

In this contribution, therefore, I aim to explore the ethical dimensions of the professional relationship between veterinarian and animal patient by making use of the 'relational matrix' (De Lange, 2011).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

My aim is therefore primarily hermeneutic, and not focused on justifying the way animals are being treated within the veterinary practice. I focus on veterinary medicine because of its intrinsic and obvious relationship with 'care', and discuss this mainly within the context of the Dutch legislative framework.

In the next section I introduce the relational matrix as developed within the human–human care professional context, followed by a section using the relational matrix as a heuristic for veterinary practice, and I conclude with discussing what has been found and what requires more investigation.

Relational matrix

Frits de Lange (2011) has articulated a 'relational matrix' to articulate the ethical dimensions of the professional relationship within care professions. First, we can distinguish between *symmetrical* and *asymmetrical* dimensions. Asymmetrical relationships are those relationships in which one has power over the other due to a difference in knowledge (the physician over the patient), experience (the elder over the younger), authority (the military officer over the private soldier), vitality (the healthy over the sick and injured).

Other relationships are symmetrical. In those relationships, participants are equal in light of the goal and meaning of the relationship. Thus, they are equal in job level (colleagues), in love (partners), in friendship (friends), in rights and duties (citizens).

Second, we can distinguish between *formal* and *informal* relationships. Formal relationships are those that are mediated by institutions and as such relationships of societal functionality, while informal relationships are encounters from human to human, personal, and unmediated.

The relational matrix, now, is built up of two axes that cross each other in the middle (Figure 1). The vertical axis represents symmetrical versus asymmetrical relationships, while the horizontal axis represents formal versus informal relationships. This results in four different types of relationships and associated ethical discourses: (1) symmetrical, informal relationships represent *friendship* relations;

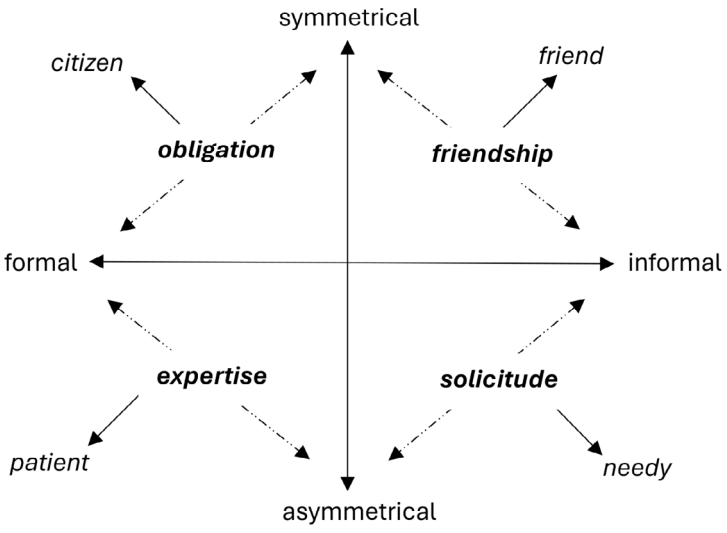


Figure 1. The relational matrix (after De Lange, 2011).

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

(2) asymmetrical, informal relationships represent relations of *solicitude*; (3) asymmetrical, formal relationships refer to relations of *professional expertise*; and (4) horizontal, formal relationships refer to relations of *obligation*.

Solicitude (or care, compassion) is at the heart of the healthcare relationship between caregiver and care recipient. On the one hand, there is therefore no equality, no symmetry, in the care relationship. The one is moved by the suffering of the other, and affords help. On top of that, the physician – patient relationship is asymmetrical because the physician has power over the patient due to a difference in *expertise*.

On the other hand, within the asymmetrical care relation, there can always be moments of similitude: the caretaker shares in principle in the same vulnerability and neediness as the care-receiver. What the care-receiver can 'give' the caretaker is recognition of its own frailty. It basically means: 'I am as you'. This similitude and recognition is denoted by *friendship* as a dimension of the professional care relationship. Within the professional care relationship, the patient does not necessarily have to become a friend, but there should be gestures of friendship. As such it implies more than the equality of *citizens* as in the formal, symmetrical dimension of rights and associated duties.

Veterinary medicine

In this section I use the relational matrix as a heuristic to articulate the ethical dimensions of the veterinary professional relationship.[7] I discuss subsequently the four quadrants of the relational matrix.

Solicitude

Solicitude is about the concrete care extended to a being in need. Can we discern something similar in veterinary medicine? I think we can. Just like human beings, animals are vulnerable to disease, injury, and distress. Even though veterinary care for a diseased animal is usually requested by the human caretaker[8] that owns the animal — as such establishing the veterinarian–client relationship — veterinarians actually recognize a duty of care to animals in distress *irrespective* of whether the animal is owned (e.g. KNMvD 2022, Article 2.3). This recognition of a duty of care is intelligible precisely in light of the moral appeal of the animal in distress. It seems, therefore, that it is not far-fetched to presume that solicitude is the heart of the veterinary human–animal relationship as well.

Obligation

Veterinary care, just like human healthcare, is nowadays not provided at the whim of the veterinarian. The human caretaker of the animal does not have to beg the veterinarian to take care of its animal. The Dutch Animals Act, for instance, stipulates veterinarians' 'duties of care' to animals for which their help has been requested and to animals in emergency situations (Nederlandse Rijksoverheid 2024, Article 4.2). This implies that under Dutch law (sentient) animals in emergency situations have a direct right to

[7] What should be noted upfront, is that in veterinary practice almost always a triadic relationship among veterinarian–animal patient–human caretaker is in place. In the human healthcare context, such a triadic relationship only occurs in paediatrics, geriatrics, and care for people with (severe) disabilities, in which cases there is a parent, guardian or some other agent involved. This triadic relationship and the ethical dilemmas it engenders, figures prominently in veterinary ethics (Kipperman and Rollin, 2022; Morgan and McDonald, 2007). In this contribution, I will focus, however, on the veterinarian–animal patient relationship.

[8] I prefer the term 'human caretaker' over that of 'human owner', because it better reflects what is at stake in the triadic relationship: the client comes to the veterinarian with an appeal to help with one or more animals in need.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

veterinary care. Yet, in non-emergency situations animals only have an indirect right to veterinary care. In the latter case, it is the human caretaker owning the animal who effectively has a right to veterinary care *for* the animal under its care. In the first case, the veterinarian has a direct duty to the animal to provide veterinary care, while in the second case the duty to the animal is indirect and mediated by the veterinarian's duty towards the animal caretaker. A formal relationship of symmetry between veterinarian and animal patient, therefore, is currently only present under emergency circumstances (under Dutch law).[9]

The dimension of obligation relates the veterinarian practice also to a broader societal context with associated ethical challenges. For instance, a veterinarian tasked to participate in the large-scale destruction of poultry due to an outbreak of aviary influenza, might be severely compromised by the duty to care for animals on the one hand, and the duty to safeguard public health on the other. This tension can be understood precisely from the 'logic' internal to the caring relationship that focuses on restoring the health of the animal, which conflicts with the killing of healthy animals.

Professional expertise

The heart of the veterinary human-animal relationship may be solicitude, veterinary medicine has over the ages become a profession founded on scientific knowledge and skills (Jones and Koolmees, 2022). In the human healthcare context this creates an inherent asymmetry in the relation between physician and patient, because the patient lacks the professional expertise the physician has. How is this in the veterinary human-animal relation?

At first sight, one may want to say that the animal patient is likewise lacking in professional expertise, and therefore in a position of asymmetry. This is true. But it should be observed that this asymmetry goes deeper than in the human healthcare context. While humans, given the right societal conditions, generally are in the position to pursue a veterinary career and acquire professional expertise, as far as we know, animals are not capable to achieve this. So, animals are not only unequal 'in light of the goal and meaning of the relation', but also on a deeper, intrinsic level. Yet, this is not to be taken as an excuse for mistreatment and exploitation of animals, but rather increases the intensity of the moral appeal of the needy and suffering animal on the veterinarian.

Friendship

What is the place of friendship in the veterinarian–animal patient relationship? This is arguably the most challenging question to answer. If one looks in the literature, friendship is discussed especially in the context of the human caretaker–companion animal relationship (e.g. Townley, 2010). It is sometimes discussed in the context of the veterinarian–client relationship (Bard *et al*., 2019), but virtually never in the context of the veterinarian–animal patient relationship. What is increasingly emphasized is 'strong patient advocacy' (Coghlan, 2018), but does this imply friendship? Does it matter to a dog or laying hen whether the veterinarian makes gestures of friendship? It is likely that friendly behaviour alleviates the stress for the animal (e.g. Waiblinger *et al*., 2002). But will friendly gestures matter *to* the animal in the sense of conveying: 'I see you. And you are not just a patient, but a valuable fellow creature'?[10]

[9] Animal rights philosophers and organisations precisely aim to broaden and deepen animal rights regulations and argue for the moral status of animals. On Nussbaum's conception, for instance, animals have a moral right to veterinary care to ascertain the capability of 'bodily health' (Nussbaum, 2022: p. 88).

[10] As to the veterinarian side, we can easily see that being (actively!) present to an injured or diseased animal, can remind the veterinarian of his or her own bodily vulnerability. In this vein, Acampora argues for what he calls *symphysis* to denote the shared bodily vulnerability to injury and illness, 'just by virtue of being sentient entities of animate flesh' (Acampora, 2006: p. 130). This already should have a levelling effect in the veterinary–animal patient relation.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

That is, are animals capable of giving and receiving *recognition* in the philosophical meaning of the word?[11] To my knowledge, this is relatively uncharted territory and in need of further investigation (but see Smith, 2014).

Discussion

Using the relational matrix as a heuristic to articulate the ethical dimensions of veterinary medicine, solicitude could be identified at the heart of the veterinary–animal patient relationship. Furthermore, veterinarian practice has become a profession with its own toolbox of professional skills and expertise. While both dimensions of the veterinary–animal patient relationship are asymmetrical, solicitude is an encounter at the human–animal level, while professional expertise has a mediating function between veterinarian and animal patient, as such creating distance.

Symmetrical dimensions in the veterinary–animal patient relationship are harder to come by. To some extent (under Dutch law) there is symmetry in the veterinarian–animal patient relationship, in so far the animal has a direct right to veterinary care and the veterinarian a corresponding direct duty to provide veterinary care to the animal under emergency circumstances. Whether we can talk of friendship, implying symmetry, at the face-to-face level of the human–animal encounter in veterinary practice, proved to be the hardest question to answer.

It might be worthwhile to further investigate empirical work on human–animal friendships – within the veterinary clinic and beyond — in close connection with the Continental philosophical tradition. With respect to the latter, Cora Diamond, for instance, in discussing two poems on animals, suggested that "images of fellow creatures are naturally much less compelling ones than images of 'fellow human beings' can be" (Diamond, 1978: p. 477). The reason is that *we* inhabit the *human* life form, i.e. know it 'from the inside out'. This has implications for the 'reach' of empathy and solicitude (Plant, 2019), but also for the question in how far we can recognize 'the other as my likeness and myself as the likeness of the other. Without ... recognition, alterity would not be a matter of one other than myself, but the expression of a distance indistinguishable from absence' (Ricoeur, 1999: p. 46).[12] This does not imply a ruthless exploitation of animals, because 'one rediscovers an equivalent of the search for recognition at the level of friendship and interpersonal relations (in Rawls' conception of justice) as the maximization of the weakest share' (Ricoeur, 1999: p. 47). And this weakest share could very well be those of (some species of) animals (compare Rowlands, 2012). A focus on friendship and recognition is therefore warranted to connect the personal with the impersonal in discourse on the institutional access of animals to veterinary care and beyond, and possibly be a more fruitful starting point for veterinary ethics within the clinic.

Acknowledgement

I thank Frans Stafleu, Joost van Herten, and Ellen Deelen, as well as the reviewer, for valuable comments on an earlier version.

[11] The issue of recognition, so central for friendship in Ricoeur's analyses, has been remarkably absent in the discussion of human-animal friendships based on Aristotle's concept of friendship and the ethical implications thereof (e.g. Torres, 2022).

[12] From this perspective, even though anthropocentric, Arluke and Sanders' (1996) socio-zoological scale would not so much reflect a rational hierarchy, but be a 'scale of recognition'.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

References

Acampora, R.R. (2006). Corporal compassion: Animal ethics and philosophy of body. University of Pittsburgh Press, Pittsburgh, PA.

Arluke, A. and Sanders, C.R. (1996). Regarding animals. Temple University Press, Philadelphia, PA.

Bard, A.M., Main, D., Roe, E., Haase, A., Whay, H.R. and Reyher, K.K. (2019). to change or not to change? Veterinarian and farmer perceptions of relational factors influencing the enactment of veterinary advice on dairy farms in the United Kingdom. Journal of Dairy Science, 102(11): 10379–10394. DOI: 10.3168/jds.2019-16364.

Causey, M. (2019). Animal ethics based on friendship: A reply. Journal of Animal Ethics, 9(1), 1–6.

Coghlan, S. (2018). Strong patient advocacy and the fundamental ethical role of veterinarians. Journal of Agricultural and Environmental Ethics, 31(3), 349–367. DOI: 10.1007/s10806-018-9729-4.

De Lange, F. (2011). In andermans handen: Over flow en grenzen in de zorg (In the hands of others: On flow and boundaries within care professions). Meinema, Zoetermeer.

Diamond, C. (1978). Eating meat and eating people. Philosophy, 53(206), 465–479.

Donovan, J. and Adams, C.J. (2007). The feminist care tradition in animal ethics: A reader. Columbia University Press, New York, NY.

Engster, D. (2006). Care ethics and animal welfare. Journal of Social Philosophy, 37(4), 521–36. DOI: 10.1111/j.1467-9833.2006.00355.x.

Hursthouse, R. (2006). Applying virtue ethics to our treatment of the other animals. In: Welchman, J. (ed.) The practice of virtue: Classic and contemporary readings in virtue ethics. Hackett, Indianapolis, IN, pp. 136–155.

Jochemsen, H. (2013). An ethical foundation for careful animal husbandry. NJAS — Wageningen Journal of Life Sciences, 66(November), 55–63. DOI: 10.1016/j.njas.2013.05.011.

Jones, S.D., and Koolmees, P.A. (2022). A concise history of veterinary medicine. Cambridge University Press, Cambridge.

Kipperman, B, and Rollin, B.E. (2022). Ethics in veterinary practice: Balancing conflicting interests. Wiley, Hoboken, NJ.

KNMvD (2022). Code voor de dierenarts. Available online at https://www.knmvd.nl/app/uploads/2022/06/Code-voor-de-Dierenarts-2022.pdf (accessed 15 March 2024).

Midgley, M. (1983). Animals and why they matter. The University of Georgia Press, Athens, GA.

Morgan, C.A. and McDonald, M. (2007). Ethical dilemmas in veterinary medicine. Veterinary Clinics: Small Animal Practice, 37(1), 165–179.

Nederlandse Rijksoverheid (2024). Wet Dieren (Animals Act). Available online at https://wetten.overheid.nl/BWBR0030250/2024-01-01. Accessed 15 March 2024.

Nussbaum, M.C. (2022). Justice for animals: Our collective responsibility. Simon & Schuster, New York, NY.

Plant, B. (2019). Vulnerable lives: Levinas, Wittgenstein, and "animals". In: Atterton, P. and Wright, T. (eds) Face to face with animals: Levinas and the animal question. State University of New York Press, Albany, NY, pp. 31–61.

Ricoeur, P. (1999). Approaching the human person. Ethical Perspectives, 1, 45–54.

Rowlands, M. (2012). Contractarianism, animals, and risk. In: Garrett, J.R. (ed.) The ethics of animal research: Exploring the controversy. MIT Press, Cambridge, MA, pp. 147–166.

Smith, C. (2014). Articulating ecological injustices of recognition. In: Wissenburg, M. and Schlosberg, D. (eds.) Political animals and animal politics. Palgrave Macmillan, Basingstoke, pp. 61–74.

Torres, J. (2022). Animal Ethics Based on Friendship: An Aristotelian Perspective. Journal of Animal Ethics 12 (1): 76–88

Townley, C. (2010). Animals as friends. Between the Species, 13(10), 3. DOI: 10.15368/bts.2010v13n10.3.

Waiblinger, S, Menke, C. and Coleman, G. (2002). The relationship between attitudes, personal characteristics and behaviour of stockpeople and subsequent behaviour and production of dairy cows. Applied Animal Behaviour Science, 79(3), 195–219. DOI: 10.1016/S0168-1591(02)00155-7.

Webb, S.H. (1998). On God and dogs: A christian theology of compassion for animals. Oxford University Press, Oxford.

Franck Meijboom and Patrick Bos, Back to the future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

QALY as a supporting factor for animal model selection in animal research

K. Persson[1,2,] and S. Hartstang[1]*
[1]University of Veterinary Medicine Hannover, Foundation, Bischofsholer Damm 15, 30173 Hanover, Germany; [2]University of Basel, Petersplatz 1, 4001 Basel, Switzerland
[*] Corresponding author, e-mail: Kirsten.Persson@tiho-hannover.de

Abstract

Given the utilitarian basis of animal research legislation (we focus on the German and Swiss Animal Welfare Acts, here, but acknowledge European animal research regulations, namely the Directive 2010/63, too), it seems plausible to suggest further utility-based tools for decision-making in animal research. The "Quality-Adjusted-Life Years" (QALY) is a measure in medicine and public health, originally used to compare different approaches in a health care system (population-based) or different interventions for an individual patient (individual-based) in clinical decision-making regarding the outcome for the patients (and, consequently, their cost-effectiveness). The basic idea of QALY is the integration of the expected remaining quantity and quality of life for a patient, whereby quantity is measured in years and quality in a health state value between zero (death) and one (perfect health), occasionally also including negative values for states worth than death. In animal research, the selection of animal models is currently based on different ethical, legal, and practical criteria, such as: preferring non-vertebrates over vertebrates, fish over mammals, less sentient over more sentient animals, well-established model organisms over less conventional species, choosing animals "lower on the evolutionary scale", natural hosts, or those animals who are easier to handle. From an animal ethics perspective, in contrast to the suffering inflicted during experimental procedures, the loss of lifetime for the individual animal when being used for a research study is currently not taken into consideration. Here, we want to suggest implementing QALY in animal research (QALYAR) as a way of including this criterion as a morally relevant aspect for the model selection in animal research. Like in the QALY calculation, a health state value should be attributed to each phase of the potential laboratory animal's life. QALYAR can, accordingly, be influenced not only by the choice of animal species (or breeding line) but also by the animal's age at the time of the experiment, by different solutions to take care of animals after the experiment, and by the refinement of all human-animal-interaction in the animal's life. An adaptation of the original parameters to calculate QALY in human medicine would have to be discussed for QALYAR in detail.

Laboratory animal model selection in the law

Despite the plurality of current approaches in animal ethics and despite the complexity of human-animal relationships, most animal welfare legislation is still based on utilitarian assumptions. On the one hand, the legal implementation of concepts like the intrinsic value (Article 1.3 Dutch Animal Welfare Act) of animals, animal dignity (Chapter 1, Article 3 Swiss Animal Welfare Act), or the protection of animal life (Section 1 German Animal Welfare Act) points towards gradual changes in animal welfare law. On the other hand, when it comes to concrete, specific regulations of human-animal interactions, they predominantly include a utilitarian weighing of animal welfare against other (human) goods and preferences.

In animal research, the process of animal model selection is only vaguely framed and guided by most animal welfare legislation. By "animal model" we refer here mainly to the species of the animal but also to breeding lines or models for particular diseases or genetic properties. Animal model selection can be

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

crucial for several aspects of animal research such as effort, outcome, validity and translational power of a study (D'Angelo *et al*., 2022),. The EU Directive 2010/63 prescribes the selection of the species "with the lowest capacity to experience pain, suffering, distress or lasting harm" (13). While the Swiss Animal Welfare Law dictates the choice of species which are lowest on the evolutionary scale (Section 20b) (without compromising the scientific outcome of the study), the German Animal Welfare Act asks to pick that type of animal that would suffer the least from the experimental procedure (Section 7a (2)), presenting a precision of the EU directive by focusing on the context (suffering *from the experimental procedure*) instead of inherent properties (the *species with the lowest capacity*...) of the animal. Further selection criteria that are mentioned or implied in Western Animal Welfare legislation but will not be discussed in detail, such as: preferring non-vertebrates over vertebrates, preferring fish over mammals, preferring less sentient over more sentient animals, preferring well-established model organisms over less conventional species, early developmental stages over adult animals, choosing natural hosts, or those animals who are easier to handle.

Lifetime wellbeing as a criterion in laboratory animal model selection

From an animal ethics perspective, in contrast to the suffering inflicted during experimental procedures, the loss of lifetime for the individual animal when being used and killed for a research study, and the loss through lifetime being spent in a non-preferable state are currently not taken into consideration. Here, we want to suggest a way of including these criteria as morally relevant aspects for the model selection in animal research. Before explaining the method of attributing quality-adjusted life years to animal life, we want to make the assumptions explicit that, despite being far from undisputed in the animal philosophy discourse, will be taken as given for the purpose of our argument, here. Firstly, and broadly accepted in both science and philosophy, we assume that animals have preferences for certain states in life and, secondly, that we have means to access those preferences at least to some extent. Furthermore, we adhere to the view that animals have a lifetime wellbeing. We will provide examples for measuring tools later on. Thirdly, we assume that death means a harm to animals, at least in a simple sense of the deprivation account of animal death, that is, the animal is deprived of future chances to experience moments in life (Delon, 2023). Based on these assumptions it makes sense to compare the lifetime wellbeing of animals' lives and compare the quality of different life scenarios with earlier and later times of death.

QALY as a concept

The Quality-Adjusted-Life Year (QALY) is a measure in human medicine and public health, originally used to compare different approaches in a health care system (population-based) or different interventions for an individual patient (individual-based) in clinical decision-making regarding the outcome for the patients (and, consequently, their cost-effectiveness). The basic idea of QALY is the integration of the expected remaining quantity and quality of life for a patient:

"Conceptually based in expected utility theory, the QALY rests on the assumption that preference-weighted values may be attached to specific health states relative to the time spent in those states. Because the QALY incorporates both quantity and quality of life, it therefore provides a reasonable estimate of the amount of quality time (i.e., health benefit) an individual may experience as a result of a particular health program or intervention. Furthermore, comparisons between programs or interventions may be made both within a single disease and across different diseases. Consequently, the QALY has been widely used as an outcome measure in medicine, psychology, public health, and economics.

Calculation of the QALY requires various health states be assigned a value ranging from zero to one, with zero representing death and one representing ideal health. Health states considered worse than death (i.e., a health state valuation less than zero) can also exist and are assigned a negative value. In order to

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

determine the values of each particular health state, respondents are asked to rate them relative to one another, or using an anchor point such as death. Several methods may be used to ascertain valuations, including preference measurement techniques such as the standard gamble or time trade-off, or through the use of rating scales, such as the EQ-5D, Health Utilities Index, Quality of Well-Being Scale, and SF-6D." (Howren, 2013).

The transfer from human medicine to animal research obviously requires some adaptations and the purpose of the value shifts from an economic to an ethics angle. However, the core idea that quality and quantity of life could be integrated in a single value that can be useful in decision-making processes is comparable. We will briefly describe the steps towards a "quality adjusted life year measure for animal research" (QALYAR) in the following chapter.

QALYAR - QALY for animal research

Like in the QALY calculation, a health state value should be attributed to each phase of the potential laboratory animal's life. That includes the influences of living under laboratory conditions (e.g., limitations regarding movement and choice of social partners, boredom, being handled by laboratory staff, transportation, etc.), effects of genetic modifications (e.g., disposition for development of certain diseases), the duration and frequency of study participation and the extent to which the physical and mental health state are affected during the experimental procedure; but also the age and average life expectancy of the respective species and the animal's fate after the experiment. The QALYAR can, accordingly, be influenced not only by (1) the choice of animal species (or breeding line), but also by (2) the animal's age at the time of the experiment, by different solutions to take care of animals after the experiment, and by (3) the refinement of all human-animal-interaction in the animal's life. An adaptation of the original parameters to calculate QALY in human medicine would have to be discussed for animals in detail.

(1) The law (as well as societal norms) distinguishes between certain animal species at various points within the animal research legal framework. Following the EU directive 2010/63, the German Animal Welfare Act (German acronym TierSchG), and the Animal Welfare Regulation Governing Experimental Animals (German acronym TierSchVersV), specifically cover only vertebrates and cephalopods. Furthermore, certain regulations apply to dogs, cats and primates (e.g., TierSchG Section 4 No. 3, TierSchVersV Sections 8, 9, 23, 24, 28, 29). The reasons for making these kinds of categorizations can be interpreted as follows: The former regulations in a way try to take into consideration the different kinds of capacities to suffer, while the latter can be explained by a special kind of human–animal relation. Focussing on the first group, it can be stated that, in general, vertebrates and cephalopods are considered to be on a 'higher' level of evolutionary development and therefore have a higher capacity for suffering (by having developed the biological prerequisites for this). Given the pathocentric principle within the legal framework, a higher capacity for suffering constitutes a higher level of protection claims. This pathocentric claim behind these distinctions in law is taken into account in a special way by a QALYAR-approach: A QALYAR-value, which would be attributed to an animal here, would precisely take into account the ability of a being to suffer, as this is an essential factor in the calculation. In this sense, the requirements of the legal framework would be fulfilled by implementing the QALYAR-approach on the one hand and, on the other, would be very feasible in practice due to its (quasi-empirical) method. Of course, this claim is only valid under the assumption that calculating subjective mental status of beings is always limited. As subjective mental status are, epistemological speaking, exactly that: radically subjective. And accordingly, the empirical ascertainability of these states is always subject to epistemological limits. Nevertheless, it is possible to draw meaningful conclusions about subjectively experienced states — and some indications of this may even be empirically measurable under certain circumstances (e.g. certain physiological parameters).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

A special effect should also be briefly mentioned here: a QALYAR-approach focuses precisely on the subjective quality of experiences of individuals, without making absolute statements about these qualities. But also without making normative statements about these qualities in comparison of different species to one another. To a certain extent, this takes into account the ethical principle that the individual well-being of a being should be central to the considerations (cf. e.g. Tom Regan).

(2) To begin with, a more general remark is to be made: there is something particular for the laboratory animal context which is absolutely different for the original applications of QALY. The animal individual is not the focus of the intervention, he is not the "patient" like in human or veterinary medicine, but a means to another end. Accordingly, it is not the main goal of animal research to promote laboratory animal wellbeing but rather a necessity amongst others. For those reasons, a high QAYLYAR value is, from an ethical point of view, something that should be taken into consideration when choosing model organisms, even though maximising QALYAR it is not part of the scientific agenda. Having said that, the QALYAR would be highly dependent on the animals' age in several respects. There are at least three different dimensions of animal age that could be considered (Persson *et al*., 2022).

Firstly, a research animal of old age might not be able to compensate for a treatment's side effect as easily as a younger one. It might also take her longer to recover or she might suffer from comorbidities. Her overall quality of life during a given treatment might accordingly be comparatively low and a longer duration in that stage would affect QALYAR negatively.

Secondly, an individual's remaining life expectancy is an important criterion to calculate the quality-adjusted life years in human medicine – and it should count in the same way for QALYAR. On the one hand, a short remaining life expectancy means an overall constraint for the value for QALYAR because the high-quality life-time that can be gained is very limited. On the other hand, a long remaining life expectancy means that (1) what the animal is deprived of if her life is taken early is a lot or (2) a long time of suffering under the conditions of living in a laboratory and being experimented on. As a practical consequence, one piece of advice in terms of QALYAR could be to prefer species with an overall low or very low life expectancy.

Thirdly, there is the idea of "fair innings" which "reflects the feeling that everyone is entitled to some 'normal' span of health (...) and anyone failing to achieve this has been cheated, whilst anyone getting more than this is 'living on borrowed time'" (Williams, 1997: p. 117). For lab animals, a reasonable "normal span of health" would have to be defined, as animal life under laboratory condition differs fundamentally from other animals' lives. A criterion for the choice of species could be if the respective animal has a normal span of health, if he can live his life to a comparatively large extent of the full potential. Here, the option of rehoming animals might come into play as an additional chapter of their life would be added.

(3) Two aspects of human-animal relations in the context of the choice of animal models should be briefly mentioned here. Firstly, an analytical argument: the choice of an animal model is often influenced or even determined by particular human-animal-relations. This can be exemplified by the fact that the legal framework provides special regulations for cats and dogs (see above). These regulations are often based on certain social norms and human-animal-relations. If QALYAR aspects are the guiding principle for decisions on the choice of an animal model, such exceptions or distinctions would ultimately be arbitrary and could not be used to justify preferential treatment for certain species solely on the basis of their particular human-animal-relations.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

A more prospective thought should also be voiced: A refinement of human-animal-interactions (such as a phase of getting to know the animals prior to the start of a study) may also have a beneficial effect on the husbandry conditions of the animals and a QALYAR score would increase accordingly.

Conclusion

Any concept that focusses on the quality of animals' lives faces an inherent problem. It balances some calculated good in the future against a harm in the present. While humans can decide to endure some kind of pain or discomfort in the present (e.g. throughout a medical treatment) in order to experience some good (e.g. a beneficial health status) in the future, nonhuman animals cannot. As far as we know today, most animals lack this fundamental capability to free themselves from the constraints, the circumstances of the situation, the moment itself, to place themselves in relation to the circumstances, to reflect, and, consequently, to revise their (initial) judgement if necessary, i.e., to be able to change their mind. Animals, in that sense, are 'closely tied to the peg of the moment' (Nietzsche, 1999: p. 248). Animals experience their affections and inner states in a very direct and inescapable way. According to Bernard Rollin, "We must remember that an animal *is* its pain, for it is incapable of anticipating or even hoping for cessation of that pain" (Rollin 2011, p. 657). Taking this into account, a QALYAR-approach within ethical considerations in animal research always has to bear in mind, that there is an absolute maximum of negatively experienced conditions of an animal that categorically prohibits any forthgoing, even if there is a high probability of a high quality of life in the future. Thus, there are absolute limits of suffering of an animal in the present, regardless of the prospects of success in the future. (It is also the case that humans might suffer from the prospect of having a shorter life time than they had expected, whereas most nonhuman animals lack the awareness of their life expectancy and can, thus, not suffer from that prospect. Based on that, one can argue that shortening or not prolonging nonhuman animal life is less bad than shortening or not prolonging human life.)

Tools for the evaluation of animal quality of life resemble questionnaires that are used to assess the quality of life in human patients who are unable to self-report, such as small children or cognitively impaired patients, usually answered by proxies and known as OROs (obswerver-reported outcome measures) (Fulmer *et al*., 2022). The development of disease-specific assessment tools can be helpful for QALYAR calculation, as they are sensitive to the impact of particular diseases or treatments that can be an important part of laboratory research. Nevertheless, aspects like the specific circumstances of living under laboratory conditions, being handled, treated, and, in the end, if applicable, being killed if "humane endpoints" are reached, would have to be integrated in already existing tools to render them suitable in the cases of laboratory animals.

Furthermore, another limitation of the concept of QALYAR has to be mentioned, which is a problem of justification theory. QALYAR-approaches are ultimately based on a consequentialist, or more precisely: a utilitarian premise. And as such, the objections that are raised against utilitarian concepts should also be addressed here (Williams, 1973). These include, among others: problems in measuring happiness, unpredictability of consequences or the fundamental problem of violating individual rights.

References

D'Angelo, L., de Girolamo, P., Lossi, L., Merighi, A., Raspa, M. and Scavizzi, F. (2022): Anatomy, physiological features, genetics and genetic alterations, breeding and strain differences relevant to the choice of the model—Impact of 3Rs. Practical Handbook on the 3Rs in the Context of the Directive 2010/63/EU, 47–79. DOI: 10.1016/B978-0-12-821180-9.00009-X.

Delon, N. (2023): The value of death for animals. An overview. In Giroux, V., Voigt, K. and Pepper, A. (eds) The ethics of animal shelters. Oxford University Press, Oxford, pp. 103–130.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Fulmer, A.E., Laven, L.J. and Hill, K.E. (2022): Quality of life measurement in dogs and cats: A scoping review of generic tools. Animals, 12(3), 400. DOI: 10.3390/ani12030400.

Howren, M.B. (2013): Quality-Adjusted Life Years (QALYs). In : Encyclopedia of behavioral medicine. Springer, New York, NY, pp. 1605–1606. DOI: 10.1007/978-1-4419-1005-9_613.

Nietzsche, F. (1999): Unzeitgemäße Betrachtungen. Zweites Stück: Vom Nutzen und Nachtheil der Historie für das Leben. 15 volumes. DTB/de Gruyter, Munich.

Persson, K., Selter, F., Kunzmann, P. and Neitzke, G. (2022): Killing Kira, letting Tom go?-An empirical study on intuitions regarding end-of-life decisions in companion animals and humans. Animals, 12(19), 2494. DOI: 10.3390/ani12192494.

Rollin, B.E. (2011): Euthanasia, moral stress, and chronic illness in veterinary medicine. Veterinary Clinics: Small Animal Practice, 41(3), 651–659. DOI: 10.1016/j.cvsm.2011.03.005.

Williams, Alan (1997): Intergenerational equity: An exploration of the 'fair innings' argument. Health Economics, 6(2), 117–132. DOI: 10.1002/(SICI)1099-1050(199703)6:2<117::AID-HEC256>3.0.CO;2-B.

Williams, B. (1973): A critique of utilitarianism. In Smart, J.J.C. and Williams, B. (eds) Utilitarianism: for and against. Cambridge University Press, Cambridge, pp. 67-128.

Franck Meijboom and Patrick Bos, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Independent review of animal experimentation: Who should do what and when?

E. Louis-Maerten[1,], A. Milford[1] and B.S. Elger[1,2]*
[1]Institute for Biomedical Ethics, University of Basel, Basel, Switzerland; [2]Center of Legal Medicine, Faculty of Medicine, University of Geneva, Geneva, Switzerland
[*]Corresponding author, e-mail: E-mail: edwin.louis@unibas.ch

Abstract

The review process and its independence are two critical ethical pillars guiding the preliminary stages of animal experimentation. By following a thorough review process, institutions seek to uphold ethical standards in animal experimentation and promote the responsible and humane use of animals. This process typically involves two kinds of review: first, the scientific merit review, usually done at the level of funding and ensuring that the study design is relevant and the research objectives are achievable, and second, the ethical review, usually done after securing the funding and whose role is to ensure compliance with ethical and legal standards. Each review has its importance and plays a part in warranting best practices in animal experimentation. However, the current timeline consisting of doing first the scientific merit review within a funding scheme call, and then the formal ethical review required by the law does not promote the full implementation of some best scientific practices, e.g., the 3R principles, and may result in inadequate budget calculations. Furthermore, it is possible that committees for animal experimentation may be influenced by the momentum gained by research projects that already got accepted by the scientific merit review and funded. In this essay, we explore alternative timelines and suggest some guidelines for a more optimal independent review process. More precisely, we argue that ethical review should occur concomitantly with the scientific merit review in order to fully operationalize the requirements of the European Union directive 2010/63. We also highlight the importance of independence in the review process, especially from the funding body, which is decisive in building trust, promoting best practices, and fulfilling the full range of the requirements of the current laws.

Keywords: animal research ethics, committee for animal experimentation, ethical review, preliminary review, scientific review

Introduction

Broadly speaking, the preliminary review of research protocols plays a critical role in ensuring that science is done following the best available evidence (epistemic virtue) and within the appropriate legal and ethical frames (ethico-legal virtue). Together with the peer-review process of research publications, the preliminary review process is a key mechanism for scientific integrity and should therefore be built on strong foundational principles and aim for the best practices. In human clinical research, the declaration of Helsinki sets such kinds of general principles for the preliminary review of research protocols (World Medical Association, 2013). When it comes to nonhuman animals protected by law (hereafter 'animals'), the European Union (EU) directive 2010/63 (Directive 2010/63/EU, Article 38) and the EU working document on project evaluation and retrospective assessment (European Commission, 2018) identify four core principles for the preliminary review: (P1) Necessity of animal use: there is no alternative method able to answer the scientific question and which does not involve the use of live animals; (P2) Scientific validity: the experimental design is scientifically sound and is likely to yield meaningful results; (P3) Compliance with local regulations: the proposed research follows the appropriate regulations and guidelines governing the use of animals for scientific purposes; (P4) Ethical considerations: the proposed

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

research aims are justified in terms of harms done to the animals and the potential expected benefits for scientific or medical/veterinary knowledge. In the EU and Switzerland, the presence of review boards that evaluate these core principles (in particular (P1), (P3), and (P4)) has become a requirement with the directive 2010/63 (Directive 2010/63/EU, recital 48) and the Swiss Animal Protection Ordinance (AniPO, Article 149), respectively. However, the current implementation of these review boards does not fully meet these core principles, especially the first one. In this essay, we will first briefly introduce the current review process of animal experimentation (with a focus on the EU and Switzerland, as the organisation of animal experimentation varies across the world) and argue why it is suboptimal at best. In a second step, we will propose two measures that may help improve this process.

A double pitfall in the preliminary review process of animal experimentation

The preliminary review process in the EU and Switzerland

The review process of animal experimentation typically involves the submission of a funding application with the scientific rationale and a general outline of the methodologies that will be employed. Only then is a detailed protocol describing the objectives of the research, the experimental design, and measures for animal welfare submitted to a committee for animal experimentation. To better understand the nature of the underlying issues at stake, Figure 1 represents a simplified version of how an animal research protocol is processed in this scheme.

As we can see, most of the scientific merit review is done at the level of the funding body and, based on its positive opinion, the formal review process of the full application (the one required by the EU directive and the AniPO) is conducted in a second step. We argue that this mode of operation seems flawed for at least two reasons: first, it puts emphasis on the funding body's opinion, and second, it hampers the implementation of (P1), the principle of necessity of animal use.

Reliance on the scientific opinion of funding agencies

Because the scientific merit review is usually done at the level of the funding body, it sets the frame within which the research project will proceed. As a result, the ethical review is less efficient as it could be and cannot allow for a full implementation of the relevant ethical guidelines, in particular concerning the 3Rs (Replace, Reduce, Refine) or the 3Vs (Würbel, 2017). For example, if a research project is validated by a funding scheme and a grant is provided, it may be difficult to suggest substantial changes in the protocol design (e.g., by replacing the use of some animals, adding more refinement methods, or proposing to rehome the animals) due to practical and financial concerns following the scientific merit review approbation. But because of this misplaced emphasis, some important deliberative aspects of

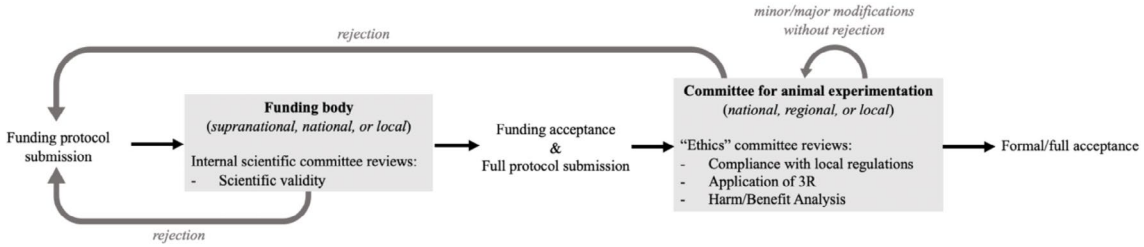


Figure 1. Schematic view of the preliminary review process of animal experimentation in the EU and Switzerland.

Franck Meijboom and Pamela Rowe, Book, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

the ethical review are set aside, and the ethical review itself becomes another administrative burden, a technicality of research, rather than a genuine piece of the scientific process or a true occasion to improve the quality of science (Vogt *et al.*, 2016), as envisioned by the EU Commission and the Swiss Parliament in their policy.

On another note, because the scientific merit review is done by the funding agency, there may be concerns of unequal access to funding or biased scientific review. Indeed, 'fashionable' research (i.e., projects that are aligned with current scientific trends, prevailing theories, or societal interests) and research projects that are based on conventional animal experimentation are more likely to be accepted and funded compared to projects that are using or developing NAMs (Non-Animal Methods, or New Approach Methodologies) or other 3R methods (Ingber, 2020; Krebs *et al.*, 2023; Veening-Griffioen *et al.*, 2021). Therefore, it may be assumed that the current model of preliminary review partly maintains scientific inertia in animal research and the lack of uptake of NAMs and 3R methods based on a traditional epistemic approach.

Reliance on the ethical review to handle the scientific query of replacement

As said in the introduction, the necessity of animal use is one of the core principles of preliminary review of animal experimentation. And this principle echoes directly the general objective of the EU directive to phase out animal experimentation wherever possible (Directive 2010/63/EU, recital 10). However, compared to the principles (P2), (P3), and (P4) defined above, this specific principle is rather poorly implemented (Blattner, 2019). One reason for this may stem from the fact that the evaluation of the application of the 3R principles is done during the ethical review. And, within the 3Rs, the principle of replacement matches the aim of the one of necessity of animal use: 'Member States shall ensure that, wherever possible, a scientifically satisfactory method or testing strategy, not entailing the use of live animals, shall be used instead of a procedure' (Directive 2010/63/EU, Article 4, section 1). The problem here is that the assessment of replacement, or of the necessity of animal use, is more a scientific issue rather than an ethical one, and should therefore belong to the scientific merit review. As explained in a recent paper by Kramer (2024), there are three conditions a methodology should meet to be considered as an alternative to animal experimentation: first, the methodology should address the same problem as the one requiring animal experimentation, under an appropriate description of that problem; second, the methodology should have a reasonable chance of success, compared to animal experimentation, in solving that problem; finally, the methodology must not be ethically unacceptable as a solution. The last condition being set aside for the ethical review, it is clear that the first two conditions explicitly call for a scientific evaluation of the current evidence. Therefore, the current model of preliminary review does not allow for the promotion of core principle (P1) because its evaluation happens at the wrong stage of the review process.

Looking for remedies: how the review process can be improved given the current situation?

Some lessons learned from the review process of clinical trials on human subjects

In order to evaluate some possible solutions to the identified problems, we may first turn our attention to the review process in human clinical trials. In the EU, these are regulated by the EU Clinical Trials Regulation 536/2014. Within this legal frame, a research application is first submitted to a funding agency, and then is concomitantly reviewed by an independent scientific committee (usually a national competent authority) and another independent ethical committee (e.g., at the regional or local level). From this, we can learn at least two measures to apply to the preliminary review of animal experimentation: (1) The scientific and ethical reviews should be independent from the funding body

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

to limit possible biases; (2) the decision of funding itself should be subordinate to the decisions of these two reviews so that they are true instruments for scientific integrity. From a theoretical perspective, the implementation of these two measures does not require any change in the legal apparatus, as both the EU directive 2010/63 and the AniPO state that the reviews should be independent and aligned with (P1), (P2), (P3) and (P4). However, it does require a structural change in the process of doing scientific and ethical reviews, as well as more coordination with the funding bodies.

Restructuring the scientific and ethical reviews

Building on the discussion in section 1-C, we could say that a more optimal partition of the core principles of the preliminary review of animal experimentation would be to have the scientific merit review assessing (P1) and (P2), and the ethical review assessing (P3) and (P4). That being said, how to *actually* implement these changes? Two options may be available here: either having a single authority that is in charge of both scientific and ethical reviews, or keeping two separate bodies. On the one hand, it may be argued that many ethical concerns to animal experimentation (and the assessment frameworks currently used such as the 3Rs and harm-benefit analysis) relate to some extent to the scientific validity of the research project, and that therefore a single entity may be more appropriate and efficient to perform the whole review process. However, it may also be argued on the other hand that each review has its own specificities, and if each is given the partition of core principles stated before, then having a specific composition for each type of review (centred on scientific competency for the scientific one, and on more various and balanced competencies for the ethical one) would be more appropriate.

On a more important note, these two kinds of review should be truly independent from the funding body and other sources of conflicts of interest. This is mostly the case for the existing ethical review bodies, but this should also concern the scientific review. Like for human clinical research, one could imagine the creation of a national competent authority whose task would be to scientifically evaluate the research projects asking for the use of animals. Such authority would include competences from various research fields, laboratory science, and veterinary science. But it could also centralize the existing scientific expertise on replacement methods in order to co-opt this expertise within the assessment panel whenever necessary and carry out a satisfactory assessment of (P1). The Belgian initiative RE-place (2024) and the European Medicines Agency's Non-Clinical and New Approach Methodologies European Specialised Expert Community (2024) are examples of centralized databases of experts that may help in this process.

Implementing conditionality in funding schemes

The second measure we propose here is to redefine the weight of funding schemes and funding bodies in the evaluation of scientific projects. There should be no misunderstanding here: funding agencies should be able to decide which project they wish to sponsor, with the caveat of biases sketched in section 1-B. However, the decision of the funding body should not be confused by researchers with the formal scientific and ethical validation of the project, as outlined by the laws. To this end, we suggest that no formal funding acceptance of a research project involving animals should be issued without a positive decision of both an appropriate scientific and ethical review committee. In other words, the decision of a funding body is subordinated or conditioned by the decision of these formal committees. This conditionality of funding does not change much of the current grant system as it is operationalized in the EU and Switzerland. It has even already been implemented into some grant schemes, e.g., Horizon Europe (European Commission, 2024). However, a full and generalised implementation may require more coordination and standardization between European countries so that the appropriate entities for scientific and ethical review can be identified by the various funding bodies at the national (e.g., Swiss National Science Foundation grants) and supranational level (e.g., EU grants).

Franck Meijboom and Pamela Pavliscak, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Improving the access to key resources

These considerations beg the question of resources: how much effort should be put into the review of animal research protocols? Both the scientific and the ethical reviews are quite resource demanding in terms of structures, time, financial support, and manpower. In particular, having qualified personnel with relevant expertise and trained to sit in either of these committees is a critical consideration to improve the review process (Russell, 2012). Moreover, standardizing the review process with clear guidelines and clear criteria for assessment and decision-making may also make the decisions more consistent and transparent. In any case, tackling the massive amount of animal research protocols to review requires an equally massive increase in the resources put into the review process, which may be further optimized with a preselection system, like the current grant system. Indeed, even if grant schemes suffer from several limitations (funding of 'fashionable' and conventional research, as explained in section 1-B), they have the collateral effect that they reduce the workload imposed on the formal review process, making it more effective.

Revising the preliminary review process of animal experimentation

In Figure 2 we illustrate the implementation of these two measures in the process of an animal research project.

Conclusion

In conclusion, the current preliminary review process of research protocols in animal experimentation, as it is done in the EU and Switzerland, falls short of its objectives, most importantly concerning the assessment of the necessity of animal use and the promotion of the 3Rs. Relying heavily on scientific merit reviews conducted by funding bodies, the process lacks efficiency in the implementation of alternative methods and the evaluation of animal necessity. To address these shortcomings, adopting independent scientific and ethical committees to conduct parallel reviews, and conditioning funding decisions on the approval of these committees, can enhance the rigor and ethical integrity of the review process. Such reforms are crucial steps to uphold scientific standards, promote innovation, and ensure the welfare of animals used for experimental purposes.

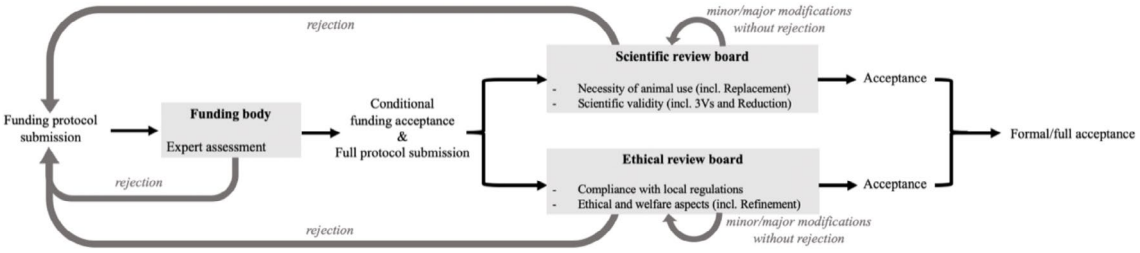


Figure 2. Schematic view of the preliminary review process of animal experimentation including the conditionality of funding and an independent scientific and ethical review.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

References

Blattner, C.E. (2019). Rethinking the 3Rs: from whitewashing to rights. In Animal experimentation: Working towards a paradigm change. Brill, Leiden, pp. 168–193.

Directive 2010/63/EU of the European Parliament and of the Council of 22 September 2010 on the protection of animals used for scientific purposes. OJ L 276, 20.10.2010, ELI. Available online at http://data.europa.eu/eli/dir/2010/63/oj

European Commission, Directorate-General for Environment, (2018). Caring for animals aiming for better science: Directive 2010/63/EU on protection of animals used for scientific purposes: project evaluation and retrospective assessment, Publications Office. Available online at https://data.europa.eu/doi/10.2779/59814

European Commission (2024). EU Grants: Horizon Europe Programme Guide: V4.1. Available online at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/programme-guide_horizon_en.pdf.

European Medicines Agency (2024). Non-Clinical and New Approach Methodologies European Specialised Expert Community. Available online at https://www.ema.europa.eu/en/committees/working-parties-other-groups/chmp/non-clinical-new-approach-methodologies-european-specialised-expert-community (accessed 29 May 2024).

Ingber, D.E. (2020). Is it time for reviewer 3 to request human organ chip experiments instead of animal validation studies? Advanced Science, 7(22), 2002030. DOI: 10.1002/advs.202002030

Kramer, K. (2024). When is something an alternative? A general account applied to animal-free alternatives to animal research. Cambridge Quarterly of Healthcare Ethics, 33(1), 89–101. DOI: 10.1017/S0963180123000300

Krebs, C.E., Lam, A., McCarthy, J., Constantino, H. and Sullivan, K. (2023). A survey to assess animal methods bias in scientific publishing. ALTEX, 40(4), 665–676. DOI: 10.14573/altex.2210212

RE-Place (2024). Database. Available online at https://www.re-place.be/database (accessed 29 May 2024).

Russell, D. (2012). Why animal ethics committees don't work. Between the Species, 15(1), 127–142.

Swiss Animal Protection Ordinance 455.1 of the Swiss Federal Council of 23 April 2008. Available online athttps://www.blv.admin.ch/dam/blv/en/dokumente/tiere/rechts-und-vollzugsgrundlagen/tschv-en.pdf.download.pdf/Animal%20Protection%20Ordinance%20455.1.pdf

Veening-Griffioen, D.H., Ferreira, G.S., Boon, W.P.C., Gispen-de Wied, C.C., Schellekens, H., Moors, E.H.M. and Van Meer, P.J.K. (2021). Tradition, not science, is the basis of animal model selection in translational and applied research. ALTEX, 38(1), 49–62. DOI: 10.14573/altex.2003301

Vogt, L., Reichlin, T.S., Nathues, C. and Würbel, H. (2016). Authorization of animal experiments is based on confidence rather than evidence of scientific rigor. PLoS Biology, 14(12): e2000598. DOI: 10.1371/journal.pbio.2000598

World Medical Association. (2013). World Medical Association Declaration of Helsinki: Ethical principles for medical research involving human subjects. Journal of the American Medical Association, 310(20), 2191–2194. DOI: 10.1001/jama.2013.281053

Würbel, H. (2017). More than 3Rs: the importance of scientific validity for harm-benefit analysis of animal research. Lab Animal, 46(4), 164–166. DOI: 10.1038/laban.1220

Franck Meijboom and Patrick Bateson | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Why all healthy laboratory animals should be rehomed

M.R.E. Janssens[1,] and P.L.P. van Loo[2]*
[1]Ethisch Bedrijf (Ethical Company), 3011 XL Rotterdam, the Netherlands; [2]Animal Welfare Body Utrecht, Utrecht University, 3584 CJ Utrecht, The Netherlands
** Corresponding author, e-mail: moniquejanssens@ethischbedrijf.nl*

Abstract

This paper explores the ethical imperative of rehoming all healthy animals of sentient species after experiments have finished or when they have become otherwise redundant. We consider disparate perspectives in animal ethics and see how they point in the same direction. We illustrate our case with our own rehoming experience from the joint Animal Welfare Body of Utrecht University and the University Medical Centre Utrecht, the Netherlands.

Keywords: adoption, animal experiments, chain responsibility, ethics, rehoming

Introduction

Rehoming laboratory animals that are alive and healthy after animal experiments, or that have not been used and are redundant, is common practice for larger companion animal species. At the same time, it seems normal to routinely kill smaller surplus animals such as mice and rats (Palmer *et al*., 2022; Skidmore and Roe, 2021). The Netherlands National Committee for the protection of animals used for scientific purposes (NCad) was asked by the Dutch Minister of Agriculture, Nature and Food Quality to advise on rehoming of laboratory cats, dogs and non-human primates, given the public interest in these animals. The NCad states that there is no need for killing laboratory animals. One of their proposed actions is: 'Encouraging the rehoming of other eligible animal species by means of the general rehoming framework drawn up by the committee' (NCad, 2016: p. 6).

Legislation and guidelines

The subject of rehoming has been largely absent in laboratory animal legislation and guidelines but is gradually being addressed more often. The latest version of the Guide for the Care and Use of Laboratory Animals (National Research Council, 2011) does not mention rehoming at all. The EU directive 2010/63/EU (European Commission, 2010) and the Australian Code for the care and use of animals for scientific purposes (NHRMC, 2023) both promote rehoming. EU legislation and national guidelines regarding the rehoming of laboratory animals primarily focus on cats and dogs (LASA, 2023; NCad, 2016). Many countries have specific organisations that intermediate for cats and dogs.

There is, however, a shift visible regarding other species that are considered eligible for rehoming. Bottom-up, we see that increasingly research institutes are involved in the rehoming of a range of species (Harms and Stoskopf, 2007; Skidmore, 2020). A recent European survey showed that 97 respondents had rehomed as many as 23 different species (Moons *et al*., 2023). Top-down we see that in Germany the law on Animal Welfare (Tierschutzgesetz) prescribes that killing animals without good reasons is not allowed. This includes laboratory animals and thus implies that researchers need to think about the fate of the animals after use (Doehring and Erhard, 2005). Furthermore, a Federation of European Laboratory Animal Science Associations (FELASA) working group on 'Rehoming of animals used for scientific and educational purposes' offers recommendations for the rehoming of a range of laboratory animals species (Ecuer *et al*., 2023a).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Ethical arguments

Ethics plays an important role in animal testing. From the sixties onwards, the 3Rs — Replacement, Reduction and Refinement — have gained ground and increasingly formed the ethical and legal basis of all animal experimentation (Tannenbaum *et al*., 2015). In the meantime, animal ethics has evolved further and has become an indispensable part of both the assessment of projects for licensing, and daily decision making in the animal facilities and laboratories. Rehoming laboratory animals is one of many much-discussed ethical issues, especially when it comes to smaller animals that are not the common pet species (Skidmore and Roe, 2020).

In animal ethics, it has been argued broadly that animals from many species have a moral status, which means they are morally considerable (Warren, 1997). In this paper we focus on vertebrate species, which are all sentient, meaning that animals of these species can experience positive and negative affective states, such as happiness, relief, hunger, thirst, pain and boredom (Duncan, 2006). Additionally, memory, anticipation and the ability to cope with specific circumstances can enhance or diminish negative and positive experiences (Spruijt *et al*., 2001; Varner, 2012). The ethics used in animal experimentation is mainly utilitarian (Franco and Olsson, 2016), based on a harm-benefit analysis: weighing the burdens against the benefits (Grimm, 2015). The utilitarian case for rehoming all redundant laboratory vertebrates that are healthy and rehomeable is that a life worth living is prolonged, while for the volunteering adopter there is a small burden and a great pleasure. Although current laboratory practice is shaped by the view that the death of an animal is not a welfare issue (Palmer *et al*., 2021), and that in utilitarianism the topic of the value of continuing life has triggered debate, killing can be seen as taking away future welfare or future fulfilment of preferences (Balcombe, 2009; Bovenkerk and Braithwaite, 2016; DeGrazia, 2016; Janssens, 2022; Kagan and Singer, 2016; Kasperbauer and Sandøe, 2016).

How is this for other approaches in ethics? From a deontological viewpoint, Regan argues that animals (at least mammals) have inherent value and that therefore their lives matter (Regan 2004). Killing them is violating their right to life. Korsgaard argues that other animals than humans are also beings for whom things can be good or bad (Korsgaard, 2018). They pursue positive experiences just like humans and are therefore ends in themselves that should not be treated solely as instruments for the purposes of others. In addition, there is the deontological case that the animals who have been used for the benefit of humankind deserve a pension-like life in relative happiness. Meijer argues that based on political philosophy, animals should be granted rights (Meijer, 2022). Working animals, like lab animals, for example, deserve a form of pension or retirement (see also De Rooij, 2023). Rehoming is also supported by the telos- and virtue-oriented capabilities approach, that prescribes that we should do justice to animals by allowing them a range of capabilities that offers them the possibility to flourish as the typical beings they are, which includes staying alive (Nussbaum, 2022). Care ethics supports rehoming as well. It grants feelings of care, in this case of caretakers and researchers, a separate ethical value (Palmer *et al*., 2021). These employees often experience an intimate relationship with the animals, know them as individuals and feel bothered by having to kill them (LaFollette *et al*., 2020). Therefore, we take it as a premise that prolonging a life worth living is a value that should be promoted for the sake of the animals and the people around them.

Nevertheless, it can be counter-intuitive that the life of a mouse equals the life of a horse or the life of our special niece. What can then be the criteria for making a difference? Varner has proposed a continuum: from mere sentience of those who can experience pleasure and pain, via near-personhood of those who have a sense of their own mental states in the past and the future, to full personhood of those who can place their mental states of the past and the future in their life story (Varner, 2012). On the other hand, it may as well be the case that pain is worse for sentient animals than for persons who can grasp the purpose and the probable duration of the pain (Akhtar, 2011; Rollin, 2011). Nussbaum

Franck Meijboom and Pamela Rowe, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

explicitly rejects the hierarchical scale (Nussbaum, 2022: p. 180). This means that the question of how we should value the lives and emotions of different species and individuals against each other cannot easily be answered. On the other hand, there is no need to resolve it here, as in this paper we discuss discrimination as opposed to equal treatment of specifically vertebrate (and often mammal) non-human species. There is no evidence that for example chickens and mice occupy an entirely different place on the personhood scale than cats and dogs. (we will not go into rehoming great apes, who have a special status in the laws of many countries, as they are attributed personhood (Sharp, 2022)). We conclude that we should grant all redundant vertebrate laboratory animals a longer life in good welfare, if possible (see also Fenton, 2022).

Ethical preconditions

A relevant ethical criterium for selection for adoption is the animal's chances of a good life in the new home. This is a discrimination criterium on an individual basis that cannot be standardised (Ecuer *et al*., 2023a). At least, the animal's basic welfare conditions should be guaranteed (NCad, 2016). This includes the precondition that the animal is appropriately socialised beforehand (Fenton, 2021) or can and will be socialised by the adopter. In addition, rehoming an animal is not right when there is a risk to public health (NCad, 2016). For this reason, laws that do allow rehoming of lab animals exclude genetically altered animals. The purpose of these laws is to ensure that no genetically altered animals unintentionally spread to the wild or end up in the human food chain. Advice against rehoming genetically altered animals is therefore given without further debate (Carbone *et al*., 2003; Ecuer *et al*., 2023a). This rigidity may, however, lead to ethically conflicting situations because of the death of perfectly healthy, adoptable animals (Clark, 2024).

If one takes the ethical imperative to rehome healthy laboratory animal seriously, time and money costs will be made, both to enable the adoption and costs for the animal after adoption has taken place. This can lead to debate about where the responsibility rests. In most cases, costs after adoption will be for the new owners, whereas for the costs to enable rehoming the responsibility lies in the first place with the institution conducting the research. This institutional responsibility can be extended to chain responsibility (Janssens 2022), which in this case means that the institution is responsible for a sound origin of the animals (coming from a certified breeder with high animal welfare standards) and a good continuation of their life (Franco and Olsson, 2016). These costs should be included in the funding of the research.

After surgery conducted as part of the experimental set-up, sometimes restorative surgery is a necessary precondition for an animal to have a good life after rehoming. This can bear difficult ethical dilemmas on those responsible. Cases should be discussed thoroughly during an ethical assessment. In the UK, restorative surgery on laboratory animals for rehoming purposes is not allowed because it is not a permissible scientific purpose (Home Office, 2015). Where there are no legal objections, again a case-by-case approach involving several experts is paramount (Ecuer *et al*., 2023a). Another issue that should be thoroughly assessed ethically is the option of preventive surgery, such as neutering.

The proof of the pudding: Utrecht rehoming policy and practice

In 2019 we worked at the Utrecht Animal Welfare Body (of Utrecht University and University Medical Centre), where we discussed with Animal Rights, a Dutch-Belgian NGO, our joint ambition to stop killing healthy lab animals. Together with partners, we started a pilot that later became a standing policy. From then until the end of 2023, we rehomed over 2000 animals: mice, rats, chickens, goats, guinea pigs, hamsters, zebra finches, a python and an iguana. We built a framework to ensure that we abide by the law and that the animals we rehome are suitable for adoption and will properly be taken care of in

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

their new homes. The principles we followed correspond largely with those that were later described by FELASA (Ecuer *et al*., 2023b). Before animals are put up for adoption, reuse is considered (for the sake of reduction). We rehome healthy wild type animals only; genetically modified animals are legally not allowed to leave our lab. We rehome animals that are socially capable of adjusting to their new home and are social towards human beings. Social species are rehomed in groups of at least two animals. Due to the high risk of aggression, we exclude male mice. We rehome animals that are healthy and still have an acceptable life expectancy. We ask adopters to sign a rehoming agreement in which ownership of the animals is transferred (full financial responsibility, no breeding) and provide them with a brochure with good care recommendations. We monitor the adoptions through questionnaires and adjust our policy accordingly. We communicate transparently about our rehoming programme, which is very positively received and brings us new adopters, up to a waiting list (for a detailed description of the pilot, policies, conditions and monitoring, see Van Loo and Janssens, 2023).

We conclude that rehoming all healthy redundant vertebrate animals from the lab is ethically imperative. The case of Utrecht shows that it is also feasible.

Acknowledgements

Both authors contributed equally. We thank all the colleagues, the NGO's, the adopters and the animals who are involved.

References

Akhtar, S. (2011). Animal pain and welfare: Can pain sometimes be worse for them than for us? In: Beauchamp T.L. and Frey R.G., (eds) The Oxford handbook of animal ethics. Oxford University Press, Oxford, pp. 701–724.

Balcombe, J. (2009). Animal pleasure and its moral significance. Applied Animal Behavior Science, 118(3–4), 208–216.

Bovenkerk, B. and Braithwaite, V.A. (2016). Beneath the surface: killing of fish as a moral problem. In: Meijboom, F.L.B. and Stassen, E.N. (eds) The end of animal life: a start for ethical debate; Ethical and societal considerations on killing animals. Wageningen Academic, Wageningen, pp. 225–250.

Carbone, L., Guanzini, L. and McDonald, C. (2003). Adoption options for laboratory animals. Lab Animal, 32(9), 37–41.

Clark, J.L. (2014). Living with transgenic animals. Humanimalia, 6(1), 88–113.

European Commission (2010). Directive 2010/63/EU of the European Parliament and of the Council of 22 September 2010 on the protection of animals used for scientific purposes. O. J. Eur. Union. 2010 276, 33–79. Available online at https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:276:0033:0079:en:PDF (accessed 12 June 2023).

DeGrazia, D. (2016). Sentient nonpersons and the disvalue of death. Bioethics, 30(7), 511–519.

De Rooij, M. (2023). Hoeveel vakantiedagen heeft een varken? Over nut en noodzaak van een vakbond voor dieren. Noordboek, Gorredijk.

Doehring, D. and Erhard, M.H. (2005). Whereabouts of surplus and surviving laboratory animals. ALTEX, 22(1), 7–11.

Duncan, I.J.H. (2006). The changing concept of animal sentience. Applied Animal Behavior Science, 100: 11–19.

Ecuer, E., Boxall, J., Louwerse, A.L., Mikkelsen, L.F., Moons, C.P.H., Roth, M. and Spiri, A.M. (2023a). FELASA recommendations for the rehoming of animals used for scientific and educational purposes. Laboratory Animals, 57(5), 572–582. DOI: 10.1177/00236772231158863

Ecuer, E., Boxall, J., Louwerse, A.L., Mikkelsen, L.F., Moons, C.P.H., Roth, M. and Spiri, A.M. (2023b). Species specific requirements for rehoming. Available online at https://felasa.eu/working-groups/id/10 (accessed 12 June 2023).

Fenton, A. (2021). Holding animal-based research to our highest ethical standards: Re-seeing two emergent laboratory practices and the ethical significance of research animal dissent. ILAR Journal, 60(3), 397–403.

Franco, N.H. and Olsson, I.A.S. (2016). Killing animals as a necessary evil? The case of animal research. In: Meijboom, F.L.B. and Stassen, E.N. (eds) The end of animal life: a start for ethical debate; Ethical and societal considerations on killing animals. Wageningen Academic, Wageningen, pp. 187–202.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Grimm, H. (2025). Turning apples into oranges? The harm-benefit analysis and how to take ethical considerations into account. ATLA, 43(2), 22–24.

Harms, C.A. and Stoskopf, M.K. (2007). Outcomes of adoption of adult laboratory ferrets after gonadectomy during a veterinary student teaching exercise. JAALAS, 46(4), 50–54.

Home Office (2015). Re-homing and setting free of animals. Advice Note: 03/2015, Animals (Scientific Procedures) Act 1986. Available online at https://www.health-ni.gov.uk/sites/default/files/publications/health/doh-rehoming-and-setting-free-of-animals.pdf (accessed 12 June 2023).

Janssens, M.R.E. (2022). Animal business: An ethical exploration of corporate responsibility towards animals. Food Ethics, 7(1), 2.

Kagan, S. (2016). Singer on killing animals. In: Višak, T. and Garner, R. (eds) The ethics of killing animals. Oxford University Press, Oxford, pp. 136–153.

Kasperbauer, T.J. and Sandøe, P. (2016). Killing as a welfare issue. In: Višak, T. and Garner, R. (eds.) The ethics of killing animals. Oxford University Press, Oxford, pp. 17–31.

Korsgaard, C.M. (2018). Fellow creatures: Our obligations to the other animals. Oxford University Press, Oxford.

LaFollette, M.R., Riley, M.C., Cloutier, S., Brady, C.M., O'Haire, M.E. and Gaskill, B.N. (2020). Laboratory animal welfare meets human welfare: A cross-sectional study of professional quality of life, including compassion fatigue in laboratory animal personnel. Frontiers in Veterinary Science, 7, 114.

LASA (Laboratory Animal Science Association) (2020). LASA guidance on the rehoming of laboratory dogs: A report based on a LASA Working Party and LASA Meeting on rehoming laboratory animals. Laboratory Animal Science Association, London. Available online at https://www.lasa.co.uk/wp-content/uploads/2018/05/LASA-Guidance-on-the-Rehoming-of-Laboratory-Dogs.pdf (accessed 12 June 2023).

Meijer, E. (2022). Learning to see mice (stray philosophy III). Humanimalia, 13(1), 203–251.

Moons, C.P.H., Spiri, A.M., Boxall, J., Louwerse, A.L., Mikkelsen, L.F., Roth, M. and Ecuer, E. (2023). Survey among FELASA members about rehoming of animals used for scientific and educational purposes. Laboratory Animals, 57(5), 565–571. DOI: 10.1177/00236772231153747

National Research Council (2011). Guide for the Care and Use of Laboratory Animals, 8th edn. Available online at https://nap.nationalacademies.org/catalog/12910/guide-for-the-care-and-use-of-laboratory-animals-eighth (accessed 12 June 2023).

NCad (Netherlands National Committee for the protection of animals used for scientific purposes) (2016). Rehoming of former laboratory animals. Opinion of the Netherlands National Committee for the protection of animals used for scientific purposes. Available online at https://english.ncadierproevenbeleid.nl/documents/publications/16/7/19/adoption-of-former-laboratory-animals (accessed 12 June 2023).

NHRMC (2013). Australian Code for the care and use of animals for scientific purposes. Reference number EA28, Available online at https://www.nhmrc.gov.au/about-us/publications/australian-code-care-and-use-animals-scientific-purposes Accessed 12 June 2023).

Nussbaum, M.C. (2022). Justice for animals; our collective responsibility. Simon & Schuster, New York, NY.

Palmer, A., Skidmore, T. and Anderson, A. (2021). When research animals become pets and pets become research animals: care, death, and animal classification. Social & Cultural Geography, 24(9), 1519–1537.

Regan, T. (2004). The case for animal rights. University of California Press, Berkeley, CA.

Rollin, B.E. (2011). Putting the horse before Descartes: My life's work on behalf of animals. Temple University Press, Philadelphia, PA.

Sharp, L.A. (2022). Care and the cowboy boot: Interspecies responsibility and the wobbly boundaries of lab animal personhood. Science, Technology & Human Values, 48(5), 1199–1222. DOI: 10.1177/01622439221120114

Skidmore, T. (2020). A Life after the laboratory: exploring the policy and practice of laboratory animal rehoming. Doctoral Thesis, University of Southampton, Southampton

Skidmore, T. and Roe, E. (2020). A semi-structured questionnaire survey of laboratory animal rehoming practice across 41 UK animal research facilities. PLoS ONE, 15(6), e0234922. DOI: 10.1371/journal.pone.0234922

Spruijt, B.M., Van den Bos, R. and Pijlman, F.T.A. (2001). A concept of welfare based on reward evaluating mechanisms in the brain: anticipatory behaviour as an indicator for the state of reward systems. Applied Animal Behavior Science, 72(2), 145–171.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Varner, G.E. (2012). Personhood, ethics, and animal cognition: Situating animals in hare's two-level utilitarianism. Oxford University Press, New York, NY.
Tannenbaum, J. and Bennett, B.T. (2025). Russell and Burch's 3Rs then and now: the need for clarity in definition and purpose. JAALAS, 54(2), 120–132.
Van Loo, P. and Janssens, M.R.E. (2023). Why all healthy laboratory animals should be rehomed, no matter how small. Animals, 13(17), 2727.
Warren, M.A. (1997). Moral status; obligations to persons and other living things. Oxford University Press, Oxford.

Franck Meijboom and Patrick Bateson - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

3.6 Veterinary professionals

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Mission veterinary medicine: Learning from methodological aspects in Just War Theory

K. Deininger[1,2], J. Karg[2] and H. Grimm[2]*
[1]University of Vienna, Department of Philosophy, Vienna Doctoral School of Philosophy, Universitätsstraße 7, 1010 Vienna, Austria; [2]Messerli Research Institute, Unit of Ethics and Human-Animal Studies, University of Veterinary Medicine, Vienna, Medical University of Vienna, University of Vienna, Veterinärplaz 1, 1210 Vienna, Austria
** Corresponding author, e-mail: konstantin.deininger@univie.ac.at*

Abstract

This paper explores the phenomenon of moral distress in veterinary practice, particularly in environments like animal husbandry, where real-life barriers are in conflict with veterinarians' moral beliefs. This paper draws controversial parallels, at least on first sight, with Just War Theory, which is understood as a non-ideal theory in response to morally non-ideal circumstances. The paper examines how veterinarians, corresponding to combatants, can navigate moral conundrums within their profession. It discusses the limitations of general ethics in guiding professionals like veterinarians who operate, just like soldiers, in morally non-ideal circumstances. It argues that while general ethics offers universal claims, it fails to address the complexities of real-world barriers faced by veterinarians, such as conflicting interests, economic pressures, and legal regulations. Using Just War Theory as a framework, the paper distinguishes between systemic factors and individual conduct in understanding moral distress. It suggests that veterinarians are not responsible for changing the system but are best advised to ensure ethical conduct within their profession. This perspective acknowledges the tension between moral beliefs and professional demands, highlighting the importance of maintaining agential integrity while recognizing the limitations in effecting systemic change. Ultimately, the paper concludes that veterinarians are permitted to focus on fulfilling their professional duties while remaining cognizant of their moral beliefs.

Keywords: animal husbandry, Just War Theory, moral distress, veterinary practice

Introduction

Veterinarians frequently operate in environments characterized by stress, and high-strain situations. Research consistently highlights the challenge veterinarians encounter in balancing the needs of animals and humans, leading to experiences of pressure and moral distress (Arbe Montoya *et al.*, 2019; Fawcett and Mullan, 2018; Florian *et al.*, 2023; Moses *et al.*, 2018). 'Moral distress' arises where individuals face (1) moral problems (feeling overwhelmed because of conflicting ethical choices), (2) moral uncertainty (uncertainty about the right thing to do), or (3) barriers that prevent them from acting on their convictions (Fourie, 2015). These various barriers have often been described in veterinary ethics – ranging from clients' interests diverging from veterinary opinions, economic pressure limiting the treatment of animals, and legal regulations prescribing specific veterinary actions.

In this paper, we take these real-world barriers contributing to moral distress in veterinary practice seriously and suggest how this phenomenon can be properly explained and mapped by moral theory. We depart from three claims: (1) Veterinarians act in systems in which harms to animals happen, indeed the harms necessitate the job; (2) veterinarians are likely to be guided by moral beliefs such as that causing unjustified harms to animals is inherently wrong and needs to be minimized; and (3) veterinarians frequently operate in environments characterized by stress, danger, and high-pressure situations. This

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

may lead to a conflict in the veterinarian's integrity: they have (and want) to do their job as well as possible, while some fields they work in, probably most salient in animal farming, necessitates harms to animals on a regular basis. In animal husbandry, harming animals is legally regulated and sometimes even demanded on a legal basis, e.g. culling in order to prevent epidemic diseases.

In the following we will discuss why general ethics — which is characterized by making exceptionless, universal claims about all relevant cases — fails to provide moral guidance for those who work in professions that are deemed to fail to meet general ethics' claims. We will illustrate this by discussing veterinary practice in animal husbandry.

Although it might seem as a most controversial comparison on first sight, we shall draw on methodological insights of traditional Just War Theory (hereafter JWT) to show that there are different levels of moral reflection which need to be differentiated (Walzer, 2006). In traditional JWT the moral claims on and the responsibilities of combatants differ from the justification of war. In other words, one needs to differentiate between systemic factors that can be criticized (states, legislation, international parties), and the ones acting within the framework under certain constraints — such as combatants in war. The soldiers, are, in the performance of their job, not responsible for criticizing or changing the framework conditions, but for doing their job *right*. This entails significant restrictions on their actions. Combatants are, for example, allowed to attack military objectives but not civilians. The constraints of conduct for combatants are regulated by international humanitarian law (ICRC, n.d.: Article 48), the central sources of which are the Geneva Conventions and the UN Charter.

The upshot of the analogy is to show the following: although one cannot change the framework conditions, one can act right within their profession in non-ideal circumstances. This holds for soldiers and veterinarians alike. This perspective may help to reduce moral distress as it relieves from the burden to do 'the right' from a general ethics perspective. Further, this analogy sheds light on the working contexts veterinarians actually face while emphasizing that it is not up to them to change the framework conditions which would be the task of political and legal institutions.

General ethics and the problem of real-world barriers

General ethics is characterized by making exceptionless, universal claims about all necessary features of all relevant cases (*pace* Christensen, 2018). It is opposed to moral philosophies which focus on context or culture which do not aim at providing universal claims. We take both deontology and utilitarianism to be the two leading paradigms of general ethics. In essence, we understand both paradigms in the following way (while acknowledging that such an abbreviated presentation fails to reflect the complexity of positions within each paradigm): In deontology, the goal is to achieve justice and to treat others with respect for their inherent value. An action's goodness is determined by its intrinsic rightness. Deontologists often defend an inviolable rights perspective which includes the right to life for people and for animals as is famously argued by Regan (1983). In utilitarianism, in contrast, the goal is to maximize the expected utility of a particular action. An action's goodness is explained based on its probable or actual consequences. Utilitarians tend not to ascribe a right to life to people, as consequences may outweigh someone's claim of having a right to life. Despite their differences, bot paradigms aim at providing binding guidance for *all* possible, comparable situations.

Many contemporary utilitarians and deontologists consider animal husbandry as inherently problematic as it violates the animals' moral status in a fundamental, non-compensable way. Many utilitarians argue that animal husbandry *as an institution* is morally wrong, as the harms experienced by the animals are in sum not outweighed by the expected utility (Singer, 2009; Višak 2013). From a deontological point of view, it is argued that animal husbandry violates the animals' inherent value and with that their right to

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

life (Regan, 1980). This makes animal husbandry an unjust institution. Therefore, some deontologists argue that animals should have rights on par with human rights, particularly the right not to be killed (Korsgaard, 2013). General ethicists from both paradigms seem to agree that animal husbandry is morally wrong.

However, many important jobs in our society, such as that of the veterinarian, are conflicting with general ethics' claims. That their jobs are important can be seen quite easily: Even if one thinks that how animals are treated in animal husbandry is nothing but pure moral evil, the same person has to acknowledge that, as long as the practice exists, the animals should be treated the best way possible by a veterinarian. Interestingly, something similar holds for soldiers. Even if one abhors belligerent behaviour, it is reasonable to hold that a state should employ soldiers to ensure its safety from aggressors. Another point of convergence lies in the fact that both combatants and veterinarians act in non-ideal circumstances. They do their jobs in systems in which harm to others is foundational to their profession. At the same time, from a general ethical perspective, these harms are likely to be deemed as morally problematic.

So, the veterinarian in animal husbandry finds herself working in a system that likely fails to meet the moral standards of general ethics. Her own moral beliefs may be — at the same time – shaped by claims deriving from general ethics. That this is the case, is backed by recent empirical research. Kahane and Caviola (2021) show that people tend to be deontological with regard to humans and animals. Accordingly, it is reasonable to assume that people generally accept some right to life view. However, the authors also show that people accept exceptions to this view based on utilitarian calculations, while endorsing stronger restrictions when it comes to human life. We follow these findings in the following: people tend to be deontological but utilitarian when it comes to making exceptions.

Following that, we forward the claim that people in general care about their 'agential integrity'. We defend a very basic idea of the concept: people usually hold some basic moral beliefs which are shaped by general ethics, and they wish to accommodate these beliefs in living in accordance with them. Accordingly, it is not surprising that some people find themselves in situations in which their moral beliefs and the demands of their jobs clash. In the veterinarian context, this is backed by Christian Dürnberger's empirical findings on how veterinarians working in animal husbandry perceive challenges in their job. For example, the interviewees were sure what the morally right thing to do was in a given situation but could not put it into practice (Dürnberger, 2021: p. 46). In his discussion of the statements, Dürnberger (2021: pp. 52–53) notes that veterinarians would like to act differently based on their moral convictions, but they cannot as external constraints prohibit them to do so.

So, there is a tension between general ethics' claims, the demands of one's profession, and the agent's integrity. This tension may explain at least partially the phenomenon of moral distress: If an institution can be deemed as morally unjustified from the perspective of general ethics, and there is at least rough agreement with the claims of general ethics, but simultaneously one is an essential part of the system, then there may arise the problem of being unable to reconcile the competing demands of doing the *right thing* and *doing your job right*.

JWT and veterinarians working in animal husbandry

We try to resolve this conundrum by drawing on JWT. Interestingly, as Dürnberger shows in his empirical study, many veterinarians working in animal husbandry feel like soldiers as they are doing a job that is important for society, but which people would rather not see pictures of (Dürnberger, 2021: p. 67). This underlines the importance of the veterinarian's job in animal husbandry but at the same

Franck Meijboom and Bonnie Rowe, Brill, 2024 | DOI:10.1163/9789004715509-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

time displays the moral reservations against the practice of animal husbandry that is shared among many people. If veterinarians perceive themselves as soldiers, can their "war" be just?

What justifies JWT is the fact that 'wars are, regrettably, going to happen', but there are 'ways war can be more *humane*' (Milburn and Van Goozen, 2023: p. 427, emphasis original). JWT tries to provide moral guidance in non-ideal circumstances. In this paper, we focus on *traditional* JWT as introduced by Walzer (2006), although we acknowledge that it has been influentially criticized by McMahan (2009). According to traditional JWT

violence is just if it meets certain criteria. (...) The key distinction is between *jus ad bellum*, just recourse to war, and *jus in bello*, justice in war. Classically, theorists apply the former primarily to states' conduct, holding that combatants need only concern themselves with the latter (Milburn and Van Goozen, 2023: p. 426, emphasis original).

There are various requirements for *jus ad bellum* and *jus in bello*. The requirements of *jus ad bellum* are: just cause, right intention, legitimate authority, reasonable chance of success, last resort, and proportionality (Begby *et al.*, 2012: p. 328). We cannot discuss each requirement in detail here but highlight what the criteria aim to achieve: Entry in war is just if it serves to defend one's own or another's security and if war is the last resort after having considered non-violent alternatives. There must be the right intention by states to enter a war which 'excludes the use of war as an instrument for the pursuit of unrelated political ends' (Begby *et al.*, 2012: p. 332). Further, war must be proportional, meaning that the harm caused by war is smaller than the harm that is to be avoided. *Jus in bello* applies to soldiers, and the requirements are discrimination and proportionality of means (Begby *et al.*, 2012: p. 328). According to the former, only military objectives can be targeted in a just war while the latter claims that the harms to achieve a strategic goal must not outweigh the harms it tries to avoid.

Drawing on JWT, we can illustrate the various levels of moral reflection for understanding the occurrence of moral distress. At the most abstract level of general ethics, considerations revolve around fundamental questions such as the conditions under which harm, even death, is permissible, independent of any specific context — in other words: in *ideal circumstances*. Below this lies the systemic level, where considerations shift towards the justification of systems like international humanitarian law or animal welfare acts, responding to real-life barriers while still, potentially, influenced by general ethics. Finally, at the micro level, individuals, like combatants or veterinarians, navigate their moral beliefs within the framework of both general ethics and systemic constraints. Moral distress arises from the recognition that the systemic level, though responsive to real-world barriers, remains morally flawed, leading to discord between moral beliefs and actions within the system.

Here, we do not wish to discuss whether the system of animal husbandry is just – accordingly, we do not discuss possible criteria analogous to *jus ad bellum*. Rather, we shall carve out what it means for the veterinarian working in the non-ideal circumstances of animal husbandry. As is reflected in the phenomenon of moral distress, some veterinarians think that they work in a deficient system. This, however, does not mean that they cannot to their job in a good way, i.e., ensuring ethical conduct in their profession.

Now, take that veterinarians correspond to combatants. That would entail that they should, *qua* their profession, focus on just behaviour within their profession. If this holds, veterinarians *as professionals* are not responsible for justifying the system but ensuring ethical conduct within their profession. Note that this by no means demands from the veterinarians *as persons* to act as if they had no moral beliefs or responsibility for their actions. To say that veterinarians *as professionals* are not responsible for justifying the system does not mean that they should cease to reflect critically on their actions and beliefs.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Pace jus in bello, veterinarians as professionals should be concerned with the appropriate conduct in their profession. To change the system would be *supererogatory*. This correlates with the *jus in bello case* for soldiers. Combatants are obliged to act within predefined constraints (ICRC, n.d.: Article 48) — they are allowed to attack military objectives, but not allowed to loot or torture civilians. But they are not responsible for changing the system. This is not a plea for blind obedience, though. It is simply a clarification of what we can ask from the soldier as a professional in a *moral* way. If the combatant in question thinks that she fights in an unjustified war as it may be fought with the wrong intentions, nothing should stop her to follow her moral conviction and lay down her weapons. However, *qua* her profession as a soldier, she is allowed to do the right thing within the constraints of the profession. Practicing the profession and changing the system at the same time is neither in the power nor the duty of the combatant. According to Walzer, the combatants are not those who begin and lead a war, but they are "servants" of the state:

He (the soldier) is not the member of a robber band, a wilful wrongdoer, but a loyal and obedient subject and citizen, acting sometimes at great personal risk in a way he thinks is right. (...) Not that his obedience can never be criminal; for when he violates the rules of war, superior orders are no defence. The atrocities that he commits are his own; the war is not (Walzer, 2006: p. 39).

In analogy, veterinarians are allowed to concentrate on doing their job right as long as they are convinced that what they are doing is right. Ensuring good ethical conduct on the farm or in the slaughterhouse, i.e., fulfilling the (legal) standards of the given systemic context, is morally right within the limits of the profession. This holds even if they feel far from certain whether the system they are working in is just. With that, veterinarians ensure what the veterinary profession demands: achieving the best for the animal patient. They act in the right way in non-ideal circumstances. So, veterinarians are allowed to concentrate on doing their job right. As they work under the constraints of non-ideal circumstances, they cannot *and* do not need to abide to general ethics' claims which are likely to condemn the system of animal husbandry as a whole.

In analogy to JWT, political and legal institutions are responsible for creating structures in animal husbandry which are morally justifiable. It is their task, and thus effectively for society as a whole, to ensure that a system is not unjust, and this task can be — and maybe even should be — influenced by the insights of general ethics. However, this task should not be imposed on veterinarians. Changing the system of animal husbandry is a matter of democratic institutions.

But as we have noted, the veterinarian should not be asked to disregard her moral beliefs and her agential integrity. f her moral beliefs make it impossible for her to continue working on the farm or at the abattoir, she is free to step back from that job or even actively protest against it. We should not ask the veterinarian to repress her agential integrity, but we cannot ask her to change the system, either.

Conclusion

In conclusion, we would like to summarize to what extent drawing upon JWT offers a pertinent analogy for veterinarians working in animal farming. Admittedly, the analogy only works to a certain extent. Here, we cannot discuss the analogy's limitations in full detail, but we will highlight an obvious one. The motivations driving individuals to choose their profession may vary significantly: veterinarians may choose their profession out of a desire to help patients, whereas being a soldier entails inflicting harms on military objectives. Nonetheless, both combatants and veterinarians exhibit structural parallels: Veterinarians, much like combatants, find themselves navigating their roles within systems that may not align with overarching ethical principles. Both operate within non-ideal circumstances and face inherent constraints within their respective professions.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

JWT offers a framework which distinguishes between systemic factors and individual conduct. While veterinarians as professionals are not responsible for changing the system, they do right by upholding standards within their profession. This perspective recognizes the tension between moral convictions and professional obligations, stressing the importance of maintaining personal integrity while acknowledging the challenges of effecting systemic change. Ultimately, veterinarians should be encouraged to prioritize fulfilling their professional responsibilities while staying true to their moral beliefs. Therefore, they retain the freedom to step back if their beliefs clash irreconcilably with their work environments. And given that most veterinarians wish to help patients and not harm them, they may have a stronger incentive than soldiers to unite and speak out against systemic problems. Arguably, they may eventually have the power to initiate systemic changes. But again, there is no duty deriving directly from the profession to do so; this desire to initiate change would relate to their agential integrity.

In this paper, we were mainly interested in understanding the phenomenon of moral distress as experienced by veterinarians working in animal farming by drawing on parallels with JWT. In effect, we were able to highlight some structural similarities which help to show that the veterinarian's duty as a professional is not to change the system but to act morally right within the profession. Democratic institutions are responsible for systemic changes. Admittedly, much more would have to be said to justify this claim.

References

Arbe Montoya, A.I., Hazel, S., Matthew, S.M. and McArthur, M.L. (2019). Moral distress in veterinarians. Veterinary Record, 185(20), 631.

Begby, E., Reichberg, G. and Syse, H. (2012). The ethics of war. Part II: Contemporary authors and issues. Philosophy Compass, 7(5), 328–347.

Christensen, A.-M.S. (2021). Moral philosophy and moral life. Oxford University Press, Oxford.

Dürnberger, C. (2021). Moralische Herausforderungen der Veterinärmedizin in der Nutztierhaltung. Harald Fischer Verlag, Erlangen.

Fawcett, A. and Mullan, S. (2018). Managing moral distress in practice. In Practice, 40(1), 34–36.

Florian, M., Skurková, L., Mesarčová, L., Slivková, M. and Kottferová, J. (2023). Decision-making and moral distress in veterinary practice: What can be done to optimize welfare within the veterinary profession? Journal of Veterinary Medical Education, e20220073.

Fourie, C. (2015). Moral distress and moral conflict in clinical ethics. Bioethics, 29(2), 91–97.

International Committee of the Red Cross (ICRC) (n.d.). Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977. Available online at https://ihl-databases.icrc.org/en/ihl-treaties/api-1977?activeTab=undefined (accessed 13 March 2024).

Kahane, G. and Caviola, L. (2023). Are the folk utilitarian about animals? Philosophical Studies, 180(4), 1081–1103.

McMahan, J. (2009). Killing in war. Oxford University Press, Oxford.

Moses, L., Malowney, M.J. and Boyd, J.W. (2018). Ethical conflict and moral distress in veterinary practice: A survey of North American veterinarians. Journal of Veterinary Internal Medicine, 32(6), 2115–2122.

Milburn, J. and Van Goozen, S. (2023). Animals and the ethics of war: A call for an inclusive just-war theory. International Relations, 37(3), 423–448. DOI: 10.1177/00471178231191297

Regan, T. (1980). Utilitarianism, vegetarianism, and animal rights. Philosophy & Public Affairs, 9(4), 305–324.

Regan, T. (1983). The case for animal rights. University of California Press, Berkeley, CA.

Singer, P. (2009). Animal liberation: The definitive classic of the animal movement. Harper Collins, New York, NY.

Višak, T. (2013). Killing happy animals: Explorations in utilitarian ethics. Palgrave Macmillan, London.

Walzer, Michael. (2006). Just and unjust wars: A moral argument with historical illustrations, 4th edition. Basic Books, New York, NY.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Sociologising veterinary ethics: An exploration of professional identity

M.J. Bubeck[1] and S. Springer[2]*
[1]University of Potsdam, Faculty of Health Sciences Brandenburg, Am Mühlenberg 9, 14476 Potsdam, Germany; [2]Messerli Research Institute, University of Veterinary Medicine, Vienna, Veterinaerplatz 1, 1210 Vienna, Austria
** Corresponding author, e-mail: marc.bubeck@uni-potsdam.de*

Abstract

The Federation of Veterinarians of Europe (FVE) embraces the mission 'one profession, one vision, one voice' but at the same time emphasises plural tasks and normative responsibilities including the improvement of animal health and welfare, public health, and environmental protection. Against this background, the question arises as to the extent to which the proposed vision of the FVE does justice to the profession or whether tensions arise due to these multiple normative orientations of the veterinary profession. To shed light on this issue, our contribution seeks to sociologise veterinary ethics by dissecting the intricacies of collective identity within this professional domain. In doing so, we propose a sociological stance on professional ethics that addresses the socio-historical construction of animal categories and their meaning in veterinary practice. This involves a nuanced examination of relationships across three levels: macro, meso and micro level. Turning to the macro level, we focus on the examination of the social construction of animal categories and their historical changes. In relation to the meso level, we focus on the organisation of veterinary medicine that is affected by these historical changes. Finally, the micro level is examined through the lens of collective identity and the professional self-image of veterinarians. Drawing on insights from sociology, history, and veterinary ethics, this paper aims to challenge conventional notions of the existence of a unified veterinary profession and to unravel the intricate interplay between ethics, sociology, and the practice of veterinary medicine.

Keywords: collective identity; human–animal studies; sociology; veterinary education; veterinary medicine

Introduction

The Federation of Veterinarians of Europe (FVE) represents veterinary organisations from 38 European countries and veterinarians working in all different sectors. The association strives to enhance animal health, animal welfare, public health, and the protection of the environment by promoting the veterinary profession. Even though the FVE recognises the different contexts in which veterinarians practice, including small animal medicine, large animal medicine, laboratory medicine, or food safety, the FVE, by their statement 'one profession, one vision, one voice' (FVE, n.d.), emphasises serving as a unifying entity within the European veterinary community. However, the multi-contextuality of veterinary medicine is characterised by the different status of the animal, varying goals of veterinary treatment and ends of medicine (Springer and Grimm, 2022). This can create tensions and conflicts that challenge the notion of a unified vision and voice. Keeping this in mind, the question arises: How can a profession operating in multiple contexts articulate a unified stance? To address this question, we aim to broaden the analytical lens by examining the multi-contextuality of the veterinary profession at three interrelated levels: firstly, a macro level that includes the investigation of (historical) changes of human-animal relations in society; secondly, a meso level that examines the current organisation of the veterinary profession; and thirdly, a micro level that sheds light on the development of (future) veterinarians' professional identity.

EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_50, © Brill | Wageningen Academic 2024
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

This sociological framework allows for both theoretical explorations and empirical investigations by acknowledging the socio-historical underpinnings while facilitating comparative analyses within the various disciplines of veterinary medicine and their interrelationships.

Macro level: Changes in human–animal relations

With respect to the considered macro level, our premise is twofold: first, that human-animal relationships are categorical and socially constructed, and second, that they are subject to constant changes (see e.g. DeMello, 2012; Jones, 2002; Wiedenmann, 2009). These socially constructed categories of animals have been described and elaborated by Stewart and Cole (2009). They illustrate the contingency and social construction of human-animal relationships by means of a coordinate system that positions animal categories according to their degree of visibility or invisibility in the public sphere, on the one hand, and a spectrum of subjectivity or objectivity, on the other hand (see Figure 1). The position of animals is relational and refers to humans. With respect to the socio-zoological scale, Arluke and Sanders (1996) have already pointed out that 'human' is not always a uniform group, for example when groups of people are classified as being of less value than others. The horizontal axis, on the other hand, divides categories of animals according to whether they are seen as objects or from an instrumental perspective, or are subjectified as independent beings and individuals with their own rights (Stewart and Cole, 2009). Based on their work, Stewart and Cole (2009) show how individual animals are socially constructed, for example the rabbit whose constructions can fall into almost any category, depending on the context.

We aim to extend this account by a historical narrative by describing how human-animal relationships have changed over the past century (in the Global North). For example, 'livestock' animals such as cattle, pigs, and poultry were once highly visible in everyday life but have become largely invisible in modern societies. With respect to this, Settele (2020) described the change in Germany since the 1950s by showing the increasing intensification and industrialisation of livestock farming. Conversely, the horse, our second example, was once perceived as a 'working' animal in the military, in agriculture, and later in transportation. In recent decades, horses have gained significant ascribed subjectivity as companions, reflected in declining slaughter numbers (Statista, 2024) and even slaughter bans, as in the United States (Jones, 2002; Vermilya, 2012). Similarly, our contemporary understanding of dogs and cats as 'pets' represents a relatively recent historical development (the former in the 1950s and the latter in the 1970s), albeit one that profoundly shapes human-animal relationships for many (Jones, 2002; Wiedenmann,

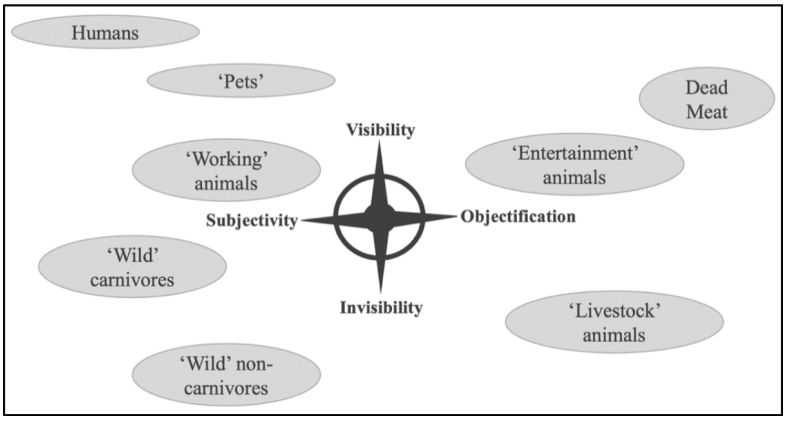


Figure 1. Mapping animals along their visibility/invisibility and subjectivity/objectification in society (Source: based on Stewart and Cole, 2009: p. 461).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

2009). Animals are present in everyday life through (social) media, when visiting a park, or as one's own. The relationship has not only changed quantitatively but also qualitatively. In 2022, almost every second household (46%) in Germany kept an animal as a pet (IVH and ZZF, n.d.). The importance is reflected in the term 'family member' or even 'fur baby', which shows the strong emotionalisation of the relationship (Wiedenmann, 2009). A further example for recent changes of human-animal relationships is 'wild' carnivores. They have become more visible and are the subject of current debates, particularly in discussions about 'rewilding' Europe with species such as bears, lynxes, and wolves (Pereira and Navarro, 2015). With no claim of completeness, these examples highlight constant and significant changes in human-animal relationships over the past century. Understanding these changes is crucial when considering the professionalisation and associated organisation of veterinary medicine, as they shape the context in which veterinarians operate. To be able to examine this in a structured way, we propose to examine the three levels and the way they interact with each other.

Meso level: Organisation of veterinary medicine

As indicated above, the relationship between humans and animals is constantly changing. This has been reflected in the organisation of veterinary medicine since its institutionalisation in Europe in the 18th century (Swabe, 1999). The social construction and valuation of animals are intertwined with how the profession's disciplines and specialities evolved and became established (Jones, 2002). The model of the profession has evolved from the horse, whose military relevance was decisive at the beginning of institutionalisation, to cattle, which were in the foreground because of their economic importance, to the companion animal (Jones, 2002).

According to Stewart's and Cole's illustration of human-animal relationships, fields of veterinary medicine can also be represented in a coordinate system that organises the fields with respect to visibility or invisibility in public discourse on the vertical axis and the construction of the animal on the horizontal axis (see Figure 2). Constructing and evaluating the human-animal relationship, that is subjectifying or objectifying an animal, is strongly linked to the status of the animal and the definition of medical goals (see Springer and Grimm 2022).

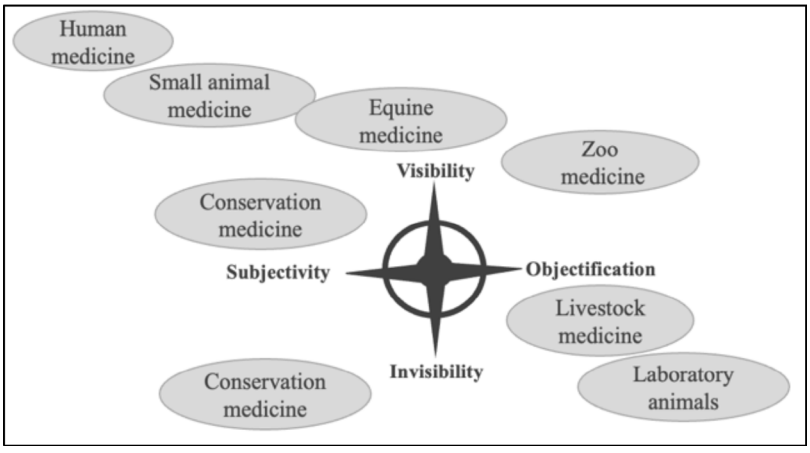


Figure 2. Mapping fields of veterinary medicine along their visibility/invisibility and subjectivity/objectification in society (Source: own representation, cf. Stewart and Cole, 2009: p. 461).

Franck Meijboom and Pamela Rowe (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Therefore, small animal medicine is placed in the quadrant of high visibility and animal subjectivity. On the one hand, as already mentioned: It has become a prominent field and is very present in the media. On the other hand, the subjectivity of the animal is emphasised. The animal has the status of a patient, which is, in some ethical discussions, linked to the topos of the 'best interest' principle (Coghlan, 2018; Gray and Fordyce, 2020; Grimm *et al*., 2018), which refers to human medical discussions (Selter *et al*., 2022). In contrast, livestock medicine is less visible in public discourse and has a more instrumental view of the animal as part of a production chain. The focus is not primarily on the individual animal but on the herd or 'production unit'; the goal of treatment is functionality and economic prosperity (Springer and Grimm, 2022).

The organisation of veterinary medicine thus reflects the current categorisation of animals and lived human-animal relationships. The extent to which this is historically applicable, and whether this is a case of co-evolution or veterinary medicine is lagging behind social human-animal relations, cannot be stated here; this is an empirically open question. In addition, the organisation of the profession is already reflected in veterinary education programmes. The structure of the curriculum at various veterinary schools underlines this connection. For example, according to the curriculum at the University of Veterinary Medicine, Vienna, students receive general clinical training in the early semesters (1st to 9th semester), followed by specialisation in a chosen field to acquire first-day skills (Vetmeduni, 2022). These specialisations cover a variety of areas, including small animal and ruminant medicine, as well as areas such as laboratory animal medicine and conservation medicine, or food safety and science, veterinary public health. Consequently, students do not only have to decide whether to study veterinary medicine but also about the specific area in which they want to specialise. In doing so, we argue that this decision is closely related to the professional identity students seek, which constitutes the source of elaboration at the micro level.

Micro level: Professional identity

The decision to specialise in a particular field within veterinary medicine is of significant importance and influenced by various factors including the nuances of human-animal relationships and the associated expectations, as well as responsibilities related to each working field. This pivotal decision is closely intertwined with the development of the professional identity, a concept we define as an embedded representation of the self in the context of work, describing one's role in and for the profession. Drawing on the sociology of professions (Freidson, 1986), professional identity goes beyond the individual or psychological dimension to include the social and the collective (Hamilton and Taylor, 2013). This identity transcends the individual or psychological realm and embodies a social and collective dimension. In addition to the self, this identity includes the expectations of other professionals in the field, stakeholders (e.g. clients), and broader societal norms and expectations. Therefore, it is appropriate for advancing our argument for sociologising veterinary medicine at the micro level because it is closely tied to practices and interactions. As in other empirical studies, for example on euthanasia in small animal medicine (Morris, 2012) or on the role of 'dirty work' in livestock medicine (Hamilton, 2007), these could themselves become the phenomena under study.

In her ethnographic study, Vermilya (2022) shows how a collective professional identity is developed despite the differences between the fields. She argues for a segmented collective identity in veterinary medicine that challenges students to work on their identity at three levels: personal, institutional and professional. However, structuring along species lines makes it difficult to assert a unified collective identity. To defend their relationship to the collective identity, they use different discursive strategies. This seems to be especially necessary when tasks do not (at first glance) seem to involve care, for example violent actions that may even involve killing animals. In this sense, collective identity is flexible. The common characteristics are those shared by many veterinarians, such as the image of a caring (1) and

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

advocating (2) veterinarian based on medical knowledge (the 'doctor' as the third pillar (3)). However, the concrete form of these characteristics varies according to the different constructions of 'animal patients'.

Sociologising veterinary ethics: the interplay of society, organisation, and identity

To conclude, our exploration leads us to critically examine the FVE's mission of speaking with a single voice. While the mission seems commendable in theory, its practical implementation poses challenges. The different involvements and roles in the (ambivalent) human-animal relationship have led to different practices and normative considerations in veterinary medicine, which are not always compatible. At the micro level, as shown, Vermilya (2022) speaks of a segmented collective identity that allows for overlaps and unites differences and contradictions in professional identities and responsibilities. Furthermore, the strategy of the FVE emphasises another crucial aspect: the overarching goal to achieve widespread recognition and appreciation of the indispensable expertise of veterinarians in society. The sociologisation of veterinary ethics can significantly contribute to this goal by drawing on sociological theories and concepts. Through empirical research and consideration of the macro, meso- and micro-levels, we can better understand and examine veterinary practice and its social embeddedness in (changing) human-animal relationships.

As shown, categories of animals resulting from social construction and societal change are reflected in veterinary medicine (Jones, 2002). The profession evolves in tandem with society: Changing human-animal relationships and related changes in societal attitudes toward animals (macro level) are reflected in the organisation of the profession (meso level) and professional identities (micro level). These are not three separate levels but rather interlinked in practice. For example, changes and advances in society, such as cultural norms, technological developments, and environmental concerns have a direct impact on the field of veterinary medicine. As society becomes more aware of the importance of animal welfare and the human-animal bond, veterinarians may place greater emphasis on preventive care, behaviour management, and quality of life for animals. In addition, advances in technology, such as diagnostic tools and treatment options, influence how veterinarians diagnose and treat animal health problems. Furthermore, societal trends, such as the growing interest in alternative and holistic therapies, may lead veterinarians to explore new treatment modalities and approaches to care. Additionally, concerns about environmental sustainability and animal agriculture practices can influence how veterinarians approach issues related to food production, animal husbandry, and public health. Overall, the evolving needs and values of society play a significant role in shaping the direction of the veterinary profession and driving innovation, research, and especially education in the field. Undoubtedly, the expectations placed on the profession represent a challenge for the future. However, we believe that a broader analytical perspective, encompassing the macro-, meso- and micro-levels, enhances the ability to reflect on these dynamics and is a valuable skill, especially for future professionals to meet societal, professional as well as personal expectations.

Consequently, sociologisation of ethics could enable veterinarians to understand the socio-historical embeddedness of human-animal relationships and veterinary interactions, as well as veterinary professionalism, morality, and ethics, to reflect on their own roles and practices and find socially acceptable responses to existing and future challenges. Through sociologisation, we facilitate empirical and theoretical exploration of these expectations, examining how they manifest themselves in the organisation of the profession (e.g. education), in professional practices and identities, and in their normative orientations. Our approach seeks to enrich the toolbox of veterinary ethics by incorporating sociological perspectives. In essence, sociologisation offers a fruitful way to grapple with the complexities of veterinary ethics and to navigate through the multifaceted landscape of this esteemed profession.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

References

Arluke, A. and Sanders, C.S. (1996). Regarding animals. Temple University Press, Philadelphia, PA.

Coghlan, S. (2018). Strong patient advocacy and the fundamental ethical role of veterinarians. Journal of Agricultural and Environmental Ethics, 31(3), 349–367.

DeMello, M. (2012). Animals in society: An introduction to human-animal studies. Columbia University Press, New York, NY.

Federation of Veterinarians of Europe (n.d.). FVE strategy 2015–2020. Available online at https://fve.org/publications/fve-strategy-2015-2020-2/ (accessed 14 March 2024).

Freidson, E. (1986). Professional powers: A study of the institutionalization of formal knowledge. University of Chicago Press, Chicago, IL.

Gray, C. and Fordyce, P. (2020). Legal and ethical aspects of 'best interests' decision-making for medical treatment of companion animals in the UK. Animals ,10(6), 1009.

Grimm, H., Bergadano, A., Musk, G.C., Otto, K., Taylor, P.M. and Duncan, J.C. (2018). Drawing the line in clinical treatment of companion animals: Recommendations from an ethics working party. Veterinary Record, 182(23), 664. DOI: 10.1136/vr.104559.

Hamilton, L. (2007). Muck and magic: Cultural transformations in the world of farm animal veterinary surgeons. Ethnography, 8(4), 485–501.

Hamilton, L. and Taylor, N. (2013). Animals at work: Identity, politics, and culture in work with animals. Brill, Boston, MA.

Industrieverband Heimtierbedarf e.V. and Zentralverband Zoologischer Fachbetriebe Deutschlands e.V. (n.d.). Der deutsche Heimtiermarkt in Zahlen. Strukturen und Umstatzdaten. Available online at https://www.zzf.de/fileadmin/ZZF/Dokumente/Heimtiermarkt/ZZF_IVH_Der_Deutsche_Heimtiermarkt_Anzahl_Heimtiere_2022.pdf (accessed 14 March 2024).

Jones, S.D. (2002). Valuing animals: Veterinarians and their patients in modern America. Johns Hopkins University Press, Baltimore, MD.

Morris, P. (2012). Blue juice: Euthanasia in veterinary medicine. Temple University Press, Philadelphia, PA.

Pereira, H.M. and Navarro, L.M. (2015). Rewilding European landscapes. Springer, Berlin.

Selter, F., Persson, K., Risse, J., Kunzmann, P. and Neitzke, G. (2022). Dying like a fog: The convergence of concepts of a good death in human and veterinary medicine. Medicine, Health Care and Philosophy, 25(1), 73–86.

Settele, V. (2020). Revolution im Stall: Landwirtschaftliche Tierhaltung in Deutschland 1945–1990. Vandenhoeck & Ruprecht, Göttingen.

Statista (2024): Anzahl der Pferdeschlachtungen in Deutschland in den Jahren 1993 bis 2023. Available online at https://de.statista.com/statistik/daten/studie/459175/umfrage/pferdeschlachtungen-in-deutschland/ (accessed 14 March 2024).

Stewart, K. and Cole, M. (2009). The conceptual separation of food and animals in childhood. Food, Culture & Society, 12(4), 457–476.

Swabe, J. (1999). Animals, disease and human society. Human–animal relations and the rise of veterinary medicine. Routledge, London.

Vermilya, J.R. (2012). Contesting horses: borders and shifting social meanings in veterinary medical education. Society & Animals, 20(2), 123–137.

Vermilya, J.R. (2022). Identity, gender, and tracking: the reality of boundaries for veterinary students. Purdue University Press, West Lafayette, IN.

University of Veterinary Medicine, Vienna (2022): Curriculum Diplomstudium Veterinärmedizin 2014. Stand: 23.06.2022. Available online at https://www.vetmeduni.ac.at/fileadmin/v/z/lehre/Curricula/20220623_Curr_DS_Veterinärmedizin.pdf (accessed 14 March 2024).

Wiedenmann, R.E. (2009). Tiere, Moral und Gesellschaft. Elemente und Ebenen Humanimalischer Sozialität. VS Verlag, Wiesbaden.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The hidden skill? Dealing with disgust in veterinary medicine

J. Karg and C. Dürnberger*
Messerli Research Institute, Veterinaerplatz 1, 1210 Vienna, Austria
**Corresponding author, e-mail: Johanna.karg@vetmeduni.ac.at*

Abstract

The article deals with a topic that has received little attention in research to date: dealing with disgust in veterinary medicine. While veterinarians are confronted with situations and materials (such as faeces, blood and pus) that many people are disgusted by, the need to deal with disgust is not featured in the descriptions of the profession and its challenges, nor in accompanying sociological research. In the following article, we will briefly outline the emotion of disgust and its relevance to veterinary medicine. Given the limited research on disgust within veterinary medicine, we will draw upon insights from analogous professions, particularly human medicine, to illuminate how this emotion impacts professionals, their practice, and their relationships with patients: The emotion of disgust is indeed present and prevalent among surveyed healthcare professionals, irrespective of their level of experience; feeling disgust can have a negative impact on the healthcare professional-patient relationship; and healthcare professionals develop specific coping strategies to encounter the feeling of disgust during work. Since there is a lack of corresponding research in veterinary medicine, exploring how disgust influences various aspects of veterinarians' well-being, decision-making processes and interactions with both patients and clients, the paper argues that the phenomenon of "disgust" deserves greater attention within the field of veterinary medicine.

Keywords: dirty work, soft skills, veterinary education, veterinary ethics

Introduction

When people think of veterinarians, a common image that comes to their mind is a person with one arm inserted into the rectum of a cow. While such activities are a part of a veterinarian's daily work, this mental image can be repulsive to many people, and perhaps also for some veterinarians themselves, especially at the beginning of their studies or their professional career. However, contact with animal body fluids such as blood, faeces, pus or even contact with the bodies of deceased animals must be tolerated when practicing veterinary medicine. To put it bluntly: Veterinarians are required to deal with situations and materials that many people are disgusted by. In the following paper, our aim is to trace the emotion of disgust and examine its potential impact on veterinarians and their practice. To achieve this, we will initially examine the phenomenon from both a biological and, briefly, a moral philosophical perspective. Given the limited research on disgust within veterinary medicine, we will draw upon insights from analogous professions, particularly human medicine, to illuminate how this emotion impacts professionals, their practice, and their relationships with patients. We will finally argue that this phenomenon deserves greater attention within veterinary medicine.

Disgust between biological mechanism and moral condemnation

The concept of disgust fascinated Charles Darwin, who described in 1872 the state of disgust as being "excited by anything unusual in the appearance, odour, or nature of our food" (Darwin, 1872: p. 257). Subsequent research described the roots of disgust in biological terms, i.e. disgust was primarily understood as a mechanism for avoiding contaminated and inedible food (Haidt and Rozin, 1993). This argument is supported, for example, by human facial expressions caused by disgust: A wrinkled

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (Eds.), ***Back to the future***
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_51, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

nose, a raised upper lip or even narrowed eyes have a protective function for the nasal and oral mucous membranes, as they shield them from direct contact with the repulsive stimuli (Rozin *et al*., 1994). However, individuals do not universally find all things equally disgusting; perceptions of what is considered repulsive are subjective and can vary. Haidt *et al*. (1997) explored what things provoke disgust in humans. They identified in total seven broad categories as triggers for disgust, including food, animals (such as insects or pests), body products (blood, faeces etc.), sexual deviance (incest, bestiality), body envelope violations (wounds), poor hygiene, and contact with death (Haidt *et al*., 1997).

Not only psychology, but also moral philosophy has become increasingly interested in the "unreasoned" (Russell and Giner-Sorolla, 2013: p. 328) emotion of disgust in recent decades. Instances of racist, sexist, and unjust conduct are, for example, associated with feelings of disgust; this connection goes beyond a mere linguistic correlation, where "disgusting" is commonly used interchangeably with unacceptable. Rather, the connection is grounded in the observation that indignation shows overlapping brain activation patterns and elicits parallel physical reactions as those provoked by physically repulsive stimuli (Moll *et al*., 2005). This article, however, focuses on a narrow understanding of disgust. The focus is not on disgust in a moral dimension but on dealing with tangible materials such as pus, bodily excretions and viscera in the workplace.

Disgust and "dirty work"

There is a theoretical approach that takes a closer look at disgusting situations and substances in work environments and, above all, their consequences: The concept of "dirty work", introduced by Hughes (1951), focuses on (parts of) occupations that are likely to be perceived as degrading or disgusting. He describes the work of a nurse: some tasks of health professionals are considered "pleasant" both by the professionals themselves and by outsiders, other tasks are seen as disgusting. Hughes uses the term "dirty work" for tasks of the second kind and emphasizes that although almost every job has its share of "dirty work", some professions are characterized by the fact that they perform activities that many people are disgusted by. Such jobs are associated with dirt, stench, death, or waste; the work is often perceived as nauseating, leading to feelings of repulsion. Examples of such jobs are sewer workers, morticians, or butchers (Ashforth and Kreiner, 2013). People who do such work experience a kind of stigmatization that has been called "taint" by following research (Ashforth and Kreiner, 1999). Hughes pointed out that all professions tend to delegate the "dirty work" parts of their job to other groups and focus on the prestigious, enjoyable parts (Hughes, 1958: p. 51). Human medicine can be used as an illustrative example: Whereas in earlier centuries it was still common for physicians to clean and tidy the operating room themselves, this part of medicine has been "outsourced" to other professions over the course of history. The theoretical approach of "dirty work" also provides explanatory approaches relating to the social prestige of a profession. To give an example: Health professionals deal with various kinds of bodily fluids, which is why certain roles, particularly those involving patient hygiene and care, are often associated with lower occupational status than other tasks and jobs in medical care (Ostaszkiewicz *et al*., 2016).

Disgust in human medicine

Empirical studies within the field of human medicine underscore the importance of investigating the sensation of disgust within medical professions. Below, we provide a short summary of key findings in three points.

1. The emotion of disgust is indeed present and prevalent among surveyed healthcare professionals, irrespective of their level of experience. They recognize disgust as a "common yet negative emotion" (Hadjiitofi *et al*., 2020: p. 10) encountered in practice. Another finding is that even though it is common, this feeling is hardly talked about, described as a "hidden" part of practice (Van Dongen,

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

2001) and nursing students expressed a desire for patients not to recognize this negative feeling in them (Krey 2004). Explanations for this phenomenon would be the perception that disgust is deemed "unprofessional" (Muggleton *et al*., 2015), but also from the tendency for health professionals to be silent about unpleasant facets of their work (Ostaszkiewicz *et al*., 2016).

2. The experience of disgust can influence physician-patient relationships. Feelings of disgust can lead to specific reactions such as stepping back, maintaining distance, or avoiding triggers perceived as disgusting. Muggleton and colleagues (2015) found that encountering disgusting symptoms in patients hindered nurses from being empathetic professionals, reducing their willingness to spend time with and attentively listen to their patients (Muggleton *et al*., 2015). Disgust experienced by nurses can even contribute to patient abuse and dehumanization (Goergen, 2004).
3. Healthcare professionals have coping strategies to encounter the feeling of disgust during work. As public and collegial discourses around feelings of disgust remains limited, nurses and other professionals have found alternative methods to cope with this negative emotion. Habituation occurs after being confronted repeatedly with the same stimulus resulting in decreased sensitivity towards this stimulus. In a study by Rozin (2008) involving medical students, disgust sensitivity was assessed both before and after participating in a cadaver dissection course. The results revealed a notable decrease in sensitivity to death and bodily envelope violations following the course. However, it's noteworthy that this mechanism was selective; while students showed adjustment to handling cold cadavers, they did not exhibit the same adaptation to those that were still warm (Rozin, 2008). Other studies suggest that individuals who choose to work in human medicine may in general be less sensitive to disgust triggers compared to those who go for fields where encountering disgusting stimuli might be less likely, such as pharmacology (Consedine *et al*., 2013).

Disgust and working with animals

Compared to human medicine, there is a lack of empirical studies focusing on disgust within the veterinary profession. However, there are some studies that explore aspects such as working with animals, cadavers, or animal organs, which can provide relevant insights. Randler and colleagues (2013) for example investigated disgust in biology students during animal dissection. They highlighted the correlation between disgust and other negative emotions, underscoring the significance of exploring this feeling further: The biology students who experienced disgust during an animal dissection course exhibited reduced interest, decreased well-being, and encountered heightened levels of pressure and boredom (Randler *et al*., 2013). Another study also showed a correlation between disgust and reduced self-efficacy belief among students during the dissection of a pig heart (Holstermann *et al*., 2009). Sanders (2010) is one of the few who has at least partially dealt with veterinary work and disgust: In his study on veterinary technicians, he describes that these professionals often perceive tasks commonly deemed disgusting as "something one has to get used to". All these studies suggest that the feeling of disgust may be prevalent in veterinary students as well as practicing veterinarians during their work.

Disgust in veterinary medicine

In 1931 Theodor Kitt, a German professor of veterinary medicine, published a book called "Der tierärztliche Beruf und seine Geschichte" ("The veterinary profession and its history"), giving veterinary students an overview of what it takes to become a good vet. He mentions the need to deal with disgust on the very first few pages: "A veterinarian must not shrink from such manual labor as lies in touching sick animals, cutting up dead ones, examining their entrails and diseased parts. He is often forced to stay in dirty stables. Even the human doctor often has to enter living rooms that are not always inviting and carry out work that requires him to overcome a strong sense of disgust" (own translation) (Kitt, 1931: p. 10). However, Kitt's explicit address seems to be the exception — especially in the present day. The

Franck Meijboom and Pamela Rice, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

need of dealing with disgust is not featured prominently in the descriptions of veterinary medicine, in the lists of necessary skills or in the research on the challenges of the profession — rather the contrary.

Disgust plays hardly any role in these contexts and only little research has been carried out on this "dirty" part of the veterinary profession. There are various possible reasons for this. Perhaps it is assumed that vets are in general not too sensitive to disgust. In this context, the need of dealing with disgust could best be understood as part of a "hidden curriculum" (Whitcomb, 2014). It could also be the case that the topic is considered private and therefore people may prefer not to talk about it as it could be perceived as an unprofessional emotion. As a result, the topic of "disgust sensitivity" does not appear explicitly, neither in research nor in descriptions of the job. To give an example: Although the so-called "Day One Competences" of the European Association of Establishments for Veterinary Education (EAVE) specify the minimum standard that a veterinarian must have, skills in dealing with disgust do not appear anywhere – not even in the so-called soft skills (cf. EAVE).

Outlook

As we can see from research into other professional fields the emotion of disgust could be a thought-provoking and highly relevant topic for research about the veterinary profession. Understanding this feeling and its influence on moral behaviour could provide deeper insights into the ethical dimensions and human-animal relationships within veterinary medicine. Exploring how veterinarians respond when disgust is triggered by both the animal patient but also potentially by the animal owner would yield valuable insights. Furthermore, the influence of disgust on veterinary education and teaching should also be considered. Veterinary students deal with animal cadavers, body envelope violations, and carcasses during their studies. The studies referenced above suggest that this has an impact on student motivation and well-being. How this affects veterinary medical students remains unexplored at this point.

This article does not call for disgust to be explicitly mentioned in job descriptions and necessary skills, but: ignoring them leads to the risk of the phenomenon being completely disregarded, even in research. We are convinced that it would be beneficial for disgust to studied in the context of veterinary medicine: What disgusts vets? What impact does disgust have on their work, their well-being and their relationship with the patients and clients? What strategies or coping mechanisms do they use to deal with disgust? Do they discuss the feeling of disgust with colleagues or in their private lives? Does it change over the years? Does disgust also influence the choice of professional environment, e.g. whether you work in a small animal clinic, in livestock farming, in a laboratory or in a slaughterhouse? All of these would be worthwhile and relevant research questions.

Acknowledgement

This work was funded by FWF (Austrian Science Fund) Project P 36759-G.

References

Ashforth, B.E. and Kreiner, G.E. (1999). 'How can you do it?': Dirty work and the challenge of constructing a positive identity. Academy of Management Review, 24(3), 413–434.

Ashforth, B.E. and Kreiner, G.E. (2013). Dirty Work and dirtier work: Differences in countering physical, social, and moral stigma. Management and Organization Review, 10(1), 81–108.

Consedine, N.S., Yu, T.C. and Windsor, J.A. (2013). Nursing, pharmacy, or medicine? Disgust sensitivity predicts career interest among trainee health professionals. Advances in Health Sciences Education, 18, 997–1008.

Darwin, C. (1872). The expression of the emotions in man and animals. University of Chicago Press, Chicago, IL.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

European Association of Establishments for Veterinary Education (EAVE). The Association: Foundation, mission and objectives. Available online at https://www.eaeve.org/ (accessed 7 March 2024).

Goergen, T. (2004). A multi-method study on elder abuse and neglect in nursing homes. The Journal of Adult Protection, 6(3), 15–25.

Hadjittofi, M., Gleeson, K. and Arber, A. (2022). The experience of disgust by nursing and midwifery students: An interpretative phenomenological approach study. Nursing Inquiry, 29(2), e12427.

Haidt, J., McCauley, C. and Rozin, P. (1993). Individual differences in sensitivity to disgust: A scale sampling seven domains of disgust elicitors. Personality and Individual Differences, 16(5), 701–713.

Haidt, J., Rozin, P., McCauley, C. and Imada, S. (1997). Body, psyche, and culture: The relationship between disgust and morality. Psychology and Developing Societies, 9(1), 107–131.

Holstermann, N., Grube, D. and Bögeholz, S. (2009). The influence of emotion on students' performance in dissection exercises. Journal of Biological Education, 43(4), 164–168.

Hughes, C E. (1958). Men and their work, 1st edn. The Free Press of Glencoe, London.

Krey, H. (2004). Gefühlsregulierung in der Pflegeausbildung–Eine Untersuchung zum Ekelempfinden von Auszubildenden in der Pflege im 3. Ausbildungsjahr. Forum Qualitative Sozialforschung, 5(1), 8.

Kitt, T. (1931): Der tierärztliche Beruf und seine Geschichte. Ferdinand Enke Verlag, Stuttgart.

Moll, J., de Oliveira-Souza, R., Moll, F.T., Ignácio, F.A., Bramati, I.E., Caparelli-Dáquer, E.M. and Eslinger, P.J. (2005). The moral affiliations of disgust: A functional MRI study. Cognitive and Behavioral Neurology, 18(1), 68–78.

Muggleton, J., Guy, H. and Howard, R. (2015). Breaking the taboo: an interpretative phenomenological analysis of healthcare professionals' experience of caring for palliative patients with disgusting symptoms. BMJ Supportive & Palliative Care, 5(2), 189–195.

Ostaszkiewicz, J., O'Connell, B. and Dunning, T. (2016). 'We just do the dirty work': dealing with incontinence, courtesy stigma and the low occupational status of carework in long-term aged care facilities. Journal of Clinical Nursing, 25(17–18), 2528–2541.

Randler, C., Hummel, E. and Wüst-Ackermann, P. (2013). The influence of perceived disgust on students' motivation and achievement. International Journal of Science Education, 35(17), 2839–2856.

Rozin, P. (2008). Hedonic "adaptation": Specific habituation to disgust/death elicitors as a result of dissecting a cadaver. Judgment and Decision Making, 3(2), 191–194.

Rozin, P., Lowery, L. and Ebert, R. (1994). Varieties of disgust faces and the structure of disgust. Journal of Personality and Social Psychology, 66(5), 870–881.

Russell, P.S. and Giner-Sorolla, R. (2013). Bodily moral disgust: What it is, how it is different from anger, and why it is an unreasoned emotion. Psychological Bulletin, 139(2), 328–351.

Sanders, C.R. (2010). Working out back: The veterinary technician and "dirty work". Journal of Contemporary Ethnography, 39(3), 243–272.

Van Dongen, E. (2001). It isn't something to yodel about, but it exists! Faeces, nurses, social relations and status within a mental hospital. Aging & Mental Health, 5(3), 205–215.

Whitcomb, T.L. (2014). Raising awareness of the hidden curriculum in veterinary medical education: a review and call for research. Journal of Veterinary Medical Education, 41(4), 344–349.

Franck Meijboom and Patrick Bos, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Moral distress measurement in animal care workers: a systematic review

Y. Baysal[1,], N. Goy[2], S. Hartnack[1] and I. Guseva Canu[2]*
[1]Section of Epidemiology, Vetsuisse Faculty, University of Zurich, Winterthurerstrasse 270, CH-8057 Zurich, Switzerland; [2]Department of occupational and environmental health, Unisanté, University of Lausanne, Lausanne, Switzerland
** Corresponding author e-mail: yigit.baysal@uzh.ch*

Abstract

The mental health of veterinary and other animal health professionals is significantly impacted by the psychological stressors they encounter, such as euthanasia, witnessing animal suffering, and moral distress. Moral distress, initially identified in nursing, arises when individuals are aware of the right action but are hindered by institutional constraints. We aimed to review existing research on moral distress scales among animal care workers, by focusing on the identification and psychometric validity of its measurement. First, we identified all moral distress scales used in animal care research, in the eligible original studies. Second, we evaluated their psychometric validity, emphasizing content validity, which is a critical aspect of patient-reported outcome measures (PROMs). This evaluation adhered to the Consensus-based Standards for the Selection of Health Measurement Instruments (COSMIN). The results were reported according to the PRISMA. Data sources used: PubMed, EMBASE and PsycINFO to search for eligible studies published between January 1984 and April 2023. We included original (primary) studies that (1) were conducted in animal care workers; describing (2) either the development of a moral distress scale, or validation of a moral distress scale in its original or modified version, to assess at least one of the psychometric properties mentioned in COSMIN guidelines. Two independent reviewers used standardized methods to search, screen and code included studies. We considered the following information relevant for extraction: study reference, name and reference of the moral distress scale used, psychometric properties assessed, and methods and results of their assessments. The collected information was then summarized in a narrative synthesis. The review identified only one PROM specifically adapted for veterinary contexts: the Measure of Moral Distress for Animal Professionals (MMD-AP), derived from the Measure of Moral Distress for Healthcare Professionals (MMD-HP). Both MMD-HP and MMD-AP were evaluated for the quality of development and content validity. The development quality of both measures was deemed doubtful. According to COSMIN, MMD-HP's content validity was rated as sufficient, whereas MMD-AP's was inconsistent. However, the evidence quality for both PROMs was rated low. This is the first systematic review focused on moral distress measurement in animal care workers. It shows that moral distress is rarely measured using standardized and evidence-based methods and that such methods should be developed and validated in the context of animal care. PROSPERO registration number: CRD42023422259

Keywords: content validity, ethics, occupational health, patient-reported outcome measures (PROMs), psychometric properties

Introduction

Animal care workers' mental health and work stressors

The World Health Organization (WHO, 2022) defines mental health as a state of well-being essential for coping with daily life and engaging in meaningful work, beyond just the absence of mental disorders.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The Global Burden of Disease (GBD) study highlights a bidirectional relationship between work and mental health (Wang *et al*., 2020). Participating in meaningful work serves as a protective factor for mental health, while mental well-being influences occupational functioning and quality of professional life (WHO, 2022). However, work-related stressors, particularly those with moral challenges, can negatively impact mental health (Crane *et al*., 2015). Occupational mental health issues like burnout, compassion fatigue, and moral distress (MD) have been studied in healthcare workers but less so in other professions facing similar stressors, such as animal care workers (Al-Gobari *et al*., 2022; Burdorf, 2023; Shoman *et al*., 2022). Animal care workers, including lab technicians and veterinarians, are at risk of mental ill-health and suicide, particularly due to unique stressors like euthanasia (Arbe Montoya *et al*., 2019; Moses *et al*., 2018; Zimmermann *et al*., 2023). Compared to human healthcare professionals, research on moral distress among animal care workers is limited.

Both human and animal health care professionals, directly or indirectly being responsible for the care of their patients, form emotional bonds with them. However, at the same time, they may perform procedures that may cause pain and distress to their patients or find themselves unable to alleviate their pain and distress. Occupational mental health of animal care professionals has recently been emphasized; LaFollete *et al*. (2018) suggested that animal care professionals are significantly experiencing emotional dissonance and moral stress. A key difference between human healthcare and animal care professionals regarding workplace stress lies in the outcomes within clinical and experimental settings. The endpoint in animal experimentation is typically the death of the animal. In harm-benefit analysis it is crucially important that attempts were made to minimize harm and suffering in animal experimental setting. This ethical framework is often in conflict with predisposition of attachment, love and empathy based on human animal bonds. Animal care workers are often find themselves constantly making and breaking these emotional bonds (LaFollete *et al*., 2018). Combined with the role conflict experienced due to balancing competing interest of animal welfare and human interests, moral dilemma experienced at workplace can transform into moral distress (Moses *et al*., 2018). Social support networks can buffer the effects of moral dilemma and role conflict by providing emotional support and alternative perspectives that help the individual navigate ethical dilemmas and role demands. Yet, a systematic review of workplace stress in animal-care workers found reports of qualitative studies where stigma associated with animal related work tasks (e.g., euthanasia, use of animals in research) can hinder the access of social support networks (Scotney *et al*., 2015). Considering the complexity of moral distress in animal care work, we emphasize the need for exploration of this psychological syndrome targeted to animal care workers.

Moreover, experiencing moral distress and its negative consequences potentially impacts animal welfare, including the implementation of the 3R principle (replacement, reduction, refinement) in the animal experimental setting with animal care takers being responsible for fostering these (Grimm *et al*., 2023). An association between poorer quality of life in laboratory animal personnel and limited control over euthanasia procedures was found (LaFollete *et al*., 2018).

Concept of moral distress and its attributes

Moral distress was first described in nursing as "when one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action" (Jameton, 1993; Jameton and Jackson, 1984). It involves complicity in wrongdoing, lack of voice, and conflict with professional values, often exacerbated in hierarchical work environments (Jameton, 1993; Jameton and Jackson, 1984; Kogan and Rishniw, 2023). In veterinary medicine, moral distress arises from practices like euthanasia and witnessing animal suffering, with personal experiences and attitudes towards animals influencing its development. Veterinarians also report high levels of compassion fatigue, anxiety, burnout, depression, and suicidal thoughts (Arbe Montoya *et al*., 2019; Moses *et al*., 2018; Zimmermann *et al*., 2023). Moral

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

distress affects both professional and personal quality of life and can exacerbate PTSD, burnout, and compassion fatigue (Andrukonis *et al*., 2020; Arbe Montoya *et al*., 2019; Reeve *et al*., 2006).

Despite several systematic reviews on moral distress in medical workers, none have specifically addressed animal care workers (Giannetta *et al*., 2020). Various tools, mostly self-administered questionnaires, or Patient-Reported Outcome Measures (PROMs) (Mokkink *et al*., 2018) have been developed to measure moral distress. Front of such diversity, a question of their relevance and validity in the context of animal care practice arises.

Study objectives

In this study, we aimed to systematically review the available literature to answer two complementary research questions: (1) Which scales or PROMs are used in animal health care workers to assess moral distress?; and (2)What is the psychometric quality of these PROMs? The quality of a PROM is defined by its validity, reliability, and responsiveness, with the content validity being the most important psychometric property (Mokkink *et al*., 2018). According to the COnsensus-based Standards for the selection of health Measurement INstruments (COSMIN) (Mokkink *et al*., 2010, 2018; Terwee *et al*., 2018), the content validity is "the degree to which the content of a scale is an adequate reflection of the construct to be measured"(Mokkink *et al*., 2010). Thus, we focused on the content validity, while assessing the quality of the identified moral distress measures.

Results

Included studies

Step 1: The literature search resulted in 560 items. After duplicates removal, 455 records were retained for the first screening based on titles and abstracts. For the second screening based on the full-text screening, we selected 16 articles, from which only one met the inclusion criteria. In the other articles, either the moral distress was not measured (n=13), or it was an ineligible type of publication: such as a dissertation (n=1), or the article did not satisfy the inclusion criteria (n=1), only using the moral distress prevalence as one of the covariates. The included study was published in 2023 by Kogan and Rishniw and aimed to assess moral distress in veterinarians, differentiating between the veterinarians and the animal owners

Step 2: In the second step, we evaluated the included studies based on the COSMIN methodology checklist (21). In the COSMIN framework, all revised versions of a PROM are considered as new PROMs and should be assessed independently. Therefore, in the second step of this study, we considered both PROMs: MMD-HP and MMD-AP for associates and animal owners.

Construct definition and PROM description

The two identified PROMs share the same construct of Moral distress, initially defined by Jameton (1993). Epstein *et al*. (2019) defined it later as follows: "The pressure to act unethically is the defining concept of the phenomenon and it separates those situations that are emotionally distressing or otherwise morally troubling from those that threaten moral integrity".

Quality of psychometric validity of the selected PROMs

Quality of the PROM development: The COSMIN guidelines for evaluating the quality of the study on the PROM development consist of two parts. The first part deals with the standards used to assess the quality of the searches carried out to find the most suitable items for the new PROM. It includes

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

general design requirements and concept elicitation. The concept of elicitation is important for relevance and comprehensiveness of the PROM. The second part looks at the standards used to assess the quality of the cognitive interview study or pilot studies conducted. The aim is to rate the comprehensiveness and comprehensibility of the PROM (Terwee *et al*., 2018).

For both PROMs, the construct and its origin, the target population, and the context of use were well-defined and rated as very good. Both PROMs have been developed in English and tested in a sample representing the target population, thus the general design requirements were also rated as very good. We appraised the concept elicitation as doubtful for MMD-AP and adequate for MMD-HP. For these two PROMs, we could not rate them as very good, because the qualitative data collection was not or not enough described, even after contacting the authors for further information on the analyses they carried out. The total PROM design was thus rated as adequate for MMD-HP and doubtful for MMD-AP. The MMD-AP authors conducted a very good cognitive interview asking the target population (i.e., veterinarians) for guidance and feedback, thus we evaluated the general design requirements as very good. For MMD-HP, the rating was adequate because the cognitive interview was performed with experts and clinicians but not with all health professionals. However, Kogan et al. did not ask the participants about the comprehensibility of the items included in the PROM. Comprehensibility is the standard that ensures that PROM is comprehensible to the target population. For a very good rating, different PROM components need to be evaluated separately: instruction, item, response option, and recall period (Terwee *et al*., 2018). Since the authors did not mention whether they have evaluated these components for MMD-AP, we rated the quality of the comprehensibility study as doubtful. Finally, the total quality of the MMD-AP development study was rated as doubtful. For MMD-HP, the comprehensibility was also assessed as doubtful. Although its authors carried out a study to evaluate the face validity, they did not mention whether they used an interview guide and did verbatim transcriptions.

Table 1 summarizes the results of the PROM development assessment, with the items considered and their consensual rating by two independent reviewers.

Table 1. Quality of the PROM development

PROM	**MMD-HP**	**MMD-AP**
Authors (year)	Kogan and Rishniw (2019)	Epstein *et al*. (2023)
Language in which the PROM was developed	English	English
PROM design		
Clear construct	V	V
Clear origin of construct	V	V
Clear target population for which the PROM was developed	V	V
Clear context of use	V	V
PROM developed in sample representing the target population	V	V
Concept elicitation	A	D
Total PROM design	A	D
Cognitive interview study performed in sample representing the target population	A	V
Comprehensibility	D	D
Total cognitive interview study	D	D
Total PROM development	D	D

A, adequate; D, doubtful; V, very good, MMD-AP, measure of moral distress for animal professionals; MMD-HP, measure of moral distress for healthcare professionals; PROM, patient-reported outcome measures.

Franck Meijboom and Bonnie Rowe, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Quality of the PROM content validity: The criteria to assess content validity are relevance, comprehensiveness, and comprehensibility. The relevance means, for example, ensuring that PROM items are adapted to the target population and to the context in which they are used. The comprehensiveness evaluates the completeness of the PROM and the comprehensibility concerns the understanding of the PROM by the target population. Table 2 summarizes the results of these three criteria for PROMs content validity assessment.

Quality of evidence for moral distress scales are assessed using the modified GRADE approach for risk of bias (Mokkink *et al*., 2018; Prinsen *et al*., 2018). This approach allows reviewers to adjust their evaluations of pooled results of PROM measurement property evaluations. It assumes that pooled results of individual measurement properties have an overestimation of the quality of evidence; thus, they have to be downgraded, given suspicion over trustworthiness of the published results. It consists of five factors to determine the quality of the evidence: risk of bias, inconsistency, indirectness, imprecision, and publication bias. Within these factors, three of these factors are applicable to content validity evaluation: risk of bias, inconsistency, and indirectness (Mokkink *et al*., 2018; Terwee *et al*., 2018). Risk of bias depends on the number of publications available in the literature on a given PROM on its development to numerous studies assessing its measurement properties, and their ratings by reviewers based on their adequacy. Indirectness factor is related to whether qualitative methods are conducted to a representative sample of the intended target population. The inconsistency factor depends on the variability of rating given to each item by reviewers in COSMIN content validity methodology checklist. If there is no explanation found to explain the variability of ratings, the rating is downgraded to "inconsistent" (Mokkink *et al*., 2018).

Table 3 summarizes the results of the PROMs overall rating of content validity, with the adjusted quality of evidence.

Other psychometric properties of the selected PROMs

According to the COSMIN framework, in case the PROM does not meet the criteria for a sufficient quality of content validity, the assessment of other psychometric proprieties is useless, the content validity being a paramount requirement for recommending a PROM for use in research or clinical

Table 2. Systematic results for the MMD-HP and MMD-AP PROMs for the criteria content validity

PROM	Development study	Rating of reviewers	Overall rating	Quality of evidence
MMD-HP				
Relevance	+	±	+	Low
Comprehensiveness	+	+	+	Low
Comprehensibility	+	+	+	Low
Content validity rating	+	+	+	Low
MMD-AP				
Relevance	±	+	±	Low
Comprehensiveness	–	+	±	Low
Comprehensibility	–	+	±	Low
Content validity rating	±	+	±	Low

MMD-AP, measure of moral distress for animal professionals; MMD-HP, measure of moral distress for healthcare professionals; PROM, patient-reported outcome measures; +, sufficient; ±, inconsistent; –, insufficient.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Table 3. Systematic results for the overall rating of MMD-HP and MMD-AP PROMs and their quality of evidence

	MMD-HP		MMD-AP	
COSMIN psychometric properties for content validity	Overall rating	Quality of evidence	Overall rating	Quality of evidence
Relevance	+	Low	±	Low
Comprehensiveness	+	Low	–	Low
Comprehensibility	+	Low	–	Low

COSMIN, consensus-based standards for the selection of health measurement instruments; MMD-AP, measure of moral distress for animal professionals; MMD-HP, measure of moral distress for healthcare professionals; PROM, patient-reported outcome measures; +, sufficient; ±, inconsistent; –, insufficient.

practice. The content validity was inconsistent for MDD-AP and sufficient for MDD-HP, therefore, we did not conduct any formal assessment of the other properties of these PROMs.

Acknowledgements

The first two authors contributed equally. This project has received funding from the Swiss National Science Foundation (SNF) for the NRP79 project 407940_206396 "Linking animal and human welfare — refining rodent euthanasia".

References

Al-Gobari, M., Shoman, Y., Blanc, S. and Canu, I.G. (2022). Point prevalence of burnout in Switzerland: a systematic review and meta-analysis. Swiss Medical Weekly, 152, w30229. DOI: 10.4414/smw.2022.w30229.

Andrukonis, A., Hall, N.J. and Protopopova, A. (2020). The impact of caring and killing on physiological and psychometric measures of stress in animal shelter employees: A pilot study. International Journal of Environmental Research and Public Health, 17, 24. DOI: 10.3390/ijerph17249196.

Arbe Montoya, A.I., Hazel, S., Matthew, S.M. and McArthur, M.L. (2019). Moral distress in veterinarians. Veterinary Records, 185(20), 631. DOI: 10.1136/vr.105289.

Burdorf, A. (2023). How to improve intervention research on the psychosocial work environment? Scandinavian Journal of Work Environment and Health, 49(5), 311–313. DOI: 10.5271/sjweh.4107.

Crane, M.F., Phillips, J.K. and Karin, E. (2015). Trait perfectionism strengthens the negative effects of moral stressors occurring in veterinary practice. Australian Veterinary Journal, 93(10), 354–360. DOI: 10.1111/avj.12366

Epstein, E.G., Whitehead, P.B., Prompahakul, C., Thacker, L.R. and Hamric A.B. (2019). Enhancing understanding of moral distress: The measure of moral distress for health care professionals. AJOB Empirical Bioethics, 10(2), 113–124.

Giannetta, N., Villa, G., Pennestrì, F., Sala, R., Mordacci, R. and Manara, D.F. (2020) Instruments to assess moral distress among healthcare workers: A systematic review of measurement properties. International Journal of Nursing Studies, 111, 103767. DOI: 10.1016/j.ijnurstu.2020.103767.

Grimm, H., Biller-Andorno, N., Buch, T., Dahlhoff, M., Davies, G., Cederroth, C.R., Maissen, O., Lukas, W., Passini, E., Törnqvist, E., Olsson, A.S. and Sandström, J. (2023). Advancing the 3Rs: innovation, implementation, ethics and society. Frontiers in Veterinary Science, 10, 1185706. DOI:10.3389/fvets.2023.1185706

Jameton, A. (1993). Dilemmas of moral distress: moral responsibility and nursing practice. AWHONNS Clinical Issues in Perinatal Womens Health Nursing, 4(4), 542–551.

Jameton, A. and Jackson, E.M. (1984). Nuclear war and nursing ethics. What is the nurse's responsibility? Möbius, 4(1), 75–88. DOI: 10.1002/chp.4760040110

Franck Meijboom and Patrick Bateson | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Kogan, L.R. and Rishniw, M. (2023). Veterinarians and moral distress. Journal of the American Veterinary Medicine Association, 261(5), 1–7. DOI: 10.2460/javma.22.12.0598.

LaFollette, M.R., Riley, M.C., Cloutier, S., Brady, C.M., O'Haire, M.E. and Gaskill, B.N. (2018). Laboratory animal welfare meets human welfare: A cross-sectional study of professional quality of life, including compassion fatigue, among laboratory animal personnel. Quality of Life Research, 27(5), 1147–1157. DOI: 10.3389/fvets.2020.00114

Mokkink, L.B., de Vet, H.C.W., Prinsen, C.A.C., Patrick, D.L., Alonso, J., Bouter, L.M. and Twerwee, C.B. (2018). COSMIN risk of bias checklist for systematic reviews of patient-reported outcome measures. Quality of Life Research, 27(5), 1171–1179. DOI: 10.1007/s11136-017-1765-4

Mokkink, L.B., Terwee, C.B., Knol, D.L., Stratford, P.W., Alonso, J., Patrick, D.L., Bouter, L.M. and de Vet, H.C.W.. (2010). The COSMIN checklist for evaluating the methodological quality of studies on measurement properties: A clarification of its content. BMC Medical Research Methodology, 10, 22. DOI: 10.1186/1471-2288-10-22

Moses, L., Malowney, M.J. and Boyd, J.W. (2018). Ethical conflict and moral distress in veterinary practice: A survey of North American veterinarians. Journal of Veterinary Internal Medicine, 32(6), 2115–2122. DOI: 10.1111/jvim.15315

Prinsen, C.A.C., Mokkink, L.B., Bouter, L.M., Alonso, J., Patrick, D.L., de Vet, H.C.W. and Terwee, C.B. (2018). COSMIN guideline for systematic reviews of patient-reported outcome measures. Quality of Life Research, 27(5), 1147–1157. DOI: 10.1007/s11136-018-1798-3

Reeve, C., Rogelberg, S., Spitzmueller, C. and Digiacomo, N. (2006). The caring-killing paradox: euthanasia-related strain among animal-shelter workers. Journal of Applied Social Psychology, 35, 119–143. DOI: 10.1111/j.1559-1816.2005.tb02096.x

Scotney, R.L., McLaughlin, D. and Keates, H.L. (2015). A systematic review of the effects of euthanasia and occupational stress in personnel working with animals in animal shelters, veterinary clinics, and biomedical research facilities. Journal of the American Veterinary Medicine Association, 247(10), 1121–1130. DOI: 10.2460/javma.247.10.1121

Shoman, Y., Rousson, V., Bianchi, R. and Canu, I.G. (2022). Holistic assessment of factors associated with exhaustion, the main symptom of burnout: a meta-analysis of longitudinal studies. International Journal of Environmental Research and Public Health, 19(20), 13037. DOI: 10.3390/ijerph192013037.

Terwee, C.B., Prinsen, C.A.C., Chiarotto, A., Westerman, M.J., Patrick, D.L., Alonso, J., Bouter, L.M., de Vet, H.C.W. and Mokkink, L.B. (2018). COSMIN methodology for evaluating the content validity of patient-reported outcome measures: A Delphi study. Quality of Life Research, 27(5), 1159–1170. DOI: 10.1007/s11136-018-1829-0

Wang, H., Abbas, K.M., Abbasifard, M., Abbasi-Kangevari, M., Abbastabar, H., Abd-Allah, F. (2020). Global age-sex-specific fertility, mortality, healthy life expectancy (HALE), and population estimates in 204 countries and territories, 1950–2019: A comprehensive demographic analysis for the Global Burden of Disease Study 2019. Lancet, 396(10258), 1160–1203. DOI: 10.1016/S0140-6736(20)30977-6

World Health Organization. (2022). WHO guidelines on mental health at work. WHO, Geneva.

Zimmermann, C., Strohmaier, S., Niederkrotenthaler, T., Thau, K. and Schernhammer, E. (2023). Suicide mortality among physicians, dentists, veterinarians, and pharmacists as well as other high-skilled occupations in Austria from 1986 through 2020. Psychiatry Research, 323, 115170. DOI: 10.1016/j.psychres.2023.115170

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Between the beast and the boss: Work psychology challenges for animal health and welfare staff

D.N. Costa[1], D. Rolo[2], N.H. Franco[3], M. Magalhães-Sant'Ana[4] and I.A.S. Olsson[3]
[1]FPCEUP, Rua Alfredo Allen, 4200 Porto, Portugal; [2]ISCTE, Av. das Forças Armadas, 1649 Lisboa, Portugal; [3]i3S, Rua Alfredo Allen, 4200 Porto, Portugal; [4]FMV, Universidade de Lisboa, Avenida da Universidade Técnica, 1300 Lisboa, Portugal
** Corresponding author, e-mail: olsson@i3s.up.pt*

Abstract

Compassion fatigue (CF), first described in human healthcare, aims to capture the struggle experienced when limiting resources or competing demands prevent professionals from providing appropriate care. Also for the veterinary profession, large scale surveys have reported high levels of CF, and other animal care professionals at risk are now starting to get research attention, with high CF levels found in laboratory animal care staff as well as animal shelter staff and volunteers. In both, the caring-killing paradox (having to kill animals one cares for) is reportedly a key driver. Most research is from North America, and using quantitative methods. We present results from two focus group interviews with Portuguese professionals, using a qualitative approach. Shelter professionals report distress over decision-making, human-animal dilemmas, and public misunderstandings, whereas laboratory animal personnel point to difficult interactions with researchers, moral dilemmas of euthanizing surplus animals, and a lack of recognition within their institutions. These results suggest that professional mental well-being is about much more than CF.

Keywords: compassion fatigue, focus groups, mental health, qualitative analysis, veterinary professionals

Introduction

The mental health of animal care professionals has only recently started to receive research attention, with studies highlighting the prevalence of psychological disorders in this population. Most of the evidence comes from quantitative surveys of veterinarians (e.g. Hill *et al*., 2020; Ouedraogo *et al*., 2021), animal shelter workers (e.g. Jacobs and Reese, 2021) and lab animal personnel (e.g. Randall *et al*., 2021), and using the notion of compassion fatigue to characterize psychological suffering in these professions. Compassion fatigue has been identified as a major mental health problem among human healthcare workers, where there is a much longer tradition of studying occupational mental health. Whereas there is a clear analogy between these populations, there are also important distinctions. In-depth research with animal care professionals is essential to understand their specific challenges, and develop effective measures to prevent mental health problems.

Interview study with personnel in animal shelters and research animal facilities

The results reported here come from two focus group interviews with Portuguese professionals in laboratory animal research facilities (L, 8 women, 4 men) and animal shelters (S, 8 women, 2 men), done in October-November 2023, in the context of professional conferences. These semi-structured interviews were designed to provide pilot data for a grant proposal and written consent was sought before data collection. The initial interview guide, used with animal shelter personnel, focused on empathy. As this first focus group showed empathy and compassion fatigue to be only two of many important issues for

EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_53, © Brill | Wageningen Academic 2024
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

professional well-being, a revised interview guide was used in the second group, with research animal facility personnel. Audio recordings from the interviews were transcribed and analysed thematically. The main themes of relevance for mental well-being are presented.

Challenges and dilemmas around animals

Among personnel in animal research facilities, animal species and their different position in the phylogenetic/sociozoological scale came up repeatedly. Interviewees who work with aquatic organisms referred to researchers being less considerate of and sensitive to non-mammalian animals. "I understand that our researchers may be more desensitized. Even though it is a vertebrate. (...) it's not so much the way they handle the model, it's the way they use it, sometimes, in too much abundance. The excesses, that's what's more... They use it in a more liberal way, let's say" (L-1). On the one hand, lack of researcher sensitivity may add to the burden and responsibility of caretakers: "I try to sensitize, at times, researchers or students to the fact that, although they are simple organisms, we should take the same care as we would with other animals. I feel that this topic ends up being very important. (...) It does weigh heavily because (...) I end up feeling that we are the last defence for those animals, because other people don't have the sensitivity for it" (L-2). On the other hand, working with animals who are phylogenetically and sociozoologically very close to humans adds burden: "I dealt with primates and dogs in England. Undoubtedly, working with a primate entails a completely different kind of wear compared to working with a rodent or with fish: it is completely different" (L-3).

Dilemmas associated with killing animals present an emotional and ethical challenge faced by those responsible for the care and management of laboratory animals. In this discussion, the question of purpose came up repeatedly, and the idea of having to kill surplus animals was perceived as particularly problematic. " I think what upsets the most is not the procedures, it's not them being used, it's not having to sacrifice animals that were, in fact, used for their purpose; it's when researchers, for some reason that we... I understand (...) genotyping, or because they had really thought about that experiment which then couldn't be concluded. But then it ends up being tanks and tanks... well, 200 (dead) fish (...) hours of work from someone's life wasted, dedicating themselves to those animals. There's an interconnection, it's all care. And then it was for nothing" (L-1).

For shelter personnel, the dilemmas around killing are somewhat different and constrained by the legal ban of animal euthanasia for reasons other than terminal suffering. The challenges emerge from the attempt to reconcile two seemingly intractable conflicting interests: avoiding unnecessary animal suffering and respecting the human-animal emotional bond. Respondents may handle these dilemmas by compartmentalising tasks and avoiding dealing with anything that is not strictly necessary (see also the reference to disengagement in the Mental Health section). "Now it's not allowed to perform euthanasia in (municipal kennels): we don't do that. But that doesn't mean I don't have handlers crying next to me and a terminally ill animal. They are my coworkers, but sometimes I have to tell them: 'I'm going to get someone else, I can't do this with you crying, I just can't.'. I feel bad, I don't know" (S-2).

To be or not be (empathetic)

The dialogue between professionals reveals a nuanced view of the emotional toll associated with empathy towards animals. Although emotionally challenging, empathy towards animals is seen as an essential aspect of veterinary practice and animal care. The challenge of maintaining empathy in the face of routine professional pressures is highlighted, suggesting that, for some, the ability to empathize is innate and central to their personal and professional identity. "If someone manages not to have empathy, that's diabolical, it's unnatural, it goes against (a veterinarian's) nature. (...) Most of us went into (Veterinary) Medicine because we felt a calling for it. And that already shows empathy towards others. We are,

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

certainly (most veterinarians at least), willing people that are trying to help not only the animals but also many (other) situations…" (S-3).

The conflict between the desire to act in the best interest of the animal and the limitations imposed by external factors is a cause of emotional stress that several respondents report strategies to cope with. "I can't perform if I'm constantly putting myself in other people's place. Nowadays, I can put myself more in the place of the animal than in the place of the owner (or) the person who comes here with it. No, I no longer have… I have lost the ability to empathize a long time ago" (S-4).

Workers' mental health

The importance of emotional resilience is highlighted. A metaphorical "bag" that fills up and at some point might "overflow" suggests a need for mechanisms to manage emotional overload ("when the bag is full, I have to cry" (S-5) and prevent burnout and other serious health conditions. "In January, I had a little… I thought I was going to have a stroke or something, and I was going to ask the doctor for a week off. And the doctor: 'No, you're going to take two weeks off, and if necessary, it can even go up to a month.'. It was no longer about the animals, it was something else that was affecting me, because something wasn't… there you have it, the 'bag': I kept adding, and adding, and adding. And it affected me to the point that anything people told me made my blood pressure (gesture of steep rise). And I noticed it when I could already feel the heartbeat right here. (points to the chest)" (S-6).

Some interviewees stress the importance of recognizing and respecting personal perspectives, as well as the diverse mental states and capabilities that are often found within a team. "What constitutes a manageable workload for one person is not exactly the same for another. Yet, the basic training of all of us is the same. And people — and now I speak for myself as well — only discover these limits after they start working. And those who are coordinating the project do not yet know what the limits of the people who are there performing the procedures will be. And so, it's very variable, and I think attention must be paid to the individual because what one can handle well, another may find far beyond what they can manage" (L-4).

However, this does not indicate a dismissive attitude towards mental health. On the contrary, some interviewees had voluntary sought psychotherapy to improve their mental health and well-being. Additionally, several of them admitted that they tend to redirect work-related tensions and negative emotions towards non-work-related targets, particularly family members. "Yes. (signs of) irritability with people at home" (S-4), "Yes, definitely. Sometimes, it's my daughters who end up bearing the brunt" (S-2).

This "displacement" phenomenon – where emotions, often negative, are redirected from their original source to another target, usually less threatening – acts as a psychological defence mechanism of an automatic, unconscious nature. There are, however, other strategies that are more deliberate in mitigating the impact of work-related stressors.

For example, colleagues often emerge as crucial support systems, providing emotional stability and a sense of belonging, which are viewed as essential for coping with challenging situations or emotions. "Our team has a daily routine that includes sharing on a personal level, as well as about work, every day. Every day we spend half an hour together having coffee and talking. (…) Usually, we all gather in one place and share situations: sometimes it has nothing to do with work, other times it does. And that is very important. I think that much of what keeps us in that job – which is emotionally difficult – is that team spirit and the connection we have with each other. (…) I think that helps a lot" (L-5). On the other hand, the significance of drop-out, or withdrawal, as a protective strategy within the veterinary field is

Franck Meijboom and Bonnie Rowe, Book, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

highlighted, reflecting a profound personal struggle with the demands of the profession, particularly the emotional toll of constant empathy for animals and humans. Many colleagues end up seeking an escape from this, because it's extremely difficult to manage this experience with ourselves, (thinking in terms) of: 'I can't not convey empathy, not live (with) empathy. I can't, it goes against my nature. This isn't who I am, this isn't what I studied for, so I can't be in this.'. And they leave (the profession). So, it's a shell, a protection" (S-4).

Even if this particular attitude may be viewed as an extreme measure, it nonetheless signals that while emotional disengagement from work-related tasks is not always feasible or desirable, strategic avoidance, or distancing from certain emotionally charged scenarios, can be crucial for mental health and professional longevity. One example is the separation between the task of euthanizing an animal and that of dealing with its grieving humans, as referred to under Challenges and dilemmas around animals. Rationalization serves as a means to cope with the cognitive dissonance arising from challenging professional duties or overwhelming situations, by focusing on logical justifications or the greater good these actions might serve. "I don't feel indifferent. Euthanizing is part of my duties, it's acknowledged, and I know. But I also don't think it costs me more, or less, now. Because, from the beginning, I was aware of why I was doing it, the need to do it, and that by doing this I am protecting the others (more individuals in the colony, for example). So, it's hard, but it's something I can handle. (...) In my case, the 'bag' fills up if I don't understand what's going on. Now, solid lines of reasoning ensure that traumatic situations don't accumulate in the bag" (L-5).

Compassion fatigue (among other burdens)

The overwhelming nature of continuous decision-making, especially in contexts involving animal welfare and euthanasia, significantly contributes to mental and emotional strain. The need to constantly empathize with animals and their owners while making tough decisions exacerbates this stress, leading to what is often termed as "compassion fatigue." "Having to make so many decisions, it's impossible to maintain any sanity if you put yourself in someone else's place. But upstream, it's not just the stress of one little thing: it's so much... on the same day there are so many decisions, so many conflicting feelings. The way people wear themselves out with this 'wanting to do; having nothing more to do; having to make decisions; trying to do, doing, but knowing that there might have been other ways, perhaps, to achieve better results...'. Everything is very draining." (S-3). Animal research personnel also recognized compassion fatigue as something they knew and related to: " Yes, (the theme comes up). And, with the caregivers, especially those who have to deal with euthanizing animals, it occasionally comes up among them" (L-1).

High workload and the pressure of managing a large number of animals amplify stress levels. "But I also feel that, in fact, over time, there's an associated weariness. Because we deal with the death of a large number of animals (...) I believe that, if we consider within the same species, the workload we're discussing here, the burden... that is, the number of animals we're going to euthanize, even within the same species, the greater it is, and the less spaced out in time, the more impact it will have" (L-6).

Managerial aspects of animal care

Questions of salary come up in different contexts. It is a question of recognition: "And then, this huge lack of recognition (...) because I've been in this role for a long time: (...) I was on a scholarship for 9 years, and when I switched to a contract, my salary was exactly the same. My salary is still the same" (L-4). Through the income it brings, it is also a crucial factor for ability to ensure overall wellbeing and health: "having more financial capacity for a municipal veterinarian means: more psychotherapy sessions, better conditions at home for sleeping, better mobility conditions, being able to live closer to

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

the workplace... (...) I can endure working 20 years without prospects for progression (...) the downside is mental health. Therefore, I think all the money makes all the difference" (S-4).

There is recurrent mention of the disconnect between the needs of animal care and the resources provided, leading to operational inefficiencies and stress, especially among shelter veterinary staff. "The colleagues are overwhelmed because it's not just about earning poorly; it's about being mistreated; it's about not having the conditions to do what they set out to do" (S-3).

Structural support within an organization encompasses recognition for individual and collective contributions. This support seems foundational for fostering a work environment conducive to high morale, job satisfaction, and a sense of belonging, but is often perceived to be lacking. This is the case both in shelters ("There is always the lack of recognition from the management. It's not just me; it's really with the team. (...) It hurts a lot to come to work every day and seeing the work of those people who struggle and are not appreciated" (S-4) and in research facilities: "At our institute (...) researchers must acknowledge the participation of facilities. (...) Since it's instituted and mandatory, people don't find it very flattering. Therefore, people working in the animal facility feel much more valued when there's something more, right? (...) when a researcher has a result and comes to share it... but, unfortunately there's little of it. (...) the animal facility is required to communicate everything we do (...) and our researchers publish a paper (...) and we don't even know about it? (...) Sometimes, the lack of recognition hurts" (L-6).

In the case of shelters, most of which are municipal, this lack of recognition is further understood as a reflection of the gap between political rhetoric on animal welfare and the reality of operational support and conditions provided to veterinarians.

Social interactions, in the workplace and beyond

Many interviewees in leadership positions refer to safeguarding their team's psychological well-being by assuming heavier burdens. Such proactive measures taken by coordinators or directors to shield their staff from extreme distress illustrate compassionate leadership. "(D)uring COVID-19 (...)It wasn't the caretakers: it was me who (...) spent hours euthanizing animals, just to not make my staff go through that. Why? Because I knew that I might be able to deal with it. Suddenly asking the caretakers to euthanize 3000 animals (or however many there were) is a burden, a very big psychological load" (L-5).

In animal shelters, the need for careful management of interactions with clients is demanding. "(It takes more) energy because for me, it's not natural. (...) I confess that I sometimes feel I force empathy a bit (to make) the conversation easier. Because if one approaches in a slightly less empathetic manner, the response from the other side will not go well, there's no communication (...) therefore, I consider it a bit of forced empathy: trying to be empathetic, trying to understand (...) It's more of a practical approach than a genuinely empathetic one" (S-2). This extends to the broad spectrum of socio-economic and health-related challenges faced by pet owners. As these can complicate treatment decisions, compliance, and even the basic ability to provide for an animal's welfare, they lay a burden on veterinarians who must navigate these human elements with sensitivity and professionalism.

Within research facilities, complex relationships unfold between animal facility staff, namely between caretakers and coordinators, and the researchers utilizing these facilities. A significant aspect of this relationship is the mutual effort to understand and accommodate each other's roles and pressures. Sometimes this fails: "For me, (the biggest source of distress) is the lie. Of having something described, and people lying to those taking care of the animals" (L-??). A preventive stance, aiming to pre-empt issues before they arise, helps ensure trust, but this trust must be mutual. "It's our frustration (as animal

Franck Meijboom and Bonnie Beaulieu | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

facility staff) that researchers do not view us as allies. (They see us) as if we were inspectors. We are there to facilitate and help, and we are not seen as such" (L-5).

Animal shelter personnel moreover highlighted the impact of social media and public opinion on their mental and emotional well-being. Workers are often subjected to harsh criticism, online harassment, and unrealistic societal expectations. "Animals don't go on social media to insult us and incite us to commit suicide, which is something that happens frequently" (S-5). "What bothers us the most are those highly derogatory comments. Social media is unbearable. Sometimes, certain comments can ruin the day for the entire team. No matter how much we do (...) we are always abused. (...) (the abuse is) directed at us, personally, with names and all. (...) I've even been afraid that they might come to my house" (S-2).

Discussion and conclusions

This article aimed to explore the role of the work environment in the mental health of animal care professionals, drawing from two pilot populations: laboratory animal facilities and animal shelters. Despite relevant differences between the two groups, their reported experiences share similarities. Importantly, the lack of institutional support and social recognition was a key source of distress, conversely mitigated by colleague support, among other coping and defence mechanisms.

In conclusion, a range of challenges emerge from our focus group interviews with Portuguese professionals that extend well beyond the scope of compassion fatigue, highlighting the interplay between empathy, work relations and management aspects. The findings underline the significance of addressing both the challenges arising from animal care and the workplace dynamics where they occur.

References

Hill, E.M., LaLonde, C.M. and Reese, L.A. (2020). Compassion fatigue in animal care workers. Traumatology, 26(1), 96–108. DOI: 10.1037/trm0000218

Jacobs, J. and Reese, L.A. (2021). Compassion fatigue among animal shelter volunteers: Examining personal and organizational risk factors. Anthrozoös, 34(6), 803–821. DOI: 10.1080/08927936.2021.1926719

LaFollette, M.R., Riley, M.C., Cloutier, S., Brady, C.M., O'Haire, M.E. and Gaskill, B.N. (2020). Laboratory animal welfare meets human welfare. Frontiers in Veterinary Science, 7. DOI: 10.3389/fvets.2020.00114

Ouedraogo, F.B., Lefebvre, S.L., Hansen, C.R. and Brorsen, B.W. (2021). Compassion satisfaction, burnout, and secondary traumatic stress among full-time veterinarians in the United States (2016–2018). Journal of the American Veterinary Medical Association, 258(11), 1259–1270. DOI: 10.2460/javma.258.11.1259

Randall, M.S., Moody, C.M. and Turner, P.V. (2021). Mental wellbeing in laboratory animal professionals. Journal of the American Association for Laboratory Animal Science, 60(1), 54–63. DOI: 10.30802/AALAS-JAALAS-20-000039

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Live and let die — The distinction between doing and allowing harm and the veterinarian's integrity

E. Linder[1,2,*]
Messerli Research Institute, University of Veterinary Medicine, 1210 Vienna, Austria; Vienna Doctoral School of Philosophy, University of Vienna, Department of Philosophy, Vienna, Austria
**E-mail: erich.linder@vetmeduni.ac.at*

Abstract

In this paper I will address the relevance of the distinction between *doing and allowing harm* (DDA) in applied ethics focusing on veterinary ethics. Such a distinction can help professionals, in this case veterinarians, in reflecting on the demands inherent to their profession and how these relate to their personal identity. I will show this by first illustrating the DDA. According to this distinction — if we always have reasons to reduce harm — doing harm is harder to justify than merely allowing harm. Many utilitarians claim that such a distinction does not hold and that our positive duties are equivalent to our negative duties. Instead, advocates of the DDA hold that this distinction is necessary to grant an agent their integrity, meaning their capacity to pursue the life projects they are committed to and that constitute the image that they have of themselves. Were they responsible for all the harm they allow, they would have to give up on their life projects and instead pursue the projects that best maximise utility. This would lead them to think of themselves as an impersonal agent devoid of any idiosyncrasies and personal history. The DDA shows us how agents are depicted in different ways by its advocates and its opponents: on the one hand we are confronted with impartial agents, on the other, we are asked to consider the importance of one's personal identity. I will then show how this distinction is reflected also in practical contexts, such as those faced by veterinarians in catastrophic circumstances. I will argue that some essential elements of the veterinarian profession seem to demand to give equal consideration to the harm directly done and the harm allowed. This in turn threatens other aspects of the individual veterinarian. In fact, veterinarians are not *just* veterinarians, they are people with particular desires and life-projects. Assuming that there is no distinction between doing and allowing harm would threaten parts of their identity by burdening them with excessive negative responsibility.

Keywords: negative responsibility, personal identity, utilitarianism

Introduction

Veterinarians are sometimes tasked with the culling of large numbers of animals to prevent or limit outbreaks of disease. In the spring of 2001, for example, the United Kingdom was hit by an outbreak of the foot and mouth disease, a highly contagious disease of cloven-hoofed livestock (Jamal and Belsham, 2013). The animals were culled to limit the spread of the disease and avoid further economic losses and possible animal suffering (cf. Tildesley *et al*., 2009). This poses a moral conflict for the veterinarians involved in the culling: on the one hand, were they to refuse to kill the animals they would be allowing widespread deaths and further severe societal impacts; on the other they would be directly harming animals who might themselves not even be at significant risk of dying or suffering. Apart from ethical concerns from the animal's perspective, veterinarians — who might even disagree with the culling policy (Law, 2010: p. 60) — might endure significant psychological strain, known as 'moral stress' and 'moral injury' (cf. Arbe Montoya *et al.*, 2019; Rollin, 2014). Should veterinarians nonetheless be held responsible for the harm allowed were they not to cull the animals? Answering this question will depend on many factors tied to the particular context in which they find themselves. However, moral

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (Eds.): ***Back to the future***
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_54, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

theory can shed some light on what consequences particular ways of approaching the issue might lead to. In this case, I suggest that discussions around the moral relevance of the distinction between doing and allowing harm can show different ways in which veterinarians might be led to think of themselves as agents and about their responsibility as individuals and as veterinarians.

Philosophers have reflected on whether agents should be held equally responsible for allowing harm as for directly causing it and have formulated the so-called 'distinction between doing and allowing harm' (hereafter referred to as DDA). In the following, I aim to show how such a normative distinction can help inform applied ethics in general, with a particular focus on veterinary ethics. Depending on whether one believes that doing and allowing harm can be distinguished, one makes different assumption of how agents conceive themselves. Reflecting on the DDA allows us to see how agents can be led to think of themselves as neutral and impersonal agents and how this may pose an attack on their *integrity*, that is, their capacity to pursue the life projects they are committed to (cf. Smart and Williams, 1973). I will firstly illustrate how contemporary philosophers understand the DDA and the relationship it holds with an agent's integrity: If advocates of the DDA are correct, establishing a distinction between doing and allowing harm provides a justification for agents to pursue projects that align with their self-identity, and therefore maintain their integrity. This distinction serves to prevent the agent from viewing themselves solely as a detached utilitarian actor burdened with excessive responsibilities. I will then illustrate the DDA's relevance to veterinarians confronting catastrophic circumstances. While I will not draw definitive normative conclusions, this analysis will highlight how, one's stance on whether veterinarians should be held responsible for the allowed harm leads to different assumptions about how an agent should perceive themselves.

The distinction between doing and allowing harm

The debate around the DDA typically seeks to understand whether directly causing harm is more difficult to justify than merely allowing harm to occur. While both proponents and critics of the DDA agree that we should always seek to reduce harm and suffering whenever possible, they disagree on the extend of responsibility individuals bear for allowing harm to occur (cf. Woollard, 2015). Those who reject the DDA are typically consequentialists (act-utilitarians in particular) who claim that the only way an action can be properly judged is based on the consequences it produces; regardless of whether the agent acted intentionally or unintentionally, or whether the agent acted by directly causing something to happen or by merely letting it happen. What matters is the state of affairs of the world following the agent's action compared with that of the world preceding it (cf. Rachels, 1975). In contrast, many advocates of the DDA claim that such a distinction is necessary to uphold an agent's *integrity*. I will next illustrate what I mean by integrity before proceeding to show how it is jeopardised by rejecting the DDA.

Integrity

The notion of integrity has been used in multiple ways in contemporary debate (cf. Cox *et al.*, 2021). Therefore, it is important to clarify what I am referring to. To repeat, I am using the word to denote a person's capacity to consistently pursue the projects to which they are committed to and give meaning to their life. In other words, it is their capacity to become the kind of person they aspire to be. Integrity, as I use it, should not be confused with a person having what is sometimes described as 'moral integrity', meaning a strict adherence to moral values. While someone can have such 'moral integrity' even if one follows strictly utilitarian principles, such principles can actually infringe upon one's integrity in the former sense – one's project may be disrupted by one's utilitarian calculus recommending against them. In that sense, it would still make sense to talk about someone's integrity even though we think they are being immoral.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The basic idea of integrity, then, is that agents have a conception of the kind of person they aspire to be, a conception of an idealised version of themselves towards which they aspire to, and which gives meaning to their projects (Velleman, 2002). As Bernard Williams put it, 'projects and decisions have to be seen as the actions and decisions which flow from the projects and attitudes with which he (an agent) is most closely identified' (Smart and Williams, 1973: p. 116). Consider Johanna, an aspiring veterinarian who might decide to enrol at the university of veterinary medicine because she sees herself as someone who loves animals and wants to take care of them. Investing time and resources to build an education to become a veterinarian makes sense to Johanna against the background of a certain image she has of herself in the future. Most of the choices one makes are guided by the kind of person one aspires to become. A person's integrity, then, is exemplified by the resolute fulfilment of the commitments and projects with whom they identify themselves. Advocates of the DDA argue that rejecting it can endanger one's integrity by pushing them towards adopting an act-utilitarian perspective which, in turn, requires agents to relinquish an important part of their personal identity. I will now briefly show why rejecting the DDA, according to its advocates, leads to act-utilitarianism and then illustrate how this poses a threat to one's integrity.

The DDA and maximising the good

Advocates of the DDA usually understand such a difference in terms of positive and negative rights (cf. Foot, 1994; Quinn, 1989). *Negative* rights are usually understood as rights of non-interference: Konstantin has a right not to be struck by Johanna. For Johanna to interfere on his right, she would have to *do* harm. Konstantin also has the *positive* right to be assisted every time he falls from the stairs. For Johanna to interfere with such a right, she would merely need to refrain from assisting him, thereby *allowing* the harm to occur (cf. Woollard, 2015:8). Thus, instances of doing harm entail a breach of negative rights and cases of allowing harm involve a violation of positive rights.

Advocates of the DDA express concern that if we allow the distinction between positive and negative rights to dissolve, the obligations stemming from both would carry equal weight. This would mean that we would have only utilitarian calculations to assess our actions (Quinn, 1989: p. 307), resulting in what Williams terms an overwhelming burden of 'negative responsibility' (cf. Smart and Williams, 1973), where we would bear equal responsibility for the harm done and the harm allowed. In fact, opponents of the DDA argue that whenever we allocate our resources towards our personal ends, we neglect the needs of others and allow needless suffering (cf. Singer 1972; Unger, 1996). This would mean that every project one has, should in principle be given up if the principle of utility would require it. As Fiona Woollard has noticed, agents would be discouraged to do long-terms projects since every time doing something else would bring about better consequences they would have to do so (Woollard, 2015: 197). As a result, both personal projects and the kind of person one aspires to be would lose relevance, overshadowed by the weight of negative responsibility stemming from all the harm allowed.

Williams observes that this *rationale* would lead to 'alienate him (the agent) in a real sense from his actions and the source of his action in his own convictions. It is to make him into a channel between the input of everyone's projects, including his own, and an output of optimific decision.' (Smart and Williams, 1973: p. 117) and it 'is thus, in the most literal sense, an attack on his integrity' (Smart and Williams, 1973: p. 117). If people were held accountable for every harm that they allow, morality would require them to think of themselves as dispensable and impartial and to give up on their project with which they identify themselves. Without integrity, agents would then lose what gives meaning to their actions, thus jeopardising the capacity to act autonomously in the first place.

For the purposes of this paper, I suggest resisting the temptation to try to settle down the debate over whether to embrace or reject the DDA. Instead, I suggest using it as a tool to explore how moral discourse

Franck Meijboom and Patrick Bijsterveld, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

reflects the way we think of ourselves as agents. In fact, the DDA shows us how agents are depicted in different ways by its advocates and its opponents: on the one hand we are confronted with impartial agents who only consider worth pursuing whatever life project brings about the best consequences. On the other, we are asked to consider individuals moulded by their distinct idiosyncrasies and characters. These individuals can make sense of their actions against the backdrop of their personal history. And it is with these two selves that veterinarians are faced. Indeed, veterinarians engaging in the culling of cows during a foot and mouth disease outbreak might ask themselves, as phrased by John Law: 'What kind of person would one become if one becomes used to killing?' (Law, 2010: p. 64).

Veterinarians and the DDA

To be precise, I am not claiming that veterinarians are torn between their personal aspirations and the demands of utilitarianism as a moral theory. In fact, becoming a veterinarian does not imply any commitment to utilitarianism. Moreover, there is not a strict and universally accepted set of rules that should guide a veterinarian's conduct, nor is there a unique way in which veterinarians understand their roles (cf. Deelen *et al*., 2020; Dürnberger, 2022)

However, there are two elements inherent in the profession that nudge veterinarians in adopting a *quasi-utilitarian* rationale: the kind of aims that they commit themselves to in their oaths, and their practical expertise. In veterinarian's oaths, they typically vow to 'benefit society through the protection of animal health and welfare, the prevention and relief of animal suffering, etc.' or commit utilizing their expertise for the 'prevention of zoonoses' (Bones and Yeates, 2012: p. 33). Here, societal benefits, the prevention of further deaths or of economic losses take the place of the 'maximisation of utility' in reference to which the direct harming of some animals is justified. In other words: even though 'there are different versions of the bigger picture' (Law, 2010: p. 65) a quasi-utilitarian rationale remains: bad consequences must be avoided regardless of whether one directly inflicts harm or simply allow it to occur. Additionally, due to their expertise, veterinarians appear to be the most dependable professional on which society can rely in times of crisis. They are, arguably, those who know best how to end an animal's life painlessly.

These supererogatory elements inherent in the veterinarian's profession, as is the case also in other kind of medical professions (cf. Van Gils-Schmidt and Salloch, 2022: p. 3), seem to make the DDA lose relevance. In fact, even some advocates of the DDA might argue that given their expertise veterinarians qualify as 'unique potential saviours' (Woollard, 2015: p. 128) whose special capacity to reduce harm burden them with particular negative responsibility.

However, as Williams argued, such an understanding of agents does not account for the fact that their actions are not the actions of some abstract entity but those of a particular person who must make a choice for which they are genuinely responsible. In such a quasi-utilitarian perspective, the person behind the veterinarian vanishes and the beliefs, desires and plans that constitute the kind of person they take themselves to be ceases to matter. Of course, one might argue, a veterinarian might hold as their core commitment the plan to strive for the greater good of society; they might dismiss as irrational distractions other desires and aspects of their identity. This imaginary veterinarian would welcome the burden of negative responsibility as part of what makes their life meaningful. However, these plans would already be part of how this perfectly impartial veterinarian understand themselves and takes their life to be worth living. The demands from a quasi-utilitarian rationality would be stemming from the agent itself and not from an external source. A more realistic veterinarian, instead, might have commitments and might hold values which sometimes conflict with what a culling policy expects veterinarians to do. For example, during the 2001 foot and mouth disease outbreak in the UK, cows who did not have the disease themselves were nonetheless required to be killed in farms for cautionary purposes (Law, 2010: p. 57). In such a situation a veterinarian might disagree with the policy (Law, 2010: p. 60) and be asked

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

to act against their own understanding of themselves. This would force them to give up on the image that they have of themselves, to fulfil a greater purpose.

Even though the policy *might* be the correct one, it seems problematic to claim that since veterinarians would be responsible for all the potential harm allowed, they should engage in the culling. Such an approach seems to dismiss the importance of the uniqueness of people besides their professional roles. It seems to overlook the distinctive sense in which each agent is responsible for the action that stem from themselves and from the decisions that they make.

Conclusions

These considerations about the DDA do not provide a clear answer to the initial question of whether veterinarians should be held responsible the harm allowed if they were they not to engage in the culling in zoonotic outbreaks or other catastrophic events. Indeed, besides the need to evaluate contextual differences, further theoretical considerations could be made. For example, one might still ask to what extent one's integrity should play a role in evaluating how an agent ought to act. After all, one might give meaning to their life by pursuing despicable projects.

Still, discussing the DDA in the context of applied ethics has allowed me to highlight a fundamental aspect of our moral life: the conception that we have of ourselves when we address both abstract and more concrete moral problems. Depending on whether one claims that there is a distinction between doing and allowing harm, one is implicitly assuming how an agent should conceive of themselves. Utilitarian understanding suggests that agents should aspire to be impersonal and neutral actors, whereas advocates of the DDA highlight the importance of one's own projects and personal identity. Both of these conceptions might be implicit in more concrete contexts, as is the case of veterinarians facing moral conflicts. Denying that there is a distinction between doing and allowing harm comes with the threat to an agent's integrity. And this, as even some utilitarians acknowledge (cf. Ashford, 2000), certainly poses a problem which should not be easily dismissed.

Acknowledgement

I wish to thank Konstantin Eckl and Johanna Karg for their careful and thorough feedback which helped me to greatly improve my initial draft.

References

Arbe Montoya, A.I., Hazel, S., Matthew, S.M. and McArthur, M.L. (2019). Moral distress in veterinarians. Veterinary Record, 185(20), 631.

Ashford, E. (2000). Utilitarianism, integrity, and partiality. The Journal of Philosophy, 97(8), 421–439.

Bones, V.C. and Yeates, J.W. (2012). The emergence of veterinary oaths: social, historical, and ethical considerations. Journal of Animal Ethics, 2(1), 20-42.

Cox, D., La Caze, M. and Levine, M. (2021). Integrity. In Zalta, E. N. (ed.).The Stanford Encyclopedia of Philosophy, Available online at https://plato.stanford.edu/archives/fall2021/entries/integrity/ (accessed 29 February 2024).

Deelen, E., Meijboom, F.L., Tobias, T.J., Koster, F., Hesselink, J.W. and Rodenburg, T.B. (2022). The views of farm animal veterinarians about their roles and responsibilities associated with on-farm end-of-life situations. Frontiers in Animal Science, 3, 949080.

Dürnberger, C. (2020). Am I actually a veterinarian or an economist? Understanding the moral challenges for farm veterinarians in Germany on the basis of a qualitative online survey. Research in Veterinary Science, 133, 246–250.

Foot, P. (1994). Killing and letting die. In Steinbock, A. and Norcross, A. (eds.), Killing and letting die. Fordham University Press, New York, NY, pp. 280–290.

Franck Meijboom and Bernice Bovenkerk (Eds.) 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Jamal, S.M. and Belsham, G.J. (2013). Foot-and-mouth disease: past, present and future. Veterinary Research, 44, 1–14.
Law, J. (2010). Care and Killing: Tensions in veterinary practice. In Mol, A. Moser, I., and Pol, J., (eds.) Care in practice: on tinkering in clinics, homes and farms. Bielefeld, pp. 57-72.
Quinn, W. S. (1989). Actions, intentions, and consequences: the doctrine of doing and allowing. The Philosophical Review, 98(3): 287–312.
Rachels, J. (1975). Active and passive euthanasia. The New England Journal of Medicine, 292(9), 78–80.
Rollin, B.E. (2014). Euthanasia and moral stress. In Suffering. Routledge, Abingdon, pp. 115–126.
Singer, P. (1972). Famine, affluence, and morality. Philosophy & Public Affairs, 1, 229–243.
Smart, J.J.C. and Williams, B. (1973). Utilitarianism: for and against. Cambridge University Press, Cambridge.
Tildesley, M.J., Bessell, P.R., Keeling, M.J. and Woolhouse, M.E. (2009). The role of pre-emptive culling in the control of foot-and-mouth disease. Proceedings of the Royal Society of London Series B: Biological Sciences, 276(1671), 3239–3248.
Unger, P.K. (1996). Living high and letting die: our illusion of innocence. Oxford University Press, Oxford.
van Gils-Schmidt, H.J. and Salloch, S. (2022). Taking a moral holiday? Physicians' practical identities at the margins of professional ethics. Journal of Medical Ethics, jme-2022-108500.
Velleman, J.D. (2002). Motivation by ideal. Philosophical Explorations, 5(2), 89–103.
Woollard, F. (2015). Doing and allowing harm. Oxford University Press, Oxford.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Section 4.
Teaching ethics

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Teaching protein futures — A cross-disciplinary approach

E. Bjørnerud[1], V. Jones[2], C. Bear[3], H.E. Pilskog[1], C.B. Halstvedt[1], R. Helliwell[4], T. Nerby[5] and P. Varela[6]
[1]Østfold University College, Department of Natural Sciences, Practical-Aesthetic, Social and Religious Studies, Faculty of Teacher Education and Languages, Postboks 700, NO-1757 Halden, Norway; [2]University of the West of England, Bristol BS16 1QY, UK; [3]Cardiff University, School of Geography and Planning, King Edward VII Avenue, Cardiff, UK; [4]Institute for Rural and Regional Research, Loholt Alle 81 (4. etg), N-7049 Trondheim, Norway; [5]Norwegian Board of Technology, Kongens gate 14, NO-0153 Oslo, Norway; [6]Nofima, Postboks 210, NO-1431 Ås, Norway

Abstract

This paper examines the role of education in addressing global challenges related to sustainable development through the lens of the agrifood system. We report on the development and testing of a flexible educational approach aimed at engaging primary school pupils in Wales and teacher students in Norway in the complexities of sustainable and ethical food production. Utilizing different protein sources, such as plant-based products, edible insects, and laboratory-grown meat, this study highlights the effectiveness of using specific food items to facilitate the understanding of broader sustainability challenges and demonstrates how such educational methods can foster a sense of agency among young people, enabling them to make informed food choices and engage with ethical dilemmas. The findings suggest that this pedagogical approach can be a viable means to achieve educational goals related to citizenship, participation, and sustainability, while also raising concerns about the normalization of fast-food culture and utilitarian ethics. Further research is recommended to explore the integration of more diverse ethical frameworks and the expansion of the approach to include other food types and educational settings.

Keywords: citizenship, education for sustainable development, jigsaw method, proteins, student-active learning

Introduction

Global challenges related to sustainable development are becoming increasingly important in education systems and for pupils themselves (International Commission on the Futures of Education, 2021). The global agrifood system offers an important entry point through which children and youngsters might engage with the complexity of sustainable development. For instance, according to the United Nations (UN) Food and Agriculture Organisation, agrifood systems were responsible for 31% of global greenhouse gas emissions in 2020 (Food and Agriculture Organization of the United Nations, 2022). Alongside these emissions, the biomass of food animals is nearly double that of humans and more than ten times as high as the combined biomass of wild mammals and birds (Bar-On *et al*., 2018); and food systems are central drivers for malnutrition and obesity and other diet related diseases that are more harmful than smoking, drinking and drugs combined (Global Panel on Agriculture Food Systems for Nutrition, 2016). In addition, concern over animal welfare has raised questions relating to the ethics of farming and meat consumption with growing numbers reducing their intake through promoted activities such as Veganuary (eating only plant based protein through January), No Meat Mondays etc. (Jones, 2019). Consequently, societal attitudes to food, individuals' food choices, and the organisation of food provisioning are crucial for the ecosphere and for our quality of life. In this paper, we explore the role of education in helping young people to engage with, and act on, such challenges.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The paper reports on the development of a flexible educational approach to protein choice in primary schools (7–11-year-old pupils) in Wales and with student teachers (18 + years teacher students) in Norway. Our goal is to show how using a specific food item/dish can engage students and pupils in complex challenges related to sustainable and ethical food production through information gathering, critical thinking and democratic processes and how these skills are transferable to wider themes. The approach was developed for the Welsh schools and tested for adaptation to the Norwegian school system by engaging teacher students.

In both the Norwegian and Welsh examples, we used the availability of different protein sources as a route to exploring the wider challenges raised by the global agrifood system. In recent years, a greater variety of so-called 'alternative proteins' have emerged that claim to hold benefits over various meat-based proteins. These alternative proteins include widely-available plant-based products but also sources such as edible insects and laboratory-grown meat (Rønning *et al*., 2024; van Huis *et al*., 2013). These 'alternatives' have been promoted as healthier, better for animal welfare, and as having fewer environmental impacts – directly addressing significant concerns over conventional meat proteins. However, the claims made about these products and protein sources are highly contested and raise scientifically, socially and ethically challenging questions. Deciding what source of protein to eat, when, and under what circumstances, can provide a route to engaging young people to consider complex questions that relate both to global and local realities.

The explicit ethical dimensions of this teaching approach were that the students analysed various protein sources (insects, beef, cultured meat and plants) as the basis for a meal in relation to values such as animal welfare, climate friendliness and human health. These values can be seen as specifications of impacts on livestock, the climate and humans (Kaiser *et al*., 2007). Of course, these can be substituted and/or supplemented with other relevant values (or specifications of these) such as inhabited countryside, workplaces/employment, the environment, distributive justice etc. By focussing on select specifications, pupils and students become aware of the nature of ethical dilemmas, reaching agreement through discussions of conflicting norms, and more practical problems, where there are non-ethical factors that induce conflict with the norms (James, 2003).

Through this, the paper also explores the role of education in enabling young people to act on what they learn about, providing them with the resources to develop a sense of agency as well as actual agency (Glover and Sumberg, 2020). This is especially significant as young people have often been portrayed as passive receivers of food, rather than as holding agency, using critical thinking and acting on their knowledges and beliefs. In contrast, the studies reported on here take the agency of young people seriously, both in directing classroom activities, and being able to act on what they have learnt once they leave the classroom (Ares *et al*., 2024). The paper, therefore, asks how a specific pedagogical approach works for teaching young people about the place of animals in the food system while enabling them to act on what they learn.

Development

Initially, Welsh partners developed and tested teaching materials for primary schools. Next, the materials were modified for a Norwegian context and tested in a Norwegian teacher educational college. The purpose was to explore ways of creating agency through a cross-disciplinary theme and for different age levels and settings. All participants filled in forms for informed consent.

Franck Meijboom and Patrick Baron (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Wales

The development of workshops in Wales was contextualised and driven by the introduction of a new curriculum, which aims to engender 'ethical, informed citizens' who are 'able to take considered, ethical and sustainable action'(Welsh Government, 2019). The complex and often competing claims made about different sources of protein offered a focus through which to explore the role of pedagogy in empowering young people's critical engagement with debate around environmental futures and the role of animals in the changing food system.

To develop the workshops, an initial online survey of primary teachers in South Wales was conducted (receiving around 30 responses), exploring teacher experiences of teaching topics relating to ethics and sustainability, along with their hopes and concerns around the New Curriculum. Following the survey of teachers, three schools with contrasting catchments (e.g. one urban, one rural, and one peri-urban) were recruited to participate in subsequent stages. These included in-depth interviews with teachers in each school and the circulation of a pre-workshop survey to all children (for whom consent had been given) in participating classes; in total, there were around 150 responses. This survey was designed to determine children's experiences of, and attitudes to, different protein sources. It also provided them with an opportunity to write questions that they would like farmers to answer about food production. A representative selection of questions was sent to an insect farmer, pea farmer and a beef farmer. Answers were then developed into a workshop that explored these different farming processes of protein through discussion, drama and critical thinking.

Norway

As the context in the Norwegian setting was a teacher training college, the Welsh approach needed adaptation to the age and to the disciplines, religion and ethics and natural science, as well as to the meeting between students from these two disciplines. In order for these students to explore each other's strengths, we selected a method of collaborative learning called "expert groups" from the so-called "jigsaw approach" where students explore parts of a subject individually or in small groups and collaborate to establish an overall conclusion (Aronson, 1997). Furthermore, the Norwegian team agreed to have the students themselves searching for information in order to discuss biased sources and to develop a critical awareness in this policy field. Lastly, the Norwegian team left the didactical and educational framing for the discussion with the students since we sought their thought and opinions.

Testing

In both the Norwegian and Welsh cases, burgers were used as the focus for the learning - a familiar protein that can be produced with different forms of protein, including beef, insects, cultured meat and plant-based.

Wales

A total of 10 workshops (each lasting 1–1.5 hours) were conducted across the three schools and began with pupils identifying which burger they would prefer to eat for lunch — beef, insect or plant-based. The sessions were then themed around three issues pupils identified in the survey as important: climate change, human health and animal welfare. Pupils were given some information about different sources of protein, but were encouraged to retrieve information through discussion and question-asking, rather than a more traditional transmission approach to teaching. The workshops included a significant proportion of role play activities, ranging from working through how different animals are farmed, through to participating in a mock parliamentary debate framed as a 'farm to fork summit' — which

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

related to an event held by the UK Prime Minister at around the same time. The pupils found this approach engaging, and it was successful in bringing out not only a range of perspectives on the future of food provisioning, but also in raising questions that they wanted to explore further. At the end of the workshop pupils were asked again which burger they would choose for lunch and the complex nature of choice was reflected on the impact of each protein source on climate, health and animal welfare was considered.

Following the workshops, the children, working with their teachers, wrote postcards, including illustrations, to the Prime Minister to outline their hopes and concerns around future food provisioning. These were shared with the project team prior to being posted. Responses were received and letters were read out in the schools and used as an example of Pupil Voice in action.

Norway

As in the Welsh approach, the day started with the students indicating their preference for a burger made of beef, plants or lab-grown beef. After the statement of individual preferences, the students were told to select which burger should be served in an imagined school cafeteria. The students were given brief introductions to the content of the burgers, and, as in Wales, the farming methods and supply chain involved for it to become a burger.

The students were divided into two expert groups on climate change, two groups on animal welfare and one group on human health. The expert groups were given 90 minutes to search, discuss and agree and decide upon which burger would be best according to their field of expertise (i.e. climate, animal welfare or human health). During these 90 minutes, the college teachers provided coaching and listened to the dilemmas the students discovered. One central discovery for the students was the lack of neutral sources on this topic. The students reported difficulties also with the availability of information regarding cultured meat especially regarding climate change. Given the nature of this experiment, the students were served plant-based hamburgers for lunch.

After lunch, we rearranged the groups into three consensus groups. One consensus group consisted of at least one member from each of the expert groups. These consensus groups should then select the burger that they considered the best one — and list the reasons for selecting the specific ingredient for the burger.

Two groups selected a plant-based burger for the school cafeteria and the last one chose lab-grown meat. The students primarily emphasized arguments related to animal well-being and one group focussed on them living a full life (in the tradition of virtue ethics). Two of the groups directly argued based on climate emissions, and two of the groups gave arguments from a human health perspective. In addition, one group used a resource argument that the global production of greens is already sufficient to feed the world. Furthermore, a part of the desirability was the possibility to customize the meat to the consumers.

Evaluations

Wales

Observations of workshops and follow-up interviews were conducted with four teachers who had been involved in the workshops. These lasted 30–40 minutes each and were audio recorded and later transcribed. Data was then thematically analysed, informed by Braun and Clarke (2020). Teachers recognised that using different protein sources as a focus for studying food systems offered an interesting and accessible route into complex discussions that their previous work in this area did not allude to.

Franck Meijboom and Dorothy Boorse (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

In particular it was felt that issues around animal welfare from farm to fork (including slaughter) were presented in an appropriate way. Pedagogy was identified as age/stage appropriate. It was also noted that framing discussion around pupil's interests in climate, animal welfare and health mirrored the demands of the new curriculum in Wales which focuses on pupil led learning. While the sessions offered space for discussion and reflection, it was noted that teachers would want to embed tasting the different protein options in future iterations of the learning sequences. Teachers agreed that having resources and lesson plans available to rerun the sessions in the future would be useful to them and others as they were time poor.

Norway

In order to relate the teaching approach to the Norwegian school system, we asked how the teacher students perceived how this teaching approach could be applied. Their inputs were:

1. Policy areas: Respect for nature and environmental consciousness; sustainability, environment, health,
2. Interdisciplinary themes: Public health & sustainable development: democracy and citizenship
3. Religion and ethics: Reflection on existential questions pertaining to humans' lives and living conditions and the planet's future; exploring the views of others, dealing with disagreements; identifying ethical issues connected to human rights, sustainability and poverty; reflections, philosophical dialogues and imagination.
4. Science: Differences between observations and conclusions; organisation of data, identifying cause and effect arguments, drawing conclusions, estimating sources of error, presentation of findings; evaluation the quality of one's own and others' explorations; sustainability, environment and energy, inherent value of nature; give an account of global warming and addressing factors that can cause climate change

Furthermore, in order to address how the students perceived the teaching methods in relation to relevance for the schools, pupil-centred learning, and interdisciplinarity, we asked the students how they would score the teaching approach on a 1 to 5 Likert scale. Here, pupil-centred learning and interdisciplinarity scored 4.7 and relevance for school scored 4.3 (N=16).

Discussion

Endowing pupils with a sense of agency through providing them with tools for addressing complex normative challenges seems to be a central outcome both in the Welsh and the Norwegian trials. Consequently, this approach to teaching seems a viable (and not very time-consuming in delivery once planned) approach to reach educational policy goals of citizenship, participation, and sustainability.

As educators and ethicists, we have two worries concerning this approach. Firstly that it might normalize a fast-food and ultra processed cuisine. However, this approach should not be the only lesson in food, animal welfare, climate change and health that pupils receive. In addition, the intuitive engagement caused by the hamburger largely facilitated engagement. Secondly, the ethical issues in this testing were limited to utilitarian issues that also might normalize one approach to ethics. Further work is needed to investigate how more nature-centred, care-oriented or virtue-based approaches might be included.

Conclusions and further work

Further workshops, based on the approach from Wales are being run in England through Global Goals Centre, an environmental education charity. This is providing exploration of how the issues and approaches might work with different ages and stages and how resources produced can be used by and

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

with different groups of learners. The team continues to explore how ethical concerns in the production of protein as food are being represented and are currently undertaking a review of education material in the UK that explores farming practices including slaughter.

For the Norwegian part, there are three logical next steps. The first step is to test the approach in a relevant school setting and report on the testing. The second step is an inquiry into including other ethical issues such as the inherent value of animals and ecosystems, justice and fairness – and to consider in which school year these might be relevant. A third step is to see if the method can be expanded by using other food types that the cellular agricultural industry is aiming for. For all steps, relevant background material needs to be produced.

Acknowledgements

This research has been partially funded by RCN grant no. 336136, "ARRIVAL of cellular agriculture – Enabling biotechnology for future food production" for Erik Bjørnerud and by British Academy-Leverhulme Trust grant no. SRG21\210557, "Young people, alternative proteins and pedagogies for sustainable futures" for Christopher Bear and Verity Jones.

References

Ares, G., De Rosso, S., Mueller, C., Philippe, K., Pickard, A., Nicklaus, S., van Kleef, E. and Varela, P. (2024). Development of food literacy in children and adolescents: implications for the design of strategies to promote healthier and more sustainable diets. Nutrition Reviews, 82(4), 536–552. DOI: 10.1093/nutrit/nuad072.

Aronson, E. (1997). The jigsaw classroom : building cooperation in the classroom. Longman, New York, NY.

Bar-On, Y.M., Phillips, R. and Milo, R. (2018). The biomass distribution on Earth. Proceedings of the National Academy of Sciences of the USA 115(25), 6506–6511. DOI: 10.1073/pnas.1711842115.

Braun, V. and Clarke, V. (2020). One size fits all? What counts as quality practice in (reflexive) thematic analysis? Qualitative Research in Psychology, 18(3), 328–352. DOI: 10.1080/14780887.2020.1769238.

Food and Agriculture Organization of the United Nations (2022). Greenhouse gas emissions from agrifood systems: Global, regional and country trends, 2000–2020. FAO, Rome.

Global Panel on Agriculture Food Systems for Nutrition (2016). Food systems and diets: Facing the challenges of the 21st century. London: Global Panel on Agriculture and Food Systems for Nutrition, London.

Glover, D. and Sumberg, J. (2020). Youth and food systems transformation. Frontiers in Sustainable Food Systems, 4, 101. DOI: 10.3389/fsufs.2020.00101.

International Commission on the Futures of Education (2021). Reimagining our futures together: a new social contract for education. UNESCO, Paris.

James, H.S. (2003). On Finding Solutions to Ethical Problems in Agriculture. Journal of Agricultural and Environmental Ethics, 16(5), 439–457. DOI: 10.1023/A:1026371324639.

Jones, V. (2019). Adapting our diets for global climate change: Could eating bugs really be an answer? Teaching Geography, 44(2), 72–74.

Kaiser, M., Millar, K., Thorstensen, E. and Tomkins, S. (2007). Developing the ethical matrix as a decision support framework: GM fish as a case study. Journal of Agricultural and Environmental Ethics 20(1), 65-80. DOI: 10.1007/s10806-006-9023-8.

Rønning, S.B., Pedersen, M.E. and Bjørnerud, E. (2024). Emerging food trends: Cellular agriculture – novel food production technology. In Hassoun, A. (ed.) Food Industry 4.0: Emerging trends and technologies in sustainable food production and consumption, 1st edn. Academic Press, San Diego, CA, pp. 233–246.

van Huis, A., Van Itterbeeck, J., Klunder, H., Mertens, E., Halloran, A., Muir, G. and Vantomme, P. (2013). Edible insects: future prospects for food and feed security. FAO, Rome.

Welsh Government (2019). Draft Curriculum for Wales 2022: Humanities. Welsh Government, Cardiff.

Franck Meijboom and Bernike Pasveer (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Understanding food issues in socioscientific argumentation: A case study of primary science classrooms in China

C. Liao and G. Liao*
Institute for Science, Technology and Society, South China Normal University, Guangzhou 510006, Guangdong, P.R. China
**Corresponding author, e-mail: chengdong.liao@uqconnect.edu.au*

Abstract

Agricultural and food issues need broader and deeper understanding from an ethical perspective concerning societal change and the application of technology. Meanwhile, although early-year education is seen as an important stage in forming one's lifelong sense of morality and responsibility, it is hard for the educational system to incorporate ethics in primary science classroom, especially when knowledge delivery and educational assessment are heavily emphasised in China. To explore primary students' perception and reasoning on food issues and thus effective ways to teach ethics, we introduce a food and health-based Socioscientific Issues (SSI) teaching approach with the controversial topic titled *Does technology make our food healthier?* We conducted the SSI teaching in a fifth-grade science classroom throughout the autumn semester in an urban, public primary school in Guangzhou, China in 2022. Data was collected using group discussions, argumentation forms and interviews with students during and after classes and was then quantitatively and qualitatively analysed using QSR NVIVO 12. We found that, compared to standard teaching, in SSI classrooms, students effectively obtained diversified and logical understanding of food issues by: (1) practicing various and higher-level informal reasoning modalities in expressing views; (2) linking textbook content and their own life experience to form arguments; and (3) incorporating evidence and arguing against rebuttals to defend their viewpoints. These findings imply that incorporating food ethics into primary science classroom by encouraging students' discussion on food dilemma is possible. Furthermore, compared to traditional content-based curricula, SSI teaching allows students to understand food issues in a logical, critical and sensible manner.

Keywords: food issues, science education, socioscientific argumentation, teaching ethics

Introduction

Understanding agricultural and food issues from an ethical perspective has attracted growing attention, as technological changes in those fields are radical but elements that comprise those issues are interconnected in complex ways. Growing attention is paid to adolescents' perceptions on agriculture and food (Uhlmann *et al*., 2023), and students' understanding of the causes of climate change (Powell, 2022), as they would directly impact the future generations' willingness to behave responsibly. Likewise, many have been calling for inclusion of ethics in science curricula at school as early-year education is seen as critical in nurturing one's sense of morality (Andrew and Robottom, 2001). However, there are two main challenges for schools and teachers. Firstly, contents in science curricula and textbooks are mainly determined by natural scientists (Acott and McGibbon, 2007), and are knowledge-driven (Li *et al*., 2020), which lack ethical perspective. Secondly, one-way delivery classrooms reduce space for equal discussion and debate, and the exam-centric education system hinders the emergence of perspectives outside the pre-determined curricula and textbook (Kirkpatrick and Zang, 2011), which are essential in ethics. Regarding teaching ethics in school science classrooms, we argue that there is a need for approaches that are student-centric, encourage debate and argumentation, and aim to promote students' scientific inquiry and reasoning skills. The Socioscientific Issues (SSI) teaching approach which

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

we explain below has the potential to achieve these aims. This study thus explores following research questions: (1) What are students' perceptions of food and health issues? (2) How do students form their argumentation and discuss them with other students? (3) How do students perceive SSI teaching?

Teaching ethics with the Socioscientific Issues (SSI) approach

Socioscientific Issues (SSI) teaching has emerged as a useful tool in science education, especially in contexts where school science is curricula and teacher-dominated (Saunders and Rennie, 2013). Conventional school science has been criticized for its use of one-way delivery and emphasis on content knowledge. Meanwhile, typical science, technology, society and environment (STSE) education is often thought to be insufficient by simply inserting and instructing social and environmental activities in school science (Karisan and Cebesoy, 2021). Also, STSE has limitations in not incorporating ethical, moral and character development for students (Wu and Tsai, 2011; Zeidler *et al*., 2005). Alternatively, although debate-based modes were recognized in teaching ethics in schools (Sivasubramaniam, 2022), ethical dilemmas were simply used as cases that added to content delivery, rather than vehicles that promote students' discourse and moral reasoning. Above all, in terms of incorporating ethics into school science, we argue that the ideal teaching approach should be able to promote students' skill in logic, inquiry and reasoning, and ability to establish linkages among various knowledge, evidence and materials. We argue that SSI has the potential to achieve all these goals.

In SSI teaching, students are learners that are in the central position rather than recipients. Furthermore, SSI teaching particularly looks at students' development of inquiry and reasoning skills, which includes ethical and moral reasoning explicitly or implicitly (Zeidler and Sadler, 2008). From an ethics-teaching perspective, SSI instructs students to use content knowledge, evidence and their life experiences to construct standpoints on controversial issues such as genetically modified food, nuclear energy and climate change (Sadler *et al*., 2006; Powell, 2022). In addition, SSI teaching provides a democratic atmosphere for students to discuss and debate, and sometimes argue against rebuttals. Moreover, SSI argumentation requires the exercise of informal logic and reasoning skills (Kuhn, 1993; Sinnott-Armstrong and Fogelin, 2014), rather than the formal logic and reasoning that are commonly practiced in science and mathematics.

In this study, we introduce an SSI teaching approach with a structure of controversial topics related to agriculture, food and health. The main topic is *Does technology make our food healthier*, which comprises three sub-topics: (1) How does food technology impact the growing of our muscles and bones? (2) Microplastics are found in human blood veins, can we still use plastic products for our food? (3) What do you think of fast food? We used this SSI approach to deliver the *Healthy life* textbook content in the science class of a fifth-grade classroom with 49 students. The school is an urban, public primary school in Guangzhou, China. The time frame was across the autumn semester (from October to December) of 2022. Details of the SSI teaching approach are described in Table 1. The academic ethics clearance of this study was approved by the M.Ed. program committee of Institute for Science, Technology and Society, South China Normal University (Approval date: 28/Jun/2022).

The data collection of this study includes: (1) Students' open discussions of SSI issues in classrooms; (2) Investigation of students' reasoning skill using the TAP form (the Toulmin's Argument Pattern that comprises ground, claim, warrant, backing, qualifiers and rebuttal); (3) Students' interviews on their reflections on the SSI teaching. A total of 188 materials were collected and then transcribed into text. Three-stage thematic coding was conducted to analyse those transcripts in Chinese using QSR NVIVO 12. The coding was guided by three dimensions of students' reasoning including reasoning modalities, decision modalities and reasoning levels. A multiple-coding process was performed by members outside this project to assure the accuracy of the codes (Date: 12/Mar/2023). A few selected quotes were translated into English to provide examples of students' comments.

Franck Meijboom and Renate Reijmerink, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Table 1. SSI topics, structures and activities

Time	Contents in the *Healthy life* unit	SSI topics	SSI structures and activities
Week 1	Understand our body	How does food technology impact the growing of our muscles and bones?	1. Introduction (1) Teachers provide previously learned content in relation to each SSI topic. (2) Teachers introduce the textbook content and the SSI topic, then allow some time for students to think. (3) Students express their views about this topic in relation to their life experience. 2. Open conversations (1) Students express their views. (2) Students debate other students' views and give reasons. 3. Conclusion (1) Making closing remarks. (2) Reflections on the class.
Week 2	Body movements		
Week 3	Heart and blood veins in our body	Microplastics are found in human blood veins, can we still use plastic products for our food?	
Week 4	The "Navigator" of our body		
Week 5	The "Communicator" of our body		
Week 6	Learning to manage our body	What do you think of fast food?	
Week 7	Making healthy-life plans		

Examples of students' argumentation in SSI teaching

At the beginning of the *Healthy life* unit, the main SSI topic Does technology make our food healthier was introduced to the whole class. Teachers allowed some time for students to think about the topic and said that they would be invited to present their views and discuss them with other students later in the class. The broad, controversial and everyday life-related nature of the main topic provides space for students to think and relate their learning to life experiences.

Students' group discussions in SSI teaching

In the "microplastic in our food" topic, from the materials that teachers provided and discussions held in classes, students learned that plastic products were commonly used in our food and that microplastics were consumed into our body through those foods and found in human blood veins. In this topic, students were distributed roles to argue about the use of plastic products in foods. These roles include scientist, doctor, white-collar worker, environmental advocate and ordinary citizen. One discussion is provided below:

Student 1 (Doctor): I think we should reduce the use of plastic because we would eat them into our body, and that is harmful to our health.
Student 2 (White-collar worker): Plastic products are convenient, as long as we eliminate those low-quality plastic products, we can use them. Plastic bags are cheap, and we can reuse them in trash cans.
Student 3 (Scientist): It is a technical problem; we can invent degradable plastic bags.
Student 4 (Environmental advocate): I disagree with the use of plastic bags, even though degradable plastic is good for our environment, cheap plastic bags need to degrade, and it takes millions of years. Our environment will be full of plastic bags.
Student 5 (Ordinary citizen): Plastic products like food containers, water bottles and plastic bags are cheap and convenient. We can reuse water bottles too.

(Date: 9 November 2022; Group discussion about SSI topics)

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

In this example, students actively use moral reasoning to think about food issues, for example, the use of "should" expression in reasoning, which is a format of arguments that involves moral judgments. Also, in SSI discussion, students learn that different perspectives can lead to different conclusions on certain issues, and they need to respect and incorporate those that are related to their own arguments.

In the fast-food topic, teachers provided students with materials about the types of fast food and their relationships with our daily lives and health including the convenience of fast food, the addictive, flavouring ingredients and their imbalance nutrition, and potential consequences of longtime consumption. Students were given some time to think about the issue and a few students were invited to openly express points of view and argue against the view of others. One discussion is provided as below:

Student 1: I think fast foods are unhealthy, harmful to our body, and that eating too much can cause illness and we may die young.
Student 2: But fast foods are quick. We can do much more things with the saved time.
Student 1: But the ingredients of fast foods are not fresh and need to be refrigerated, and used upon demand, and bacteria can easily occur, and the food can go bad.
Student 3: Many foods are vacuum-packed and there will be no bacteria.
Student 1: Plastic bags can take million years to degrade, this causes environmental pollution.
Student 4: Now our country encourages recycling, and some businesses use degradable bags, sometimes paper containers. The paper can be recycled.
Student 1: But still, many are using plastic bags, to reduce costs.
Student 5: I think paper containers do not cost much, and I saw there are some eatable containers in other countries.
Student 1: But we do not have them here.

(Date: 17 November 2022; Group discussion about SSI topics)

This example shows how students form their own opinions on fast food and learn to support themselves by giving evidence, ethical considerations and counterarguments. Most students expressed values of being concerned about our health and the environment. However, student 1 thought that people should quit eating fast food because of their unhealthy ingredients and environmental damage. Meanwhile, other students claimed that fast food could be acceptable if the technology is improved such as degradable plastic.

Students' arguments in SSI teaching

After classroom discussions, students were invited to express their arguments on SSI topics using the TAP form. We use the argument of a student who supports the use of plastic products in our foods as a case and present them in the TAP structure. This student claimed that it is necessary to use plastic products in our food (Ground), because many food packages are plastic, and we need those foods every day (Warrant). In addition, they said that our body would intake microplastic by consuming those foods, and the human body could easily consume microplastic, for example, when people use plastic cups to get boiled water (Rebuttal). They said that so long as the quality of the plastic products can be assured, for example, plastic cups filled with boiled water have no plastic smell (Qualifier), and in this context we can use plastic products in our foods (Claim). Likewise, in the discussion of fast food, one student claimed that they support fast foods (Ground), because fast foods are fast and convenient, especially in the context that people are busy with work (Warrant). They added that restaurants would generally make their food healthy and clean, otherwise they would be out of business with complaints (Rebuttal). They concluded that unless there are unknown additives and contamination of flavouring, which are bad for our health (Qualifier), fast foods are acceptable (Claim).

Franck Meijboom and Dorothy Bray (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

In SSI discussions, some students' argumentation manifests high-level reasoning skills by being able to make multiple and complex causal linkages among three or more factors. For example, a student who tends to be an environmental advocate reasoned that: 1) Plant growth may be impacted by air pollution; 2) Our foods are wrapped using plastic products, and plastic products would result in white pollution; 3) Pollution in our environment would pollute vegetation and meat, and would eventually harm our health when we eat them; 4) Plastic products pollute marine environment, and fish would accidentally eat plastics, so if human beings eat those fish, that would eventually impact our blood vein. Students that tend to be ecological reasoners commonly claimed that they would act responsibly in their daily lives and support environmental activities.

Ethical considerations in students' argumentations

The findings mentioned above show that SSI teaching enables students to exercise their moral reasoning by engaging in open and free discussions, and their value-based opinions reinforced through building their arguments, understanding of other perspectives and discussions with other students. Students practice ethical considerations by judging right-or-wrong questions, for example, whether people should use plastic products in our food. Students learn that different perspectives can lead to different conclusions on a specific issue, and they need to either respect other opinions or counter them to create and defend their own arguments.

We also found that most students who participated showed concern for our health and the environment. However, they had different viewpoints, perspectives and arguments. Some students avoided fast food because of the unhealthy ingredients and environmental damage. Meanwhile, some students also acknowledged the value of fast food in busy urban life and tried to balance the opposing opinions by adding qualifiers to their arguments, saying fast food was acceptable only if the quality of food and minimum harm to the environment could be guaranteed.

In terms of moral principles, we found that almost all students base their arguments on food issues on the outcomes of the actions, which reflect consequentialism and utilitarianism. A few students argue from the perspective of respecting nature and environment, which could indicate deontological reasoning from acknowledging the intrinsic value of the ecology and environment. For example, the student who opposed the use of degradable plastic products. However, more study and data would be required to support this argument. Deontology is equivalently important as consequentialism in ethics, but often, in general, its logics are harder to capture and organize than consequentialism moral reasoning, especially for primary level students and teachers. For example, the student who expressed care for marine life in arguing against plastic products may implicitly think that animals have intrinsic value but lack the skill to reason in a deontological way. Further research should explore how to involve deontological reasoning in teaching ethics.

Students' reflections on the SSI teaching

There are three major themes from codes of students' conversations. First, students commonly concurred that SSI teaching allows them to practice their thinking, reasoning and logic. Students commonly said that the attempt to reply to other people's views and persuade others encourages them to think, especially when they found flaws in other people's reasoning, and challenges in arguing against other students. One student said that it is important to learn different perspectives from other students, especially by which their views have been changed. Second, students reflected that they learned to organize their language, express their views, and communicate their thoughts with other students. One student compared SSI teaching with a debate team contest, adding that they enjoyed the atmosphere. Thirdly, students said that compared to conventional classroom teaching, SSI teaching allows them to learn more things and

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

knowledge that textbooks have not included. Furthermore, students voluntarily relate their learning to their life experience. One student said that they paid attention to the food delivery orders with "no disposable cutlery" notes:

> Student 1: My father does food delivery. We only give customers disposable cutlery upon demand. When customers note that they do not want disposable cutlery, we do not provide it.
>
> (Date: 18 November 2022; Interview about SSI teaching)

Another student mentioned that they thought of the SSI topic when they were eating in a fast-food restaurant. These cases indicate that students proactively link learning to their life experience.

Discussion and conclusions

Primary science classes need effective incorporation of ethics and conventional methods that simply insert environmental and ethical contents into textbooks and employ one-way delivery in classes are insufficient. In this paper, we argue that an SSI teaching approach can promote students' understanding of agriculture and food issues from an ethical perspective by providing open space for students to form arguments and discuss them with others, practicing logic and reasoning skills, and linking learning with their life experiences. In SSI discussions, students learned that there are other forms of logic rather than formal logic that is commonly practiced in mathematics. In addition, students learned other people's perspectives in discussions of controversial issues to reach consensus or to argue against them. All of these activities are crucial for thinking from an ethical perspective. This study has implications for primary school science teachers who wish to include ethics in their classrooms. And we encourage schools and academics to innovate modalities in SSI teaching. By obtaining greater understanding of agriculture and food issues, students would be more likely to act responsibly in their daily lives and influence future generations. Furthermore, the reasoning skills that students learned from ethical inquiry would be transferred to other fields of application, which would make them more qualified to attend public affairs and become responsible global citizens.

Acknowledgements

We would like to thank participants in this study and people that provided supports in the fieldwork. Financially, we would like to thank the China Postdoctoral Science Foundation (2021M701282) and the Guangdong Province Philosophy and Social Science Foundation (GD24YSH05).

References

Acott, T.G. and McGibbon, M. (2007). Environmental science and sustainability: some critical thoughts. Environmental Sciences, 4(4), 199–207.

Andrew, J. and Robottom, I. (2001). Science and ethics: Some issues for education. Science Education, 85(6), 769–780.

Karisan, D. and Cebesoy, U.B. (2021). Use of the SEE-SEP model in preservice science teacher education: The case of genetics dilemmas, In: Powell, W.A. (ed.) Socioscientific issues-based instruction for scientific literacy development. IGI Global, Hershey, PA, pp. 223–254.

Kirkpatrick, R. and Zang, Y. (2011). The negative influences of exam-oriented education on Chinese high school students: Backwash from classroom to child. Language Testing in Asia, 1(3): 36.

Kuhn, D. (1993). Connecting scientific and informal reasoning, Merrill-Palmer Quarterly, 39(1), 74–103.

Li, X., Tan, Z., Shen, J., Hu, W., Chen, Y. and Wang, J. (2020). Analysis of five junior high school physics textbooks used in China for representations of nature of science. Research in Science Education, 50(3), 833–844.

Franck Meijboom and Dennis Bos, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Powell, W.A. (2022). A Socioscientific Issue approach to understanding middle school students' beliefs and intentions toward climate change, In: Powell, W.A. (ed.), Socioscientific issues-based instruction for scientific literacy development, IGI Global, Hershey, PA, pp. 394–425.

Sadler, T.D., Amirshokoohi, A., Kazempour, M. and Allspaw, K.M. (2006). Socioscience and ethics in science classrooms: Teacher perspectives and strategies. Journal of Research in Science Teaching, 43(4), 353–376.

Saunders, K.J. and Rennie, L.J. (2013). A pedagogical model for ethical inquiry into socioscientific issues in science. Research in Science Education, 43(1), 253–274.

Sinnott-Armstrong, W. and Fogelin, R.J. (2014). Understanding arguments: An introduction to informal logic. Cengage learning, Stamford.

Sivasubramaniam, S.D. (2022). incorporating ethics into everyday classroom in science education, In: Eaton, S.E. and Khan, Z.R. (eds) Ethics and integrity in teacher education. Springer International, Cham, pp. 147–159.

Uhlmann, K., Ross, H., Buckley, L. and Lin, B.B. (2023). Food in my life: How Australian adolescents perceive and experience their foodscape. Appetite, 190, 107034.

Wu, Y.T. and Tsai, C.C. (2011). High school students' informal reasoning regarding a socio-scientific issue, with relation to scientific epistemological beliefs and cognitive structures. International Journal of Science Education, 33(3), 371–400.

Zeidler, D.L. and Sadler, T.D. (2008). Social and ethical issues in science education: A prelude to action. Science & Education, 17(8), 799–803.

Zeidler, D.L., Sadler, T.D., Simmons, M.L. and Howes, E.V. (2005). Beyond STS: A research-based framework for socioscientific issues education. Science Education, 89(3). 357–377.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

From engineering to bioengineering: towards an ethical turning point

*P. du Jardin**
Gembloux Agro-Bio Tech, University of Liège, Avenue Maréchal Juin, Bât. 48, 5030 Gembloux, Belgium
**E-mail: patrick.dujardin@uliege.be*

Abstract

The identity of engineers can be defined in historical, sociological, epistemological or deontological terms. Depending on the countries, it appears that the ethos of professional engineers stems from either a tradition of 'state engineers' educated in state engineering schools, or from the free association of practitioners trained by their peers and creating professional orders regulating their profession. Whatever the pathway for making engineers, they appear to adhere to ethical values typical of industrial modernity, pursuing the public interest by relying on scientific and technical progress, considering the techniques as instrumental, artefacts having functions and values limited to their utilities; in this perspective the moral world is anthropocentric, the natural environment providing the resources needed for human health and welfare, within the capacities of ecosystems. In some countries, the term "bioengineer" has been coined to refer to curriculums in the field of agricultural or biological engineering. In order to facilitate the ecological transition, should the ethics of bioengineering be different from that of 'traditional' engineering, as outlined above? The following changes, promoting an 'ethical turning point', are proposed for discussion: (1) regarding living beings – from organisms to ecosystems- as autonomous and complex systems, substituting the aim of 'controlling nature' by the aim of dealing with the intrinsic, dynamic processes of nature (*i.e.* as in agroecology and 'regenerative' agriculture); (2) seeing the components of the natural environment as partners and not as resources; (3) thinking over the temporality of human development by considering the temporality of biodiversity and its preservation, and not only in terms of intergenerational solidarity between human beings; (4) substituting the anthropocentric outlook by bio- and ecocentric ones; (5) embedding technical objects, devices and algorithms into a new 'techno-eco-humanism', making artefacts relational objects with some degree of 'agency'. Although bioengineers should to be prone to adopt such a new ethical stance, we propose that they pave the way to a change in the culture of engineering as a whole, capable of meeting the challenges of global change, as well as the expectations of new generations of engineers.

Keywords: code of conduct, ecological transition, living systems, technology

The ethos of engineers

There are different ways of defining the professional engineer: in historical and sociological terms by describing the origin of the name, profession and title, in epistemological terms accounting for a particular way of 'thinking', and in deontological terms addressing 'codes of conduct' adopted by associations of engineers. Altogether, they will make up the *ethos* of the engineer, his/her identity within society.

According to the French '*Centre de Ressources textuelles et lexicales*', the word engineer comes from the old French *engigneor*, which names the manufacturer of war engines in the XIIth century. The word *engigneor* would itself come from the Latin *ingenium*, which describes the natural attribute of something, *e.g.* for a human being, his unique capacity to make use of his intelligence for the design of artefacts. During the

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (Eds.) ***Back to the future***
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_57, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Renaissance, the use of the word engineer was extended to a profession of experts in military and civil arts, promoting the power and magnificence of the royal and papal courts of these times.

A milestone in the professionalization of engineers was the creation in Europe of dedicated schools of professional engineers, responding to the expansionist and mercantilist policies of the nation states from the 17th century. These schools did provide highly qualified 'state engineers', promoting industrialization, colonization of oversea territories and international trade. Nowadays, such schools still graduate engineers with legally recognized titles. To a certain extent, they maintain the elitist heritage of the former schools, e.g. by their auditing by certifying authorities.

Yet, not all countries have endorsed such a culture of state engineers like in France or in Belgium. In UK and in North America, the profession as a social category originated from the self-organization of associations of engineers, which are primarily practitioners educated by their peers in the realm of industry. Canada is a good example, where Orders of engineers have been established in some provinces, with a regulatory power over their members (Didier, 2015a,b).

The profession of engineers has also epistemological grounds, which is beyond the scope of this short paper (reviewed in Christensen *et al*., 2015). In brief, engineers do not aim at delivering a universal knowledge of the universe, but localized solutions to local problems. Thereby following Aristotle in his Metaphysics, saying: 'actions and productions are all concerned with the individual; for the physician does not cure man, except in an incidental way, but Callias or Socrates or some other called by some such individual name, who happens to be a man' (Aristotle, 2001). As pointed out by Newberry in Christensen *et al*. (2015), this results in engineering concentrating 'on the local and the specific. Localization manifests itself in two primary ways in engineering, one circumstantial and the other methodological.' Circumstantial localization means 'particularity' – the solution applicable here and now does not say much about its applicability in other contexts -, while methodological localization calls for a reductionist approach. 'In order to cope with real world complexity and uncertainty, engineers invariably isolate, subdivide, and simplify', as written by Berry in Christensen *et al*. (2015).

According to Picon (2007), these epistemological grounds, together with the mission of state engineers, have converged to some 'more general connivance between engineering culture and technocratic ideals.' Technocracy is defined by this author as 'the tendency to give precedence to technological competence over political legitimacy, to rational administration over the hazards of public debate'. Although the word was coined in the USA during the first half of the 20th century, the corresponding attitude can be traced back to the historical foundations of engineering as defined above.

In conclusion, we attempt to summarize the ethos of 'traditional' engineers in a few words: the engineer develops contextualized solutions based on a reductionist knowledge of the systems involved, encouraged by public policies and by economic interests, supporting the ideal of social and economic progress of industrial modernity.

It should be acknowledged that this view is inherited from the past and that many young engineers today certainly do not find themselves in this description.

From ethos to ethics, the 'codes of conducts' of professional engineers

Professional associations of engineers have adopted 'codes of conducts', which are important components of their identity. What do we find in these documents?

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

In Europe, 'Engineers Europe' (formerly FEANI), the European federation of national engineering associations, has adopted a position paper on Code of Conduct of Professional Engineers in 2006 (Box 1). This statement of the federation acknowledges the convergence of the codes of conducts of their national associations, leading to a so-called 'universal statement regarding the conduct of professional engineers'. This short statement is usefully completed by the guidance and recommendations provided by national associations, and we provide the URLs of three of them, from France, Belgium and UK in box 1.

Taking all this information together, three sets of ethical requirements and abilities can be distinguished, which make up the identity of professional engineers. The first one refers to professionalism. The engineer shall ensure a high level of competence, the maintenance of this competence throughout his career, and transparency about the tasks for which he/she is competent or not. The second ethical requirement is about integrity, the quality of the relationships and communication with employers and stakeholders, including respect of confidentiality and avoidance of conflicts of interests. The third one is about responsibility towards society and the environment, having regard to the fact that 'the decisions and actions of engineers have a large impact on the environment and on society. The engineering profession thus has an obligation to ensure that it works in the public interest and with regard for health, safety and sustainability'. This statement is indicated by FEANI as the 'Ethical principle' introducing all provisions of the framework statement itself.

From engineering ethics to bioengineering ethics

The codes of conducts can be seen as collections of norms, which they primarily are, but they also point to values subtending the ethical stance of engineers. From the reading of the codes of conducts, we would like to put forward the following interpretations:

1. the public interest should be sought by maximizing the ratio between beneficial / adverse effects of technology;
2. engineers aim at controlling the systems they act upon by making them predictable and calculable;
3. technology is instrumental in an anthropocentric world;
4. the natural environment is seen as resources, the boundaries of human action being set by the maintenance capacity of ecosystems (homeostasis and resilience);
5. responsibility is directed towards future generations, which deserve access to the same natural capital we have inherited from our parents.

Box 1. Codes of conduct of engineering associations

European Federation of National Engineering Associations

FEANI position paper on Code of Conduct: Ethics and Conduct of Professional Engineers
approved by the FEANI General Assembly on 29 September 2006

Ethical Principle

The decisions and actions of engineers have a large impact on the environment and on society. The engineering profession thus has an obligation to ensure that it works in the public interest and with regard for health, safety and sustainability.

Framework Statement
(...)

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Individual engineers have a personal obligation to act with integrity, in the public interest, and to exercise all reasonable skill and care in carrying out their work. In so doing engineers:

- Shall maintain their relevant competences at the necessary level and only undertake tasks for which they are competent
- Shall not misrepresent their educational qualifications or professional titles
- Shall provide impartial analysis and judgement to employer or clients, avoid conflicts of interest, and observe proper duties of confidentiality
- Shall carry out their tasks so as to prevent avoidable danger to health and safety, and prevent avoidable adverse impact on the environment
- Shall accept appropriate responsibility for their work and that carried out under their supervision
- Shall respect the personal rights of people with whom they work and the legal and cultural values of the societies in which they carry out assignments
- Shall be prepared to contribute to public debate on matters of technical understanding in fields in which they are competent to comment

Codes of Conduct

The pan-european statement on engineering ethics and conduct presented above is best implemented through the codes issued by national engineering associations. These codes can, and in general already do, incorporate the listed objectives in a form which reflects national circumstances and allow additional objectives to be added as required by national practice.

Codes of conduct of national engineering associations:

In UK: Engineering Council and Royal academy of engineering (2014). Statement of ethical principles for the engineering profession
https://www.engc.org.uk/media/2337/statement-of-ethical-principles-2014.pdf

In France: IESF (*Société des Ingénieurs et Scientifiques de France,* formerly CNISF, *Conseil National des Ingénieurs et Scientifiques de France*). (2001). *Charte éthique de l'ingénieur*
http://home.iesf.fr/offres/doc_inline_src/752/150731_Charte_ethique.pdf

In Belgium : FABI, *fédération des associations belges d'ingénieurs civils, d'ingénieurs agronomes et de biongénieurs. L'éthique de l'ingénieur à l'aube du XXIe siècle* (consulted on March 21st 2024)
https://www.fabi.be/l-ingenieur-charte

Bioengineers are engineers educated in life sciences, agricultural and environmental sciences, and this wording has been adopted over the recent years by various curriculums related to biological engineering, including agricultural sciences, biotechnology, and related fields. In this article, bioengineering encompasses agricultural and biological engineering.

Living systems have unique properties making biological engineering a distinct discipline within engineering. Thus, living systems are:

1. autonomous, self-organized and self-replicating;
2. they combine invariance with mechanisms of genetic changes, making them capable of Darwinian evolution;

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

3. they are 'non-optimized' systems, accommodating some 'noise' in the way they process information, as well as a degree of functional redundancy, which are essential aspects of their evolutionary capacity;
4. they are metastable systems, deviated from thermodynamic equilibrium, thereby storing free energy used to perform work;
5. they are multi-level, hierarchized systems (molecules building cells, building tissues, etc.), with emerging properties at each level, making them typically complex systems.

Not only are living systems special playgrounds for the bioengineer, but the public health and environmental crises of our times highlight the intricacy between human welfare and our living environment — cf. the climatic disorders, the pandemics, etc.- lending substance to the increasingly popular concept of 'One health'.

The question is now: is the ethical stance of 'traditional' engineers adapted to the new challenges of biological and environmental engineering? Considering the special features of living systems on one hand and the moral attitude of 'traditional' engineers outlined above on the other hand, we would like to propose an ethical turning point for bioengineers.

Thus, the following ethical tenets are proposed for discussion:
1. to regard living beings – from organisms to ecosystems- as autonomous and complex systems, substituting the objective of 'controlling nature' by the aim of dealing with the intrinsic, dynamic processes of nature (*i.e.* as in agroecology and 'regenerative agriculture');
2. to consider the natural environment as partner and not as resource. Components of the ecosystems are recruited as suppliers of ecological functions, which become production factors for a so-called 'ecological intensification of agriculture'. For example, synthetic pesticides are substituted by natural biological agents controlling pests and diseases, and synthetic fertilizers are substituted by microorganisms increasing the availability of soil nutrients to plants;
3. to think over the sustainability of human development by considering the temporality of biodiversity and its preservation, and not only in terms of intergenerational solidarity between human beings. In situ preservation of biodiversity needs timeframes which allow the intrinsic dynamics of living communities to operate. In such a framework, biodiversity is not preserved as a static, steady-state entity, but is actually amplified by promoting its own evolutionary capacities;
4. to substitute the anthropocentric outlook by bio- and ecocentric ones. The center of moral values is not mankind, but living beings and ecosystems, regarded as 'teleonomic centers' for which there is a 'good' and a 'bad' for their own sake. Mankind is expected to benefit from this moral perspective in the long term;
5. to embed technical objects, devices and algorithms into a new 'techno-eco-humanism', making artefacts 'relational objects' (following the French philosopher Gilbert Simondon, 1958). Our instruments are not only instrumental, but integrate into human cultures, where they acquire a certain level of 'agency'. Human beings should accept them as such, away from the technophilic attitude regarding artefacts as mere enhancers of human capacities, as well from technophobic attitudes considering that man has become the instrument of his instruments (following the critics of 'technicism' by the French philosopher Jacques Ellul).

Conclusions, from bioengineering ethics (back) to engineering ethics

The ethos and the ethics of engineers are rooted in their historical, sociological and epistemological grounds. This engineering culture seems to be hardly adapted to the challenges raised by the ecological transition in the context of the global change. To this aim, our understanding of living systems brought about by modern biology and ecology, and their 're-valuation' by environmental philosophies should

Franck Meijboom and Patrick Baert, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

help develop a new engineering. This engineering would revisit our interactions with living beings, but also with our own artefacts, inside the complexity of ecosystems. Bioengineering is expected to pioneer this ethical stance, but, as a liaison between engineering and biological sciences, it is hoped to pave the way for all engineering disciplines.

References

Aristotle. Metaphysics. B.I, Ch I. §9. In Aristotle. (2001). The basic works of Aristotle. The Modern Library, New York, NY.

Christensen, S.H., Didier, C., Jamison, A., Meganck, M., Mitcham, C. and Newberry, B. (2015). Engineering Education and Practice in Context, Volume 2. Philosophy of Engineering and Technology 21. Springer, Berlin.

Didier, C. (2015a). Ethique de l'ingénieur – Un champ émergent pour le développement professionnel. Techniques de l'Ingénieur. Ref AG102 V1.

Didier C. (2015b). Engineering Ethics: European Perspectives. In: Holbrook, J.B. (ed.) Ethics, science, technology, and engineering: A global resource, Vol. 2, 2nd edn. Macmillan Reference, Farmington Hills, MI, pp. 87–90.

Picon, A. (2007). French Engineers and Social Thought, 18-20th Centuries: An Archeology of Technocratic Ideals. History and Technology. 23: 197-208.

Simondon, G. (1989). Du mode d'existence des objets techniques, 3ème édn. Aubier, Paris. (English translation available 'On the Mode of Existence of Technical Objects', translated by Malaspina, C. and Rogove, J., 2017).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Before studying veterinary medicine. A discussion of biographical aspects of veterinary students

C. Dürnberger[1,], S. Fliri[2] and S. Springer[1]*
[1]Messerli Research Institute, University of Veterinary Medicine, Vienna, Veterinärplatz 1, 1210 Vienna, Austria; [2]University of Veterinary Medicine, Vienna, Veterinärplatz 1, 1210 Vienna, Austria
**Corresponding author, e-mail: christian.duernberger@vetmeduni.ac.at*

Abstract

This study examines the professional socialisation process of veterinary medicine students, focusing on their backgrounds and human-animal relationships before entering the profession. While existing research has primarily explored later stages of professional socialisation within the veterinary field, little attention has been given to the pre-university experiences of veterinary students. Through an online questionnaire involving 386 students in Vienna, the study reveals that the majority of students (87.4%) had early exposure to dogs and/or cats, with significant percentages also interacting with rodents and/or rabbits (56.7%) and animals in nature (53.8%). A small proportion (8.1%) had limited or no contact with animals during their upbringing. Small animal medicine (73%), equine medicine (43%), and ruminant medicine (39%) were identified as the primary motivations among students for pursuing veterinary medicine. Furthermore, the research highlights that a substantial percentage (74.9%) of students did not undertake apprenticeships or prior studies before embarking on their veterinary education. Additionally, nearly 60% of the students had minimal practical experience in veterinary medicine before starting their studies, while almost 70% had exposure to ethics-related subjects during their pre-university education.

Keywords: human–animal studies, questionnaire-based study, veterinary education, veterinary ethics

Introduction

Professional socialisation is understood as a process that involves coming to terms with the requirements and conditions of a profession (Higgs, 2013). This process can be divided into three phases (Ajjawi and Higgs, 2007): The first phase of professional socialisation begins *before* entering a particular profession or education, for example through biographical aspects including social and family influences. The second phase starts with socialisation *into* the profession by gaining precise insights and experiences through studies and training. The third phase of professional socialisation is shaped by the progressive influence of practical work in the job and *through* the profession. While recent research mainly focused on the last two phases of professional socialisation within the veterinary profession, veterinary students' lives before they start studying has, to the best of the authors' knowledge, received little attention so far.

Against this background, the main aim of this questionnaire-based study is to shed light on the rarely addressed first phase of the professional socialisation of veterinary students prior to their studies. This will be achieved through answers to the following research questions: (1) In which human-animal relationships did students grow up during their childhood and/or adolescence? (2) How many students started or completed an apprenticeship or another study programme before studying veterinary medicine? (3) How many students attended courses in ethics and/or philosophy during their school education? (4) How many students were able to gain practical experience in veterinary medicine (e.g. internship) before starting their studies? (5) What fields of veterinary medicine motivated students to

EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_58, © Brill | Wageningen Academic 2024
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

study veterinary medicine? (6) Do students' lived human-animal relationships in their childhood and/or adolescence have an impact on students' motivation for different fields to study veterinary medicine?

Material and methods

The study is based on the diploma thesis submitted by Samira Fliri at the University of Veterinary Medicine, Vienna in February 2023.

Study population, recruitment, and study participants

The link to the online questionnaire was sent to a total of 1187 students enrolled in the Veterinary Medicine programme (semesters 1 to 12) by the Office of Student Affairs at the University of Veterinary Medicine, Vienna. Data were collected from 11 to 24 October 2021. The study was reviewed and approved by the Head of the Ethics Committee of the Medical University of Vienna (no. 0183_001). With a response rate of 32.52%, a total of 386 students participated in the study.

Survey design and measurements

The present study used a subset of data from a larger questionnaire survey. The data reported in this paper focus on different aspects related to socio-demographic aspects and students' motivation for studying veterinary medicine. First, eight types of human-animal relationships were formulated to investigate students' lived human-animal relationships during childhood and/or adolescence. The respondents could tick all that were relevant. The option "I had no regular contact with animals in my childhood and/or adolescence" was also provided. Further, students were asked about possible previous apprenticeships and/or study programmes (response options: "yes, completed", "yes, not completed", "no", "prefer not to say"), educational background in ethics and/or philosophy (response options: "yes", "no", "I don't know"), practical experience in veterinary practice prior to their studies (response options: "none" up to "< 12 months"). To identify the working field(s) that motivated students to study veterinary medicine, we presented 14 different fields and asked respondents to tick all that were relevant. The option "other" was also provided.

Data analysis

The online survey was set up using the survey software Alchemer®; IBM SPSS Statistics version 29 was used in all analyses. Univariate descriptive statistics were presented in tables or text. Chi-square tests were conducted to determine whether experienced human-animal relationships differed between female and male respondents. Logistic regression analyses were conducted to examine whether socio-demographic aspects and experienced human-animal relationships were associated with different fields of veterinary practice that motivated students to study veterinary medicine. The age was inserted as a continuous predictor. The categorical variables were: (1) gender (1=male, 2=female); eight lived human–animal relationships ((2) With dog(s) and/or cat(s); (3) With rodents and/or rabbits, (4) With animals in nature, (5) With farm animals (e.g. grew up on a farm), (6) With animals in a sporting context (e.g. competition horse sport), (7) With exotic animals (e.g. snakes, turtles), (8) With ruminants as hobby animals, (9) With animals as part of my parents' profession (e.g. parents are/were veterinarians); (answer options: 1=yes; 2=no).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Results

Lived human–animal relationships during childhood and/or adolescence

The study investigated whether students had been in contact with animals from an early age and which animals they had been in contact with during their childhood and/or adolescence (Table 1).

With 87.4%, the vast majority of students stated that they had grown up in contact with dogs and/or cats, followed by rodents and/or rabbits (56.7%) and animals in nature (53.8%). Around one third of the students (34.9%) indicated that they had a connection to animals in a sporting context (e.g. competitive equestrian sport). Further, 23.1% of students stated that they had been in contact with farm animals. 8.1% of the students reported that they had had no regular contact with animals during childhood and/or adolescence. A comparison between male and female students shows that, at 42.6% and 70.4%, significantly more male students than female students (51.3% and 20%) had been in contact with animals in nature (P=0.009) and farm animals (P<0.001). In contrast, at 38.4%, significantly more female students than male students (11.1%) grew up with animals in a sports context (P<0.001).

Prior apprenticeship and/or studies

The participants were asked whether their current studies in veterinary medicine had been preceded by an apprenticeship and/or other studies and, if yes, whether these had been completed. In total, at 74.9%, three quarters of the participating students neither did an apprenticeship nor attended another study programme before their veterinary studies. At 15.3%, 57 students stated that they had completed an apprenticeship; at 3%, 11 students had started but not completed one. Further, 8.1% of the students reported that they had successfully completed another study programme before studying veterinary medicine; 31.2% of the students stated that they had started but not completed another study programme.

Table 1. Lived human–animal relationships in childhood and/or adolescence

	All students (n=372)	**Female (n=310)**	**Male (n=54)**	**Test[a]**
With dog(s) and/or cat(s)	325 (87.4%)	275 (88.7%)	47 (87%)	$\chi2(1)=0.126$, $P=0.723$
With rodents and/or rabbits	211 (56.7%)	182 (58.7%)	25 (46.3%)	$\chi2(1)=2.889$, $P=0.089$
With animals in nature	200 (53.8%)	159 (51.3%)	38 (70.4%)	$\chi2(1)=6.743$, $P=0.009$
With farm animals (e.g. grew up on a farm)	86 (23.1%)	62 (20%)	23 (42.6%)	$\chi2(1)=13.115$, $P<0.001$
With animals in a sporting context (e.g. competition horse sport)	130 (34.9%)	119 (38.4%)	6 (11.1%)	$\chi2(1)=15.174$, $P<0.001$
With exotic animals (e.g. snakes, turtles)	38 (10.2%)	26 (8.4%)	9 (16.7%)	$\chi2(1)=3.628$, $P=0.057$
With ruminants as hobby animals	34 (9.1%)	25 (8.1%)	7 (13.0%)	$\chi2(1)=1.376$, $P=0.241$
With animals as part of my parents' profession (e.g. parents are/were veterinarians)	12 (3.2%)	9 (2.9%)	3 (5.6%)	$\chi2(1)=1.015$, $P=0.314$
I had no regular contact with animals in my childhood and/or adolescence.	30 (8.1%)	24 (7.7%)	5 (9.3%)	$\chi2(1)=0.144$, $P=0.704$

[a]Pearson Chi-square test

Franck Meijboom and Patrick Bos, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Practical experience in veterinary medicine before studying

It is not uncommon for students to get a taste of working life in the form of internships in veterinary clinics before they start their studies. The survey investigated how much time had been spent on gaining practical experience through e.g. internships in veterinary practice *before* the students had started with their veterinary studies (Table 2).

Approximately 32% of the students had no practical experience in veterinary medicine prior to their studies. At 58.3%, more than half of the students had no or very little (less than one month) practical experience. Around 13% stated more than 12 months of experience.

The students who indicated that they had already gained practical experience in veterinary practice before starting their studies were asked to report in which field(s): The top answers were small animal medicine (86.2%), equine medicine (34.6%) and ruminant medicine (33.1%) (Table 3).

Table 2. Practical experience in veterinary medicine before studying

	All students (*n*=372)
None	118 (31.7%)
>1 month	99 (26.6%)
1 month	49 (13.2%)
2–3 months	36 (9.7%)
4–6 months	14 (3.8%)
7–8 months	1 (0.3%)
9–10 months	2 (0.5%)
11–12 months	6 (1.6%)
More than 12 months	47 (12.6%)

Table 3. Fields in which the students gained practical experience before studying veterinary medicine (ranked)

	Students with practical experience (*n*=254)
Small animal medicine	219 (86.2%)
Equine medicine	88 (34.6%)
Ruminant medicine	84 (33.1%)
Swine medicine	19 (7.5%)
Reproductive medicine	9 (3.5%)
Poultry medicine	8 (3.1%)
Wild animal medicine	8 (3.1%)
Food sciences	7 (2.8%)
Laboratory animal medicine	4 (1.6%)
Research	4 (1.6%)
Exotic animal medicine	2 (0.8%)
Zoo animal medicine	1 (0.4%)
Public authority	1 (0.4%)
Other field(s)	3 (1.2%)

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Previous education in ethics/philosophy

The participants were asked whether they had attended a subject in their school career that had explicitly dealt with philosophical/ethical topics. A total of 69.9% (260) students stated that they had attended such a subject during their school years.

Fields of veterinary medicine that motivated students to study

The students were asked which working field(s) had motivated them to start studying veterinary medicine (Table 4). The top answers were small animal medicine (72.6%), equine medicine (43.3%), ruminant medicine (38.7%), wild animal medicine (35.5%), zoo animal medicine (26.1%) and the field of research (19.6%).

What explains students' motivation for different fields of veterinary practice?

Small animal medicine: Logistic regression shows ($\chi 2$ (10)=47.112, P<0.001) that students who grew up with dogs and/or cats are more likely to state that small animal medicine was a source of motivation for starting their studies (P=0.007). On the contrary, students who grew up with farm animals are less likely to indicate that small animal medicine was a source of motivation (P<0.001).

Ruminant medicine: Logistic regression analysis shows ($\chi 2$ (10)=96.073, P<0.001) that students who grew up with farm animals and with ruminants as hobby animals are more likely to state that farm animal medicine was a source of motivation for studying veterinary medicine (P<0.001; P<0.001).

Equine medicine: Logistic regression shows ($\chi 2$ (10)=112.893, P<0.001) that students who grew up with farm animals and with animals in a sporting context are more likely to state that equine medicine was a source of motivation (P=0.013 (farm animals), P<0.001 (animals in sports context).

Table 4. Fields of veterinary practice that motivated students to study veterinary medicine (ranked)

Field	*N* (percent of cases)
Small animal medicine	270 (72.6%)
Equine medicine	161 (43.3%)
Ruminant medicine	144 (38.7%)
Wild animal medicine	132 (35.5%)
Zoo animal medicine	97 (26.1%)
Research	73 (19.6%)
Exotic animal medicine	35 (9.4%)
Food sciences	32 (8.6%)
Reproductive medicine	28 (7.5%)
Poultry medicine	20 (5.4%)
Swine medicine	19 (5.1%)
Public authority	17 (4.6%)
Laboratory animal medicine	16 (4.3%)
Other fields	10 (2.7%)

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Wild animal medicine: Logistic regression indicates ($\chi 2$ (10)=18.336, P=0.050) that students who grew up with exotic animals and with animals in nature are more likely to state that wild animal medicine was a source of motivation for studying veterinary medicine (P=0.024 (exotic animals), P=0.047 (animals in nature).

Discussion

The study sheds light on the first phase of veterinary students' professional socialisation *prior* to their studies. One research question focused on lived human-animal relationships in the childhood and/or adolescence of the surveyed veterinary students. In their Australian survey of first-year veterinary students back in 1996, Heath *et al*. (1996) found no significant relationship between prior experience with animals and career plans of future veterinarians, whereas Serpell (2005) showed that previous experiences of veterinary students with different categories of animals (e.g. companion animals or farm animals) do influence their career choices within veterinary medicine. Similarly, based on her study with veterinary students from all veterinary faculties in Germany, Kostelnik (2011) identified strong species-specific associations between students' employment preferences and the kinds of animals they or their families had owned or kept. Our results support the latter thesis in line of Serpell (2005) and Kostelnik (2011): For example, surveyed students who grew up with dogs and/or cats were more likely to state that working in small animal medicine had been a major motivation for studying veterinary medicine. Similar conclusions could be drawn with regard to livestock farming, sport and wild animals. Therefore, this study shows an influence of lived human-animal relationships during childhood and/or adolescence and the career path that students are aiming for within veterinary medicine.

The gender analysis indicates that significantly more male students than female students had been in contact with farm animals and animals in nature in their childhood and/or adolescence; the reverse is true for animals in a sporting context. Even if these findings cannot be used to make any statements about the field(s) in which students will actually work after graduation, these findings supplement the results of Kostelnik (2011) in regard to veterinary faculties in Germany, showing that male students of veterinary medicine (23.4%) are more likely than female students (12.0%) to favour a career in farm animal medicine. If it is noted that veterinary students' gender influences their employment preferences or career choices, also the extent to which this is not least related to certain gender differences or role models that are effective already during childhood must be discussed.

Finally, one last aspect of the research question on lived human-animal relationships should be mentioned: Almost 10% of the interviewed veterinary students stated that they had had no regular contact with animals at all in their childhood and/or adolescence. As there is a lack of comparative studies, this figure is difficult to classify. Considering that intrinsic passion for animal care is often cited as the students' major motive for choosing veterinary medicine (Cake et al., 2020), it can be discussed to what extent this passion presupposes actual contact with animals before studying – or not. It can also be asked whether these students have other areas of interest than animal care. In principle, further research, both quantitative and qualitative, would be necessary to better classify these almost "animal-free" students.

Another main research question of the survey concerned the students' practical experiences *prior* to their studies. Tomlin *et al*. (2010) investigated the pre-university work experience of veterinary students in the UK: Around 20% of the respondents indicated that they had gained regular work experience "over a long period". In our study, only around 12% stated that they had gained "more than one year" of practical experience. In their article, Tomlin et al. did not indicate how many students had no or hardly any experience — but this point is particularly worth discussing with regard to our study: A good third had no practical experience at all; a quarter had less than one month. This means that almost 60% of

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

the interviewed students had no or very little (less than one month) practical experience in a field of veterinary medicine before starting their studies in Vienna. These figures seem remarkable against the following background: The students in Vienna undergo a demanding entrance test that requires preparation before – if they are successful – they start a complex six-year study programme in order to finally end up in a profession that is described as quite challenging. In other words, many students do not "get a taste" of the later daily job before they set off on this exhausting "journey", which raises the question of why this is not more common. Further questions are: Would fewer drop out of university if they had gained more practical experience beforehand? And if yes: Would more graduates actually do the job after successful completion of the degree programme? These exemplary questions show the potential importance of studies focussing more on the pre-university phase of veterinary students.

Finally, the study also addressed teaching ethics with regard to the pre-university phase. Generally, teaching ethics as part of veterinary studies has significantly increased in recent years; this was recently shown in a study among 57 veterinary schools from 25 European countries by De Briyne *et al*. (2020). However, little is known about the pre-university education of veterinary students with regard to ethics: Almost 70% of the surveyed students stated that they had attended a subject dealing with ethics at school. Future studies could examine more closely the existing prior knowledge, for example the extent to which the students had come into contact with certain topics and positions relating to animal ethics already at school.

References

Ajjawi, R. and Higgs, J. (2007). Learning to reason: a journey of professional socialisation. Advances in Health Sciences Education, 13, 133–150. DOI: 10.1007/s10459-006-9032-4

Cake, M., McArthur, M.L., Mansfield, C.F., Zaki, S., Carbonneau, K. and Matthew, S.M. (2020). Challenging identity: Development of a measure of veterinary career motivations. VetRecord, 186, 386. DOI: 10.1136/vr.105510

De Briyne, N., Vidović, J., Morton, D.B. and Magalhães-Sant'Ana, M. (2020). Evolution of the teaching of animal welfare science, ethics and law in European veterinary schools (2012–2019). Animals, 10(7), 1238. DOI: 10.3390/ani10071238

Heath, T.J., Lynch-Blosse. M. and Lanyon, A. (1996). A longitudinal study of veterinary students and recent graduates: 1. Backgrounds, plans and subsequent employment. Australian Veterinary Journal, 74, 291–296. DOI: 10.1111/j.1751-0813.1996.tb13778.x

Higgs, J. (2013). Professional socialisation. In Loftus, S., Gerzina, T., Higgs, J., Smith, M., and Duffy, E. (eds) Educating Health Professionals. Becoming a University Teacher. Sense, Rotterdam, pp. 83–92. DOI: 10.1007/978-94-6209-353-9.

Kostelnik, K. (2011). Der Mangel an tierärztlichem Nachwuchs in der Nutztiermedizin. Dissertation, FU Berlin, Berlin. DOI: 10.17169/refubium-10735.

Tomlin, J.L., Brodbelt, D.C. and May, S.A. (2010). Veterinary students' understanding of a career in practice. VetRecord, 166(25), 781–786. DOI: 10.1136/vr.b4842

Franck Meijboom and Patrick Bateson | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Critical evaluation-methods of chatbot output accuracy in animal ethics (poster)

*D. Springinklee**
Messerli Research Institute, Interdisciplinary Life Sciences, Veterinaerplatz 1, 1210 Vienna, Austria
**E-mail: daniel.springinklee@vetmeduni.ac.at*

Abstract

As the intersection of technology and ethics becomes increasingly relevant in educational contexts, particularly within the fields of agriculture, food, and environmental ethics, there is a growing need to understand and refine the role of Artificial Intelligence (AI) in these domains. This abstract lays the groundwork for an ambitious project, drawing upon a foundational study, in which AI-generated submissions in an undergraduate animal ethics exam were analyzed. The primary aim of this new research is to develop strategies for identifying and correcting plausible yet incorrect outputs from chatbots in the field of animal ethics. The initial study, which serves as the basis for this project, involved a quantitative comparison between student and AI responses in an animal ethics exam. It provided critical insights into the capabilities and limitations of AI in mirroring student performance and the challenges faced by educators in distinguishing between AI and student submissions. These findings are instrumental in informing the next phase of research. Building on this foundation, the proposed paper aims to delve deeper into the ethical implications of AI in educational settings. We plan to explore innovative methodologies for discerning and rectifying misleading yet convincing responses generated by AI in the context of animal ethics. This exploration is particularly pertinent given the increasing use of AI tools in educational environments and their potential impact on ethical decision-making in sectors related to agriculture, food, and the environment. The forthcoming study will contribute significantly to the discourse on sustainable innovations in ethical education. It will provide valuable guidelines for educators and professionals in utilizing AI as an educational tool, ensuring that its integration enhances, rather than compromises, ethical understanding and decision-making. This research aligns with the central themes of EURSAFE 2024, emphasizing the critical role of technology in shaping the future of ethical education in fields that are pivotal to sustainable development and ethical practices.

Keywords: AI, animal ethics, evaluation of chatbot-output, exam design

Introduction

Since its debut in late 2022, ChatGPT has ignited a comprehensive and international discussion concerning the consequences of what is commonly referred to as "artificial intelligence." This conversation spans a variety of topics, including the potential for criminal activity (Europol, 2023), inaccuracies in output (Vanian, 2023), the impact on employment markets (Abril, 2023), and several additional issues like plagiarism (Fazackerley, 2023).

Of particular interest within the realm of higher education is the dilemma surrounding the possibility and advisability of prohibiting its use to maintain the integrity of existing examination systems or, conversely, assimilating it into a new paradigm of assessments, akin to the incorporation of calculators in high school mathematics examinations.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Initial study

The findings of the initial study reveal substantial disparities in performance between students and AI, particularly in specific segments of the examination, most notably in areas where the AI's training dataset was deficient in pertinent information. The identification of AI-generated responses was predicated on characteristics such as error-free, fluent writing, the absence of citations specific to the course, and engagement with the case studies presented. Although these indicators were the most effective, they proved to be inadequately precise for incorporation into a conventional grading framework (Springinklee and Grimm, 2024).

Furthermore, in the initial study the challenge of assessing plausible yet incorrect answers produced by AI became apparent, as the outputs generated inaccuracies to question 3, which asked about a specific veterinary ethics tool (VET-tool) not widely covered online compared to topics like Singer, Regan, and moral individualism, highlighting the limitations of ChatGPT/PG's training data. This training data likely included extensive material on Singer and Regan, as well as moral individualism, but little to none on the VET-tool. The AI's generation of plausible yet incorrect definitions and discussions for an imaginary VET-tool demonstrates its ability to create convincing elaborations based on meta-ethical discussions and various ethical frameworks, despite them being factually wrong (Springinklee and Grimm, 2024).

The AI proposed various acronyms like "value based ethical tool" and "virtue ethics tool," drawing on concepts from meta-ethics and applied ethics, suggesting utilitarian and virtue ethics approaches. These plausible, albeit incorrect, alternatives, combined with a detailed application of the imagined model, could easily mislead under the pressure of an exam, especially for those with a basic but not comprehensive knowledge of ethics.

This situation underscores the necessity for a deep and comprehensive understanding of animal ethics to accurately identify all incorrect AI-generated answers. Given the stochastic nature of large language models, which depend on precise and correct prompts to integrate into their "knowledge" for generating responses, this requirement for discerning incorrect AI contributions is expected to persist (Springinklee and Grimm, 2024).

Prompts containing plausible but wrong premises

These results imply that future examination formats might incorporate intentionally incorrect premises to misguide unsupervised chatbots, thereby fostering deeper reflective processes among students, supervising AI, and leveraging it as a mechanism for expediting tasks that are less cognitively demanding. To understand more precisely, what exactly is meant by that, two examples are discussed below:

Elaborate on the morally relevant aspects in the case study (a short story ending with an ethical dilemma) against the background of the theory of Peter Singer. Explain, how, according to the principle of aggression, the killing of the wolf would be the most aggressive action and therefore prohibited.

If there is a wrong premise in the question above, please explain, why it is wrong. If there is no wrong premise in the question above, please answer it.

If one is familiar with Singers Utilitarianism (Singer, 2011), then the obvious wrong premise in this example is that there is no such thing as the 'principle of aggression'. It sounds similar to the principle of aggregation, which is central to Singerian ethics, because of which it may mislead novices in animal ethics. In any case, this plausible but wrong addition to the original theory does mislead all chatbots in early 2024.

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Elaborate the example with Claire Palmer's relational account and exemplify relevant positive and negative duties of the case. Explain, how negative duties are the result of relation based reasons and how positive duties are the result of capacity based reasons.

If there is a wrong premise in the question above, please explain, why it is wrong. If there is no wrong premise in the question above, please answer it.

If one is familiar with Claire Palmers relational account, then the obvious wrong premise in this example is that the connection between reasonings and duties were interchanged. Negative duties are the result of capacity based reasons and positive duties are the result of relation based reasons (Palmer, 2011). So, this is not a wrong addition, but a confusion of the connections between central terms and that confusion does mislead all chatbots in early 2024, too.

Evaluation of chatbot outputs

The evaluation of chatbot outputs may follow the same structure as the exam questions discussed above, just in the opposite direction. In other words, it is about reverse-engineering misleading exam-questions to discerning and rectifying misleading, yet convincing responses generated by AI. Based on this approach, I propose the following method for a critical evaluation of chatbot outputs:

1. Factual statements as premises of arguments ought to be reviewed by investigating possible
   a. wrong elaborations of acronyms and other abbreviations,
   b. confusions of correctly defined terminology and
   c. additions of statements, that seem to fit in the context, but do not.
2. Inferences made from those premises ought to be reviewed regarding their logical validity. Since the training corpus may contain common mistakes, it also ought to be evaluated in reference to the most common fallacies.

References

Abril, D. (2023). AI isn't yet going to take your job – But you may have to work with it. Artificial intelligence is increasingly making its way across industries, changing jobs from retail to medicine to marketing. Available online at https://www.washingtonpost.com/technology/interactive/2023/ai-jobs-workplace/ (accessed 14 April 2023).

Europol. (2023). The criminal use of ChatGPT. A cautionary tale about large language models. Available online at https://www.europol.europa.eu/media-press/newsroom/news/criminal-use-of-chatgpt-cautionary-tale-about-large-language-models (accessed 14 April 2023).

Fazackerley, A. (2023). AI makes plagiarism harder to detect, argue academics – in paper written by chatbot. Lecturers say programs capable of writing competent student coursework threaten academic integrity. Available online at https://www.theguardian.com/technology/2023/mar/19/ai-makes-plagiarism-harder-to-detect-argue-academics-in-paper-written-by-chatbot (accessed 14 April 2023).

Palmer, C. (2011). The moral relevance of the distinction between domesticated and wild animals. In Beauchamp, T. and Frey, G. (eds) The Oxford handbook of animal ethics. Oxford University Press, Oxford.

Singer, P. (2011). Practical ethics, 3rd edn. Cambridge University Press, Cambridge.

Springinklee, D. and Grimm, H. (2024). Navigating AI in educational assessments. A quantitative analysis on the identification and performance of "AI"-generated exam-submissions in animal ethics. Heliyon, in press.

Vanian, J. (2023). Microsoft tries to justify A.I.'s tendency to give wrong answers by saying they're 'usefully wrong'. Available online at https://www.cnbc.com/2023/03/16/microsoft-justifies-ais-usefully-wrong-answers.html (accessed 14 April 2023).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Section 5.
Environmental ethics

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

An ethical agenda for the oceans and the planet

M.E. Lam
Centre for the Study of the Sciences and the Humanities, University of Bergen, Bergen, Norway

Abstract

Two monumental UN agreements, the legally binding Conservation and Sustainable Use of Marine Biodiversity of Areas Beyond National Jurisdiction (BBNJ) Treaty and the voluntary COP15 Kunming-Montreal Global Biodiversity Framework (GBF), herald a new era in global governance. The BBNJ Treaty is the first international treaty to protect the high seas, whereas the GBF is the first to set quantitative targets to protect global biodiversity. Each enshrines the concept of "fair and equitable sharing of benefits," from marine genetic resources and genetic data collected from plants, animals, and other organisms, respectively. How this protection and fair and equitable sharing will be operationalized remains to be seen, but these agreements set the stage for an ethical agenda for the oceans and the planet. Notions of fairness and equity vary, as do values, so how to reconcile natural resource conflicts and policy trade-offs, given these pluralities, is fundamentally a problem of science and ethics. Scientists tend to steer clear of ethics, maintaining an illusory separation of facts and values, but they do at the peril of not contributing their relevant knowledge and reasoning at the science-society-policy nexus. Ethics, both as the rules of conduct or societal norms adopted by a group or culture and as a discipline concerned with principles and the quality of moral reasoning, not only permeate, but also guide science and society. Environmental problems are inseparable from value conflicts and thus ethics, as they all originate as deficiencies of a system that is valued, where the problems and solutions are defined by diverse social actors according to their own knowledge systems and values. Within this context of human plurality now lies humanity's daunting ethical task not only to decide upon, but also to uphold fair and equitable rules for all to live by, both on land and in the sea.

Background

Diverse agendas abound when it comes to nature: most prominently, political, industrial, and conservation agendas, but also community and indigenous agendas. Lofty as these agendas or goals are to their proponents, they represent disparate interests and values of the ocean, the planet, and its resources. Each frame or lens, while laudable and plausible within its own perspective, has the cumulative effect, when combined with all others, to parcel nature. As proponents take their slices, the oceanic pie is warming and acidifying, being polluted, deoxygenated, and depleted of species, and losing resilience, integrity, and health (Cheung *et al*., 2021; Jones, 2023a). Meanwhile, grabs on land, biodiversity and habitat loss, species extinctions, pollution, and degradation threaten the planet that humanity calls home. In response to this ongoing environmental loss and often accompanying environmental injustices (Martinez Alier, 2021), the international community has signed two monumental agreements to protect marine and global biodiversity: the legally binding Conservation and Sustainable Use of Marine Biodiversity of Areas Beyond National Jurisdiction (BBNJ) or High Seas Treaty (Jones, 2023b) and the voluntary COP15 Kunming-Montreal Global Biodiversity Framework (GBF; Gilbert, 2022). The GBF, which falls under the Convention for Biological Diversity (CBD, 1993), commits to protect and restore 30% of the world's lands and seas by 2030, while the BBNJ Treaty, which falls under the UN Convention on the Law of the Seas (UNCLOS, 1994), provides a legal mechanism to designate marine protected areas and other area-based tools to protect fragile, biodiverse regions and restrict harmful ocean-based activities. Also, in a bold reversal of the typical burden of proof, the BBNJ Treaty requires nations and companies to conduct environmental impact assessments of any future commercial activities on the high seas to review and report on possible harm to marine ecosystems and organisms. Both

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

enshrine "fair and equitable sharing of benefits," following the *Nagoya Protocol* (2014), an international agreement under the CBD which specifies legal obligations for providers and users of genetic resources. By committing to protect oceanic and global biodiversity and to fairly and equitably share benefits from the use of genetic resources, the international community has set forth an ethical agenda for the oceans and the planet. But this will be a difficult goal to operationalize, given the plurality of knowledge systems, values, and notions of fairness and equity that exist. For example, fairness can be based on equality or preferences in treatment or outcomes to individuals or social groups (Castelnovo *et al.*, 2022; Kaplow and Shavell, 2000, 2001; Zafar et al., 2017). How to reconcile diverse notions of fairness and equity with the myriad ways of knowing and valuing nature (IPBES, 2022) will require ethical protocols, tools, and argumentation, in addition to scientific ones to describe, analyze, and evaluate policy options. Embedding environmental problems within both an ethical and scientific decision-analysis framework can enhance policy outcomes by recognizing and reconciling this inherent plurality within humanity. Here, we identify six stages of such a framework as stepping stones toward achieving humanity's ambitious new goal of principled co-existence.

References

Castelnovo, A., Crupi, R., Greco, G., Regoli, D., Penco, I.G. and Cosentini, A.C. (2022). A clarification of the nuances in the fairness metrics landscape. Scientific Reports, 12, 4209. DOI: 10.1038/s41598-022-07939-1

Cheung, W., Frölicher, T.L., Lam. V.W.Y., Oyinlola, M.A., Reygondeau, G., Sumaila, U.R., Tai, T.C., Teh, L.C.L. and Wabnitz, C.C.C. (2021). Marine high temperature extremes amplify the impacts of climate change on fish and fisheries. Science Advances, 7, eabh0895. DOI: 10.1126/sciadv.abh0895

Diaz, S., Settele, J., Brondízio, E.S. Ngo, H.T., Agard, J. Arneth, A. ... Zayas, C.N. (2019). Pervasive human-driven decline of life on Earth points to the need for transformative change. Science, 366, eaax3100. DOI: 10.1126/science.aax3100

Gilbert, N. (2022). Nations forge historic deal to save species: what's in it and what's missing. Nature. DOI: 10.1038/d41586-022-04503-9

IPBES Secretariat. (2022). Assessment report on diverse values and valuation of nature. Available online at https://www.unep.org/resources/report/assessment-report-diverse-values-and-valuation-nature

Jones, N. (2023a). The ocean is hotter than ever: what happens next? Nature, 617, 450. DOI: 10.1038/d41586-023-01573-1

Jones, N. (2023b). UN forges historic deal to protect ocean life: what researchers think. Nature. DOI: 10.1038/d41586-023-00684-z

Kaplow, L. and Shavell, S. (2000). Notions of fairness versus the Pareto Principle: On the role of logical consistency. The Yale Law Journal, 110(2), 237–249.

Kaplow, L. and Shavell, S. (2001). Fairness versus welfare. Harvard Law Review, 114(4), 961–1388.

Kunming-Montreal Global Biodiversity Framework. (2023). Available online at https://www.unep.org/resources/kunming-montreal-global-biodiversity-framework?gclid=CjwKCAjwvpCkBhB4EiwAujULMhR21ueVSX_dhifsMpxRFBx4xDEd3XO2rtt7jRVmf83uzEDO88BsrBoCYaEQAvD_BwE

Martinez Alier, J. (2021). Mapping ecological distribution conflicts: The EJAtlas. The Extractive Industries and Societies 8, 100883. DOI: 10.1016/j.exis.2021.02.003

Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity. (2014). Available online at https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf

UN Convention on Biological Diversity. (1993). Available online at https://www.cbd.int/

UN Convention on the Law of the Seas. (1994). Available online at https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Synthetic biology, genetic engineering in the wild, and biological diversity

K. Hagen, M. Otto, K. Stracke and M. Engelhard*
Federal Agency for Nature Conservation (BfN), Konstantinstr. 110, 53179 Bonn, Germany
** Corresponding author, e-mail: kristin.hagen@bfn.de*

Abstract

To date, most genetically modified organisms (GMOs) outside closed systems are crops, which have the potential to become harmful to ecosystems for example by releasing toxins or becoming invasive, and therefore ought not to spread outside agricultural areas. However, the contrary paradigm is currently attracting attention in research and policy: Increasingly, research is being conducted on GMOs that are intended to get established and/or spread in nature. The research is fuelled by technological transformations like digitalisation that have given rise to the field of synthetic biology. With the ongoing joint global climate, biodiversity and food crises, a view of humans as able and (morally) permitted to more actively interfere in nature has become a (contested) legitimisation for such research agendas. Contrary to nature conservation's paradigm of precaution with regard to GMOs, synthetic biology is even targeting species protection as a potential area of application. The present paper presents a perspective of the German Federal Agency of Nature Conservation (BfN), a nature conservation authority which is also involved in GMO authorisation procedures. We briefly address potential impacts of wild living GMOs, the international policy discourse and the role of the statutory foundations and values of nature conservation for the assessment of GMOs in the wild. We argue that the urgency of combating biodiversity loss is not a justification for the use of genetic engineering in nature. Rather, the crisis justifies the implementation of effective measures to prevent further pressure on nature by overuse, contamination or the release of GMOs in the wild, where impacts on nature are too complex to be scientifically evaluated in a relevant time frame. These measures ought not to be undermined by overconfidence in technical solutions.

Keywords: genetically modified organism, nature conservation, precaution, regulation, risk assessment

Introduction: Nature conservation and genetic engineering

The relationship of nature conservation with genetic engineering reflects not only biological aspects (regarding changes in genes, organisms and ecosystems), but also broader implications (e.g., on agricultural systems or on the practice of nature conservation), as well as conceptual and normative layers (concerning ideas of what nature is and what it means to protect it). When the International Union for Conservation of Nature (IUCN) published a somewhat optimistic perspective on the speculative potential of genetically modified organisms (GMO) as a tool for species survival (Redford *et al*., 2019), it spurred controversy among its member organisations. It also prompted publications that questioned not only the usefulness and safety of wild GMOs for species protection, but also the compatibility of wild GMOs with nature conservation (Federal Agency for Nature Conservation, 2022, Comité Francais de l'UICN, 2021). At the time of writing, IUCN develops a policy on synthetic biology in light of these controversies. However, the underlying fundamental conceptual issues are still barely addressed in this international discourse, and at the level of the United Nations Convention on Biological Diversity (CBD), too, the need to address value issues around genetic engineering in nature is only starting to be recognised (SCBD, 2024), despite the fact that the intrinsic value of nature is referred to in Recital 1

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

of the Convention's Preamble. Given the dynamic development of potential GMO applications in the wild, there is thus an urgent need to also address these underlying conceptual issues.

To date, GMO released outside closed systems are still almost exclusively genetically modified (GM) crops (mainly soybean, maize, canola, and cotton) grown on agricultural land. Almost all of these are either herbicide resistant or express a toxin, or both (so-called stacks, i.e. the crop containing resistances against multiple herbicides and/or expressing multiple toxins). Such GM crops can be harmful for ecosystems through consequences of their intended traits. For example, herbicide tolerance is developed for use in monocultures with intensive application of complementary herbicides that have been reported to be harmful to health and the environment (Defarge *et al*., 2023, Schütte *et al*., 2017). GM crops can also harm ecosystems by expressing a toxin, as, for example, in varieties of insect-resistant Bt-maize that express one or more toxins from the bacterium *Bacillus thuringiensis*. Toxins expressed by GM crops are designed for certain taxonomic groups, but they can also harm non-target organisms, for example ants (Pohl *et al*., 2024) and butterflies (Zangerl *et al*., 2001). GM crops can thus harm nature while contained on agricultural land, and in addition through spread of toxic plant residuals. In the case of hybridisation or spread outside fields they may also become invasive (suppressing other organisms). Therefore, to date, it is paradigmatic from a nature conservation point of view that GMOs ought not to spread outside agricultural areas.

Nevertheless, research is increasingly also being conducted on genetically engineering *wild* organisms, i.e., not bred for agricultural or domestic purposes and not kept within agricultural land. Such wild GMOs are often intended to prevail and/or spread in nature. With GMOs even being suggested as tools *for* nature conservation, nature conservation policy is strongly affected. Therefore, in this paper, we sketch out the background of the new research focus on wild GMOs in terms of technical transformations and policy context, and we sketch out lines of evaluation with regard to risks and with regard to statutory foundations and values of nature conservation.

From labs to fields: Terminology, technological transformations, and new research

While the term "genetic engineering" continues to refer to the use of molecular biological techniques to modify DNA sequences in genomes (cf. Lanigan *et al*., 2020), significant transformations in the actual processes have been enabled by automation, miniaturisation and digitalisation. The results have been increased speed and affordability and, with the additional influence of design and re-design approaches, they have contributed to the rise of the scientific field and community known as "synthetic biology".

Synthetic biology often encompasses genetic engineering but also goes beyond it, and in some cases uses other technologies than genetic engineering (Engelhard, 2016, Sauter *et al*., 2015). Synthetic biology can be defined more or less broadly (ibid.), an example of the latter being the operational definition of the CBD: "(...) a further development and new dimension of modern biotechnology that combines science, technology and engineering to facilitate and accelerate the understanding, design, redesign, manufacture and/or modification of genetic materials, living organisms and biological systems" (CBD/COP, 2016). The most recent technological development is the convergence of synthetic biology with (generative) artificial intelligence, which is expected to further fuel efficiency, innovation, width of application scenarios, risks and conceptual challenges (SCBD, 2024).

Since around 2015, advances in genome editing techniques, especially CRISPR/ Cas nuclease systems (see EPA/ENCA IG-GMO (2023) for a definition and differentiation of terminology) have furthered feasibility and versatility of genetic engineering. Genome editing techniques, also known as "new genomic/genetic techniques" have thus become a cornerstone of genetic engineering, including in the

Franck Meijboom and Patrick Bottek | 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

context of synthetic biology, and the technological possibilities and application scenarios for GMOs are continuously widening. The new technological possibilities have brought many novel application scenarios for GMOs, as for example:

1. Organisms of an *increasing number of taxonomic groups* are genetically modified, including such that live in the wild. Examples include trees (Yin *et al*., 2021), mosquitoes (Evans *et al*., 2019), as well as farm animals (including fish) (Miklau *et al*., 2024), microorganisms (Miklau *et al*., 2024), and viruses (Eckerstorfer *et al*., 2024).
2. Increasingly, applications are developed for *release into the environment beyond agricultural land* (Federal Agency for Nature Conservation, 2022).
3. *Novel traits* are developed, which in crops include, among others: traits affecting the nutrient content, visual and olfactory traits (as in non-browning fruits and vegetables), novel pesticide resistances, novel toxins, and novel mechanisms of tolerance against biotic or abiotic stressors. In farm animals, traits typically target performance, product quality, production parameters such as hornlessness in cattle, disease resistance, or sex determination/reversal/sterility . In wild plants and animals, too, resistances against biotic or abiotic stressors are common intended traits. Microorganisms are genetically engineered for functions as biofertilisers (promoting plant growth), for biocontrol of pests or pathogens, or for bioremediation purposes (Bohle *et al*., 2024, Miklau *et al*., 2024).
4. Traits that are intended to reduce or contain populations are developed, e.g., by rendering individuals sterile, or with a technique known as *synthetic gene drive*. Synthetic gene drives involve genetic engineering tools (e.g. CRISPR/Cas) being incorporated as a part of the genetic modification (for an overview and comprehensive assessment, see, e.g., CSS *et al*., 2019). If organisms with synthetic gene drives are released, these genetic engineering tools are released too – in a sense, the genetic engineering experiment is moved into the environment, becoming a "lab in the field" (Simon *et al*., 2018). The effect of the gene drive on inheritance is that the genetic modification is inherited by more than half, and up to all, of the offspring when gene drive organisms interbreed with their wild relatives (without the gene drive, according to Mendel's principles of inheritance, only half the offspring would inherit the modification). Theoretically, gene drive GMOs can spread even if their characteristics are disadvantageous for them or for their reproduction. They therefore have the potential to cause a population to collapse or become extinct.
5. *Transient traits* are developed with a technique called RNA interference, which can, for example, be used as a type of pesticide (e.g., Mendelsohn *et al*., 2020).
6. *Paratransgenesis* applications are developed, in which microorganisms associated or in symbiosis with animals (mostly insects) are modified to in turn modify characteristics of their animal hosts (Miklau *et al*., 2024).

Potential impacts of wild GMOs

Due to the complexity of biological diversity — from the molecular to the ecosystem level – the effects of genetically engineering wild organisms cannot be robustly predicted. This is already true at the level of genetic material: Although changes can be made with relative precision at the molecular level, there are often additional unintended molecular changes in the genome. The increasing precision that is achievable when modifying individual sections of DNA cannot be translated into precise modifications of an organism's characteristics, or indeed into reliable prognoses of the consequences in nature. Any reference to (novel) genetic engineering processes as "precise" is misleading in this regard (Shah *et al*., 2021).

Moreover, the genetic diversity of wild organisms is greater than in populations bred for uniformity and intended to be used in research and agriculture, and the different genotypes in wild organisms are often unknown. This compounds the problem of how difficult it is to predict the effects of the intended and unintended genetic changes on the complex metabolism of organisms, on their characteristics and on their interactions. The interactions of physiological and ecological mechanisms are multifaceted and

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

interlinked, and this is also true for the affected natural and near-natural ecosystems. At the same time, predicting the impacts of genetic engineering interventions becomes even more uncertain with larger geographic areas and longer time spans.

The effects of wild GMOs can therefore not be predicted either in the short or long term. It remains difficult to assess whether the goals pursued with genetic modification can even be achieved, and the possibility of carrying out robust environmental impact assessment and monitoring consistent with the precautionary principle is slim. However, requirements for environmental impact assessment and monitoring must be satisfied under many legislations, including under current German and European legislation for the authorisation of GMOs.

Regulatory and normative aspects

In the EU, national GMO regulations based on stipulations of European law render mandatory an assessment of risks for humans and for the environment prior to the release of GMOs. Such an assessment must be carried out specifically for each GMO. Amongst other things, the gene constructs being used and the characteristics of the GMO are assessed, taking the specific environmental conditions into consideration. The GMOs are analysed in a step-by-step approach: laboratory/greenhouse — experimental releases in the open field — market approval. Such environmental risk assessment and subsequent monitoring are tools implementing the precautionary principle, and are intended to prevent and avert damage to nature and to the environment. This is also the goal of agreements at the international level, under the Cartagena Protocol on Biosafety (CPB) of the CBD.

Some types of GMOs produced with new genetic techniques such as genome editing are in a number of countries deregulated (and thus neither risk assessed or monitored), and could in other countries (including in the EU) be deregulated in ongoing processes (Bohle *et al*., 2024). This brings up new challenges for risk assessment and could lead to deregulation of wild GMOs, too (Reichenbecher *et al*., 2024).

Some GMOs — for example, mosquitoes — have in recent years been released outside agro-ecosystems on a trial basis, and further releases are expected. This also gives rise to new legal issues in the international context: How can GMOs released into the wild, especially those designed to spread (like gene drive GMO or self-spreading GM vaccines), be prevented from spreading over national borders? Article 17 of the CBD's Cartagena Protocol on Biosafety (CPB) only provides for notification and information obligations in the event of *unintentional* transboundary movements of GMOs (SCBD, 2000). In order to ensure an adequate level of protection (cf. Article 1 CPB), there would, however, be a need to create participation opportunities in the run-up to such a release where this involves the long-term, uncontrolled spread of GMOs (as particularly intended with gene drives), as well as to establish effective protective measures in order to prevent them impacting foreign territories.

Is it, in principle, legitimate to target wild organisms for genetic modification? Along with prudential arguments of protecting nature's intrinsic dynamic processes in humanity's own interest, biodiversity is understood to be a result of natural evolution, and at the same time as a value in its own right. This emerges from organisms' intrinsic value, in their networks with the ecological systems (Potthast, 1999). The different ethical justifications for nature conservation –nature's intrinsic value as well as instrumental value – form the foundation for different but frequently complementary understandings of nature conservation and protection strategies (Eser and Potthast, 1999). Therefore, the value of nature's unique character, of natural environments in their pristine and evolving state and of the independent future dynamic development of natural processes impose boundaries on the degree to which humans can design nature. In this sense, designed nature cannot easily be conceived of as protected nature. If permanent,

Franck Meijboom and Patrick Baron (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

far-reaching and inheritable genetic modifications of wild organisms become a reality and are accepted as legitimate instruments of nature conservation, the idea of protecting nature turns into the idea of re-designing nature. This would break with traditional understandings of nature, with higher-level protected goods, and with nature conservation objectives and practices.

In Germany, there are also fundamental reservations regarding the compatibility of the use of genetic engineering on wild animals and plants with the statutory understanding of nature conservation defined in section 1 subsection (1) of the German Federal Nature Conservation Act. The reason is that genetically engineering wild animals and plants may compromise the legally defined conservation objective, what action may be taken and the ground for protection, and protection objectives established in nature conservation.

International policy on GMOs intended to persist and/or spread in nature

Many government agencies and public authorities in the remits of nature conservation and environmental protection, as well as conservation, environmental and science organisations (e.g., the European Network of Scientists for Social and Environmental Responsibility, ENSSER) take a strong interest in the fact that research is being conducted on GMOs that are intended to persist and/or spread in nature (Dolezel *et al*., 2019). We have previously argued that such applications hold substantial risk of harming biodiversity, conflict with fundamental values of nature conservation, and pose significant legal challenges (BfN, 2022).

At the same time, some research communities and associated stakeholders take a strong interest in developing GMOs for use in the wild and for generating acceptance for the release of GMOs into the environment (Rabitz, 2024). Thus, to pre-empt moratoria and regulation that could impose strict risk assessment, soft governance and self-regulation have been repeatedly put forward (for an analysis of this legitimisation strategy, see Boersma *et al*. (2023)). In addition, application scenarios have specifically been forwarded for fields that have positive moral connotations, such as combatting tropic diseases and protecting endangered species, as opposed to agricultural biotechnology. At the level of the CBD, a hypothetical benefit of wild GMOs for species conservation has repeatedly been brought forward in the negotiations as an argument against Synthetic Biology assessment and regulation, stirring considerable controversy.

With the ongoing joint global climate, biodiversity and food crises, a view of humans as able, (morally) permitted or even obliged to more actively design and interfere in nature has become a (contested) legitimisation for such research agendas. However, it is not productive or meaningful to genetically modify wild organisms solely based on the assumption of potential benefits and with uncertainty about possible harm. The urgency of combating the global crises is not a reason to abandon the precautionary principle. Rather, on the contrary, the crises justify the more determined implementation of the precautionary principle and of measures to prevent the further global warming and the overuse and contamination of nature, to render food production more resilient, and to distribute resources more justly. Measures known to be effective should not be side-lined by technical solutions carrying risks and uncertain benefits – the focus needs to be on how human activities can be less destructive for nature.

References

Boersma, K., Bovenkerk, B. and Ludwig, D. (2023). Gene drives as interventions into nature: The coproduction of ontology and morality in the gene drive debate. Nanoethics, 17, 1–25.

Bohle, F., Schneider, R., Mundorf, J., Zühl, L., Simon, S. and Engelhard M. (2024). Where does the EU-Path on new genomic techniques lead us? Frontiers in Genome Editing, 6, 1377117.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Comité Francais de l'UICN (2021). L'avenir du vivant, nos valeurs pour l'action. Comité Francais de l'UICN, Paris.
CSS, ENSSER, VDW (2019). Gene drives. A report on their science, applications, social aspects, ethics and regulations. Critical Scientists Switzerland (CSS), European Network of Scientists for Social and Environmental Responsibility (ENSSER), Vereinigung Deutscher Wissenschaftler (VDW). Available online at https://genedrives.ch/report (accessed 31 May 2024).
CBD/COP (2016). Decision adopted by the Conference of the Parties to the Convention on Biological Diversity. XIII/17. Synthetic Biology. CBD/COP/DEC/XIII/17, Montreal, QC.
Defarge, N., Otto, M. and Hilbeck, A. (2023). A Roundup herbicide causes high mortality and impairs development of *Chrysoperla carnea* (Stephens) (Neuroptera: Chrysopidae). The Science of The Total Environment, 865, 161158.
Dolezel, M., Simon, S., Otto, M., Engelhard, M. and Züghard W. (2019). Gene drive organisms — Implications for the environment and nature conservation. EPA/ENCA IG-GMO, Vienna.
Eckerstorfer, M., Dolezel, M., Miklau, M., Greiter, A., Heissenberger, A. and Engelhard, M. (2024). Scanning the horizon for environmental applications of genetically modified viruses reveals challenges for their environmental risk assessment. International Journal of Molecular Sciences, 25(3), 1507.
Engelhard, M. (ed.) (2016). Synthetic biology analysed. Springer, Cham.
EPA/ENCA IG-GMO (2023). Definition of genome editing and relevant terminology. A technical report of the joint EPA/ENCA IG-GMO, Bern.
Eser, U. and Potthast, T. (1999). Naturschutzethik. Nomos, Baden-Baden.
Evans, B.R., Kotsakiozi, P., Costa-da-Silva, A.L., Ioshino, R.S., Garziera, L. and Pedrosa, M. (2019). Transgenic *Aedes aegypti* mosquitoes transfer genes into a natural population. Scientific Reports, 9, 13047.
Federal Agency for Nature Conservation (BfN) (2022). Genetic engineering, nature conservation and biological diversity: The boundaries of design. Viewpoint. BfN, Bonn.
Lanigan, T.M., Kopera, H.C. and Saunders, T.L. (2020). Principles of genetic engineering. Genes, 11, 291.
Mendelsohn, M.L., Gathmann, A., Kardassi, D., Sachana, M., Hopwood, E.M., Dietz-Pfeilstetter, A., Michelsen-Correa, S., Fletcher, S.J. and Székács, A. (2020). Summary of discussions from the 2019 OECD Conference on RNAi based pesticides. Frontiers in Plant Science, 11, 740.
Miklau, M., Burn, S.J., Eckerstorfer, M., Dolezel, M., Greiter, A., Heissenberger, A., Hörtenhuber, S., Zollitsch, W. and Hagen, K. (2024). Horizon scanning of potential environmental applications of terrestrial animals, fish, algae and microorganisms produced by genetic modfication, including the use of new genomic techniques. Frontiers in Genome Editing, 6, 1376927.
Pohl, M., Hommen, U., Eilebrecht, S., Schäfers, C., Gadau, J. and Otto, M. (2024) Ants are no bees — Gaps in the assessment of relevant exposure routes to pesticides and plant incorporated protectants. Environmental Chemistry and Ecotoxicology. 6. 71–80.
Potthast, T. (1999). Die Evolution und der Naturschutz. Zum Verhältnis von Evolutionsbiologie, Ökologie und Naturethik. Campus, Frankfurt am Main.
Rabitz, F. (2024). The emerging politics of genetic biocontrol. Environment: Science and Policy for Sustainable Development, 66(2), 19–28.
Redford, K.H., Brooks, T.M., Macfarlane, N.B. and Adams, J.S. (2019). Genetic frontiers for conservation. Technical assessment. IUCN, Gland.
Reichenbecher, W., Simon, S., Zühl, L., Schneider, R., Mundorf, J., Hagen, K., Engelhard, M., Stracke, K. and Hendrischke, O. (2024). For a science-based regulation of plants from new genetic techniques. Federal Agency for Nature Conservation, Bonn.
Sauter, A., Albrecht, S., van Doren, D., König, H., Reiß, T., Trojok, R., Elsbach, S. (2015). Synthetische Biologie — Die nächste Stufe der Bio- und Gentechnologie. TAB, Berlin.
SCBD (2000). Cartagena Protocol on Biosafety to the Convention on Biological Diversity: text and annexes. Secretariat of the Convention on Biological Diversity, Montreal, QC.
SCBD (2024). Synthetic biology. Note by the Secretariat. CBD/SBSTTA/26/4. Secretariat of the Convention on Biological Diversity, Montreal, QC.

Franck Meijboom and Patrick Bijma | ISBN 9004-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Schütte, G., Eckerstorfer, M., Rastelli, V., Reichenbecher, W., Restrepo-Vassalli, S., Ruohonen-Lehto, M., Saucy, A.G.W. and Mertens, M. (2017). Herbicide resistance and biodiversity. Agronomic and environmental aspects of genetically modified herbicide-resistant plants. Environmental Sciences Europe, 29, 5.

Shah, E., Ludwig, D. and Macnaghten, P. (2021). The complexity of the gene and the precision of CRISPR. Elementa: Science of the Anthropocene, 9, e8.

Simon, S., Otto, M. and Engelhard, M. (2018). Synthetic gene drive: between continuity and novelty. EMBO Reports, 5, e45760.

Yin, Y., Wang, C., Xiao, D., Liang, Y. and Wang, Y. (2021) Advances and perspectives of transgenic technology and biotechnological application in forest trees. Frontiers in Plant Science, 12. 786328.

Zangerl, A.R., McKenna, D., Wraight, C.L. and Berenbaum, M.R. (2001) Effects of exposure to the event 176 Bacillus thuringiensis corn pollen on monarch and black swallowtail caterpillars under field conditions. Proceedings of the National Academies of Science USA. 98, 11908–11912.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Rewilding – Does changing nature require changing humans' (view of) nature?

C. Gamborg[1] and P. Sandøe[1,2]
[1] University of Copenhagen, Department of Food and Resource Economics, Rolighedsvej 23, DK-1958 Frederiksberg C, Denmark; [2] University of Copenhagen, Department of Veterinary and Animal Sciences, Grønnegårdsvej 8, DK-1870 Frederiksberg C, Denmark

Abstract

In many regions and countries, nature is under increasing pressure, but efforts are made to reduce the loss of biodiversity and to help nature recover in the future. There are different ways of doing this, and different views on which aspects of nature are important to safeguard. One promising avenue advocated by conservation biologists is rewilding aiming at promoting natural processes and biodiversity, while over time reducing human influence on the land. Rewilding affects nature, including the animals and plants that already live in the wild, as well as animals that might be released into natural areas to enable some of the sought after processes. But it also affects humans by challenging prevalent views of nature. It raises questions such as whether new nature developing is wild, and whether this matters; and whether it is acceptable if translocated domesticated animals, like many wild animals, will endure periods of hardship. Answering these questions is difficult since key concepts such as nature and animal welfare are contested and there is no common vision of what counts as proper nature management and nature protection. Therefore, there is a need for a more principled ethical discussion. The paper uses the IPBES framework of intrinsic value (nature for nature's sake), instrumental values (nature for society) and relational values (nature as culture) to examine the practice of rewilding, using a Danish case potentially covering a significant part of state owned nature areas with public access. Emphasis on different types of value may give different views on what rewilding should deliver, and what is acceptable. Notably, there is bound to be controversy about i) balancing of values, e.g. whether animal welfare should trump consideration of nature values, or the extent to which consideration of nature values should always be assigned higher weight than consideration of human quality of life, ii) what trade-offs/compromises are seen as acceptable, and iii) whether views of nature will change over time.

Keywords: animal welfare, conflicts, ecological restoration, relational values

Rewilding as an ethical issue

It is widely agreed that biodiversity globally is in decline. One of the ways in which this development may be changed for the better in the direction of more diverse self-managing ecosystems is through so-called rewilding. Rewilding can be seen as larger-scale ecological restoration in response to biodiversity loss and the climate crisis, and although definitions and interpretations abound, the most commonly cited aim of rewilding in the literature relates to the restoration of functioning ecosystems and their natural disturbance regimes (Carver *et al*., 2021). In its current forms, rewilding spans a number of approaches on a continuum ranging from re-creating 'true' wilderness areas, at one end, to such activities as translocation rewilding and wildlife-friendly farming, at the other end (Gordon *et al*., 2021). Moreover, reflecting the lack of maturity of the concept, rewilding has been suggested to be recognized more as an experiment rather than a validated conservation approach. Hence, rewilding has been described on the one hand as a game changer and paradigmatic shift and on the other hand as the new Pandora's box in conservation, i.e. a process that once begun generates many problems (Nogués-Bravo *et al*., 2016).

EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_62, © Brill | Wageningen Academic 2024
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

As rewilding becomes increasingly used, it also seems to become more controversial among stakeholders and the wider public. Rewilding affects existing nature, including wild animals, as well as animals that may be released into rewilding areas. There may also be impacts on humans. This can be quite concrete, for example in relation to being able to have new and different nature experiences or the rerouting of a path due to fences being put up. Furthermore, rewilding can help to challenge views of e.g., nature and animal welfare when natural areas change character: Is it bad or good for the animals to be in rewilding areas, and if so, how should they be treated? Do cows behind fences belong in a forest? Is the nature that emerges "real" and "wild", and does it matter? To the extent that rewilding is ethically contentious, it may be asked whether the practice of rewilding should be changed to fit human needs or preferences, or whether humans' view of nature should change? A problem is that there is no clear consensus on the definition and weight of values such as nature and animal welfare, and thus to what may be considered the "right" nature management and nature protection. Consequently, there is a need for a more principled ethical discussion.

The value of nature and its elements — in theory

There are different popular "views" of nature, that is, ideas about what is "real" nature, how it should look, and how humans should relate to and act in relation to it. These views are more or less conscious, and can rarely be directly revealed or measured, but can in a certain sense be deduced from the choices made. A person's view of nature can change over time and be different in relation to the concrete context. In this way, the view of nature can be compared with views of animals, where some animals may be perceived as "pests" and treated accordingly, while other animals are perceived as companion animals and treated as such. Whether or not animals are seen as pests, may be linked to the way nature is valued.

The way the natural environment is valued plays a key role in how the natural environment is managed and used. Valuations provide an insight into what people are interested in, and why, and, moreover, what is relevant from an ethical perspective. Often, there are multiple values at stake, and different stakeholders – including professionals and decision makers – relate to and value (or disvalue) nature in different ways. There are multiple frameworks and ways to define such values, and obviously, there are many ethical theories which give directions about how to act on these values. In this paper, we will confine ourselves to looking at different types of value and how different ways of prioritizing them (without explicit references to any specific ethical theories) may give some insight into how discussions of rewilding initiatives may play out between conservation professionals, interest groups and the wider public.

We will use a well-known, classical division of values into instrumental and intrinsic values, supplemented by a third category, relational values. The latter category has been contested by some as being unnecessary or misleading (Baard, 2019), while others want to elevate relational values to the only category of values, arguing that intrinsic and instrumental values define a kind of relationship between the valued and the valuers, thus discarding instrumental and intrinsic values (Norton & Sandberg, 2021). However, as Deplazes-Zemp (2023) argues, conflating three categories of values into one might blur or make it more difficult to see why, where and how value disagreements and conflicts happen. We do see overlaps between relational value and intrinsic and instrumental values, but nonetheless in the following we will use the three categories. All three value categories have gained traction within environmental ethics (Piccolo *et al*., 2022), and lately also in economics and other disciplines working with biodiversity protection and protected area management (Pascual *et al*., 2017).

The three categories can be defined in different ways. Here, we will define intrinsic value as the value of a natural entity (or nature itself), independent of any usefulness to humans. So, put simply, intrinsic value refers to something that matters irrespective of any further use values. This idea of nature's intrinsic

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

value features very prominently within conservation biology, where value is ascribed to wild nature as whole or specific entities such as wild animals. In contrast, instrumental value can be seen as value derived from the human use of nature. Thus, nature is valuable because of its usefulness as a means to certain ends (e.g. production of goods or well-being of beings with intrinsic values, such as humans). Valuing natural entities such as forests instrumentally means that they are valued as resources, in a consumptive or non-consumptive way. The third category of value, relational value, is the value of nature in terms of desirable, meaningful, and often reciprocal human relationships with nature. Relational values can be seen as being constituent to living a good life, with care for nature and specific entities or landscapes, taking into account sense of place, and nature as a point of connection among people.

Broadly speaking, all three value categories can be linked to different ethical worldviews. An intrinsic valuation of nature and its elements (plants, animals etc.) is closely associated with an ecocentric or nature centred worldview. An instrumental valuation of nature and its elements, that is, entirely based on their value for humans, seems to imply an anthropocentric or human-centred worldview. Finally, a relational valuation of nature can be linked to a pluricentric worldview that focuses on interwoven and reciprocal relationships between humans and other beings, as well as nature's elements and processes, emphasising interdependence among all beings and questioning a strict separation of humans and nature (Goodson *et al*., 2024). Over time, there has been a change in the prominence of these values in nature conservation (Mace, 2014). Several decades ago, nature was primarily protected for the sake of humans, later the purpose changed to be about securing humans *and* nature, and now rewilding can perhaps increasingly be seen as an expression of humans preserving nature for nature's own sake?

To put the concepts to work, we use a Danish case of rewilding where the aim is to settle larger herbivores, including horses, cattle, elk, deer, and bisons, in state-owned fenced-off nature areas (so-called national nature parks) that have been and will continue to be accessible to the public. This can be seen as an example of 'rewilding lite', which means reinstating a more "natural" form of herbivory (domestic grazers and browsers), while still retaining the option for management interventions and the possibility of public access, cf. Gordon *et al*. (2021). The initiative has sparked an intense stakeholder-driven debate about means and ends. To see where the public stands on some of the controversial issues, a nationally representative survey (n=10,303) of the general public's views and underlying values was conducted (for details see Jensen *et al*., 2022).

The value of nature and its elements — in practice

In order to give a reference, we asked in what ways nature is important to people (not reported here), and which of these ways was most important. The responses can be understood to reflect, indirectly, how nature is valued (Table 1). Obviously, different values may underlie the same responses, but here is a likely interpretation, based on a simple coding of the underlying values according to the definitions of these values above. In line with viewing nature as intrinsically valuable, as in conservation biology, the significantly largest group of respondents (35.7%) ranked habitat provision as the most important aspect of nature, followed by two aspects which indicated more of an instrumental evaluation of nature in general (counteracting climate change and providing options for outdoor recreational activities). We also saw two examples of reasonably ranked relational values (to some extent mixed up with instrumental values relating to ensuring personal health and well-being); that of getting opportunities to sense nature and to gain better physical and mental health.

Franck Meijboom and Dominic Reisch, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Table 1. Most important about Danish nature and the corresponding type of value of nature (n=10 303).

Statement (values: INTRinsic, INSTRumental, RELational)	**%**
Nature provides habitats for wildlife, plants and other organisms (INTR)	35.7
Nature can help counteract climate change (INTR/INSTR)	18.2
Nature gives me the opportunity to practise my outdoor activities, e.g. walking, looking at animals and plants and the like (INSTR)	13.6
Nature gives me the opportunity to enjoy the landscape, views, sounds, smells and the like (REL/INSTR)	12.2
Nature makes me feel better both physically and mentally (REL/INSTR)	8.8
Nature gives me the opportunity to exercise, e.g. running, riding a mountain bike and the like (INSTR)	4.0
Nature provides materials and products that are beneficial to us humans, e.g. gravel and timber (INSTR)	3.4
Nature gives me the opportunity to establish or strengthen social ties with family, friends etc. (INSTR)	2.5
None of these	1.6

Based on Jensen et al. (2022).

When it came to specific translocation rewilding areas (Table 2), different aspects were seen as more important than others.

What seemed most important were aspects that (again) indicated intrinsic values, more or less at the same level of importance: wildness, diversity and welfare of the introduced animals. The latter aspect can also be seen as an example of relational value (care, responsibility and maybe interdependence). Markedly, instrumental values linked to the aesthetic appearance, and a sense of place, perhaps, (not looking like 'zoos') and outdoor recreation were ranked lowest. These results could indicate that nature was highly valued for nature's sake. But it could also be seen as an expression that ideas about Danish nature can be an important part of a national or even personal identity, and as such expressions of a relational value of nature.

Not surprisingly, we saw that nature in general and the intentional change of areas into rewilding areas were valued in multiple ways, although the intrinsic value seemed to take precedence, in particular in

Table 2. Most important about translocation rewilding (national nature parks). "Regardless of your attitude to national nature parks we would like to know what you think is most important in relation to the national nature parks. Below are shown 7 statements which you should place in order 'most important' (top) to 'least important' (bottom)" (n=10 303).

Statement (values: INTRinsic, INSTRumental, RELational)	**Average ranking**
"That nature is allowed to develop wildly (in the national nature parks)" (INTR)	3.0
"That the national nature parks help to create a more diverse nature" (INTR)	3.2
"That the grazing animals in the national nature parks thrive and are healthy and well" (INTR/REL)	3.2
"That the national nature parks will provide good nature experiences" (INSTR/(REL))	4.1
"That it is safe to walk (in the national nature parks)" (INSTR)	4.5
"That the nature national parks will not look like 'zoos'" (REL)	4.8
"That outdoor activities can continue unhindered (in the national nature parks)" (INSTR)	5.3

1= most important, 7 = least important. Based on Jensen *et al*. (2022).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

dedicated protected areas. And, as such, there might not be a need for changing the view(s) of nature when nature changes if we are to follow the views of the general public – which in this case seemed to accept changes to nature imposed by a form of rewilding and to accept the primacy (to a certain extent) of intrinsic values of nature over instrumental and relational values – as opposed to some vocal stakeholders, notably rather active types of outdoor recreational use groups, such as horseback riders and hunters, who prioritized that outdoor activities could continue unhindered and who emphasize instrumental values of nature areas. Nevertheless, in practice, when the rewilding areas are managed, complicated trade-offs will inevitably occur: Should consideration of animal welfare trump consideration of natural values, or should consideration of natural values always be weighted higher than consideration of human quality of life (Table 3)?

Although survey participants were not directly presented with these trade-offs arising from translocation rewilding, the answers from Table 2 might give a hint as to how the public would look upon these trade-offs. What seems to be clear, is that most respondents seem to buy into the idea that in rewilding areas of the kinds here considered, human interests do not have primacy. Yet, when we look at the two aspects ranked as most important, this might suggest that nature should have primacy not only over humans but also over the introduced animals. However, the third aspect with a focus on animal welfare (Table 2) is ranked as important as diversity, so it does not automatically follow that it is acceptable if e.g. the introduced animals starve or go untreated with illnesses. . However, a complication is that this result could be explained from an intrinsic value perspective ("the animals matter in their own right"); with reference to instrumental values ("if animals are thriving they'll do a good nature management job") as well as from a relational values angle ("humans have responsibility for caring for these animals"). Therefore more work is needed to determine what kind of compromises would be in line with a majority view and the involved values. Probably, context would matter, especially if the animals used are domesticated, depending on whether the introduced animals are seen as wild animals or as kept animals (Palmer *et al*., 2024).

Table 3. Potential trade-offs in translocation rewilding depending on what aspect/entity is considered most important

	Nature	**Animals**	**Humans**
Nature's primacy over…		Ex. It is acceptable if introduced animals starve, get diseases, are hurt, or die if it benefits the nature development	Ex. It is acceptable if access, ease of access, use of area is reduced, or taken away
Animals' primacy over…	Ex. It is not acceptable to do rewilding in a way that lead to introduced animals starving, getting diseases, getting hurt, or dying — even if it benefits the nature development		Ex. It is acceptable to use animals that might limit human travel in the area, 'deter' certain users from coming, instil a sense of unsafety, or cause an 'negative' aesthetic appearance
Humans' primacy over…	Ex. It is not acceptable to limit access or exclude certain users from nature, e.g. by fencing in nature areas	Ex. It is not acceptable to introduce animals which can disturb outdoor recreational activities, cause fear which might lead to stop visiting a nature area	

Franck Meijboom and Patrick Bijsmans | 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Challenges to rewilding

A major challenge to rewilding seems to be to be able to find a proper balance between the development of nature in the relevant areas and the well-being of the introduced animals. This was one of the main causes of public controversy in the, by now, infamous Dutch rewilding project in Oostvaardersplassen, where cattle and horses were set out to fend for themselves in a 5,000 hectare fenced nature area (Gamborg *et al*., 2010). Over 3,000 animals starved to death during a harsh winter. After stakeholder and public protests, the management authority chose to compromise with the defined natural values, so that the animals could now be fed – leading to further challenges with more animals born and hence more animals to translocate or cull as part of the nature management regime.

Knowledge of views and values of nature and especially those of the public can help to say something about what is needed in order for such areas to be ethically accepted in a wider societal sense. It can also be used to anticipate the scope and content of any conflicts and thus pave the way for better conflict prevention and handling. In connection with rewilding as a form of ecological restoration, there can be different types of adjustment (Gamborg *et al*., 2019): Management can be sought to be adjusted according to the public's view of nature and rewilding — as happened in the Dutch example — or work can be done to change the public view of nature and its management. The first form of adjustment has the challenge that it could well end in a race for the "voice of the people", and perhaps even that "the one who shouts the loudest will be right" — which was what seemed to happen in the Dutch case with a rather small, but very insistent, group of farmers, hunters and horseback riders getting their way. The second type of adjustment is difficult, as changes in norms and values only happen very slowly. Therefore, not only nature needs time to change, humans also need time to adjust — if they change at all.

References

Baard, P. (2019). The goodness of means: Instrumental and relational values, causation, and environmental policies. Journal of Agricultural & Environmental Ethics, 32(1), 183–199.

Carver, S., Convery, I., Hawkins, S., Beyers, R., Eagle, A., Kun, Z. ... and Soulé, M. (2021). Guiding principles for rewilding. Conservation Biology, 35(6), 1882–1893.

Gamborg, C., Christiansen, S.B., Gremmen, B. and Sandøe, P. (2010). De-domestication: ethics at the intersection of landscape restoration and animal welfare. Environmental Values, 19(1), 57–78.

Gamborg, C., Morsing, J. and Raulund-Rasmussen (2019). Adjustive ecological restoration through stakeholder involvement. A case of riparian landscape restoration on privately owned land with public access. Restoration Ecology, 27(5), 1073–1083.

Goodson, D.J., van Riper, C.J., Andrade, R., Stewart, W., Cebrián-Piqueras, M.A. and Raymond, C.M. (2024). Broad values as the basis for understanding deliberation about protected area management. Sustainability Science, 19, 449–467.

Gordon, I.J., Pérez-Barbería, F.J. and Manning, A.D. (2021). Rewilding lite: Using traditional domestic livestock to achieve rewilding outcomes. Sustainability, 13(6), 3347.

Jensen, F.S., Gamborg, C. and Sandøe, P. (2022). Befolkningens syn på naturnationalparker – Resultater fra en national spørgeskemaundersøgelse. IGN Rapport, Københavns Universitet, Copenhagen.

Mace, G.M. (2014). Whose conservation?. Science, 345(6204), 1558–1560.

Nogués-Bravo, D., Simberloff, D., Rahbek, C. and Sanders, N.J. (2016). Rewilding is the new Pandora's box in conservation. Current Biology, 26(3), R87–R91.

Norton, B. and Sanberg, D. (2021). Relational values: A unifying idea in environmental ethics and evaluation? Environmental Values, 30(6), 695–714.

Palmer, C., Gamborg, C. and Sandøe, P. (2024). Horses for Courses? How rewilding projects might challenge the ways we care for animals. Oxford Public Philosophy Turn Four. Available online at https://www.oxfordpublicphilosophy.com/environment/hs

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Pascual, U., Balvanera, P., Díaz, S., Pataki, G., Roth, E., Stenseke, M. ... and Yagi, N. (2017). Valuing nature's contributions to people: the IPBES approach. Current Opinion in Environmental Sustainability, 26, 7-16.

Piccolo, J. J., Taylor, B., Washington, H., Kopnina, H., Gray, J., Alberro, H. and Orlikowska, E. (2022). "Nature's contributions to people" and peoples' moral obligations to nature. Biological Conservation, 270, 109572.

Franck Meijboom and Patrick Baert, Book, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Reevaluating feral cat management strategies in Australia

*L. Vermeulen**
Wageningen University and Research, Hollandseweg 1, 6706 KN Wageningen, The Netherlands
**E-Mail: lowieke.vermeulen@wur.nl*

Abstract

The introduction of feral cats to Australia by European settlers has led to significant ecological challenges, impacting native wildlife and contributing to the extinction of numerous species. Through qualitative research methods, including interviews and ethnographic studies, this study explores the contentious ethical debates surrounding feral cat management, juxtaposing traditional conservation approaches with the emerging compassionate conservation approach. Compassionate conservationists advocate for methods that (1) minimize harm to animals, (2) treat all animals equally, (3) prioritize the welfare of individual animals, and (4) promote co-existence. These tenets are meant as an alternative to the collectivist, nativist, and instrumentalist tendencies that compassionate conservationists identify in traditional conservation approaches. The paper analyses the divide between the collectivist and nativist orientations of traditional conservation, which often justify lethal interventions, and the individualist, harm-averse stance of compassionate conservation. However, it also highlights areas of potential overlap, such as a shared recognition of intrinsic values of nature, critical reflection on current practices, and preference for non-lethal management strategies when feasible. Noting many conservationists' concern for individual animal welfare, albeit with differing understandings and priorities, this study challenges the binary opposition between traditional and compassionate conservationists.

Keywords: animal welfare, biodiversity, compassion, conservation values, environmental ethics

Introduction

The introduction of cats to Australia by European colonizers between 1824 and 1886, initially for companionship and rodent control, inadvertently led to the establishment of widespread feral cat populations (Burrows, 2018). The presence of these feral cats has had a significant impact on Australia's native wildlife, particularly affecting small to medium-sized mammals. It is estimated that feral cats have played a role in the extinction of approximately 25 native mammal species, primarily through direct predation (Woinarski *et al*., 2019).

The ecological impact of feral and domestic cats is causing a complex ethical problem, that relates to the much-debated issue of weighing welfare and rights of individual animals against the overarching objectives of biodiversity conservation. The dominant approach in conservation biology prioritizes diversity, ecological complexity, evolution, and the intrinsic value of biotic diversity (Soulé, 1985). Consequently, conservation has predominantly concentrated on endemism, phylogenetic uniqueness, and the overall health of ecosystems and species populations (Vane-Wright *et al*., 1991). In this context, many conservationists argue for the necessity of lethal measures to safeguard native species and preserve ecological integrity (Fleming and Ballard, 2019).

This approach is now being questioned by compassionate conservation, which advocates for recognition of the intrinsic value and the protection of animals as individuals rather than mere representatives of their species (Ramp and Bekoff; 2015; Wallach *et al*., 2018). Lethal strategies in conservation have faced criticism on multiple fronts, and the principles of compassionate conservation have further intensified the ongoing ethical debate regarding the harm or killing of certain animals for the benefit

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

of others. This debate leads to a tension that seems unlikely to result in productive collaboration, and underscores the critical need for research that not only explores these diverging perspectives but identifies potential common ground for viable solutions. This is important since the critique from compassionate conservationists resonates with a wide audience, especially in light of the growing recognition of animal sentience and sapience, emphasizing concerns about animal welfare.

This research aims to unravel the underlying assumptions and values of individuals engaged in current feral cat management to identify the roots of disagreement with compassionate conservation. It then evaluates the validity, legitimacy, and feasibility of critiques against current conservation methods and the alternatives suggested by compassionate conservation, providing insight into whether and how principles of compassionate conservation can be reconciled with conservation practices. The methodology, outlined in the following section, encompasses interviews and ethnographic studies. In subsequent sections, current management strategies for feral cats in Australia and the alternative perspective offered by compassionate conservation are explored, followed by the presentation of the results of the empirical research and preliminary conclusions.

Methodology

This study adopts a comprehensive qualitative approach to investigate feral cat management in Australia, integrating a literature review, semi-structured interviews, and ethnographic observations. From February to May 2023, 19 interviews were conducted with a varied group of practitioners and researchers in Australia, including wildlife biologists, ecologists, and government officials, to gather diverse perspectives on feral cat management practices and their ethical, ecological, and societal impacts. Purposive sampling was used to ensure a breadth of insights, continuing until thematic saturation was achieved. Further depth was added through an ethnographic approach volunteering with Bush Heritage Australia, visits to field sites and participation in (local) meetings. The selection of researchers, practitioners, and volunteers focused on individuals actively involved in or with experience in feral cat management, to ensure a representation of current management practices. Their perspectives will be examined through the lens of compassionate conservation's criticisms and principles, to reconsider current approaches and explore proposed alternatives.

Current management strategies

The control of feral cats in Australia employs various methods such as (indigenous) hunting, shooting, trapping, and poison baits to mitigate their impact on native species and ecosystems (Johnston and Algar, 2020). Hunting, shooting, and trapping are effective on a small scale, but their impact diminishes over larger areas due to cats' elusive nature and extensive ranges (Fisher *et al*., 2015). Poison baiting (1080 and PAPP) presents a more economical option for large-scale control (Algar and Burrows, 2004). Bait types are tailored to regional ecosystems, for example by utilizing Eradicat (1080) to target feral cats while minimizing risks to non-target species, particularly in southwestern Australia where native fauna have developed a tolerance to such toxins (Woinarski *et al*., 2019). Despite their effectiveness, baits require strategic placement and continuous application due to cats' preference for live prey and environmental factors that may reduce bait attractiveness (Algar and Burrows, 2004; Fisher *et al*., 2015). Fenced sanctuaries offer a solution for protecting some vulnerable native species, though they come with high costs and maintenance demands and restrict the movement of artificially fragmented populations (Hayward *et al*., 2014). Additionally, fenced areas and islands may cause issues such as overabundance issues, lack of genetic diversity, and possible long-term effects such as a further decrease in predator awareness and avoidance behaviors (Woinarski *et al*., 2019). Non-lethal alternatives, such as habitat management, offer low-cost, welfare-friendly options but may not significantly impact species highly susceptible to cat predation (Woinarski *et al*., 2019).

Franck Meijboom and Patricia Brey (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Compassionate conservation

Compassionate conservation challenges the core orientations of traditional conservation practices as identified by Wallach *et al*. (2018): instrumentalism, collectivism, and nativism. Instead, they advocate for methods that 1. do no harm, 2. prioritize the welfare of individual animals, 3. treat all animals equally, and 4. promote peaceful coexistence (Ramp and Bekoff, 2015; Wallach *et al*., 2018). Central to compassionate conservation is the commitment to minimize harm to animals (Wallach *et al*., 2018). Proponents advocate against the intentional or indiscriminate killing of sentient beings to minimize this harm (Ramp and Bekoff, 2015). Wallach *et al*. (2018) argue doing nothing may, in some cases, be better than risking harm. They also urge the recognition of the intrinsic value of these animals, and reject prioritizing instrumental value for human benefit or conservation (Wallach *et al*., 2018). Additionally, while not rejecting the value of collectives, Wallach *et al*. (2015) argue compassion is inherently directed toward individuals. Killing is often legitimized based on an animal's species, origin, or ecological function. Compassionate conservation posits all animals, regardless of their category, deserve equal consideration (Wallach *et al*., 2018). In the case of introduced species, killing is legitimized based on their origin. This is criticized on the basis that commitment to historical ecosystems is unrealistic and ignores nature's resilience. Compassionate conservation also promotes the principle of peaceful human-wildlife coexistence. Arguing for the least harmful and minimally invasive interventions, it suggests prioritizing changes in human behaviour and land use as initial steps (Lynn *et al*., 2019).

Interviews

Do no harm vs "the ends justify the means"

The interviewees' comments reveal an internal conflict between their respect for animal lives and the ecological necessity of controlling feral cats. One interviewee candidly expressed this internal struggle: "Do I struggle with the fact that we're killing a lot of animals? Yes. Do I think that the ends justify the means? Yes." Multiple interviewees highlighted the personal emotional toll such actions take, stating things like: "I don't like seeing animals suffer. It's horrible" and "It's traumatic to see an animal suffer.". Some participants even expressed admiration for cats, with one interviewee stating: "I love cats. I think they're an incredible species. I think they're fascinating, and I've come to have a deeply felt connection to a lot of these animals". This admiration counters the common misconception that conservationists are antagonistic towards cats. One participant addressed this directly: "I think it's a big barrier for us that people think we just don't like them. Even at the conference where we're secretly telling each other we have a cat at home, and then everyone got excited and showed each other pictures. So we even think that about ourselves, yeah no wonder that the general public thinks we hate cats."

Prioritize the welfare of individual animals vs "everything is interlinked"

The majority of participants stressed the importance of collective values in conservation, moving beyond the direct, human-centric benefits like ecosystem services. Rather, they conveyed respect for nature and collective ecological entities, emphasizing values informed by relational, aesthetic, spiritual, and ecological dimensions. An interviewee expressed a personal connection to the natural environment, lamenting its ongoing degradation: "I've got a really strong connection to our environment and to our wildlife and I see things just being reduced and reduced and reduced, you know, knocked out by a thousand cuts." Another participant underscored the spiritual significance of nature in contemporary society, stating, "Particularly now, getting on and understanding the value of spirituality in a world where religion is increasingly failing. I see nature as being a logical alternative to helping society have robust values."

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

A focus on wildlife individuals in conservation was critiqued: "You can't only focus on individuals. We know that some individuals are always going to be faring worse and some are going to be fitter, so we tend to focus on the overall level of populations." Another participant pressed the interconnectedness and complexity of natural ecosystems: "Everything's interlinked. You can't save one without saving the whole ecosystem. We have no idea the ramifications of one species going extinct in that certain ecosystem could be the one thing that holds everything together and then it's just going to collapse after that." Multiple participants accused critics of overly focusing on cats. One participant said: "They don't care about the native wildlife, they care about cats because they represent a relationship. It is not only about the cats. They prioritize them above everything else."

Inclusivity vs "protecting what is uniquely Australian"

Almost all interviewees mentioned saving native species and ecosystems as their main, or even sole motivator for their involvement in feral cat management. The uniqueness and irreplaceability of Australia's wildlife were highlighted: "The reality is that Australia has animals that exist nowhere else and will never exist ever again." What is special about Australian ecosystems was poetically described by one respondent: "Australia is heaving with life, but it's very subtle. It's very quiet. It's very old. It doesn't declare itself. It's just there, existing. It's playing the long game because that's what it has always done, and I like that feeling. (...) Coming here, moving here with cats, and just letting them roam just feels rude, almost."

Some participants justified their preference for native species by highlighting species relationships "These amazing mutualistic symbioses that exist in our native ecosystems. Evolutionary drivers that have worked for hundreds of thousands of generations to end up with that intimate relationship. What we see with introduced species, we don't have those relationships." Another participant noted: "Potentially, I think every species is amazing and unique. But I think there is a particular danger when they're in the wrong places because almost without fail, some of those will go on to destroy that ecosystem they are in."

Participants also reflected on our responsibility for the presence of feral cats and the protection of native species, with one stating: "As humans, we're responsible for them... Because we put them here." Another participant argued: "Australia has some really unique wildlife that are found nowhere else in the world that we have a responsibility to protect. We have a choice to make between protecting what is uniquely Australian or not. I don't want to see them lost on my watch." Another participant said: "If these species go extinct, and we were watching it happen, and nobody was doing anything or not enough to save them, that is a huge legacy to leave behind, and we don't have the right to do that." Lastly, some participants argued the presence of cats in Australia is unfair to native species: "I think cats are cool. It's just, you know, native wildlife weren't playing by these rules. They weren't interacting with these wildlife for ages."

Peaceful co-existence vs "it's a trade-off"

Many participants expressed doubts regarding the possible co-existence of native and non-native species and the effectiveness of non-lethal methods: "They want this to work at all costs because it sounds nice, it makes you feel good. And if it means that somebody's not having to kill an animal, it's worth reaching for. I agree with that completely. But it's not based on science, it's based on delusion." Regarding a do-nothing approach, one participant remarked: "You can't pretend that it's all going to get better by itself. It needs to get done. Somebody has to do it.", and another said: "When you choose not to do something, and that is an active choice, there are also implications, and very rarely do we think about that." In this regard, participants discussed the trade-off between the lives of feral cats and wildlife. "I'm sad that cats are going to die. Millions of cats are going to die. But if millions of cats die, then billions of animals don't die. And that's the trade-off."

Franck Meijboom and Patrick Bateson | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

One participant highlighted the potential of habitat modifications, that change the landscape to disadvantage cats and benefit native species, but noted: "It's unlikely that that will be enough." Another participant explained the effectiveness of grazing and fire regimes, as examples of such habitat modifications, depends on the susceptibility of the prey species: "There's a whole bunch of species that just can't co-exist with cats. And it doesn't matter what you burn, doesn't matter what you do, no matter how good you do it, cats will just kill everything." On the question of prioritizing changes in human behaviour, participants reflected: "It doesn't mean that I don't also think that we don't need to, (...) there's a whole suite of things that we need to be doing. But, you know, I'm just one person." Multiple participants argued a narrow focus on cats is flawed, by stating: "I think the way we were polarized is that cats have been destructive in Australia, but the biggest offenders in Australia are us."

A couple of participants questioned the effectiveness of current methods they are or were involved in: "No matter how much cat control I did, the cats would just kill them all.", and "I don't know if I've done a single bit of difference. (...) Unless you're killing more than they're recruiting, it's meaningless." Islands and areas were often mentioned as exceptions: "Islands are fantastic because islands have a plan to how to deal with a re-invasion. (...) If you don't have a plan for that, then you're just killing for killing's sake." Participants mentioned seeing "no real alternative", "reducing the collective intelligence of cats" and "losing options in the future that we now still have" as reasons to continue cat control on the mainland, with some hoping for the development of new techniques. Multiple participants pressed the importance of management that aligns with "clear goals and outcomes", is "routinely monitored" and is done "consistently over time".

Conclusions

This research delves into the complex dynamics between traditional conservation efforts, which prioritize native species and ecosystem health, and the emerging compassionate conservation approach, which values individual animal welfare. The insights from the interviews with conservationists, contrasted against the four principles of compassionate conservation, show a commonality in collectivist and nativist tendencies. Yet, these are not as heavily based on instrumental values as their critics suggest. Participants recognized the value of native animals in conservation efforts, and some emphasis was put on aesthetic, recreational and especially relational aspects of native species and ecosystems. Other instrumental values, such as economic benefits, were rarely mentioned. Despite their primary concern for native species, most participants were mindful of individual animal welfare. However, their understanding of animal welfare and human responsibility diverges from those of compassionate conservationists. Preferring a consequentialist approach, participants evaluated the impact on all involved animals rather than adhering to absolute rights, or the virtues of compassion and care. Many participants also expressed a sense of responsibility for the presence of feral cats in Australia, viewing these cats as an extension of humans, an unnatural presence in the ecosystem. In contrast, compassionate conservationists do not categorize animals based on how they were introduced. These differences reflect deep-seated convictions which, if left unexpressed, can lead to further communication barriers and misunderstandings.

Participants' reflection and criticism of their own practices challenge the notion that they operate with a single-minded focus or lack of compassion. While finding mutual understanding is challenging, there may be possibilities to find common ground in practice. These include a shared commitment to the least harmful methods, along with ensuring that management plans are thoroughly coordinated and monitored to minimize purposeless killing.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

References

Burrows, N.D. (2018). Feral animals in the semi-arid and arid regions of Australia: Origins, impacts, and control. In H. Lambers (ed.) On the ecology of Australia's arid zone. Springer, Cham, pp. 331–373. DOI: 10.1007/978-3-319-93943-8_13

Fisher, P., Algar, D., Murphy, E., Johnston, M. and Eason, C. (2015). How does cat behaviour influence the development and implementation of monitoring techniques and lethal control methods for feral cats? Applied Animal Behaviour Science, 173, 88–96.

Fleming, P.J. and Ballard, G. (2019). Yes, killing is sometimes essential for conservation. Australian Zoologist, 40(1), 5–12.

Hayward, M.W., Moseby, K., and Read, J.L. (2014). The role of predator exclosures in the conservation of Australian fauna. In A.S. Glen and C.R. Dickman (eds) Carnivores of Australia: Past, present and future. CSIRO Publishing, Melbourne, VIC, pp. 355–371.

Johnston, M. and Algar, D. (2020). Glovebox guide for managing feral cats. PestSmart Toolkit publication, The Centre for Invasive Species Solutions, Canberra, ACT.

Lynn, W.S., Santiago-Ávila, F., Lindenmayer, J., Hadidian, J., Wallach, A. and King, B.J. (2019). A moral panic over cats. Conservation Biology, 33, 769–776. DOI: 10.1111/cobi.13346

Ramp, D. and Bekoff, M. (2015). Compassion as a practical and evolved ethic for conservation. BioScience, 65, 323–327. DOI: 10.1093/biosci/biu223

Soulé, M.E. (1985). What is conservation biology? BioScience, 35(11), 727–734. DOI: 10.2307/1310054

Vane-Wright, R.I., Humphries, C.J. and Williams, P.H. (1991). What to protect? — Systematics and the agony of choice. Biological Conservation, 55(3), 235–254.

Wallach, A.D., Bekoff, M., Batavia, C., Nelson, M.P. and Ramp, D. (2018). Summoning compassion to address the challenges of conservation. Conservation Biology, 32(6), 1255–1265. DOI: 10.1111/cobi.13126

Woinarski, J.C.Z., Legge, S.M. and Dickman, C.R. (2019). Cats in Australia: Companion and killer. CSIRO Publishing, Collingwood, VIC.

Franck Meijboom and Patrick Bateson | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Working with nature, but how? Moving beyond agroecology and ecomodernism in pest management

J.J. Glas, B. Bovenkerk and J. van der Stoep*
Philosophy Group, Wageningen University, Hollandseweg 1, 6706 KN, Wageningen, The Netherlands
** Corresponding author, e-mail: joris.glas@wur.nl*

Abstract

Concerns about biodiversity loss and stricter legislation on chemical crop protection products make crop protection a controversial and urgent topic in the EU. Differing opinions on what choices should be made to reduce the environmental pressure of agriculture while ensuring food security cause heated political and societal debates. Agroecology and ecomodernism represent two approaches with distinct (normative) ideas on agriculture, including pest management. Both aim to make agriculture less dependent on chemical pesticides, but methods and philosophy differ. In this paper we present work of George Monbiot and Chris Smaje, two key figures in the current agricultural sustainability debate, to illustrate the differences and tensions between ecomodernism and agroecology, respectively. In the second part, we propose a third way, based on some key insights of the philosophy of Dooyeweerd. We conclude that Dooyeweerd's approach can help to elucidate the normative aspects at stake in pest management practices and what this means for human responsibility.

Keywords: Dooyeweerd, ecosystems, practice, rationalization, subsumption model

Introduction

The use of pesticides has become subject of heated discussions in recent years. An example is the herbicide glyphosate, which is controversial because of potential adverse effects on biodiversity and human health (Bloem *et al.*, 2024). The EU recently extended the permit of glyphosate for another 10 years (Casassus, 2023), although a proposal has been adopted by the European Commission (EC) to reduce the use of chemical crop protection products with 50% by 2030. This proposal however aroused fierce objection and no majority in the European Parliament was found for legislation to cut down the use of pesticides. The example illustrates three points. First, the urgency to look for alternative solutions to reduce the use of pesticides becomes clear. Second, the resistance against the EC proposal shows how difficult it is to change existing (agricultural) practices, in which pesticides still play a major role. (Especially in the production of field crops and fruits the use of chemicals is very common). Third, it shows that the transition towards environmentally friendly agriculture requires more than setting a target or taking single measures, like prohibiting the use of certain chemicals. Without providing alternative solutions or taking into account the wider context in which the farmer operates, efforts to make agriculture more sustainable by phasing out chemicals are likely to fail.

Crop protection can thus not be dealt with as a stand-alone topic. It is always related to other factors, like the local conditions on the farm (e.g. availability of water, type of soil, climate), the (labour) market, the farmer's sense of entrepreneurship, the wider economy, etc. The interconnectedness of these topics means that a systems perspective is needed in which all subjects are taken into consideration simultaneously. Bringing them together and weighing interests against each other should lead to a broad and coherent vision on how to combine food production with the protection of human health and the environment, which can then be used as the basis for (political) choices. Failure to take such a broader approach runs

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

the risk of ignoring crucial factors, resulting in inadequate policies, unworkable practices and scepsis or even anger among growers.

Crop protection is not only a complex topic, but also different presuppositions exist on what a good practice looks like. These differing views are often diametrically opposed and therefore create tensions, not only among farmers, but also more broadly in society. We believe that, in the core, many of the controversies can be traced back to different philosophical ideas on what nature is and what human's place in and role towards the natural world should be. In order to create support for policies, it is therefore important to not only consider empirical facts, but also underlying philosophies. In this paper we analyze two movements which are both influential in debates about pest management: agroecology and ecomodernism. Both approaches aim to move away from chemical pesticides but, as we will see, their underlying philosophy and methods differ. The aim of our paper is twofold. First, we analyze work of George Monbiot and Chris Smaje as an illustration of the ecomodernist and agroecologist positions, respectively. Both authors have explicit ideas on nature, the human person and how we are supposed to work with nature. We aim to investigate the consequences of their ideas for pest management. Second, we introduce a third perspective, based on the philosophy of Dooyeweerd, and show how it may change the way we think about the debate between agroecology and ecomodernism. We end with discussing the implications of Dooyeweerd's view for (our thinking about) sustainable pest management.

Monbiot and Smaje: similar concerns, different solutions

Monbiot and Smaje, two British authors, have become well-known voices in the (public) debate about the future of our food system. Both writers maintain a website (www.monbiot.com; chrissmaje.com) where they regularly write about their ideas and react to each other. Despite having similar concerns about the (un)sustainability of global food systems and the state of nature, the question of what a sustainable agriculture is and how it can be achieved is answered in a completely opposite way by both authors. In fact, it is surprising to see that two scientists who agree on many things (both think our current food system is unsustainable, both think we should find alternative ways of feeding ourselves within the limits of the earth) are in such a dispute with each other. Apparently, depending on one's philosophy, the same scientific facts can lead to completely opposite conclusions. We first discuss Monbiot in relation to ecomodernism and then Smaje and the agroecologist view.

Monbiot and ecomodernism

Ecomodernism is a movement which aims to provide material prosperity for everyone while minimizing harm to the biosphere (Breewood and Garnett, 2022). The idea is that human well-being can be 'decoupled' from environmental impacts through the intensification of agriculture (Asafu-Adjaye *et al*., 2015). By producing more on less land humans can free up space for nature, thereby 're-wilding' and 're-greening' the earth. According to this view, scientific knowledge and technological progress will allow humanity to flourish while minimizing its impacts on the environment (Boersma, 2021). In his book 'Regenesis: how to feed the world without devouring the planet' Monbiot (2022) argues, along similar lines, that as humanity we have all the scientific knowledge and technological tools available to produce sufficient food while at the same time protecting the environment. Nature can and should be protected by developing high-yielding farming systems with low environmental impact. The production and consumption of food should be organized in an efficient and rational way by stopping agricultural sprawl and rewilding the land released from farming. The farming of animals should come to an end and the sources of protein and fat replaced with microbial proteins produced using fermentation technologies.

What is Monbiot's view of the human-nature relationship? A first point is that humans are seen as being dependent on nature. Agriculture needs to change to 'secure our own survival' *and* 'protect the rest of

Franck Meijboom and Patrick Bijma | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

life on Earth' (Monbiot, 2022: p. 26), implying a dependency between human beings and nature. At the same time, there appears to be a gap between humans and the 'rest of life' (Monbiot, 2022: p. 229). Nature tends to be looked at as something external, as an object or system, which we can control or manage (at least to the extent that we know it). Humans are connected to nature but at the same time separate from it. Second, Monbiot emphasizes that, even though nature is often negatively affected by humans, human activities *can* also result in the protection of nature. For example, by improving our knowledge of the soil we can develop better agricultural practices and by creating flower banks we can stimulate insect life and biological control. As human beings we can let nature go extinct *or* we can regenerate it. The choice is up to us, we are in control. Rather than stepping back, we should use our scientific and technical knowledge to address the challenges lying ahead. Human responsibility is thus connected with knowing, with being in control. In line with this, the question of how to work with nature is seen as a predominantly scientific-technical question; cf. p. 226 where he writes: 'the heroes our crisis demands are pioneering a new science of soil ecology, discovering new ways of working with the life of the soil, developing crops that can deliver large yields with small impacts, igniting a farmfree revolution'. With their help we can 'avert our looming environmental catastrophe and reverse much of the damage we have inflicted on the living world, while ensuring that healthy diets are available for everyone. We can make peace with the planet.'

Pests are likely to interfere with the maximalization of production and therefore control should take place, albeit with environmentally friendly methods. One of the methods recommended by Monbiot is the '(burgeoning science of) biological control: using predators to manage pests' (Monbiot, 2022: p. 227). Monbiot is also positive about agroecology, as it makes use of the (ecological) relationships between the soil, (crop) plants, bacteria, fungi and insects, thereby reducing the need for fertilizers and pesticides (Monbiot, 2022: Chapter 4). A problem he sees with agroecology though is that it will be impossible to generate enough food using only local production (especially when it comes to cereals). He emphasizes that to combine agroecological (pest control) methods with high yields, more knowledge of soil biology and plant-insect interactions is required. Scientific research should lead to more insight in the interactions playing a role in agroecosystems. The obtained knowledge can then be applied to achieve a higher production.

Smaje and agroecology

Agroecology is a broad term carrying multiple meanings. A full analysis of the concept of agroecology is beyond the scope of this paper but, briefly, it is used to indicate a science, a (set of) practice(s), a movement (Carlile and Garnett, 2021) and a philosophy (James *et al.*, 2023). As a scientific discipline, agroecology studies the ecological interactions between organisms in agroecosystems. As a practice, agroecology aims to generate sustainable and resilient agricultural systems, based on ecological concepts and principles and with minimal external inputs. To achieve this, techniques like crop rotations, cover crops, polycultures, crop-livestock integration and agroforestry are applied. As a movement, agroecology strives for a just and equitable food system, based on the principles of food sovereignty and in which smallholder farms are important. Besides that, agroecology is also referred to as a 'philosophy of life', a way of life that promotes human and environmental well-being (James *et al*., 2023).

Like Monbiot, Smaje is convinced that agriculture is a major contributor to environmental problems and therefore should change to become more sustainable. In his book 'A small farm future' (2020, see also Smaje, 2023) he argues that human societies should shift to small-scale, local, agroecological farming systems. They offer the best chance to address the economic, political and environmental crises of our times. In order to prove that local farming is able to generate sufficient food for the growing world population, he pictures a scenario in which the entire British population is self-sufficient in the year 2050. Smaje's use of the concept agroecology shifts, depending on the topic he is discussing. In part 2

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

he describes the ecological aspects of agroecology (agroecology as a practice), while in part 3 and 4 the economic and political implications of agroecology are discussed (agroecology as a movement). In part 3 he also shares his ideas on what a small farm future could mean for people personally, i.e. a way to connect again, with ourselves, with other people, with other organisms and with the earth (agroecology as philosophy).

Rather than nature, Smaje speaks about ecology, which is referred to as the whole 'matrix of relationships between numerous organisms and the geophysical systems sustaining them' (Smaje, 2023: p. 99). As humanity we are not only dependent on nature/ecology (cf. Monbiot, 2022) but part of it ('…the local soils make us who we are'; Smaje, 2023: p. 145). This has implications for his view of the human person: 'people may have to embrace the old human essences of being biological, labouring, suffering creatures after all' (Smaje, 2020: p. 79). Elsewhere, humans are referred to as a keystone species (note the ecological terminology) with a 'disproportionately' large impact upon others (Smaje, 2023: p. 148). As humans it's in our nature to be 'habitat disturbers and engineers' (Smaje, 2023: p. 149). The challenge is to become a 'better' keystone species, following the model of the beaver (Smaje, 2023: p. 149). Technical skills are required for this task, but we will probably need more our social and spiritual skills. Future farming in Smaje's view will be 'biointensive, using low-impact biological inputs to ensure adequate farm outputs', with human labor 'probably' being 'the key biointensive input' (Smaje, 2020: p. 129). Although Smaje advocates agroecological practices, he is wary to call this type of farming more 'natural' than conventional farming. Ecosystems and agricultures have different aims, meaning that almost all agricultures work against nature ('the ecological tendency to revert to a low-disturbance, low-input, low-productivity state' (Smaje, 2020: pp. 118–119). This said, there are strong reasons to support agroecological practices, such as the use of polycultures, which support wild biodiversity and provide security against the failure of single crops (more benefits are mentioned; Smaje, 2020: p. 121).

Smaje's view of agriculture implies that we should not let pests go uncontrolled. The smaller scale and crop diversity may support wild biodiversity, and thereby allow for natural pest control, but additional measures will be necessary as well, such as actively releasing natural predators (Smaje, 2020: p. 118) or the planting of trees and shrubs which can provide food or shelter for natural enemies (Smaje, 2020: p. 143). These approaches are referred to as 'biointensification', i.e. the replacement of high-environmental impact methods (such as the use of chemical pesticides) with lower-impact biological ones. The main form of intensification however will be the application of more human labour per acre of land (Smaje, 2020: p. 118). Human intervention is thus necessary but it should have an 'ecological logic and based on biological dynamics' (Smaje, 2020: p. 122). Pest management should be facilitated by the smaller scale of farms and inspired by the principles of nature.

Towards an alternative perspective based on the work of Dooyeweerd

Sofar we have seen that where Monbiot emphasizes the rational-technical capabilities of human beings, Smaje puts emphasis on the fact that human beings are biological creatures. Where Monbiot hopes for scientific and technological progress which should make the transition towards a more sustainable agriculture possible, Smaje's vision is that of a small farm future where people live in close connection with plants and animals. However, one may ask, should we really choose for the one or the other? In what follows I will argue for a third way, thereby using work of the Dutch philosopher Herman Dooyeweerd (1894–1977). Dooyeweerd was one of the founders of the movement of Reformational philosophy, which over the years has gained international attention and is still actively practiced today (https://www.reformationalphilosophy.org/). Dooyeweerd's philosophy — more specifically his theory of aspects — shows that every phenomenon in reality can be approached/questioned from a multitude of different perspectives (e.g. from an ecological, an economic, a social or a political point of view). Each

Franck Meijboom and Patrick Baert | ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

of these aspects is important and should therefore receive attention. This is relevant for the debate about agriculture, food and nature where the tendency sometimes exists to absolutize certain aspects at the expense of others. By making these different aspects/questions explicit Dooyeweerd's philosophy can help to get a better understanding of complex topics, such as pest management in agriculture.

Dooyeweerd made a fundamental distinction between the 'concrete' or 'full' experience of reality and the 'theoretical' reflection of reality, as carried out in the sciences (Dooyeweerd, 1953–1958). According to Dooyeweerd, scientific knowledge is the result of isolating and analysing a particular part of the complex whole of reality in order to get a more detailed understanding of it. The specific sciences are seen as different 'angles' from which reality can be studied. These angles are not arbitrary but they correspond to 'aspects' or 'modes of being' in reality. In total, Dooyeweerd came up with 15 of such distinct ways of being. In order of sequence these are: the numerical, the spatial, the kinetic, the physical, the biotic, the sensory, the analytical, the technical, the lingual, the social, the economic, the aesthetic, the jural, the ethical and the religious aspect. (The exact number, character and order of the aspects is a question of empirical analysis and therefore open to correction.) All the aspects have their own unique character and are irreducible to each other. At the same time, they are also related to each other. According to Dooyeweerd, all things function, in an active or passive sense, in all the aspects. Things, but also structures and practices, are not neutral but exist in response to the laws or norms that hold for them. We as human beings are also part of this complex reality. In our actions, decisions and practices we have the responsibility to ensure that justice is being done to all the different aspects simultaneously.

It is at this point of our discussion that Dooyeweerd may prove to be relevant. As we have seen, for Monbiot agriculture should generate high yields with low impact. In order to achieve this, existing agricultural practices should be professionalized/rationalized, that is improved using scientific knowledge and methods. Following Jochemsen and Glas (1997) we will refer to this view of practices as the subsumption model. (Subsumption means arranging the individual case under a general category). Two problems are however identified with this model. A first problem is that it detaches one aspect of human acting (in this case the analytical or technical-scientific) from its other aspects (like the social, the aesthetic, etc.). The consequence is that these other aspects are easily seen as standing in the way of continuing professionalization. They should however not be seen as secondary, but as constitutive for (agricultural) practices as well. Together the different aspects define the identity of the practice (for an example see Rademaker *et al*., 2017). A second problem with the subsumption model concerns the relation between theory and practice. Translating the results of science to the concrete farming practice is in fact a very complex process in which the local conditions, the economic and social circumstances as well as the experience and craftmanship of the farmer play a major role. Smaje shows he is aware of the importance of the local context, as he criticizes organic agriculture and regenerative agriculture exactly on this point ('in agriculture, there are no universal rules. The same goes for no-till and regenerative agriculture, which isn't optimal in every possible situation' (Smaje, 2020: p. 123) (cf. also Giller *et al*., 2021). Also traditional agricultures should not be considered as 'a panacea' (Smaje, 2020: p. 99). Yet, given his own recurring emphasis on a future of small farms, one may wonder whether Smaje himself fully escapes this critique. For Smaje, human beings are ultimately 'farming people' (Smaje, 2020: p. 8) which is a reason why he believes in a future of small farms. Yet, as human beings we are more than farmers. We do not only exist in ecological relations but also in social and economic relations, for instance. Both Monbiot and Smaje tend to ignore the complexity of reality by emphasizing certain aspects of it (i.e. the rational-technical and the biotic), resulting in the suggestion of a universal approach that can 'fix' our food system. The point is that elements of agroecology (e.g. local production) as well as ecomodernism (e.g. the use of new scientific technologies) are very relevant but taking the broader context into account and not as a panacea.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

What does working with nature look like from the perspective of Reformational philosophy? Dooyeweerd would agree with Smaje that human beings are biological creatures and therefore part of nature, rather than being above or against it. At the same, he wants to acknowledge that there are distinct differences between plants, animals and humans, which has consequences for human responsibility. From a Reformational philosophical perspective human beings have a sense of good and evil, an awareness of normativity. Consider the word 'pest'. Only from a human point of view it makes sense to speak about pests and diseases. They are experienced as something anti-normative. As human beings we experience a calling 'to better the world', which implies a sense of responsibility. Working with nature from this perspective is characterized by an attitude of caretaking, aimed at the flourishing of life. In relation to pest management this means that biological methods should be preferred over chemicals. Following Smaje, this could indeed require diversification and/or downscaling of farms (think of field crops where large monoculture fields make pest management a challenge). At the same time, we should not be hesitant to make use of scientific knowledge and technologies in pest management. Think for example of new strategies for supplying natural enemies or the use of resistant varieties. A responsible development of pest management implies that these methods are implemented while taking the local agronomic conditions, the farmer and his knowledge, as well as the wider social and economic context of the farm as much as possible into account.

References

Asafu-Adjaye, J., Blomqvist, L., Brand, S., Brook, B., Defries, R., Ellis, E., Foreman, C., Keith, D., Lewis, M., Lynas, M., Nordhaus, T., Pielke, R., Pritzker, R., Roy, J., Sagoff, M., Shellenberger, M., Stone, R. and Teague, P. (2015). An ecomodernist manifesto. Available online at https://www.ecomodernism.org/manifesto-english (accessed 23 February 2024). Bloem, B.R., Boonstra, T.A., Elbaz, A. and Vermeulen, R.C.H. (2024). Glyphosate and neurotoxicity — A call for scientific renewal. Nature Reviews Neurology, 20, 131–132. DOI: 10.1038/s41582-023-00919-7

Boersma, H. (2021). An introduction to ecomodernism. In: Bovenkerk, B. and Keulartz, J. (eds) Animals in our midst: The challenges of co-existing with animals in the Anthropocene. Springer International, Cham, pp. 163–175.

Breewood, H. and Garnett, T. (2022). What is ecomodernism? TABLE Explainer Series. TABLE, University of Oxford, Swedish University of Agricultural Sciences and Wageningen University & Research.

Carlile, R. and Garnett, T. (2021). What is agroecology? TABLE Explainer Series. TABLE, University of Oxford, Swedish University of Agricultural Sciences and Wageningen University & Research.

Casassus, B. (2023). EU allows use of controversial weedkiller glyphosate for 10 more years. Nature. DOI: 10.1038/d41586-023-03589-z

Dooyeweerd, H. (1953-1958). A new critique of theoretical thought. Volumes I–IV. Presbyterian and Reformed Publishing, Philadelphia, PA.

Giller, K.E., Hijbeek, R., Andersson, J.A. and Sumberg, J. (2021). Regenerative agriculture: an agronomic perspective. Outlook on Agriculture, 50, 13–25.

James, D., Wolff, R. and Wittman, H. (2023). Agroecology as a philosophy of life. Agriculture & Human Values, 40, 1437–1450.

Jochemsen, H. and Glas, G. (1997). Verantwoord medisch handelen. Proeve van een christelijke medische ethiek. Buijten & Schipperheijn, Amsterdam.

Monbiot, G. (2022). Regenesis. Feeding the world without devouring the planet. Penguin Books, London.

Rademaker, C.J., Glas, G. and Jochemsen, H. (2017). Sustainable livestock farming as a normative practice. Philosophia Reformata, 82(2), 216–240.

Smaje, C. (2020). A small farm future. Making the case for a society built around local economies, self-provisioning, agricultural diversity and a shared earth. Chelsea Green Publishing, London.

Smaje, C. (2023). Saying no to a farm-free future. The case for an ecological food system and against manufactured food. Chelsea Green Publishing, London.

Franck Meijboom and Dorothy Boorse - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Five fallacies in addressing the future in environmental studies

*A. Kallhoff**
Department of Philosophy, University of Vienna, Universitätsstr. 7, 1090 Vienna, Austria
**E-mail: angela.kallhoff@univie.ac.at*

Abstract

The future has been a central point of interest in ethics. Ethicists have argued that currently living people have an obligation to future generations. However, theories of intergenerational justice, as well as arguments for the responsibility for future generations, do not only face theoretical problems but also contribute to the very limited view that harm should be reduced because of the rights of future people. I shall provide a short critique of this view. I will then argue that it is helpful to include theories in future sciences which propose different and more optimistic approaches to the future. Understanding a scientifically informed view of how we address the future helps to reopen it. We also need to take a closer look at well-documented distortions and fallacies in addressing the future. In particular, understanding the fallacies in addressing the future helps to avoid a far too limited and unrealistic view of the future; it also helps to get an understanding of the institutions that we need in order to successfully engage in the future.

Keywords: future risks, futurology, harm, intergenerational justice, status quo bias

Introduction

Generally speaking, the future is just another time period. It will materialize later on, it is what will happen in posteriority. In ethics, this view is correlated with another idea about the future. Since currently living people will certainly have a causal impact that extends beyond their lifetimes, they are obliged to consider the impact on future generations – particularly so when this impact is harmful or even destructive. However, it is not easy to justify the claim that currently living people should care about the long-term effects of their actions. Ethics has tried hard to develop a framework for this; for example, theories of intergenerational justice try to argue obligations to future people (Gosseries and Meyer, 2009).

This contribution starts in section one with a short reminder of the difficulty of arguing responsibility for upcoming generations. Section two explains that environmental ethics does not have to discuss this problem from scratch. Instead, it usually focuses on a particular facet of the problem. It argues that currently living people should take responsibility for the environmental harm that they cause because it might be detrimental and catastrophic. Instead of reiterating that claim, this contribution tries to open the view for a more optimistic approach to future concerns. Section three explains the limitations we face when addressing the future in the framework of harm to future generations. I shall instead propose a way of thinking about the future that emphasizes that we should accept that possible futures are frequently being made and that the future is open. Environmental ethics should start to engage in imagining the future in a more forward-looking and optimistic way without losing sight of the harm and destruction that is taking place. In section four I shall explain that it would be most helpful not to reiterate fallacies that have been made in the past. This discussion does not rebuild futurology; but it helps to pave a way to discuss an open future – even when addressing environmental harm.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

How to address the future from a moral point of view?

Moral claims that draw attention to people who will live in the future usually argue that there are some obligations of currently living people regarding the wishes and needs of people who live in the future.[13] However, this approach faces particular problems. Future people might materialize or they might not materialize. In the present, they are more like fictional entities than real subjects. In particular, it is difficult to argue why we should care for them and their wishes. To paraphrase a view that has been attributed to Woody Allen: 'Why should we put ourselves out of our way for future generations: what have they ever done for us?' In addition, the terms that have been used to address some responsibility of our effects on future life are also very unclear and difficult to handle: Responsibility, solidarity or even justice — all these terms are particularly complex. One of the more straightforward concepts is posthumous harm. But even then, it is difficult to argue that currently living people need to care about possibly causing harm to people living in the future (Boonin, 2019). In short, it is very difficult to explain why we should care about future people, even though philosophy has of course put much effort in demonstrating the truth of this claim.

How environmental ethics addresses the future

Luckily, environmental ethics does not have to argue intergenerational fairness from scratch. Instead, environmental ethics focuses on what people leave behind, on the heritage of current actions concerning future life. Even though this helps to shrink the content, there are still some serious problems that need to be resolved. Humankind produces deep traces on the planet. Today, this footprint needs to be regarded as irreversible change not only of living conditions and diversity of life on our planet but also of the earth system as a whole. Climate studies in particular demonstrate not only the harm ensuing from current action, but its potentially very destructive result. Climate scientists argue that the consequences of a changed composition of the atmosphere are very critical; they can even lead to a climate catastrophe and the mass extinction of life.[14]

Instead of reiterating claims of intergenerational justice, climate ethicists nowadays remind us of a duty to reduce harm so that excessive harm does not lead to a – indeed ever more realistic – ruin of the future. Steve Gardiner makes this point particularly clear. He explains that not reducing the emissions footprint drastically means the continuation of a behaviour which he calls the 'tyranny of the contemporary' (Gardiner, 2011: pp. 143–184). Currently living people profit from the actions that cause serious harm to the environment, without caring about the devastation it entails. And even when it is difficult to measure the heritage that currently living people owe to future generations, the claim not to ruin the conditions of life appears to be fair enough.

The argument for taking action for a healthy climate is clear. If we currently living people do not start changing our behaviour and nation states fail to take responsibility, we risk creating conditions that do not support our needs as a vulnerable species any longer. This is a very demanding and actually threatening way to think about the future. It might spur two types of behaviour: either fear or a 'doomsday ideology'. Catastrophic thinking is not particularly helpful when concerted and concrete action is needed. In particular, addressing quasi-catastrophic futures faces two more restrictions: it is obligatory to focus on the impact of technologies, and they are restricted to the assessment of risks (Düwell and Sollie, 2009). Often, the precautionary principle remains the main recommendation for handling risky futures (Aldred, 2017).

[13] For an overview of the contributions to intergenerational justice, see Tremmel (2006).

[14] For this, see the latest report of the IPCC report 2023, available online at https://www.ipcc.ch/report/sixth-assessment-report-cycle (accessed 10 March 2024).

Franck Meijboom and Patricia Brey, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Alternative ways to address the future

A closer look at the arguments reveals two more characteristics of the climate ethics debate: Firstly, there is a continued effort to argue that climate change action should be taken, but debates on 'who should do what' are still at the centre of concern. As Posner and Weissbach argue, we should stop worrying about the 'when, where and how – policy' (Posner and Weisbach, 2010: p. 74) and its focus on distributive and optimal outcomes, and instead understand that we face a truly global problem that needs to be resolved by concepts of comprehensive cooperation. Theories of climate justice tend to highlight not only responsibility, but distributive justice in allocating responsibility, which might even forestall a quick and joint response. Secondly, a theory of justice leaves unanswered the question raised at the beginning: 'Why should we care at all?'

The proposal that I shall outline very briefly works with a different idea of normative content in the climate debate. It argues that we should start talking about futures as manifold possible futures instead of 'the future'. The realisation that we need to think of the future as a plurality of possible futures is supported by two important methods in future sciences: scenario-building and foresight methods. Both aim to draw a clear picture of possible alternatives, not of the one most plausible future (Giaoutzi, 2013). This shift of attention has several consequences. Instead of reiterating the claims not to forfeit the opportunities for future generations, we can learn from future studies that it is up to us to choose pathways into the future that might even serve shared interests. Moreover, individuals are certainly not perfectly free to make up a future; but choices can be made as for different scenarios. Moreover, these choices should rest on information not only regarding possible harm, nor exclusively regarding our wishes, but on the prevention of fallacies that we are likely to make in addressing possible futures. And these possible futures cannot be explained as a simple extrapolation of what is happening now into posteriority, it is much more complex (Novella, 2022: pp. 18–21).

Whereas environmental ethics and environmentalists discuss harm and the containment of harm, authors in future studies think about possible futures in an entirely different mode. They think of the future as something that is open, but already present in our minds. Futurists believe that persons as well as collective actors are capable of shaping the future successfully - even under risky circumstances. The recommendations for successful shaping of the future include to 'invest in future resilience', 'think like an activist', 'think the unthinkable', 'cement the right culture', 'keep an eye on long-term goals' (Jorgensen, 2022: p. 1). Even though these imperatives would of course have to be filled with life, they represent a 'way of thinking' that environmental ethics is often lack. Even though we have to care about the fundamental harm that our current actions cause for future generations, it could be particularly helpful to address the 'open future' and the capacities to shape possible futures effectively, instead of focusing exclusively on the containment of harm and the reduction of risks. At a minimum, both should be balanced.

Avoiding fallacies

Once environmental ethics and climate ethics start working on how to change the future, two important tasks are (1) the discussion of constraints and fallacies in planning futures, and (2) the elaboration of institutional designs that enhance the futurability of current action. Whereas many proposals have already been made for institutions that support care for long-term agendas (Tremmel, 2010), the discussion of constraints and fallacies lags behind. I shall here focus on this aspect and recall fallacies that can be circumvented because we know them. Five fallacies are evidence-based and shall be portrayed briefly.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The biggest and first fallacy in addressing the future is exclusively focusing on negative effects. As for the motivation to act, negative incentives have a detrimental effect. We need good narratives and hope in order to start imagining the future.[15] In particular, this also gives space for new images that do not resonate with what is happening now. 'The future isn't just a logical extension of the present, it is a foreign country where weird, magical, strange things *might* have become a reality' (Lindkvist, 2013: p. 62).

The second fallacy has also already been mentioned. Usually, we think that the power to shape or to even make futures is not in our hands. Especially regarding megaevents such as climate change or environmental degradation, people tend to regard themselves as not in a position to change the cause of events. This me-as-a-victim thinking is not only not helpful in addressing the future. It is flawed. Even though individuals alone might be powerless, theories of joint action explain ways to collectivize, even duties to collectivize in order to address environmental problems successfully (Collins, 2013). The same holds for collective actors who already exist and start to work for the amelioration of environmental hazards. As for environmental goals, success in achieving these truly collective goals depends to a high degree on collectivization and shared agency (Kallhoff, 2021: pp. 134–202). Where individuals face obstacles, joint action can achieve environmental goals successfully.

Thirdly, the human brain is not entirely pessimistic when it comes to the future, but on the contrary tends to think overly optimistic about it (Sharot, 2011). Even though it is important to address the future in an optimistic mood, indulging in wishful thinking is not particularly helpful either. As a profoundly vulnerable species, we should be aware of the function of wishful thinking in our brains: it helps to cope with past experiences of loss and danger and simultaneously enhances the capacity to take action. But wishful thinking should not blur our thoughts about the future. However, futurists explain that this is a very common fallacy. The future is not something that can be conceived of as a linear extrapolation; the road to success is bumpy. And we need patience and persistence to achieve goals, because there are no easy recipes in a changing world, and breakdowns as well as breakthroughs cannot be anticipated (Lindkvist, 2013, pp. 106–113). Apparently, we need to learn the discriminatory capacity to work with realistic expectations.

Fourthly, many still think that future environmental harm can be shielded against by means of new technologies. However, this 'tech fix-mentality' has some shortfalls. Empirical research explains that the assessment of technological cycles usually underrates the speed of innovation, but overestimates the possibility for scaling up without taking into account the possibility of disruptive technologies (Novella, 2022: pp. 19–24). These shortfalls are again particularly dramatic when it comes to environmental agendas. The idea that currently available technologies suffice in order to prevent the climate collapse is widespread. Moreover, even the development of new technologies might face unforeseeable ceiling effects; at some point, an upcoming problem might simply not be resolvable. 'We must recognize that there are many competing concerns, and this is often why it is extremely difficult to predict how a new technology will play out' (Novella, 2022: p. 14). Recalling this difficulty in assessing new technologies in an early stage does not lead to technology pessimism. But it helps to understand that optimism as well as problem-solving ideas that rest entirely on technologies need to be handled with caution.

Fifthly, when it comes to action, people tend to stick to what they are used to and refute change — a behaviour that has already been explored in the context of climate change (Lang et al., 2021). The so-called 'status quo bias' has many facets (Bostrom and Ord, 2006). If people do not like to change behaviour, it is important to develop incentives for change as well as institutional responses to this human trait. Instead of reiterating claims of intergenerational justice, it is important to develop institutions that

[15] This point is also taken as a starting point for recent literature on new utopianism. For a recollection and interpretation of these views in the context of environmental concerns, see Kallhoff and Liedauer (2024).

Franck Meijboom and Patricia Brey (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

initiate the change that is needed in order to reduce harm and induce future-oriented guardianship, also in terms of collective change and collectivization in favour of change.

In short, future sciences help to understand standard fallacies in addressing the future and also in developing images of the possible future. Taking these insights into account does not automatically lead to a standstill. Instead, it helps to focus on actions and visions that are promising and do not suffer from the recalled shortfalls.

Conclusion

Even though it is not the space here to argue an alternative approach to the future in the context of environmental ethics, I have tried to make the case for a more open-minded, optimistic, however realistic way to address the future. Environmental ethics tends to focus on claims of intergenerational justice and on principles to contain future harm and to reduce future risk. Even though this remains important, the negative profiles of our theories also tend to throw away the opportunities to really engage for the future. Futurists in other fields of research explain what is needed to shape the future constructively. At a minimum, possible futures need to be seen as what they are: as alternative pathways that we can choose now but that might also come with obstacles and unforeseeable surprises. In particular, we cannot work with a simple extrapolation of the present, but need to invest in exploring common fallacies in order to avoid them and gain a more open future. Instead of reiterating moral appeals, it is helpful to take this lesson from future sciences.

This brief proposal on how to conceive of the future in environmental studies does not aim at rejecting moral claims, nor do I wish to argue that there is no responsibility when it comes to harm that we pose to future life. On the contrary, taking our impact on the future seriously also means understanding that we cannot but shape the future by our actions. The biggest problem in my view is not harm or negligence of the desires of future generations. Instead, we need to be more realistic and more optimistic in addressing possible futures. Once we have gained the understanding that the future is open in a strict sense, it becomes possible not only to think in a new way about how future can be shaped; it also becomes possible to discuss institutions of future guardianship that help to overcome the distortions of our capacities to shape the future.

References

Aldred, J. (2017). Risk and precaution in decision making about nature. In Gardiner, S.M. and Thompson, A. (eds) The Oxford handbook of environmental ethics. Oxford University Press, Oxford, pp. 321–332.

Boonin, D. (2019). Dead wrong: The Ethics of posthumous harm. Oxford University Press, Oxford. DOI: 10.1093/oso/9780198842101.001.0001

Bostrom, N. and Ord, T. (2006). The Reversal Test: Eliminating status quo bias in applied ethics. Ethics, 116(4), 656–679. DOI: 10.1086/505233

Collins, S. (2013). Collectives' duties and collectivization duties. Australasian Journal of Philosophy, 91(2), 231–248. DOI: 0.1080/00048402.2012.717533

Düwell, M. and Sollie, P. (2009). Evaluating new technologies methodological problems for the ethical assessment of technology developments. Springer, Dordrecht.

Gardiner, S.M. (2011). A perfect moral storm. The ethical tragedy of climate change. Oxford University Press, Oxford.

Giaoutzi, M. (ed.). (2013). Recent developments in foresight methodologies. Springer, Berlin.

Gosseries, A. and Meyer, L.H. (2009). Intergenerational justice. Oxford University Press, Oxford.

Jorgensen, H.B. (2022). Boards as stewards of the future. The Corporate Board, 43(253), 1–22.

Kallhoff, A. (2021). Climate justice and collective action. Routledge, Abingdon.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Kallhoff, A. and Liedauer, E. (Eds.). (2024). Greentopia: Utopian thought in the Anthropocene. The International Library of Environmental, Agricultural and Food Ethics, volume 36. Springer Nature, London.
Lang, C., Weir, M. and Pearson-Merkowitz, S. (2021). Status quo bias and public policy: Evidence in the context of carbon mitigation. Environmental Research Letters, 16(5), 054076. DOI: 10.1088/1748-9326/abeeb0
Lindkvist, M. (2013). When the future begins: A guide to long-term thinking. LID, London.
Novella, S. (2022). The skeptic's guide to the future: What yesterday's science and science fiction tell us about the world of tomorrow. Hodder and Stoughton, London.
Posner, E.A. and Weisbach, D.A. (2010). Climate change justice. Princeton University Press, Priceton, NJ.
Sharot, T. (2011). The optimism bias: A tour of the irrationally positive brain, 1st edn. Pantheon Books, London.
Tremmel, J. (2006). Handbook of intergenerational justice. Edward Elgar, Cheltenham.
Tremmel, J. (Ed.). (2010). Demographic change and intergenerational justice: The implementation of long-term thinking in the political decision making process. Springer, Berlin.

Franck Meijboom and Patricia Rowe, Book, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Bioprospecting microbial biodiversity for sustainable futures: An ethics of exploitation?

Z. Robaey[1,] and P. Sandin[2]*
[1]Wageningen University, P.O. Box 8130, 6700 EW Wageningen, The Netherlands; [2]Swedish University of Agricultural Sciences, P.O. Box 7043, SE-75007 Uppsala, Sweden
** Corresponding author, e-mail: zoe.robaey@wur.nl*

Abstract

Bioprospecting is the systematic searching for genetic or biochemical information in nature for some useful purpose. We review ethical issues bioprospecting and examine novel practices of bioprospecting in microbial biodiversity. Combining consideration from engineering ethics and environmental ethics, we outline a heuristic checklist for moral justifiability of a microbial bioprospecting. The checklist consists of a Precautionary Principle, a Biocentric Principle of Proportionality, and a Lockean Proviso.

Keywords: biocentrism, Lockean proviso, precautionary principle

Introduction

Bioprospecting refers to the systematic practice of searching for genetic or biochemical information in nature with the aim of developing useful products for various applications, for instance in agriculture or medicine. Two examples are how rotenone, used as a pesticide, was developed from plants used traditionally to stun fish, and how a cancer drug like vinblastine was isolated from Madagascar periwinkle (Cox and King, 2013). This practice extends to microbial biodiversity, a term that describes not only the 'range of different kinds of unicellular organisms, bacteria, archaea, protists, and fungi' characterized by their metabolism and functions among other things (Dunlap, 2013). These characteristics have potential for applications in biotechnology, such as producing aromatic compounds (Perez Rojo *et al*., 2023), improving energy production, finding new enzymatic pathways, or securing host organisms for cellular production. Finding beneficial properties can be seen as an activity essential for transitioning to a sustainable bio-based future.

In this paper, we briefly present issues at stake with bioprospecting and critically examine novel practices of bioprospecting in microbial biodiversity. Combining consideration from engineering ethics and environmental ethics, we sketch a heuristic checklist for moral justifiability of a microbial bioprospecting that contains a Precautionary Principle, a biocentric Principle of Proportionality, and a Lockean Proviso.

New frontiers, new ethical challenges

In natural science discourses, bioprospecting is often referred to as an unproblematic practice (Mateo *et al*., 2001) that allows attaching an economic value to nature (Harvey and Gericke, 2011). Moreover, there is a clear awareness of the economic value of traditional knowledge in bioprospecting (Pushpangadan *et al*., 2018). The practice of bioprospecting, a practice mostly carried out on plants, insects, and other animals, and the realm of fungi has been heavily criticized. It has been described as a practice that commodifies nature, and brings with it a host of political and moral problems (Castree, 2003). Though international institutions exist to govern access and benefit sharing, these are not devoid of downsides (Wynberg and Laird, 2009). Vandana Shiva describes bioprospecting as 'sophisticated biopiracy' (Shiva, 2006).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Like many practices, new technologies lead to changes in ways of doing. In the last decade, bioprospecting has moved from its colonial origins towards two new trends. Two varieties can be identified: The first is bioprospecting *in situ,* which typically involves an inductive approach, exploring the world and collecting organisms, in deep oceanic spaces, or other unclaimed environments. The second is bioprospecting *in vitro* for *de novo* synthesis, with the use of various techniques like the range of omics, Adaptive Laboratory Evolution, and directed evolution (Barten, 2022; Gibson *et al*., 2020; Maghembe *et al*., 2020), where either wild types or domesticated organisms are subjected to different types of pressures to lead to new functions. There is a third type of bioprospecting *in silico*, which we shall not address in this paper but will be the object of further investigation. To realize these new practices, a host of technologies are developed, some of the proprietary. The utilization of new functions then becomes decontextualized from the original micro-organism, and typically promises to contribute to sustainable, and circular, new processes of industrial production.

Yet they give rise to ethical concerns regarding how we relate to microbial biodiversity. One moral intuition would be that such practices, *in vitro* and *in situ*, imply some type of tinkering with nature (Sandin and Robaey, 2023), this tinkering with nature in turn provides some societies with benefits, and therefore demand some type of responsibility. Through tinkering with microorganisms, we exploit their capabilities. Neither case lends itself to current models of benefit sharing as suggested by mechanisms like the Nagoya protocol (Salem and Kaltenpoth, 2023). In the next sections, we explore approaches between engineering ethics, which typically is an anthropocentric approach, with a bio-centric approach in environmental ethics, to elucidate how to conceive of this exploitative relationship.

Responsibility for tinkering

Locke's theory of property claims has been applied to the case of genetically modified seeds (Thompson, 2020: Chapter 10), and other research shows the difficulty of applying such frameworks to living technologies that have inherent capacities to evolve outside of traditional ownership (Robaey, 2015). The fact that it does not disturb other areas of human activities adds another layer of complexity. For example, no humans live in deep oceans, we rake them for fisheries, and we collect rare specimens for research and development. Or again, no one has any stake in speaking out for domesticated or wild type microorganisms who undergo experiments in a laboratory. These microbes are unclaimed for and tinkered with. Typical issues that raise concern in terms of responsibility like justice or safety do not apply directly. They may become relevant once a specific trait is utilized for a certain context, for instance the production of vanilla via precision fermentation raises issues of justice while striving for sustainability (Asveld *et al*., 2019). One issue that is the source of the unease that leads to this short paper, is our relationship with nature.

One way of dealing with this discomfort is to assign a responsibility to the bioprospectors and tinkerers. In a Lockean sense, adding your labor to a natural resource gives a degree of ownership. Ownership in legal scholarship can be seen as a bundle of rights, but it is also seen as a set of corresponding responsibilities (Robaey, 2016). Finding, modifying, and extracting functions from microbial biodiversity therefore bestows some kind of responsibility on the tinkerer. But what kind of responsibility?

This is where existing ideas of responsibility in engineering ethics fall short. At most, what one can observe in practice is a form of responsibility-as-care relationship to microbes (McConnell, 2023) though this is yet to be further explored in laboratory settings. Thus, two questions emerge on the nature of responsibility and the object of responsibility. First, it can be questioned whether the instrumental nature of the relationship, based on productive goals, can ever truly be one of care (Núñez Casal, 2021). Second, there is a question on what exactly is the object of responsibility: the communities of

Franck Meijboom and Pamela Pennock, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

microbes themselves, microbial biodiversity, a given capability of microbial biodiversity, or an ideal of non-exploitation of nature.

Responsibility for exploitation

Before we continue this reflection, we turn to the position of microbes in environmental ethics. One core issue in environmental ethics has been the question of what entities are morally considerable and on what grounds. The three dominant theories in this respect are sentientism, biocentrism, and ecocentrism. Broadly speaking, they ascribe direct moral status to sentient beings, living beings, and ecosystems, respectively. The two first positions are individualistic, ascribing direct moral status to individual organisms. The latter position, however, is non-individualistic, in the sense that it allows ascribing direct, non-derivative moral status to collective entities, such as species, ecosystems, to some relational property like biodiversity, or even the whole Earth System (cf. Hamilton, 2017).

As recent scholarship highlights, microbes present a challenge to some existing ethical concepts, especially from within a biocentric perspective (Wienhues, 2022). Wienhues identifies three such challenges: the moral significance challenge, the self-defence predicament, and the undermining of individualist biocentric intuitions (Wienhues, 2022: p. 4).

Microbes starkly confront us with our behaviour as a species, which is exploitative of nature. By the same token, microbes remind us that we too, like other sorts of life, thrive on exploitation of natural resources. The understanding of 'exploitative' here is the standard one of someone taking unfair advantage of someone else. For this to occur, the exploited party must have moral standing, in the sense of being able to be benefited and harmed. This brings us to Wienhues' first challenge, that of moral standing. We may ask, first, whether bioprospecting in the microbial realm might be morally problematic because it exploits individual microbes, supposing that they have moral standing. The problem is also present in a situation where moral standing includes larger entities, such as microbial communities. The microbes' moral significance - roughly interpreted as their 'weightiness' in moral deliberation - is a somewhat different question, which Wienhues considers but which we will not dive into here. Freya Mathews (2016) proposes the use of the term 'bio-inclusive' instead of the conventional 'biocentric', in order to avoid the inference that non-human interests are weightier than human ones.

Here we might turn to Wienhues' second challenge (the self-defence predicament). This is the obvious problem for a biocentric approach of killing organisms that have moral standing. When we disinfect our hands with alcohol-based sanitizer or take antibiotics to cure an infectious that is likely to kill us, we might justify the killing of the microorganisms with an analogy to self-defence (see Taylor, 2011: pp. 264–269, who does not particularly elaborate on microorganisms). However, it would be difficult to use the self-defence analogy in the bioprospecting case - the organisms utilized in bioprospecting do not threaten us directly. In some cases, however, they might count as collateral damage.

The third challenge Wienhues presents is that of individuality. In order to reflect on this, we may return to the question of the object of responsibility. One cannot be responsible to an individual microbe, or even a community of microbe. Here, a language of cooperation is in fact found in the literature. Interestingly, reductionist approaches appropriating certain capabilities of microbes actually struggle in making cooperation happen, i.e. bioengineers devote considerable efforts to making given capabilities work in a new system. Microbes, or their communities, need not be the object of responsibility. Instead, the object of responsibility might be phrased as, how to exploit these capabilities in a good way. We inevitably return to an anthropocentric approach in dealing with microbes as true cooperation between microbes and humans will never have microbes leading the way (or at least not in modern capitalist societies).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Conclusion: Three considerations

We tentatively propose the following set of considerations as a heuristic checklist for moral justifiability of a microbial bioprospecting:

1. Precautionary Principle: In its positive form, we can see that exploiting capabilities of microbial biodiversity may indeed help transitions to more sustainable modes of production. Take for instance a classical example of insulin production via precision fermentation. On the other hand, very significant or even existential risks might be involved, and invoking some version of the Precautionary Principle is a safeguard against such risks (Sandin and Peterson, 2019).
2. Proportionality (bioinclusive criterion) - Is the intrusion into some microbial community or the influence on some other entity with moral standing proportionate to the gains (actual or potential)?
3. Lockean Proviso - does the bioprospecting bar anybody else from accessing the microbial resource? Here one might have to draw a difference between in vitro cases, which might have claims to exclusion, and in situ cases which can be conceived of as belonging to 'Earth-kind' and thus have a notion of the commons underlying them. The problem with this consideration is that it might stop endeavors to discover the diversity of the microbial world, in favor of in vitro bioprospecting. Perhaps, this is also a good thing.

References

Asveld, L., Osseweijer, P. and Posada, J.A. (2020). Societal and ethical issues in industrial biotechnology. In Fröhling, M. and Hiete, M. (eds) Sustainability and life cycle assessment in industrial biotechnology. Springer International, Cham, pp. 121–141. DOI: 10.1007/10_2019_100

Barten, R. (2022). Thermotolerant microalgae: Bioprospecting followed by adaptive laboratory evolution for strain selection and improvement. Internal PhD, Wageningen University. Wageningen. DOI: 10.18174/570643

Castree, N. (2003). Bioprospecting: From theory to practice (and back again). Transactions of the Institute of British Geographers, 28, 35–55. DOI: 10.1111/1475-5661.00076

Cox, P.A. and King, S. (2013). Bioprospecting. In Levin, S.A. (ed.) Encyclopedia of biodiversity, 2nd edn. Academic Press, San Diego, CA, pp. 588–599. DOI: 10.1016/B978-0-12-384719-5.00350-6.

Dunlap, P.V. (2013). Microbial diversity. In Levin, S.A. (ed.) Encyclopedia of biodiversity, 2nd edn. Academic Press, San Diego, CA, pp. 280–291. DOI: 10.1016/B978-0-12-384719-5.00435-4

Gibson, B., Dahabieh, M., Krogerus, K., Jouhten, P., Magalhães, F., Pereira, R., Siewers, V. and Vidgren, V. (2020). Adaptive laboratory evolution of ale and lager yeasts for improved brewing efficiency and beer quality. Annual Review of Food Science and Technology,11, 23–44. DOI: 10.1146/annurev-food-032519-051715

Hamilton, C. (2017). Defiant earth: The fate of humans in the Anthropocene. Polity Press, Cambridge.

Harvey, A. and Gericke, N. (2011). Bioprospecting: Creating a value for biodiversity. In Pavlinov, I. (ed.) Research in biodiversity — Models and applications. InTach open, London, pp. 323–340. DOI: 10.5772/24905.

Maghembe, R., Damian, D., Makaranga, A., Nyandoro, S. S., Lyantagaye, S. L., Kusari, S. and Hatti-Kaul, R. (2020). Omics for bioprospecting and drug discovery from bacteria and microalgae. Antibiotics, 9(5), 5. DOI: 10.3390/antibiotics9050229

Mateo, N., Nader, W. and Tamayo, G. (2001). Bioprospecting. In Levin, S.A. (ed.) Encyclopedia of biodiversity. Elsevier Science, Amsterdam, pp. 471–488. DOI: 10.1016/B0-12-226865-2/00034-1

Mathews, F. (2016). From biodiversity-based conservation to an ethic of bio-proportionality. Biological Conservation, 200, 140–148. DOI: 10.1016/j.biocon.2016.05.037

McConnell, M. (2023). Starting to care: Making place with microbes. Cultural Geographies, 30, 525–537. DOI: 10.1177/14744740231158604

Núñez Casal, A. 2021. Feminist para-ethnographies: A proposition for a 'critical friendship' between embodied experiences and microbiome science. London Journal of Critical Thought, 4, 21–35.

Perez Rojo, F., Pillow, J.J. and Kaur, P. (2023). Bioprospecting microbes and enzymes for the production of pterocarpans and coumestans. Frontiers in Bioengineering and Biotechnology, 11, 1154779. DOI: 10.3389/fbioe.2023.1154779

Franck Meijboom and Patrick Baas (eds), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Pushpangadan, P., George, V., Ijinu, T.P. and Chithra, M.A. (2018). Biodiversity, Bioprospecting, traditional knowledge, Sustainable development and value added products: A review. Journal of Traditional Medicine and Clinical Naturopathy, 7, 256. DOI: 10.4172/2573-4555.1000256

Robaey, Z. (2013). Who owns hazard? The role of ownership in the GM social experiment. In Röcklinsberg, H. and Sandin, P. (eds) The ethics of consumption. Wageningen Academic, Wageningen, pp. 51–53. DOI: 10.3920/978-90-8686-784-4_7

Robaey, Z. (2015). Looking for moral responsibility in ownership: A way to deal with hazards of GMOs. Journal of Agricultural and Environmental Ethics, 28, 43–56. DOI: 10.1007/s10806-014-9517-8

Robaey, Z. (2016). Gone with the wind: Conceiving of moral responsibility in the case of GMO contamination. Science and Engineering Ethics, 22, 889–906. DOI: 10.1007/s11948-015-9744-z

Salem, H. and Kaltenpoth, M. (2023). The Nagoya Protocol and its implications for microbiology. Nature Microbiology, 8, 12. DOI: 10.1038/s41564-023-01532-6

Sandin, P. and Robaey, Z. (2023). Modern biotechnology, agriculture, and ethics. In Poff, D. C. and Michalos, A.C. (eds) Encyclopedia of business and professional ethics. Springer International, Cham, pp. 1–4. DOI: 10.1007/978-3-319-23514-1_1256-1

Sandin, P. and Peterson, M. (2019). Is the precautionary principle a midlevel principle? Ethics, Policy & Environment, 22, 34–48. DOI: 10.1080/21550085.2019.1581417

Shiva, V. (2007). Bioprospecting as sophisticated biopiracy. Signs: Journal of Women in Culture and Society, 32, 307–313. DOI: 10.1086/508502

Taylor, P.W. (2011). Respect for nature: A theory of environmental ethics. 25th snniversary edition. Princeton University Press, Princeton, NJ.

Thompson, P.B. (2020). Food and agricultural biotechnology in ethical perspective, 3d edition. Springer, Dordrecht.

Wienhues, A. (2022). Looking through the microscope: Microbes as a challenge for theorising biocentrism within environmental ethics. Endeavour, 46(1), 100819. DOI: 10.1016/j.endeavour.2022.100819

Wynberg, R. and Laird, S. (2009). Bioprospecting, access and benefit sharing: Revisiting the 'Grand Bargain.' In Wynberg, R., Schroeder, D. and Chennells, R. (eds) Indigenous peoples, consent and benefit sharing: Lessons from the San-Hoodia case. Springer, Dordrecht, pp 69–86. DOI: 10.1007/978-90-481-3123-5_5

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Prioritizing climate adaptation limits and trade-offs

S. Kräuchi and I. Wallimann-Helmer
Department of Geosciences, University of Fribourg Environmental Sciences and Humanities Institute, Ch. du Musée 4, CH-1700 Fribourg/Freiburg, Switzerland

Abstract

The impacts of climate change are growing increasingly severe, and human communities must adapt to avoid these impacts. However, adaptation options are limited by constraints, which are both natural, or 'hard', and social, or 'soft'. Fundamental transformation of social systems and structures can expand these limits by adding adaptive capacities. However, such transformations may also negatively affect the communities whose adaptive capacities they are intended to expand. This article argues that transformational adaptation should take these negative effects into account by considering the value that soft adaptation limits have for communities. According to the no-harm principle, the transformation of what we term 'devalued' soft adaptation limits should be prioritized over the transformation of 'valued' ones. However, this general recommendation for action does not suffice to deal with value conflicts where trade-offs must be made. We suggest that giving the highest priority to basic human needs is a first step towards solving this issue.

Keywords: basic needs, climate change, cultural values, no-harm principle, transformation

Introduction

The impacts of climate change are growing increasingly severe, and human communities must adapt to avoid these impacts. However, adaptation options are limited by constraints, which are both natural, or 'hard', and social, or 'soft'(IPCC, 2022; Klein *et al*., 2014). Fundamental transformation of social systems and structures can expand these limits by adding adaptive capacities. However, such transformations may also negatively affect the communities whose adaptive capacities they are intended to expand. This article examines ethical challenges related to such transformational adaptation and suggests some preliminary strategies for dealing with them.

The main motivation for our ethical discussion is the fact that the distinction between hard and soft adaptation limits advanced by the Intergovernmental Panel on Climate Change (IPCC) does not distinguish between social structures that underpin soft adaptation limits by how communities value these structures. We anticipate that this lack of differentiation may lead to ethically challenging situations in transformational adaptation scenarios because transformation may impose unnecessary harm on people and communities (Carrillo and Wallimann-Helmer, 2021). For example, the adaptation opportunities of an indigenous community may be limited by their cultural beliefs, which lead them to avoid integrating into a colonial settler society, or they are limited by restrictions stemming from the organisation settler society that disable the community to follow an adaptation pathway they approve of. If transformational adaptation measures are taken to overcome these limiting factors, whether the indigenous community's cultural beliefs or the social setting of the settler state is altered makes a significant difference to the community. The former would be a loss to them whereas the latter could even improve their circumstances (Reibold, 2023).

To account for the differing impacts that can arise from transforming the social structures underpinning soft adaptation limits, we introduce an ideal-typical distinction between 'valued' and 'devalued' limits to adaptation. We label adaptation limits that correlate with, for example, cultural values, moral beliefs,

EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_67, © Brill | Wageningen Academic 2024
ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

and collective self-determination as 'valued'. Conversely, devalued adaptation limits are related to, for example, unjustified vulnerabilities and racial and gender inequalities. We do not claim that the distinction between valued and devalued is categorical. We argue that a continuum exists between these extremes. Nonetheless, distinguishing the two appears fruitful for more fine-grained analysis. We argue that transformational adaptation should, if possible, prioritize the transformation of devalued adaptation limits over valued ones, meaning that the underpinning social structure of devalued limits should first be altered to improve the adaptive capacities of a social objective. This strategy avoids inflicting unnecessary harm on communities by not transforming social structures that are endorsed by the members of the communities, and in many cases, the strategy may lead to mutual benefits by transforming devalued social structures that have negative impacts on the lives of the people and community.

We further argue that this initial distinction is insufficient to deal with all the potential challenges arising from transformational adaptation measures. We examine specific problems arising from value conflicts where trade-offs must be made. To deal with such problems, additional ethical concepts must be considered. Among many potential additional ethical concepts, we propose that minimally basic human needs should guide evaluations of these trade-offs. From this, we conclude that prioritizing the transformation of devalued adaptation limits over the transformation of valued ones is only valid if basic human needs are not threatened.

The paper proceeds as follows: First, we clarify the concept of adaptation limits and how it relates to transformational adaptation. Second, we introduce ethical challenges arising from transformational adaptation measures and introduce our ideal-typical distinction of valued and devalued adaptation limits. Third, we consider the problem of value conflicts and argue how additional ethical considerations may be mobilized to deal with them. We specifically focus on the concept of basic human needs. Then, the paper concludes.

Adaptation and transformation

Together with mitigation and loss and damage, adaptation is one of the main pillars of the United Nations Framework Convention on Climate Change (UNFCCC)efforts to combat the adverse impacts of climate change. According to the Paris Agreement, the aim of adaptation is 'a contribution to the long-term global response to climate change to protect people, livelihoods and ecosystems' (UNFCCC, 2015). Thus, adaptation aims to ensure sufficiently decent living conditions for people and communities (Wallimann-Helmer, 2016; Wallimann-Helmer *et al*., 2021).

The predominant form of adaptation is called incremental adaptation (Berrang-Ford *et al*., 2021; Thomas *et al*., 2021). The IPCC defines this as 'adaptation that maintains the essence and integrity of a system or process at a given scale' (IPCC, 2022). This means that incremental adaptation aims to sustain the current way a community lives without changing any of its fundamental attributes. For instance, a rural village dependent on cultivating rice may face difficulties in sustaining rice production due to rising temperatures. Adjusting to these rises by increasing the irrigation of their fields would not alter fundamental attributes of the community's life (Dow *et al*., 2013). Such a measure allows the village to continue planting rice as it used to.

However, incremental adaptation has its limits. The IPCC defines these limits to adaptation (or adaptation limits) as 'the point at which an actor's objectives (or system needs) cannot be secured from intolerable risks through adaptive actions' (Dow *et al*., 2013; IPCC, 2022; Klein *et al*., 2014). Thus, these limits mark a point beyond which incremental adaptation can no longer sustain some important aspect of a community's way of life. Changing irrigation practices in rice cultivation may be physically limited by how much water the ground can hold or is generally available in a region; or the community

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

may reach a point beyond which it can no longer afford additional water supplies; or water might be accessible, but only from a source that holds deep spiritual value to the community and cannot be used for mundane purposes.

These examples highlight how adaptation limits may differ in their binding force. Whether additional water is physically unavailable appears to differ from whether water becomes too expensive or cannot be used for spiritual reasons. It seems that the physical unavailability of water is harder to overcome than providing money to buy water or than changing cultural beliefs. Following this general insight, the literature and policy debate distinguishes between two forms of limits to adaptation: hard and soft (IPCC, 2022; Klein *et al*., 2014; Thomas *et al*., 2021). Hard limits are defined as the point beyond which 'no adaptive actions are possible to avoid intolerable risks' (IPCC, 2022). They are commonly associated with biophysical restrictions on opportunities for action and can be understood as outlining the general space of possible adaptation action.

Conversely, soft limits to adaptation are defined as the point where 'options may exist but are currently not available to avoid intolerable risks through adaptive action' (IPCC, 2022). These limits are commonly associated with social causes, which we term the social structures of communities and societies (Young, 2011), and can be extended if the underlying social causes are transformed. For example, if additional water cannot be afforded by a community, changing how the larger society to which the community belongs redistributes money, such as through the tax system, may enable the community to overcome this limiting factor. Similarly, if spiritual beliefs change, once-unavailable sacred water sources may be used for irrigation. Generally, soft adaptation limits can be conceptualized as outlining the space of possible adaptation action within specific social conditions.

In contrast to hard adaptation limits soft limits can be expanded by transformational adaptation. According to the IPCC, this second kind of adaptation should be understood as 'adaptation that changes the fundamental attributes of a social-ecological system in anticipation of climate change and its impacts' (IPCC, 2022). This means that transformational adaptation aims to change the social structures that cause these limits, for instance by altering the redistribution system of financial power in a society.

Two kinds of soft adaptation limits

The transformation of the structural causes of soft adaptation limits may strongly affect communities because they are accustomed to engaging with these structures daily, and the structures may even define a community's identity. However, not all structures play such an important role in a community's life. Some structures may even be experienced as oppressive. Thus, the transformation of social structures can also affect communities in significantly different ways (Carrillo and Wallimann-Helmer, 2021). For instance, an indigenous community that comes under pressure because rising temperatures disable its traditional agricultural practices might transform in at least two ways. First, the community may abandon its traditional agricultural practices and integrate their food production into the larger settler colonial society and its economic system. Second, the community could move to a different area of land, as has traditionally happened, for example with indigenous communities in North America, in cases of environmental changes. Both of these adaptation options are limited by social structural constraints. The first option is limited by the social structures of cultural identity that the community would have to relinquish in the case of assimilation. The second option is limited by the social structures of the land property system of the settler society, which may prohibit free movement over land. Both these structures may be transformed to extend adaptation limits. However, the community is unlikely to evaluate these transformational options in the same way: the first option would constitute a loss to community identity, whereas the second option would not and might even lead to improved social conditions (Reibold, 2023).

Franck Meijboom and Patricia Reus-Smit, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

This example illustrates that, as adaptation limits in general, also not all soft limits to adaptation are of the same kind. Some soft adaptation limits are highly valued and endorsed by the members of a community whereas others make no difference to communities, or even represent disvalues. We term the first kind of adaptation limits valued. Valued adaptation limits can be limits related to cultural identity, attachment to place, collective self-determination, or more generally, all those limits to adaptation whose causes are related to social structures valued positively by a community (Carrillo and Wallimann-Helmer, 2021; De Shalit, 2011; Whyte, 2011; Zellentin, 2015). Thus, they are not only factors limiting the adaptive capacities of a valued social objective, but they also constitute a social objective. In the example discussed before, the soft adaptation limits constraining integration into a settler society are related to social structures formative for the identity of the community, and, hence, are a valued social objective of the community.

Conversely, soft limits to adaptation stemming from disvalues we call devalued soft limits to adaptation. Adaptation limits are devalued if they are related to disadvantages for a whole community or some of their members. In our example, the social structures of the settler colonial society, that restrict the adaptive capacity of the indigenous community, are seen as undermining a cultural way of life and are even resented by the community. Other devalued adaptation limits may stem from gender or racial inequalities or the unequal distribution of vulnerabilities. Generally, devalued limits to adaptation are limits that are connected to some form of social inequality, injustice, or wrong (Laitinen and Särkelä, 2023; Young, 2011).

We do not claim that the distinction between valued and devalued limits to adaptation is categorical. We argue that a continuum exists between these extremes, with many real-world cases at various points on the continuum and with different communities having different understandings of what may count as a valued or devalued adaptation limits. Nonetheless, even on a continuum and considering diverse understandings, morally significant distinctions are possible between soft adaptation limits by categorizing each as more valued than devalued or vice versa.

Without being able to fully justify this here, we claim that transforming valued adaptation limits inflicts harm on a community and its members and that transforming devalued limits to adaptation does not. One may argue that members of communities have legitimate expectations in the functioning of valued social structures, hence, valued adaptation limits, and that they are harmed if these expectations are frustrated (Meyer and Sanklecha, 2014). Or, one may conceive of chosen adaptation limits as formative for the identity of the members of communities and thus, central for them leading a sufficiently good life, which means that they are harmed if these structures are removed (De Shalit, 2011; Whyte, 2011; Zellentin, 2015). Devalued limits, by contrast, do not form a valued social objective: often, they are connected to social wrongs. Thus, transforming them does not harm communities and their members. In many cases, transforming devalued adaptation limits can even benefit vulnerable members of communities (Roberts and Pelling, 2020).

From these observations, we conclude that transformational adaptation should, if possible, prioritize the transformation of devalued adaptation limits over valued ones. This conclusion stems from a broad understanding of the no-harm principle, central to common morality (cf. Kyllönen, 2018). This principle holds that one should not inflict unnecessary and unjustified harm. Thus, if transforming valued adaptation limit inflicts harm, one should refrain from doing so as long as it is not necessary or justified. For the example discussed above, this implies that the preferable adaptation pathway is the one that does not undermine the agricultural practices constitutive to the identity of the indigenous community and, hence, does not harm them.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Dealing with value conflicts and trade-offs

The approach we proposed in the previous section has some important limitations. Firstly, the distinction between valued and devalued limits to adaptation is not as clear cut as one may wish. Secondly, cases will arise in which the distinction between valued and devalued cannot indicate clearly whether transformation should occur. In this section, we investigate additional ethical considerations that can help solve the second issue, in particular the concept of basic human needs.

In some cases, there will be no option to choose between the extension of a devalued and a valued adaptation limit to expand the adaptive capacities of a valued social objective, and only the transformation of a valued adaptation limit will achieve the goal. However, as we argued above, valued adaptation limits are themselves valued social objectives. Hence, a trade-off must be made between two valued social objectives. If nothing is done, the community and people suffer due to the loss of a valued social objective that cannot be adapted further. If transformation occurs, they will suffer due to the loss of a valued soft adaptation limit, and, hence, another valued social objective. For instance, collective self-determination, a valued adaptation limit and social objective, may undermine the adaptive capacities of the healthcare system, hence limiting the adaptive capacities of health, a valued social objective. Prioritizing the transformation of devalued adaptation limits does not help to solve this issue because there are no devalued adaptation limits that can be transform instead of the valued adaptation limit. Additional ethical concepts need to be considered.

Ethical theory offers many approaches that may be applied to such cases. A consequentialist may argue that the social objective that should be preserved is the one that provides the greatest overall benefit to the community and its members. Alternatively, one may argue that additional considerations of justice should be included in the argument to clarify which valued objective should be preserved.

We take the second approach and argue that, in addition to prioritizing valued over devalued adaptation limits, an ethical approach to transformational adaptation should give the highest priority to basic human needs. This appears to us reasonable because respecting basic human needs may be seen as a minimal condition of any form of climate justice. (cf. Gardiner *et al*., 2010). Thus, the valued social objectives that should be protected are those whose loss would infringe on basic human needs. This further implies that also valued soft adaptation limits can rightly be transformed if abstaining from doing so would infringe on basic human needs. For instance, if the limitation of the healthcare system by collective self-determination is so sever for it to undermine basic human needs, it appears legitimate to transform the decision processes.

This approach cannot solve all problems relating to value conflicts. In some cases, neither option for action may infringe on basic human needs. In addition, what is understood as basic needs, and what counts as an infringement upon them depends on the cultural context, and it would be necessary to further investigate how the arguments presented in this paper apply to different cultural and social circumstances. However, even with this conceptual and practical limitations, the considerations presented may still help to guide actions in some important cases.

Conclusion

In this paper, we argued that transforming the social structural causes of soft adaptation limits to expand the adaptive capacities of social objectives can run into ethical problems because in some cases these structures are also valued social objectives. We suggested that transformational adaptation policy should deal with these questions by considering the different values that social structures hold for a community. We proposed that adaptation limits can be categorized on a continuum from valued to devalued limits.

Franck Meijboom and Patrick Baert, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

We argued that transformational adaptation should, where possible, prioritize the transformation of devalued adaptation limits over valued ones. We further pointed out that this recommendation faces difficulties when dealing with value conflicts between two valued social objectives. We highlighted that these cases need additional ethical considerations. We discussed basic human needs as one possible additional consideration. Further research should investigate how the concepts presented could be applied in different social and cultural contexts.

References

Berrang-Ford, L., Siders, A.R., Lesnikowski, A., Fischer, A.P., Callaghan, M.W., Haddaway, N.R., Mach, K.J., Araos, M., Shah, M.A.R., Wannewitz, M., Doshi, D., Leiter, T., Matavel, C., Musah-Surugu, J.I., Wong-Parodi, G., Antwi-Agyei, P., Ajibade, I., Chauhan, N., Kakenmaster, W. … Abu, T.Z. (2021). A systematic global stocktake of evidence on human adaptation to climate change. Nature Climate Change, 11, 989–1000.

Carrillo, T. and Wallimann-Helmer, I. (2021). 11. Food security and cultural identity in agricultural adaptation – A trade-off? In: Wallimann-Helmer I. and Schübel H. (eds) Justice and food security in a changing climate. Wageningen Academic, Wageningen, pp. 91–96.

De Shalit, A. (2011). Climate change refugees, compensation, and rectification. The Monist, 94, 310–328.

Dow, K., Berkhout, F., Preston, B.L., Klein, R.J.T., Midgley, G. and Shaw, M.R. (2013). Limits to adaptation. Nature Climate Change, 3, 305–307.

Gardiner, S.M., Caney, S., Jamieson, D. and Shue, H. (Eds.). (2010). Climate ethics: Essential readings. Oxford University Press, Oxford.

IPCC (2022). Climate Change 2022: Impacts, adaptation and vulnerability: Contribution of Working Group II to the sixth assessment report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge.

Klein, R.J.T., Midgley, G.F., Preston, B.L., Alam, M., Berkhout, F.G.H., Dow, K. and Shaw, M.R. (2014). Adaptation opportunities, constraints, and limits. In: IPCC (ed.) Climate change 2014: Impacts, adaptation, and vulnerability: Working Group II contribution to the fifth assessment report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, pp. 899–943.

Kyllönen, S. (2018). Climate Change, no-harm principle, and moral responsibility of individual emitters. Journal of Applied Philosophy, 35, 737–758.

Laitinen, A. and Särkelä, A. (2023). Social wrongs. Critical Review of International Social and Political Philosophy, 26, 1048–1072.

Meyer, L.H. and Sanklecha, P. (2014). How legitimate expectations matter in climate justice. Politics, Philosophy & Economics, 13, 369–393.

Reibold, K. (2023). Settler colonialism, decolonization, and climate change. Journal of Applied Philosophy, 40, 624–641.

Roberts, E. and Pelling, M. (2020). Loss and damage: An opportunity for transformation? Climate Policy, 20, 758–771.

Thomas, A., Theokritoff, E., Lesnikowski, A., Reckien, D., Jagannathan, K., Cremades, R., Campbell, D., Joe, E.T., Sitati, A., Singh, C., Segnon, A.C., Pentz, B., Musah-Surugu, J.I., Mullin, C.A., Mach, K.J., Gichuki, L., Galappaththi, E., Chalastani, V.I., Ajibade, I. … Global Adaptation Mapping Initiative Team. (2021). Global evidence of constraints and limits to human adaptation. Regional Environmental Change, 21, 85.

UNFCCC. (2015). Report of the Conference of the Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015: Part two: Action taken by the Conference of the Parties at its twenty-first session. UNFCCC, Geneva

Wallimann-Helmer, I. (2016). Differentiating responsibilities for climate change adaptation. Archiv für Rechts- und Sozialphilosphie, 149, 119–132.

Wallimann-Helmer, I., Bouwer, L. M., Huggel, C., Juhola, S., Mechler, R. and Muccione, V. (2021). Climate adaptation limits and the right to food security. In: Wallimann-Helmer I. and Schübel H. (eds) Justice and food security in a changing climate. Wageningen Academic, Wageningen, pp. 109–115.

Whyte, K.P. (2011). The recognition dimensions of environmental justice in Indian country. Environmental Justice, 4, 199–205.

Young, I.M. (2011). Responsibility for justice. Oxford University Press, Oxford.

Zellentin, A. (2015). Climate justice, small island developing states & cultural loss. Climatic Change, 133, 491–498.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Section 6.
Miscellaneous

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The eat-er and the fed-er: Feeling, feeding and livestock in more-than-animal worlds

S. Efstathiou[1] and E. Roe[2]*
[1]Philosophy and Religious Studies, NTNU, Dragvoll, 7049, Trondheim, Norway; [2]School of Geography and Environmental Sciences, University of Southampton, Highfield, Southampton SO17 1BJ, UK
** Corresponding author, e-mail: sophia.efstathiou@ntnu.no*

Abstract

What is the relationship between eating and being fed in today's food system? How does the food system use our need to eat to make us feed on what is in the interest of the market, as opposed to our health and the planet's? This paper troubles understandings of consumers as sovereign, choosy, abled *eat-ers*, to instead highlight geographies, relationalities, and conditions that create situated, bounded, disabled *fed-ers*. Suffering from an ableist bias, the conception of the consumer as an eat-er ignores the systemic disablement of fed-ers, and the multispecies injustices that emerge from current food systems. Inspired by disability justice work, cultural economy and food systems thinking we propose that accepting limits and boundedness as part of an intrinsically disabled human condition generates new paradigms and associated leverage points for food systems change.

Keywords: chicken, consumer, disability, food environment, food system thinking

Introduction: The eat-er and the fed-er

What is the relationship between eating and being fed in today's food system? How does the food system use our need to eat, to make us feed on what is in the interest of the market, as opposed to our health or the planet's? This paper offers an analytic tool for exploring the power dynamics of food relations by troubling the currently dominant understanding of food consumers. The representation of the consumer as sovereign, choosy, carefully and thoughtfully selecting what they eat, communicates a powerful agent. Yet, the consumer is also fed. Indeed, eating practices are always possible to analyse as also already ones of being fed -if, minimally, by oneself.

But do I really *ever* feed myself by myself? Food, utensils, other animals' bodies, human and animal labour, transporting, my own work to buy food, and so on are all often implicated in feeding me. In these dialectics of eating as being fed, flipping the analytic script from one highlighting agency and ability, to one that instead notices boundedness, relationality, and disability holds, we propose, important potential for reconsidering current food system paradigms.

The narrative below is compiled by Roe based on her multi-sited fieldwork over the last 20 years involving ethnography and interviews. It introduces three sketches, each featuring a different fed-er, situated and founded within the poultry food system: an intensively farmed chicken, an imagined chicken carcass consumer, and actual consumers of cheap, hot, chicken-based meals. Paying particular attention to the lived experiences of these fed-ers the sketches join the chicken who is fed; the imagined chicken carcass consumer who is fed through the necessity to create chicken-based foodstuffs using also the less desired parts of the carcass; and the wonder of cheap, fast food chicken products' ubiquity on city high streets feeding those of us who have few or no options to cook for ourselves.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

In 2023, remotely, the poultry technician checks if the automated feed system for the shed of growing broiler chickens under their care has worked. Yes, the soy-bean, nutritionally-enhanced, specialist food, making chickens grow fast, and providing exceedingly efficient "feed to weight" conversion, is being pecked up and eaten.

As today, back in 2006, live birds are culled for meat in a poultry processing plant, while all the parts of the chicken that -in the words of a processor — "need to find a mouth to eat them, as its cheaper than putting them in the ground" — become apparent: breast and wing, thighs and drumsticks (legs), heads, beak, feet, giblets (neck, heart, liver and gizzard). Who have they been fed to? Who will they feed today? How are they manufactured so, what is culturally considered the least tasty, less familiar ingredient for home-cooking, becomes instead a desirable manufactured chicken-based food to buy for your baby, cat, or you?

In 2015, from conversations with those in receipt of emergency food aid, it emerges that, with what little money they do have available, it is fast food chicken meals that are their go-to meal option. Cheap, nutritious, hot, (highly valued if you struggle to afford cooking at home), and ubiquitous on the high-street. This is the treat: a drink of Bourbon and a KFC, on a Friday.

A picture emerges of different bodies being fed by the poultry and associated industries. What these bodies are fed varies, but it is connected to the production and consumption of the commercially produced, living chicken. Instead of thinking of these consumers as buyers, with limited power, rethinking this relationship as one of feeding and caring highlights the failures of the concept of the eat-er to identify and imagine where responsibilities lie to support the health and wellbeing of fed-ers and the lives entangled with theirs.

Importantly, we think about the predicament of the fed-er in a feminist, emancipatory mode: for whilst we first identify the fed-er with lived experiences of dis-ability - including confinement, entrapment, information deficit, financial deficit, skills-deficit, choice-deficits - we consider how such forms of disability could be recognised as cutting across class and species, and unexpectedly as a resource for the future. Our analysis is inspired by disability justice activist and writer Leah Lakshmi Piepzna-Samarasinha, who call/s out in the title of their/her latest book: *The future is disabled* (2022). Piepzna-Samarasinha imagine/s a future where everyone is disabled not as the stuff of science fiction doom, but as a new utopia recognising and accepting disability as a resource which is binding humans -and we add nonhumans. Considering disability justice responses to the Covid-19 pandemic, or endemic, Piepzna-Samarasinha show/s how disabled knowledge, skills and experiences inspired and generated a diversity of more effective 'care tactics' (Piepzna-Samarasinha , 2022: p. 102) than those offered by ableist care paradigms.

This knowledge coming from disability studies is crucial also for today's food studies. For, besides several modes of disablement that are unwarranted, unjust, and unnecessarily imposed by the current food system, there are arguably necessary limits and bounds that need to be imposed within any sustainable food system (e.g., Cué Rio, 2022). This suggests that fed-er subjectivities and experiences need to become more openly embraced as a new food reality -and, why not, a future food utopia.

In sum, our paper introduces the novel political figure of 'the fed-er' which we offer as a generative, theoretically and empirically developed conceptual elaboration to the figure of the 'consumer'. We next situate this idea in food systems thinking (Black *et al*., 2024) and cultural economy (Callon, 1998) juxtaposing the figure of the fed-er with that of an imagined actively and independently consuming eat-er (next section). Then, we explore affinities between human and nonhuman fed-ers, and the roles

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

of feed-ers in this system. In conclusion we return to the idea of a disabled food utopia, caring for both human and nonhuman fed-ers.

Enacting the consumer through a food systems lens: From eat-er to fed-er

Consumers are defined operationally through their participation as presumed users/buyers of goods within food market systems. A food consumer is typically defined in dictionaries as one who buys food from the market, or as one who feeds by eating others, plants or animals. We suggest that understandings of the consumer focusing on their market activity and impact, rather than how the food system shapes their performances, ignore important details about how this figure is also fed, as much as, or even while acting to feed themselves. In this rethinking we are inspired by previous work in *cultural economy, feminist epistemology* and *food systems*.

A range of social science research is orientated around conceptualising and studying the behaviours, perceptions and attitudes of consumers, who are held up as important agents for change within dominant conceptions of market systems. Michel Callon's radical approach to understanding markets (1998), and processes of 'economisation' (Çalışkan and Callon, 2009) as culturally contingent and socially 'performed' inspires our analysis of food markets.

Economisation is a set of processes that constitutes behaviours, organisations, institutions and those things labelled as 'economic' to bring cultural or other material values into existing socio-technical economic infrastructures. For example, from a cultural economy perspective, farm animal welfare is 'performed' within the market for animal products, becoming economised and thus measure-able in terms of costs and pricing. In this sense, as Buller and Roe (2013) argue, it is possible to understand agri-food systems change as connected to how an organisation of 'the market' constitutes when something is 'economic', e.g. when food waste attains a value again.

Though the concept of the consumer is 'economised' in Callon's terms, or more broadly 'founded' in this scientific practice (Efstathiou, 2016), it is culturally contingent and possible to perform differently through future, emancipatory, scientific work. A relational food systems perspective offers this opportunity. Conceiving activity beyond 'the market' as important for studying food, the idea of a 'food system' organises the diverse set of elements that come into the making, provision, processing, consumption, and afterlives of food (Black *et al.*, 2024).

'A food system gathers all the elements (environment, people, inputs, processes, infrastructures, institutions, etc) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the output of these activities, including socio-economic and environmental outcomes.' (HLPE 2017: 23)

Importantly, rather than imagining different elements of the food system organising themselves, food systems thinking understands the food system as open to a set of complex relations that organise the system internally, but also externally, in relation to the wider political economy and environmental structures (Allen and Prosperi 2016; Brunori *et al.*, 2020: p. 42; Sage, 2022).

Once one starts to operate with a relational, 'systems' vision of the construct of 'the consumer' and 'consumption' dominant presumptions regarding the agency of the consumer, and of consumption as identity-defining begin to appear problematic: It gets harder to distinguish an agentive consumer from the system that, in the case of the food system, feeds them.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

An existing concept to explain the geographic specificities of food access in relation to diet, is referred to as the 'food environment' (Vogel *et al.*, 2017). This concept helps examine relationships between food outlet access and diet, and how consumers' situated access affects the nature and quality of the food available to them. Following this conceptual innovation one can think further that 'food environments' include, besides 'food outlets', a broader range of factors that shape the situatedness of distributed 'food system outputs' to a 'fed-er'.

The figure of the fed-er thus emerges as the flipside of the 'eat-er'. Imagined as operating in a food environment of abundance, choice and access, which facilitates, indeed encourages, their eating abilities, the eat-er perhaps embodies what Derrida identifies as the 'carnophallogocentric' subject, enacting a kind of masculinist-ableist-rationalist-anthropocentric myth of market agency and entitlement in self-fulfilled satiety (Derrida 1991; Adams and Calarco, 2016). Contrastingly, being fed is almost tautologous to being helpless. We are fed when we are infants or young children, patients, disabled, or perhaps in intimacy with our friends and lovers. Indeed, being fed can be comforting: It can be part of attending to and nourishing those we care for. Yet being fed and accepting to be fed contravene the sense of autonomy that eaters are presumed or often presume themselves to have. In a contemporary cultural context where autonomy, freedom, self-determination and self-sufficiency are prominent moral-political values it is no surprise that the fed-er remains a figure that is uncelebrated, and less discussed.

Vulnerable fed-ers and our feed-ers

We have described some limitations of the dominant market-based concept of the consumer as eat-er, suggesting that food systems thinking helps reconceive the concept of consumer, to acknowledge and identify the fed-er: the one who is fed by the system, as opposed to the one who buys their food of choice. However, the figure of 'the fed-er' became at first apparent to us, and felt, empirically, in those whose ability to eat appears to be bounded by corporate, financial, social, ecological or other situations of scarcity. These actors' agentive potential as eat-ers is in certain ways dis-abled. Their demonstrable dependence on being fed by systems and sources outside their control made it suitable to characterise their roles and subjectivities as ones of fed-ers.

Whilst it is not the case that there is a lack of food diversity in European national food systems, for significant population segments, access to food is restricted by place, price-points and promotions, and the affective lure of selling food through advertising. For example, in the UK 17% of the population were food insecure in June 2023 (Food Foundation, 2024). The proportion of people in Europe who cannot afford a 'proper' meal with fish, meat or a vegetarian equivalent every second day is also increasing, at 8.3% in 2022, up one percent from 2021, with the proportion significantly higher at 19.7%, on average, for people at risk of poverty (Eurostat, 2023).

It is perhaps easier to witness the frailty of the consumer as eat-er in the context of these human mouths, whose agency as buyers of food is compromised. These are not eat-ers as we have known them, since their capacity to buy is compromised by the failings of the Welfare State to give them money, for example in the UK. Instead, charitable giving, as money or donated food from individuals or retailers feeds them.

This is one extreme questioning the concept of consumers as eat-ers. Vulnerable consumers become 'dis-abled', since what they are able to eat, is contingent on what they can access in the market. But doesn't this contingency apply to the majority of us, not just those in receipt of emergency food aid? To what degree, even under 'normal' food system relationships does our agentive potential as consumers qualify us as fed-ers? Especially in urbanised food environments, our opportunities to develop, cultivate and exercise food skills and agencies for a self-determined, autonomous procuring, preparing, preserving, and

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

providing of our meals seem to be systematically (conveniently) delegated to others (farmers, retailers, restaurants, fast food chains, food delivery actors, etc.).

But there are also other fed-ers in contemporary food systems, whose agency and autonomy are compromised as an intrinsic feature of intensified, homogenous feeding systems and processes. Welfare scientists are looking into releasing insects into chicken houses, as a form of 'enrichment', as contemporary feeding practices do not enhance poultry lives, just maintain them. Considering food systems as multispecies structures, the figure of the livestock animal whose flesh, body processes and labour are integral to whom, how and what feeds is themselves a cornerstone fed-er, a being who is fed, to grow into food, for more fed-ers.

Taking the broiler meat chicken as an example, these purpose-bred meat birds receive a soya-bean, nutrient-enhanced diet to achieve the optimum feed conversion ratio i.e. minimal amount of feed input for maximum growth rate. On these diets their weight-gain is rapid, reaching culling weight between 35–40 days depending on intended market. This chicken breed has been selected for their large appetite that can become disastrous if they live beyond 40 days, as their body can't be physically sustained with good welfare without severely limiting their diets.

Exploring systemic entanglements and interdependencies through the 'consumer' as fed-er makes apparent the affinities between human and non-human fed-ers. Indeed, one might say that, in the historical evolution of current intensified animal-based food systems, the process through which the figure of the 'consumer' comes into play — as the carrier of an already lost ability as food-maker- is the same process through which nonhuman animals, come to be progressively, in the billions, confined, dis-abled and fed, to become food for human fed-ers (cf. Vialles, 1994, Weis, 2013).

Finally, there are some other trends in the organisation of retailing that suggest the overstated agency of the consumer in currently dominant frames. In certain food categories— supply chains are vertically integrated: That is, producer-wholesaler-retailer are coordinated by one branded company, and in some cases with few competitors, while a semblance of choice is offered through product segmentation and tiering. Food actors operating such vertically integrated value chains constitute organisational structures that perform what we think of as 'the feed-er'. As those who expect and imagine 'mouths to feed' (cf. our second empirical story), these actors come to hold a lot of power and responsibility for feeding and enacting fed-ers. They become 'the feed-ers' of fed-ers — human and not.

Whilst this argument about the power and responsibility of the handful of corporations that manage the majority flow of global commodities has been made before in the context of the UK (Lang 2020), there has been less confidence in the academic literature to ask important questions about what fate this holds for the idea of a consumer-buyer.

Conclusion: Potentials in disability

Eating is a complex set of social-material relationships with a generative potential for theory (Mol, 2021). We have argued that the figure of the food consumer understood as an eat-er becomes lacking when seen from a feminist, cultural food systems perspective that respects and recognises disability as a site of knowledge and action. In our analysis, the figure of the eat-er starts to become apparent when considering 'eaters' who are vulnerable, such as humans and animals with constrained food access. But this finding has wider ramifications. It asks: Aren't all living bodies fed? To what extent are food environments adequately open, diverse, accessible enough to fed-ers? Who, when and what should be doing the feeding? And what is the responsibility of actors holding the power to feed, in this account?

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

What emerges in the end is an affinity, a kinship in vulnerability between fed-ers, animals, human and nonhuman, which the food system as a feeding system plays into. But this vulnerability, also comes with openings of care, responsibility, and resourcefulness. As a quality of disablement is identified in the practices of the fed-er, consumer-buyer empowerment is contained, bordered and situated. This highlights an emancipatory view of fed-ers as subjects who know how to make do with less, who have cultivated skills, networks, 'care tactics' (Piepzna-Samarasinha, 2022), and workarounds precious for all of us responding to the polycrises threatening our planet.

References

Adams, C.J. and Calarco, M. (2016). Derrida and the sexual politics of meat. In: Meat culture. Brill, Leiden, pp. 31–53.

Allen, T. and Prosperi, P. (2016). Modelling sustainable food systems. Environmental Management, 57, 956–975.

Black, J., Maye, D., Krzywoszynska, A. and Jones, S. (2024). What constitutes food system resilience? The importance of divergent framings between UK mainstream and local food system actors. British Food Journal, 126(13), 57–71.

Brunori, G., Branca, G., Cembalo, L. D'Haese, M. and Dries, L. (2020). Agricultural and Food Economics: the challenge of sustainability. Agricultural and Food Economics, 8, 12.

Buller, H. and Roe, E. (2014). Modifying and commodifying farm animal welfare: The economisation of layer chickens. Journal of Rural Studies, 33, 141-149.

Callon, M. (1998). Introduction: the embeddedness of economic markets in economics. The Sociological Review, 46(1_suppl), 1–57.

Çalışkan, K. and Callon, M. (2009). Economization, part 1: shifting attention from the economy towards processes of economization. Economy and Society, 38(3), 369–398.

Cué Rio, M., Bovenkerk, B., Castella, J. C., Fischer, D., Fuchs, R., Kanerva, M., ... Röös, E. (2022). The elephant in the room is really a cow: using consumption corridors to define sustainable meat consumption in the European Union. Sustainability Science, 1–19.

Derrida, J. (1991). 'Eating Well', or the calculation of the subject: An interview of Jean-Luc Nancy with Jacques Derrida. In Cadava, E., Connor, P. and Nancy, J.-L. (eds) Who comes after the subject? Routledge, London.

Efstathiou, S. (2016). Is it possible to give scientific solutions to Grand Challenges? On the idea of grand challenges for life science research. Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences, 56, 48–61.

Eurostat (2023). How many people can afford a proper meal in the EU? Available online at https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20230710-1#:~:text=In%202022%2C%208.3%25%20of%20the,than%20in%202021%20(17.5%25) (accessed 5 June 2024).

Food Foundation (2024). Round 13 Food Prices Tracker: July 2023. Available online at https://foodfoundation.org.uk/initiatives/food-insecurity-tracking#tabs/Round-13 (accessed 4 June 2024).

HLPE (2017). Nutrition and Food Systems: A report by the high-level panel of experts on food security and nutrition of the Committee on World Food Security. HLPE, Rome.

Lang, T. (2020). Feeding Britain: Our food problems and how to fix them. Pelican, London.

Mol, A. (2021). Eating in theory. Duke University Press, Durham, NC.

Piepzna-Samarasinha, L.L. (2022). The future is disabled: prophecies, love notes and mourning songs. Arsenal Pulp Press, Vancouver, BC.

Sage, C. L., (2022). Introduction: A Research agenda for food systems. In: Sage, C.L. (ed.) A research agenda for food systems. Edward Elgar, Cheltenham, pp. 3–37.

Vialles, N. (1994). Animal to edible. Cambridge University Press, Cambridge.

Vogel, C., Lewis, D., Ntani, G., Cummins, S., Cooper, C., Moon, G., and Bairdet, J. (2017). The relationship between dietary quality and the local food environment differs according to level of educational attainment: A cross-sectional study. PLoS ONE 12(8): e0183700.

Weis, T. (2013). The ecological hoofprint: The global burden of industrial livestock. Bloomsbury, London.

Franck Meijboom and Patricia Pinto-Sanchez, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Obscured disruptions of industrial poultry sheds

*N. Lis**
The University of Queensland, Level 3, Room 306, Zelman Cowen Building (St Lucia), Brisbane, QLD 4072, Australia
**E-mail: n.lis@uq.edu.au*

Abstract

The 'Chicken of Tomorrow' competition of the 1950s in the United States is often described as the turning point for upscaling industrial poultry, however this competition was only possible because of infrastructure that emerged decades earlier. The World's Poultry Congress of 1930 in London, hosted by World's Poultry Science Association (WPSA), would be a turning point for global dissemination of large-scale industrial poultry technology. This paper casts some light on disruptive voices from the World's Poultry Congress of 1930 who spoke out against the then emergent large-scale poultry industry. The 1930 congress was a unique event because it was on the coattails of food scarcity issues from major global events of the early twentieth century. Global governments wanted to stimulate innovations concerned with larger and more effective food supplies. The United States Department of Agriculture sent displays and literature with delegates to England. Technology and experimental farms in the United Kingdom also brought emergent ideas to the global stage. There were inconsistent ideas surrounding the infrastructure of large-scale poultry. Some disruptive voices, especially women, challenged the proposed high-density housing and the shift to interior settings. Yet today large-scale industrial poultry sheds are overwhelmingly normalised. This presentation explores women of the early poultry industry and their role in and resistance to densification and intensification of industrial poultry production.

Keywords: Chicken of Tomorrow, chickens, history, women, World's Poultry Congress

Introduction

The 'Chicken of Tomorrow' competition ran in the United States (US) between 1948 and 1951, and focused on the industrialisation of large-scale meat chicken production. Competitors, working to create and expand the poultry economy, aimed to improve two aspects of chicken meat farming: first, the efficacy of production related to live birds by maximising weight while minimising food consumption, and second, the quality of the slaughtered chickens in terms of appearance and taste (Shrader, 1952). Rectangular sheds, approximately 128 m long and 7.35 m wide, located at the Arkansas Agricultural Experiment Station in the US, were evenly divided into six-by-six metre squares (Shrader, 1952). Each contestant submitted 400 chickens — half males and half females — to be raised in a density of roughly one chicken per 0.09 m^2 (Shrader, 1952). Prior to this competition chicken meat was only eaten on special occasions, but following the competition chicken meat became increasingly common in the US due to changes in how and when chicken meat was consumed (Lawler, 2016; Potts, 2012; Squier, 2010; Sunde, 2003).

The 'Chicken of Tomorrow' competition used an interior mode of chicken rearing that was only possible because of early developments in poultry infrastructure. Despite the clear connection between the introduction of large-scale poultry sheds and changes in poultry consumption that were brought on by the 'Chicken of Tomorrow' competition, the history of poultry shed technology often goes unnoticed. This paper addresses this absence by exploring aspects of the history of poultry sheds including what sparked their emergence and who played roles in shaping this now global standard of the poultry industry. Attention is paid to the World's Poultry Science Association (WPSA), established in 1912, who

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

today continues to play a role in advancing poultry science and the global poultry industry (Hunton, 2012; USDA). It publishes the authoritative *World's Poultry Science Journal* and hosts regular forums through the World's Poultry Congresses (WPCs). The Fourth WPC of 1930 in London marked a turning point for the normalisation of poultry sheds and indoor chicken containment, and for this reason informs this paper (The Ministry, 1931). In contrast, the Third WPC focused more on changes in poultry consumption patterns across the forty-three participating countries (World's Poultry, 1927). By the Fourth WPC fifty-four nations were participating and they included papers explicitly on poultry confinement (The Ministry, 1931). It was due to poultry shed technology that the 'Chicken of Tomorrow' would emerge nearly twenty years later.

The role of chickens would change after the Fourth WPC, and they would become significant livestock, which was formally uncommon. Chickens were once excluded from livestock census in the US, as Susan Squier argues they were 'marginal household creatures' associated with women, but this changed through industrialisation that was more commonly under the domain of men (Squier, 2010: pp. 144–145). Keeping chickens entirely indoors became possible only after new understanding of nutrition and vitamins emerged in the early twentieth century (Sunde, 2003). At the Fourth WPC, the risks to chickens through confinement were disputed by women poultry keepers who questioned the validity of such an idea (The Ministry, 1931). This paper examines the disruptive voices that emerged during the 1930 WPC, challenging emergent practices in industrial poultry farming, and explores their legacy in the history of densification and intensification of big poultry.

Disruptive voices and women against big poultry

Global events at the beginning of the twentieth century, such as World War I and the Great Depression in the US, created food shortages. In response, governments and agricultural organisations worked to improve the supply chain. This included a major expansion of the poultry industry. Although commercial poultry had early beginnings in the US in the late nineteenth century growing rapidly after the advent of refrigerated train cars (U.S. Department of Agri., 1930), pigs, cows, and sheep remained the frequent meat choice of consumers (Knapp, 1924). In the US chicken meat was reserved for special occasions or when guests were visiting (U.S. Department of Agriculture, 1930). However, this changed after the Fourth WPC. The WPSA laid the groundwork that now underpins the global practice of using large-scale sheds and keeping chickens entirely indoors. This strategy of poultry confinement was found to be economically advantageous and turned the poultry industry into a significant food supply, albeit one focused on yields and not poultry wellbeing or welfare.

As a result of changes in poultry farming and consumption patterns, there was also a rising demand for poultry which contributed to the intensification of this industry. Part of this change related to military rations. In the US, the military was given preference to the food supply. Chicken meat was not considered suitable for military diets, which drove more civilians towards poultry consumption (Squier, 2010). Wartime egg rationing schemes also hurt backyard chickens keepers' finances in Australia, accelerating industrial intensification (Atkins, 2012: pp. 211–212). Since civilians were more accustomed to poultry meat, events such as the 'Chicken of Tomorrow' competition, which aimed to increase the availability of chicken products, were of public interest. It was found that keeping chickens confined indoors improved yields, while controlling efficiency, such as how much chickens ate. Sheds are economically advantageous since they regulate daylight hours with the use of artificial lighting, causing meat chickens to eat less food, and egg laying chickens to produce eggs year-round (Sahin and Küçük, 2001).

Women have long been the primary keepers of chickens, a tendency that notably changed in Western nations following large-scale industrial agriculture. Worldwide, however, women are still strongly prevalent within the industry (Hovorka, 2012; Liu *et al*., 2023; Nandy *et al*., 2023), including poultry

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

abattoirs (Gray, 2014). The upscaling of the poultry industry in the early twentieth century had the consequence of pushing women's ownership out of large-scale poultry keeping and the larger poultry economy. Curiously today in Western nations small-scale chicken keeping continues to be under the domain of women (Gaynor, 2007; Squier, 2010). This could be due to chickens' small stature which has historically made them more accessible to women with limited property rights (Sachs, 1996).

Poultry empowered women economically, offering opportunities where employment options were limited. During the Fourth WPC, Mrs. George B. Simmons of Missouri expressed pride in paying her husband's mortgage through her growing poultry business. This was at a time when half of the industry in the US was controlled by women (The Ministry, 1931: p. 933). According to Carolyn Sachs, in Iowa in 1929 eggs were almost exclusively produced by women and the egg economy was touted as a 'women's enterprise' (Sachs, 1996: p. 107). As noted by Squier, the emergence of the poultry industry in the US depended on the knowledge of women such as Mrs. Ida Tilson who was the first speaker at the Farmer's Institute in Wisconsin where she presented her techniques for raising chickens (Squier, 2010).

Unsurprisingly, women were in attendance at the 1930 WPC. There were forty-seven women committee members, several of whom worked in multiple roles and three of the six Vice-Presidents of the congress were women (The Ministry, 1931). The event included 2415 registered delegates and members with 33.8% women. There were also around thirteen papers presented by women ranging from scientific papers, trade, and strategies on how to educate the public (The Ministry, 1931). It seems some of the women were in attendance with their husbands and/or parents but this wasn't explicitly stated. The longstanding history of women and poultry keeping contributes to their role in the emergence of the larger poultry industry today.

Curiously, even though women were a crucial part of the industry, discussions related to women's roles in the poultry industry at the Fourth WPC were contradictory. This is most notable around the topics of upscaling production and education. Most poultry continued to be held by women. In Germany, for instance, 47 million of the 50 million birds were kept by women in small-scale settings; however, at the same time, it was believed that woman didn't have the 'rationality' to manage a large-scale poultry farm and therefore they required education to learn how to upscale production (The Ministry, 1931: p. 810). In Ireland, women were employed by counties to educate male farmers to better equip them for serious poultry production (The Ministry, 1931, p. 856). Women were pigeonholed into nurturing, caring, raising and keeping of poultry, but men were viewed as capable of turning chickens into a large-scale economy.

The knowledge held by women was rooted in small-scale keeping practices, as seen in the US, where large poultry farms typically comprised of numerous small pens spread across entire properties. Birds were housed in small groups with access to outdoor areas and small coops (U.S. Department of Agriculture, 1930). However, the subsequent phase of upscaling relied on practices that diverged from traditional methods, with universities and governmental agricultural organisations experimenting on maximising outputs relative to inputs. The Ohio Experiment Station and the Pennsylvania State College are notable examples of institutions with experimental farms that were both in the same panel discussion at the Fourth WPC (The Ministry, 1931). Through their experiments it became apparent that keeping poultry confined without adequate space brought behavioural problems, including feather-destructive behaviour and cannibalism. Although better understood today (Evans, Brooks, Anderson, Campbell, and Jacobs, 2023), early experimenters were uncertain about the causes. At the Fourth WPC, Prof Knandel from Pennsylvania State College presented research on keeping groups of 300 chickens in 3 m by 6 m rooms, concluding that raising chickens indoors reduced parasites but it also led to cannibalistic behaviour (The Ministry, 1931: p. 369). Miss Boothby, listed in attendance to the congress from the UK, raised questions about the causes of cannibalism, suggesting factors such as floor space, mineral protein deficiency, or

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

excess lighting (The Ministry, 1931: p. 369). Knandel responded that cannibalism increased with low humidity (The Ministry, 1931). Miss Boothby questioned other presentations as well (The Ministry, 1931). It is unclear who Miss Boothby was and it is impossible to know her inner feelings in regards to chicken confinement; however, it captures a small hint of women's resistance to the emergent industrial scaled farming practice. Sachs finds that women were resistant to industrialisation because it stripped them of power in an economy they were once in control of (Sachs, 1996: pp. 107–108).

As the poultry industry expanded women's care and leadership was increasingly pushed out. The initial adoptions of high-density poultry sheds and agribusinesses were spearheaded by men, for instance, in 1951, when Charles Vantress won the 'Chicken of Tomorrow' competition, paving the way for Cobb–Vantress — now a joint venture with Tyson Foods — to become a global leader in broiler chicken genetics and breeding. This shift sidelined women who had previously played significant roles. Women activists and animal advocates turned against the industry, with Ruth Harrison's influential book, *Animal Machines,* raising awareness about the ethical concerns surrounding large-scale poultry farming in the 1960s. In the sciences, ethologist Marian Stamp Dawkins shed light on problems associated with large-scale poultry confinement (Dawkins, 1980). Meanwhile, advocacy organisations such as United Poultry Concern (UPC), founded by Karen Davis in 1990, have worked tirelessly to expose the suffering and cruelty inherent in the poultry industry. Despite these efforts, the industry continues to forge ahead and expand.

Conclusion

At the Fourth WPC, the introduction of high-density containment highlighted its economic benefits and its effectiveness in reducing parasites, diverging from traditional outdoor poultry farming practices. Despite concerns raised by women, such as Miss Boothby about this system, their voices were often marginalised by powerful organisations focused on increasing production. Nevertheless, women like Mrs. Ida Tilson played crucial roles in educating poultry farmers (Squier, 2010). By uncovering overlooked voices from history, we gain a better understanding of the power dynamics within the poultry industry. However, as the industry continues to grow, with approximately 100 million tons of poultry meat consumed globally each year (Mottet and Tempio, 2017), challenging its practices becomes increasingly difficult. Big poultry controls its narrative, making disruption and change challenging endeavours.

References

Atkins, P.J. (2012). Animal cities: beastly urban histories. Ashgate, Farnham.

Davis, K. (2009). Prisoned chickens, poisoned eggs : An inside look at the modern poultry industry, revised edn. Book Publishing Company

Dawkins, M.S. (1980). Animal suffering: the science of animal welfare. Springer, Dordrecht.

Evans, L., Brooks, G.C., Anderson, M.G., Campbell, A.M. and Jacobs, L. (2023). Environmental complexity and reduced stocking density promote positive behavioral outcomes in broiler chickens. Animals (Basel), 13(13), 2074. DOI: 10.3390/ani13132074

Gaynor, A. (2007). Animal agendas: Conflict over productive animals in twentieth-century Australian cities. Society & Animals, 15(1), 29–42. DOI: 10.1163/156853007X169324

Gray, L. (2014). We just keep running the line: black southern women and the poultry processing industry. Louisiana State University Press, Baton Rouge, LA.

Harrison, R. (1964). Animal machines: CABI, Wallingford.

Hovorka, A.J. (2012). Women/chickens vs. men/cattle: Insights on gender–species intersectionality. Geoforum, 43(4), 875–884.

Hunton, P. (2012). One hundred years of the World's Poultry Science Association. World's Poultry Science Journal, 68(4), 758–767. DOI: 10.1017/S0043933912000876

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Knapp, J. G. (1924). A review of Chicago stock yards history. The University Journal of Business, 2(3), 331–346. DOI: 10.1086/506744

Lawler, A. (2016). Why did the chicken cross the world? The Epic Saga Of The Bird That Powers Civilization. Simon and Schuster, New York, NY.

Liu, S., Yang, Y., Pang, Z., Liu, Y., Li, H., Cai, J. and Chen, Z. (2023). A cluster of two psittacosis cases among women farmers exposed to Chlamydia psittaci-infected domestic poultry in Zhejiang Province, China. Zoonoses Public Health, 70(1), 93–102. DOI:10.1111/zph.13004

Mottet, A. and Tempio, G. (2017). Global poultry production: current state and future outlook and challenges. World's Poulty Science Journal, 73(2), 245–256. DOI: 10.1017/S0043933917000071

Nandy, A., Nandi, P. C. and Chatterjee, M. (2023). efficiency management of women poultry farmers using hybrid DEA and machine learning approach: A case of SHG-based production in sub-Himalayan North Bengal. Vision (New Delhi, India), 97226292311597. DOI: 10.1177/09722629231159708

Potts, A. (2012). Chicken. University of Chicago Press, Chicago, IL.

Sachs, C.E. (1996). Gendered fields : Rural women, agriculture, and environment. Westview Press, Boulder, CO.

Sahin, K. and Küçük, O. (2001). A simple way to reduce heat stress in laying hens as judged by egg laying, body weight gain and biochemical parameters. Acta Veterinaria Hungarica, 49(4), 421–430. DOI: 10.1556/004.49.2001.4.6

Shrader, H.L. (1952). The Chicken-of-Tomorrow program; Its influence on 'meat-type' poultry production. Poultry Science, 31(1), 3–10.

Squier, S.M. (2010). Poultry science, chicken culture: A partial alphabet Rutgers University Press, New Brunswick, NJ.

Sunde, M. (2003). Seventy-five years of rising American Poultry consumption: Was it due to the Chicken of Tomorrow contest? Nutrition Today, 38(2), 60–62.

The Ministry of Agriculture and Fisheries, the Department of Agriculture for Scotland, the Ministry of Agriculture for Northern Ireland. (1931). Report of Proceedings of the 4th World's Poultry Congress at the Crystal Palace, London, England: July 22–30, 1930. HMSO, London.

US. Department of Agriculture (1930). The poultry industry of the US of America. A Special Report Supplementing the Exhibit of the US Department of Agriculture at the Fourth World's Poultry Congress, London, 1930. U.S. Government. Printing Office.

USDA. World's Poultry Science Association (WPSA) Records | Nal Special Collections. Available online at https://www.nal.usda.gov/collections/special-collections/worlds-poultry-science-association-wpsa-records

World's Poultry. (1927). Report of the Third World's Poultry Congress Held at Ottawa, Canada, July 27th–August 4, 1927. G.A. Trollope, Birmingham, AL.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Next level collaboration: towards responsible innovation for behavioural phenotyping in farm animals

M.F. Giersberg, A. van Putten and F.L.B. Meijboom*
Animals in Science and Society, Department Population Health Sciences, Faculty of Veterinary Medicine, Utrecht University, Yalelaan 2, 3584 CM Utrecht, The Netherlands
** Corresponding author, e-mail: m.f.giersberg@uu.nl*

Abstract

Animal production is shifting towards systems in which larger groups of animals are subjected to more space and structures to display a wider range of behaviours. However, in these human-created groups, animal welfare can be affected by harmful social interactions, such as tail biting in pigs and feather pecking in laying hens. AI-based technologies offer opportunities to research the functioning of these groups and to develop novel genetic and environmental intervention strategies. This is the aim of the IMAGEN project funded by the Dutch Research Council (NWO). The project activities are situated in a societal context that is characterized by discussions on animal use, welfare, public health and environmental sustainability. Complex societal challenges like this can only be tackled by real collaboration between different disciplines. The IMAGEN project addresses this ambition by involving a multidisciplinary research team which also includes societal and industry partners. However, additional efforts are necessary to create awareness and knowledge about the ethical dimensions related to the project topics. To practise dealing with socio-ethical questions in research and innovation, we organised a workshop for all project partners. In this paper, we discuss the results of this workshop and our follow-up strategy which includes a tailor-made approach to reflection based on the questions and needs of the project partners. During the workshop it became clear that institutional ethics committees were not seen as sufficient to stimulate genuine reflection. For this, participants considered transparency, trust, an open working culture and good relationships among project members as crucial. Participants also argued for an approach in which 'everyone' is involved. However, who was meant by 'everyone' seemed more difficult to define. We identified a field of tension between university and industry partners. For universities, it was deemed easy to be open and achieve 'something good' through research while companies are guided by competitive advantage. With this practical approach to transdisciplinary collaboration, we facilitate the reflection on ethical challenges and the contribution to sustainable animal production throughout the project.

Keywords: facilitation, societal challenge, transdisciplinary research, workshop

Introduction

The growing emphasis on the welfare of animals kept in food production systems includes a shift from preventing mere harm to enabling animals to engage in behaviours that they experience as rewarding (Mellor, 2016). In agricultural practice, this has led to the implementation of systems in which larger groups of animals are subjected to more space and structures providing them with opportunities to display a wide range of (social-)behaviours. However, in these human-created groups, animal welfare can be affected by harmful social interactions, such as tail biting in pigs and feather pecking in laying hens (Brunberg *et al*., 2016). More recently, AI-based methods have been adopted to study the functioning of these groups of animals and to develop novel genetic and environmental intervention strategies (e.g. van der Zande *et al*., 2021). The IMAGEN project, funded by the Dutch Research Council (NWO), aims to advance these methods and intervention strategies and to apply them for behavioural phenotyping

EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_70, © Brill | Wageningen Academic 2024
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

in commercial pig and laying hen breeding. The project activities are situated in a societal context that is characterised by discussions on animal and technology use, welfare, public health and environmental sustainability. In a previous paper, we argued that complex societal challenges like this can only be tackled by real collaboration between different academic disciplines and other stakeholders (Giersberg *et al*., 2022). The IMAGEN project addresses this ambition by involving a multi-stakeholder research team which also includes societal and industry partners.

IMAGEN is a typical example of a transdisciplinary project with the aim of achieving tangible societal impact and change in the medium and long term, as requested by many national and European research funding schemes. Transdisciplinary research does not imply a novel theory of knowledge or one specific method, it is rather characterised by more general normative aspirations (Kaiser and Gluckman, 2023). In recent years, several frameworks have been developed that embrace these aspirations, for instance by Carew and Wickson (2010) and Jahn *et al*. (2012). However, to researchers outside the community of those who study transdisciplinary processes, these frameworks often seem vague and lack a connection to their daily research tasks. This is particularly true for researchers from disciplines or fields which are grounded in radical positivism, such as animal and engineering sciences. In addition, external stakeholders often pursue different interests than the academic researchers or regard themselves more as research subjects rather than as equal research partners.

Transdisciplinary collaboration does not happen spontaneously, particularly not among research partners with different epistemological backgrounds. A common example is the challenge to integrate work packages dealing with ethical aspects of animal and innovation research into the overall project and to create functional outcomes together with the more technical work packages. The IMAGEN project is no exception to this challenge. Additional efforts of facilitation are necessary to co-create knowledge about the ethical dimensions related to the project topics and to incorporate this knowledge into further actions within the project. In this paper, we discuss the structure and the results of a workshop that we organised for all IMAGEN partners building on our previously presented stages of collaboration for societal challenge-oriented research projects (Giersberg *et al*., 2022). We end with proposing follow-up strategies which include a tailor-made approach to reflection based on the questions and needs of the project partners.

Sowing and growing — a workshop to facilitate collaboration

We developed and ran a workshop aimed at the practical implementation of transdisciplinary collaboration in a multi-stakeholder research team. In our specific case of the IMAGEN project, the workshop was designed to facilitate the integration of ethical reflection within the technically-oriented work packages together with all project partners. In particular, the workshop pursued the following objectives: (1) to create awareness and knowledge of the ethical dimensions of the different elements of the project, including technology, Artificial Intelligence (e.g. the development of tracking algorithms), animal breeding and use, and (2) to practice dealing with socio-ethical questions in research and innovation, involving multi-stakeholder perspectives.

As the pig- and laying hen cases play a prominent role within IMAGEN, we decided to kick-off the workshop with two pitches on the project activities related to these cases. This was followed by a brief introduction to the moral questions associated to the topics of IMAGEN (e.g. animal use) and the principles of Responsible Research and Innovation (RRI). Subsequently, participants were assigned to three groups, considering a heterogeneous composition in terms of people's backgrounds (academic, industry, NGO) and career levels (PhD student - professor or junior - senior level). Each group consisted of one facilitator (researcher from the ethics work package) and about five participants. Groups worked on a RRI self-reflection- and a Stakeholder Tokens task. After each group activity, a plenary wrap-up and reflection were held.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Responsible research and innovation self-reflection tool

Parallel to their positive impact, science and technology often create new risks and moral questions, fail to solve the issues they are intended to, and raise controversies. RRI strives to bring research and innovation related issues to the fore, anticipate their consequences and engage society in the discussion on how science and technology can contribute to building the type of world and society we desire for future generations. In the context of ethics, RRI focuses on (1) research integrity: the prevention of unacceptable research and research practices, and (2) science and society: the ethical acceptability of scientific and technological developments. To facilitate conversation and reflection on RRI within the IMAGEN project, the 'RRI self-reflection tool — ethics' (RRI Tools, 2016) was used. The questions presented in the RRI tool were discussed within the group. The facilitator ensured that everyone got the chance to share their thoughts. One group member wrote down the answers, ideas and main points discussed in the group in the online-tool.

Stakeholder tokens exercise

Stakeholder tokens is a participatory and playful approach to stakeholder analysis adapted by Yoo (2021). In the context of the IMAGEN project, the aim was to let project partners work out and experience a holistic picture of the stakeholder network related to the innovations studied within the project. By seeking out a robust set of stakeholders, legitimizing their inclusion and reflecting on their dynamic relationships, the project partners are able to gain a deeper and more nuanced understanding of the societal context in which their investigations take place. First, each group decided on one specific technology that is researched, developed or tested within the IMAGEN project. This was written in the centre of a large sheet of paper. Second, the group created a list of relevant stakeholders by writing their names on stickers. The stickers were attached to tokens (= small wooden dolls). Next, tokens were arranged on the paper. Finally, project partners were encouraged to be creative when sketching the interrelationships among stakeholders: to draw lines, arrows or other illustrative elements. During the exercise, the facilitator could prompt participants to substantiate their choices to stimulate the reflection process.

Harvesting — outcomes of the workshop

In the following, the insights gained from observing the group activities are summarised.

Responsible research and innovation self-reflection tool

During the self-reflection activity, all groups considered different formats of ethical reflection within a research project. Discussions often started with formalised approaches to reflection, such as the legally required approval of an ethics committee for animal experiments. In one group, the wish for clear structures and procedures predominated. Project partners expressed the need for clear guidance, 'having rules', when taking into account the often conflicting aspects of animal welfare, environmental impact and data security and privacy. However, all groups agreed that while these institutionalised procedures fulfil a useful part of the reflection process, they are not sufficient in terms of RRI. One example mentioned was that of observational on-farm studies, for which formal authorisation is not always necessary. In this case, it would not be formally required to determine which measures had to be taken, if for instance feather pecking behaviour escalated in a flock of laying hens. However, as a responsible researcher one would still have to think about this scenario beforehand: at which point is it time to intervene? When does the welfare of the animals outweigh one's research interests? Several participants reported that the companies they are working for have an 'ethics department' or an 'officer who is responsible for questions concerning ethics'. These were mainly seen as contact points in case

Franck Meijboom and Dennis Bray, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

a staff member has concerns or wants to report an issue. It was stated that regular discussions of ideas or projects do not take place, and that those officers are often not aware of research programmes such as IMAGEN. Complementary to institutionalised procedures and codes of conduct, participants considered transparency, trust, an open working culture and good relationships among project members as crucial to stimulate 'real reflection'.

A culture of openness was considered important to ensure that moments of reflection make a constructive contribution to the project. However, this welcomed openness brought with it a conflict for the industry partners of the project: how openly could they share technical detail without being at a disadvantage compared to their competitors? By this, a field of tension was revealed between academic and industry partners. At universities, it may be straightforward to move from 'publishing fancy things' to 'achieving something good through research', whereas companies are guided by competitive advantages. One participant suggested that it could also be advantageous for a company to be ahead of others when it comes to questions of animal welfare. However, it was argued for this to be true, attention to animal welfare would have to be a competitive advantage first.

Project partners were unanimous about who needs to be involved in the reflection process. As indicated above, it became clear that institutional boards or committees were not seen as sufficient to stimulate genuine reflection. All groups argued for a transdisciplinary approach in which 'everyone' is involved. However, who was meant precisely by 'everyone' seemed more difficult to define. This question formed an ideal link to the following activity, the Stakeholder Tokens exercise.

Stakeholder tokens exercise

All groups regarded the animal as a central stakeholder in the project. In one group, it was also labelled first and placed in the centre of the sheet of paper. In addition, the project partners identified the following stakeholders: the IMAGEN project itself, researcher, technician, breeder, farmer, advisor, veterinarian, neighbour, data manager, data authority, government, the EU, political party, research funding body, NGO, ethicist, activist, retail, slaughterhouse, media and society. The earth was chosen as stakeholder by one group, as it was assumed that the activities of the IMAGEN project would have a certain ecological footprint. However, an assessment of the environmental impact of the activities is not included in the research programme. This point was also mentioned during the plenary wrap-up. Several participants stated that future programmes should take into account the environmental impact of the research activities and results.

The three groups used different ways to visualise the relationships among the stakeholders. One group, for instance, drew smaller, individual or larger, shared islands on which the stakeholders were placed, depending on their assumed affinity. In another group, the tokens were arranged in clusters according to their proximity or distance to each other. The breeder, the technician and the researcher for instance were perceived to interact closely and were therefore placed in a dense cluster together with the project itself. One participant stated that it was difficult to organise the stakeholders and their interrelations on a two-dimensional sheet of paper. Creating a 3D model would be a more suitable option. Interestingly, the ethicists was put at the edge of the broadest cluster. They were also the only connection to society and the media, which were both placed in a separate cluster, outside the project clusters.

Re-seeding — follow-up strategies to sustain ethical reflection

During the plenary wrap-up, project partners expressed several ideas and suggestions on how to proceed with the integration of ethical reflection into the IMAGEN project. They agreed that the workshop contributed to creating awareness, knowledge and understanding of the socio-ethical question related to

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

the project topics. The activities also helped participants to be aware of and to acknowledge the plurality of stakeholders, their interests in and their views on these topics. A key concern was that the aspects discussed during the workshop need to be further implemented into the participants' daily work- and research practices. This would require critical, conceptual thinking. One's own values would need to be made explicit and one should not be discouraged by the argument that something is 'not feasible'. It was proposed to plan future activities to practice and deepen the reflection process by discussing cases relevant to IMAGEN.

As a follow-up to the workshop, we conducted a student project to, among other things, gain more detailed insights into (1) the participants' impression of the workshop, (2) the normative questions project partners face in their daily work on the IMAGEN project, and (3) desired formats for future activities to encourage ethical reflection. The project partners were interviewed individually on these aspects. In summary, the interviewees confirmed their positive feedback regarding the workshop. It was perceived as a constructive but also as a new approach that ethical reflection was involved in the research project from the beginning and in a tangible way. As practicing ethical reflection was perceived as something new, participants wished for more attention to be paid to it. The normative questions addressed by the project partners, if they identified any, were specific to their own professional niches. One breeder, for instance, was concerned about whether and how novel breeding strategies could be used to improve animal welfare, whereas an animal scientist was questioning their responsibility for animals in research. The fact that project partners do not immediately consider the questions that are important in the overall societal context of the project, shows that there is still room for improvement in the level of collaboration among the individual work packages. Several interviewees expressed the interest in acquiring skills to implement the knowledge obtained during the workshop into practice. In some cases, this was phrased in terms of concrete learning objectives, such as how to fill in an application for a permit of an ethics committee or how to lead discussions on socio-ethical aspects in research meetings or with citizens. This should be addressed in future activities by offering participants some guidance, but focussing on stimulating their own critical thinking.

The results of the workshop and the student project demonstrate that playful, hands-on activities in mixed groups with project partners from different backgrounds are appreciated in order to practise dealing with socio-ethical questions in research and innovation. For the IMAGEN team, it is also vital that the exercises are explicitly linked to the research activities of the respective partners. One aspect that should not be underestimated is the role of a facilitator. A facilitator is not only essential to organise activities that foster reflection, but also for ensuring the continuity of such joint development processes throughout the project and beyond the individual work packages. In the case of the IMAGEN project, our next step will be to plan an activity that builds on the workshop presented here by inviting the project partners to reflect on concrete cases in a creative way.

Conclusions

In this paper we present useful tools for the practical implementation of transdisciplinary collaboration in a multi actor research consortium. Practical exercises with which participants can relate combined with facilitation efforts are key to stimulating transdisciplinary collaboration in challenge-oriented research programmes. For the IMAGEN project, this approach means progress in reflecting on ethical challenges within the entire consortium and a contribution to sustainable innovation for animals in food production systems.

Franck Meijboom and Bernice Bovenkerk (Eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

References

Brunberg, E.I., Rodenburg, T.B., Rydhmer, L., Kjaer, J.B., Jensen, P. and Keeling, L.J. (2016). Omnivores going astray: A review and new synthesis of abnormal behavior in pigs and laying hens. Frontiers in Veterinary Science, 3, 1–15. DOI: 10.3389/fvets.2016.00057

Carew, A.L. and Wickson, F. (2010). The TD Wheel: A heuristic to shape, support and evaluate transdisciplinary research. Futures, 42(10), 1146–1155. DOI: 10.1016/j.futures.2010.04.025

Giersberg, M.F., Bolhuis, J.E., Rodenburg, T.B. and Meijboom, F.L.B. (2022). How smart should resilience be? On the need of a transdisciplinary approach to transform pig production systems. In Bruce, D. and Bruce, A. (eds) Transforming food systems: Ethics, innovation and responsibility (EurSafe 2022). Wageningen Academic, Wageningen, pp. 513–518. DOI: 10.3920/978-90-8686-939-8_80

Jahn, T., Bergmann, M. and Keil, F. (2012). Transdisciplinarity: Between mainstreaming and marginalization. Ecological Economics, 79, 1–10. DOI: 10.1016/j.ecolecon.2012.04.017

Kaiser, M. and Gluckman, P. (2023). Looking at the future of transdisciplinary research. International Science Council, Paris. DOI: 10.24948/2023.05

Mellor, D. J. (2016). Updating animalwelfare thinking: Moving beyond the "five freedoms" towards "A lifeworth living". Animals, 6(3). DOI: 10.3390/ani6030021

van der Zande, L. E., Guzhva, O. and Rodenburg, T. B. (2021). Individual detection and tracking of group housed pigs in their home pen using computer vision. Frontiers in Animal Science, 2, 1–10. DOI: 10.3389/fanim.2021.669312

Yoo, D. (2021). Stakeholder tokens: a constructive method for value sensitive design stakeholder analysis. Ethics and Information Technology, 23(1), 63–67. DOI: 10.1007/s10676-018-9474-4

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The use of the Research Ethics cards for enhancing reflexivity: Case study on detection of microplastics in salmon

H.S. Bjerklund[1,2], T. Antonsen[1] and A.I. Myhr[2,]*
[1] UiT-The Arctic University of Norway, Institute of philosophy and first semester studies, 9037 Tromsø, Norway; [2] NORCE-Norwegian Research Centre, SIVA Innovasjonssenter, 9019 Tromsø, Norway
** Corresponding author, e-mail: anmy@norceresearch.no*

Abstract

Over the past ten years, the concept of Responsible Research and Innovation (RRI) has gained visibility, both in policy context as well as within academic discussions concerning science and technology. Research funding bodies in Norway do now include RRI as a requirement in calls for funding, especially in emerging technologies projects. However, the concept of RRI has been criticized for its unclarity in how the idea of RRI should or could be interpreted practically. Here we present our experiences of using the Research Ethics cards as an RRI approach to help researchers and research participants to enhance reflexivity regarding the effects and potential impacts of research. Our task was to apply RRI concepts to guide the development of the projects methodological approach for the study on nano- and microplastics in marine animals, e.g. salmon, to identify and reflect on the ethical aspects of their research. The methodological approach utilized in the project includes for example novel technologies such as advanced microscopy and modern gene technologies as -omics approaches. By using the Research Ethics cards in applying the RRI concepts, we found that the RRI facilitator can decide what role one wish to take, and it provides a common conceptual understanding prior to discussion. This approach allowed for open discussions and circumvented the challenge that employing RRI in technology projects become a one-way discussion and that the RRI facilitator owns the questions and the answer. Yet, common to other work on reflexivity, this methodology was not suited to address power asymmetries within the research group. We suggest that adding cards addressing the social situatedness can contribute to building awareness about potential power asymmetries in a research group. This may facilitate that all viewpoints become a part of the knowledge production and help researchers and research participants to reflect on ethical responsibilities in research and innovation projects.

Keywords: converging technologies, ocean health, power relations, responsible research

Introduction

In ensuring that research processes and outcomes are in line with societal values, needs and expectations, research funding bodies have in the past years included the concept and the approach of Responsible Research and Innovation (RRI) as a requirement in calls for funding, especially in emergent technologies projects. As a policy concept, RRI entails a dynamic approach which aligns both the research/innovation process and its outcome with the values, needs, expectations and concerns of stakeholders and the society (Stilgoe *et al*., 2013). Research funding programs in EU, UK and Norway have described RRI in terms of a set of process characteristics: anticipatory, inclusive, reflective and responsive (Forsberg and Wittrock, 2022; Owen *et al.,* 2012; Stilgoe *et al.,* 2013). Integrating these dimensions thus provides a general framework. Yet, the framework has been subject of considerable criticism due to its unclarity in how to interpret RRI practically (Burget *et al*., 2017; Forsberg and Wittrock 2022; Owen *et al.,* 2012). In their systematic literature review of RRI practices, Schuijff and Dijkstra (2020) suggest that all RRIs elements seem too complex to be realized in practice, and by focusing on specific characteristics, dimensions or values will lead to a more complete uptake. In this paper, we suggest an alternative methodology helping

M.F. Giersberg, B. Bovenkerk and F.L.B. Meijboom (Eds.), ***Back to the future***
EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_71, © Brill | Wageningen Academic 2024

ISBN 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

researchers, managers, and research participants to identify and reflect on the ethical aspects of research and innovation.

Reflexivity, as one of the four RRI characteristics, is defined by reflecting 'on underlying purposes, motivations, and potential impacts, what is known (including those areas of regulation or other forms of governance that currently exist) and what is not known, associated uncertainties, risks, areas of ignorance, assumptions, questions and (ethical) dilemmas' (Owen *et al*., 2012: p. 755). A commonly discussed practice geared towards stimulating reflection during ongoing research has been midstream modulation (Schuijff and Dijkstra, 2020). Midstream modulation includes an 'embedded humanist' which engages their ''host' in what can turn to be 'high impact' critical reflection as an ongoing part of their normal routines and activities' (Fisher and Rip, 2013: p. 174). Similar methodology has also been discussed by Myskja and Myklebust (2022). Making use of Socratic dialogue in unstructured group interviews, the Socratic methodology begins by participating in an embedded humanist. Yet, since Socratic dialogue 'entail a mutuality where both parts pose questions and give answers with a reciprocal critique of what the other says' (Brinkmann and Kvale, 2005: p. 171 quoted in Myskja and Myklebust, 2022), such methodology, they argue is helpful in balancing the power relations between the interviewer and the interviewees and fostering exploratory dialogues within the group.

Building on insights from both midstream modulation and Socratic methodology, we suggest a methodology that balances the power relations between the moderator and the research consortium even further than the traditional Socratic method. By using the Research Ethics cards, we found that the RRI facilitator can decide which role to take. The approach allowed for open discussions and circumvented the challenge that employing RRI in technology projects become a one-way discussion where the RRI facilitator owns the questions and the answer. More so, this methodology helped researchers identify and reflect on important ethical aspects in their research on nano- and microplastics in marine animals, such as underlying purposes, motivations and potential impacts of the research project, and the researchers' areas of ignorance and assumptions. Through a description of the approach and discussion of some key challenges, we show this method's potential as a supplement to the catalogue of practical approaches to RRI.

Methodology: the use of the Research Ethics cards in a project

Taking part in a cross-disciplinary research project preforming a system biology approach to examine the nano- and microplastics impact on welfare of fish, applying RRI concepts were suggested to guide the development of the methodological approach. With the aim of strengthen the cross-disciplinary in the consortium, to introduce the concept of RRI to project's researchers, and to generate an inclusive and broad conversation, we utilized the Research Ethics cards (Millar *et al*., 2022). The cards are developed to help researchers, managers and research participants to identify, explore and reflect on their ethical responsibilities in research and innovation. Designed to raise awareness and ask questions about a wide range of values, aspects, attitudes and assumptions underlying research and innovation, the cards come in 14 categories: Social implications, environmental implications, economic implications, values and principles, participants and stakeholders, provocations in research, structural issues, research quality assurance, research practice, research dissemination, research engagement, research misconduct, research planning, and research questions.

Carrying out a two-hour workshop with the project consortium, the RRI facilitators prepared an introduction to RRI, followed by a conversation plan that including three categories: planning, conducting, and implications of research. We believed this structure would give the conversation an intuitive flow for the participants. In planning research, conversation starters included cards on research quality, aim, co-creation, research question, why, experimental design, hypothesis, research framing, and

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

risk assessment. For the conversation on conducting research, we had chosen 11 cards as conversation starters: hubris, reproducibility, publication concerns, non-maleficence, care, respect, research animals, you, your colleagues, whistleblowing, and uncertainty management. For the conversation concerning implications of research, we had chosen nine cards as conversation starters: economic cost, sustainability, pandoras box, dual use, retrospective view, accessibility, benefit sharing, biodiversity, and waste. Each of the cards includes a definition of the concept, a question, and a picture. The cards were chosen by the facilitators through discussion until agreement was reached prior to the workshop.

The facilitators randomly divided the group into two, including seven participants in each group. In both groups, every participant randomly received one card per category of conversation. Each conversation category lasted for about 15 minutes. In group I, participant A read out what was written on their card, and then chose participant B to answer the question. This was followed by opening the table for other participants to answer and bring in their perspectives. After a few minutes of conversation concerning participant A's card, participant B then read out their card to participant C, a round which we continued all through the conversation. In group II, a slightly different method was used. Like group I, one participant read out what was written on their card, including the question. However, in group II, the question was asked to everyone. In this group, the facilitator took a more confronting approach and thus contributed to the conversation with either comments or following-up questions, in line with a Socratic interview approach. After some time, the group moved on to a new card and a new question as the facilitator asked another participant to read out their card.

Key topics identified in planning and performing research in the project

In the workshop, using the Research Ethics cards, the researchers identified and reflected on important ethical aspects in their research on nano- and microplastics in marine animals, both in line with the overall aim of RRI as well as the goal of enhancing reflexivity. In accordance with the RRI goal of enhancing reflexivity, the cards initiated reflections and discussions concerning underlying purposes, motivations and potential impacts of the research project, and the researchers' underlying assumptions. Among some of the topics discussed, the participants reflected on their role in the research project, the project's overall aim, how they are working on co-production, and questions concerning the moral status of their research animals. When discussing the card on 'respect', one researcher noted a moral difference between the farm salmon and the wild salmon, suggesting that also treating them differently seemed appropriate. The facilitator followed up by asking why the participant thought this way. Doing so, the groups began to discuss this assumption but also extending the conversation to respect for cells and cell cultures as well. By revealing certain assumptions, the methodology initiated reflections and discussions concerning these assumptions.

In line with both the specifics of the overall aim of RRI as well as the goal of enhancing reflexivity, the methodology facilitated a conversation about the potential impacts of the research results and in what way certain outcomes may impact societal needs and expectations in a negative way. In the past years, awareness of our extensive plastic usage has prompted serious considerations, leading to governmental attempts to address this pressing issue. By realizing that their research results may suggest no harm by micro- and nano-plastics, the researchers reflected on how this result could impact the use of plastic to increase even further than of today, inquiring whether such result would not align with societal values, needs and expectations. On a later topic concerning sustainability, the researchers acknowledged how the project itself employs great amounts of plastics. Since the research project is part of this societal mission of reducing such use, the participants discussed how they could reduce the usage of plastics in their research.

Franck Meijboom and Patrick Baas (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

In addition to the goal of reflexivity and the overall aim of RRI, the methodology brought about awareness and discussions concerning research misconduct, dissemination, and quality assurance. On these topics, the facilitator took a more 'informing' role. When discussing the card 'whistleblowing', it became clear that the researchers did not know what to do in situations of, for example professional wrongdoing. Arguing that their group was very open and thus there would be no problem, the facilitator informed that whistleblowing could include fraud, corruption and so on. The facilitator then asked what the researchers would do if for example the research leader were corrupt. Following discussion, the facilitator informed the group of who to contact and the system which were in place for these situations. On the topic of 'publication slicing', the card itself informed the researchers of the concept and the card allowed the researchers to share their experiences of how expectations of publications from their research institutions can push the limit to what extent they used data and maximized outputs. Similarly, on the card concerning retrospective view, the researchers agreed that such review should take part in all research as in quality assurance and to support further reflexivity, yet, due to time constraints and economic reasons in project-based research there were rarely opportunities for this.

Overall, by facilitating reflections on topics which were new for many participants, the methodology ensured a common conceptual understanding prior to discussion. As the Research Ethics cards dictate the topic of the discussion, the facilitator can choose if one wants an 'organizing role' or if one wants to participate in the same way as the other participants. This flexibility thus eliminates power asymmetries between the facilitator and the participants even further than the Socratic methodology. In the same way as the Socratic methodology, the participants had the opportunity to challenge the active facilitator, as well as the cards' definitions and questions. Yet, the definitions provided by the cards balanced the power relations even further, ensuring that everyone started from the same point regardless of their prior knowledge of the concept. In addition, letting the questions from the cards dictate the topic of discussion circumvented the challenge that employing RRI in technology projects become a one-way discussion and that the RRI facilitator owns the questions and the answer. However, as a common problem in the RRI work on reflexivity, the methodology was not able to uncover power asymmetries between the participants within the research group.

Power relations and knowledge production

Scientific practices are today the dominant force of knowledge production and circulation. This knowledge not only shape contemporary life but also the material conditions of existence through resultant technologies, science-based policies, and science-based decision-making (Grasswick, 2007). In the late twentieth century the question of who an epistemic agent is began to challenge mainstream epistemology as the 'neutral' epistemic agents mirrored certain social groups of society (McHugh, 2007). Analysing how power operates within and around particular social positions influencing knowledge production, Fricker introduces the notion of identity power, defined as 'a form of social power which is directly dependent upon shared social-imaginative conceptions of the social identities of those implicated in the particular operation of power' (McHugh, 2007: p. 4). In everyday testimonial exchange, the hearer makes use of shared social-imaginative conceptions of social identities about how far the speaker is trustworthy. In this interaction between the speaker and hearer, these shared social-imaginative conceptions can wrongfully undermine or overestimate the speaker in their capacity of knowledge. Further elaborated by Pohlhaus (2012), the social-imaginative conceptions also impact how the knower experiences the world and what the knower is more or less likely to notice and pursue as an object of knowledge. In both ways, identity power can by excluding certain perspectives and voices, hinder deliberations crucial to scientific inquiry and to undermine RRIs internal goals.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

As recognized by many philosophers of science, scientific practices are dependent on discussion and deliberation (Hardwig, 1991; Kitcher, 1990; Popper, 1962). In a similar way, both the overall aim of RRI as well as the internal RRI goal of enhancing reflexivity requires a diverse spectrum of voices and perspectives to assess potential implications and societal expectations. Not to mention, to address what is known, what is not known, assumptions, questions, and so on. Going back to the methodology using the Research Ethics cards, identity power can play a crucial role in who gets to take part in the conversation, as well as what perspectives that are included and elaborated on. Both approach I and II described could potentially avoid one person talking too much (approach I), and make sure no participant gets a leading role, as everyone was challenged by the moderator (approach II). Yet, we experienced that the conversation was not equally shared between participants and the cards did not make visible the participants' social situatedness impacting how far a speaker is trustworthy, or the facts of hierarchies and power within the group. By not being aware nor addressing these power dynamics, important perspectives crucial to good scientific practice remain silence, thus failing to also align with RRIs overall aim and the goal of enhancing reflexivity. However, by adding cards addressing both the social situatedness as well as hierarchies and power within the group, the methodology could uncover and address the power asymmetries potentially hindering knowledge production. Importantly, it is by recognizing these power dynamics that one can ensure all viewpoints being voiced and that hidden structural effects of power imbalances are illuminated (Preston and Wickson, 2016).

Conclusion

The Ethics Cards has been presented in our project as a new RRI tool to be used in natural science or technology projects. Although our project is not directly placed under the heading of emergent technologies but aims more in a basic research approach to use new technology to develop new methods for detection of effects by micro- and nano-plastics on salmon, the intention behind RRI makes it relevant also for such projects. For us in this project we aimed to promote reflexivity, to ensure high ethical standards, as well as promote openness. The Research Cards helped us to facilitated reflections on topics which were new for many participants, it created a possibility to reflect about the process of planning, conducting and implications of research, and the potential social and policy impact by the outcome of the research. To identify power asymmetry within a project and between the researchers and society we recommend developing Ethics Cards that can facilitate discussions about social situatedness.

References

Burget, M., Bardone, E. and Pedaste M. (2017). Definitions and conceptual dimensions of responsible research and innovation: A literature review. Science and Engineering Ethics, 23, 1–19.

Fisher, E. and Rip, A. (2013). Responsible Innovation: Multi-level dynamics and soft intervention practices. In: Owen, R., Bessant, J., and Heintz, M. (eds.) Responsible Innovation. Wiley, Chichester, pp. 165–183.

Forsberg, E.-M. and Wittrock, C. (2022). The potential for learning from good RRI practices and implications for the usefulness of RRI as an umbrella concept. The Learning Organization, 30: 671–687.

Fricker, M. (2007). Epistemic injustice: power and the ethics of knowing. Oxford University Press, New York, NY.

Grasswick, H. (2017). Epistemic injustice in science. In: Kidd, I.J., Medina J. and Pohlhaus, G. (eds.) The Routledge handbook of epistemic injustice. Routledge, London, pp. 313–323.

Hardwig, J. (1991). The role of trust in knowledge. The Journal of Philosophy, 88, 693–708.

Kitcher, P. (1990). The division of cognitive labor. The Journal of Philosophy, 87, 5–22.

McHugh, N.A. (2017). Epistemic communities and institutions. In: Kidd, I.J., Medina J. and Pohlhaus, G. (eds.) The Routledge handbook of epistemic injustice. Routledge, London, pp. 270–278.

Millar, K.M., Hyde, R. and Craigon P.J. (2022). Constructing ethics for the 'Ethics in Research' card-based tool: Concepts and categories. Presented at EURSAFE.

Franck Meijboom and Dominic Roser, Leiden, 9789004715509
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Myskja, B.K. and Myklebust, A. (2022). Socratic dialogue on responsible innovation – a methodological experiment in empirical ethics. Nordic Journal of Applied Ethics, 17(1), 29–44.

Owen, R., Macnaghten, P. and Stilgoe, J. (2012) Responsible research and innovation: From science in society to science for society, with society. Science and Public Policy, 39, 751–760.

Pohlhaus, G. (2012). Relational knowing and epistemic injustice: Toward a theory of willful hermeneutical ignorance. Hypatia, 27, 715–735.

Popper, K. (1962). Conjectures and refutations: The growth of scientific knowledge. Routledge, London.

Preston, C.J. and Wickson, F. (2016). Broadening the lens for the governance of emerging technologies: Care ethics and agricultural biotechnology. Technology in Society, 45, 48–57.

Schuijff, M. and Dijkstra, A.M. (2020). Practices of responsible research and innovation: A review. Science and Engineering Ethics, 26, 533–574.

Stilgoe, J., Owen, R. and Macnaghten, P. (2013). Developing a framework for responsible nnovation. Research Policy, 42, 1568–1580.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Trends and developments in Asia Pacific food ethics: Perspectives from APSAFE2020 and 2023

*K. Ota**
Department of Policy Studies, Nanzan University, 18 Yamasato-cho, Showa-ku, Nagoya, Aichi 466-8673, Japan
E-mail: otakazu@nanzan-u.ac.jp

Abstract

The Asia Pacific region faces complex challenges in developing sustainable and ethical food systems amidst rapid urbanization and climate change, and diverse cultural influences further complicate this landscape. The Asia Pacific Society for Agricultural and Food Ethics (APSAFE) conferences in 2020 and 2023 provided a transdisciplinary platform to explore these challenges and identify opportunities for advancement. Historical contexts, such as colonialism and wars, cultural factors, religions and local customs, and recent policy changes related to food safety and environmental protection, have significantly shaped the region's food ethics. Understanding these influences necessitates combining approaches from ethics, sociology, policy studies, and anthropology. The conferences highlighted the importance of ethical justification for food practices, the role of food in forming identity, and the potential for cross-cultural learning. Case studies showcased the diversity of challenges and opportunities, from indigenous food practices in Taiwan to immigrant herb gardens in Germany. The conferences also revealed potential tensions, such as the acceptance or reservation of advanced technologies and the evaluation of top-down versus bottom-up approaches. Collaborative networks and knowledge sharing will be crucial for advancing food ethics and sustainability in the region, with insights from the conferences serving as a valuable resource for policymakers, practitioners, and researchers.

Keywords: cross-cultural exchange, cultural identity, food system governance, indigenous knowledge, transdisciplinary

Introduction

The Asia Pacific region, with its rich tapestry of cultures, histories, and ecological landscapes, presents a complex and dynamic context for the evolution of food ethics. As rapid changes in demographics, urbanization, and climate continue to strain food systems, examining the trends and challenges in food ethics across the region is increasingly important (Cinner *et al*. 2022; Rousham *et al*. 2023; Thompson and Thompson, 2018; Weinberger *et al*. 2009). The Asia Pacific Society for Agricultural and Food Ethics (APSAFE) has provided a transdisciplinary platform for researchers and practitioners to engage in discourse on sustainable and ethical food systems since its inception in 2013. This paper aims to analyse the presentations from the APSAFE2020 and APSAFE2023 (Figures 1 and 2) conferences to identify key trends, challenges, and opportunities in developing food ethics in the Asia Pacific region.

EurSafe 2024 – DOI 10.3920/978-90-0471-550-9_72, © Brill | Wageningen Academic 2024
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0



Figure 1. APSAFE2020. Source: https://www.apsafe.online/apsafe2020/

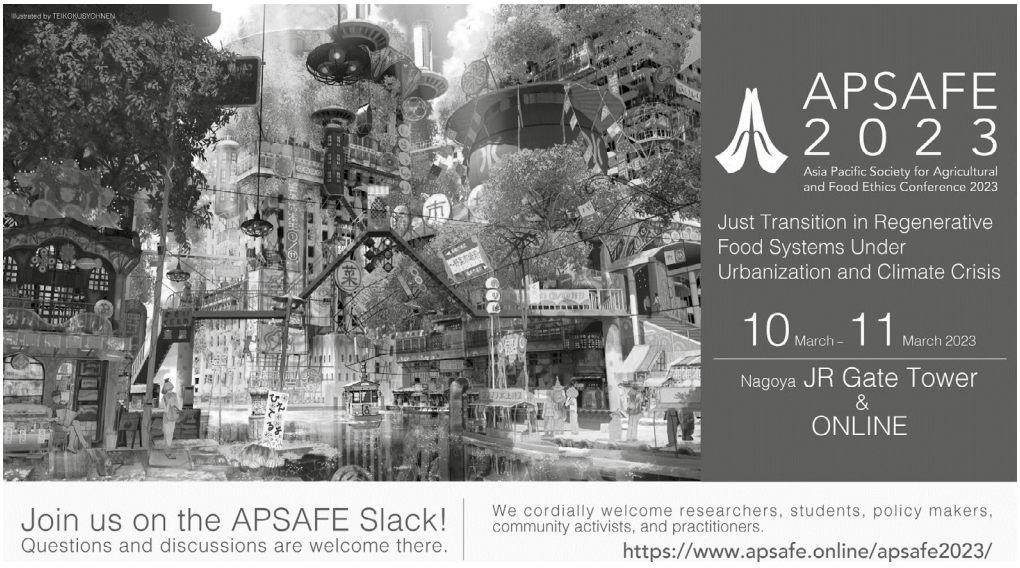


Figure 2. APSAFE2023 in Japan. Source: https://www.apsafe.online/apsafe2023/

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Historical context, migration of people, and policy changes

Historical context, migration of people, and policy changes are some of the angles that support an understanding of the complex Asia-Pacific food systems. The Asia Pacific region has a diverse history of food practices, with ecological and traditional food use playing a pivotal role in shaping current food cultures. Moreover, the region has also experienced profound changes due to historical events, such as colonialism and wars, which have significantly impacted food systems and ethics (Huang *et al*., 2022; Leong-Salobir, 2019). Cultural influences, including religions, social structures, and local customs, have played a crucial role in shaping food ethics in the Asia Pacific. These influences have tied to food as not just a source of sustenance but as the basis of individual and collective identity, moulding dietary traditions, agricultural practices, and social attitudes toward food production and consumption. The migration of people highlights the relationship between their cultural identity and food. The case of Vietnamese immigrants maintaining informal herb gardens to preserve their cultural praxis and access traditional foods exemplifies this phenomenon (Mami and Bentcheva, 2022). Policy changes in recent years related to food safety regulations, environmental protection, and fair food distribution have been underway in many countries across the Asia Pacific. Governments and international organizations are working to address the challenges posed by rapid urbanization, climate change, and changing demographics. The comparative analysis of policies across countries in the Asia Pacific region can provide valuable insights into the effectiveness of different approaches and the potential for regional cooperation on shared challenges (Islam and Kieu, 2021; Thow *et al*., 2022).

APSAFE2020: Combining approaches for sustainable food systems

The APSAFE2020 conference, held online due to the COVID-19 pandemic, brought together diverse perspectives on food ethics in the Asia Pacific. The conference combined approaches from ethics, sociology, policy studies, and cultural anthropology to explore ways to make food systems more sustainable. All presenters' full papers can be read in the proceedings, which can be downloaded free of charge from the APSAFE2020 website.

One of the key themes that emerged from the conference was the importance of ethical justification for certain norms and practices in food systems. Presenters explored the philosophical and moral foundations of food ethics, examining questions such as the rights of animals, the responsibilities of producers and consumers, and the role of food in human well-being. Applying ethical frameworks, such as environmental virtue ethics, to the analysis of traditional food practices in the Asia Pacific region, as seen in the case of Yap Island fisheries, highlights the potential for integrating Indigenous knowledge and values into the discourse on sustainable food systems. According to Jeffery & Sellmann, for a more detailed discussion of this, a sociological study of how traditional fishing is practiced on Yap Island and a cultural anthropological study of how it relates to the lifestyles of the fishermen and surrounding communities on Yap Island in general and their attitudes toward resource management, in particular, are essential.

The conference also revealed narratives that may have potential tensions. These narratives may be tied to social and cultural factors that shape food choices and the power dynamics and inequalities within the food system. One potential tension is the active acceptance/cautious reservation of advanced technologies. For example, according to Thompson, a Japanese organic farming researcher expressed bewilderment (not condemnation) at the case study presentation of Taiwanese organic farmers' active use of drones and precision surveying equipment. Another tension was the evaluation of top-down/bottom-up approaches. For example, according to Khader, one presentation highlighted how top-down technology guidance and product diffusion in India has improved gender disparities. On the other hand, according to Patnaik, another presentation in India highlighted the significance of bottom-up activities

Franck Meijboom and Patrick Rowe, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

that became a distribution channel for food during the pandemic lockdown period. These narratives, considered to have potential tensions, suggest the importance of understanding the sociocultural context in which food practices are embedded and the potential for cross-cultural learning and exchange in developing sustainable food systems.

APSAFE2023: Food as more than just nutrition

The APSAFE2023 conference, held in Nagoya, Japan, built on the themes explored in the previous conference and delved deeper into the role of food as more than just a source of nutrition. In short, food in forming personal and collective identity and the potential of food to promote intercultural exchange and solidarity. All presenters' full papers can be read in the proceedings, which can be downloaded free of charge from the APSAFE2023 website.

One of the conference's highlights was the variety of case studies presented, showcasing the diversity of food ethics challenges and opportunities across the Asia Pacific. For example, Feuer presented a study that explored the interdependence of indigenous diets and forest ecosystems in Taiwan, highlighting the importance of traditional knowledge and practices in promoting sustainable food systems. Wu discussed the case of the Amis tribe in Taiwan, who have developed a complex system of resource management and food sharing based on their spiritual beliefs and connection to the land, exemplifying the potential for indigenous food practices to inform the development of sustainable and equitable food systems. Eguchi examined the trust-based contracts between sake brewers and rice farmers in Japan, showcasing the role of social capital and community relationships in building resilient food systems.

The conference also featured presentations that explored the challenges faced by marginalized groups within food systems. For instance, Dinh examined the informal herb gardens of Vietnamese immigrants in Germany, highlighting the importance of food in maintaining cultural identity and the challenges immigrants face in accessing traditional foods. Saeki looked at the challenges insect farmers face in Laos, where entomophagy is a traditional food practice but where farmers feel discomfort with the world's "new entomophagy" trend. Seekings noted that the case of insect farming in southeast Asia highlights the complex interplay of traditional and modern food practices and the cultural appropriation and power imbalances in the development of new food trends.

Conclusion

As the Asia Pacific region continues to face significant pressures on its food systems, the development of collaborative networks and platforms for knowledge sharing and capacity building will be crucial for advancing food ethics and sustainability in the region. The APSAFE and other organizations and initiatives will provide the insights and recommendations generated by the transdisciplinary conferences can serve as a valuable resource for policymakers, practitioners, and researchers working to advance food ethics and sustainability in the Asia Pacific region and beyond: Policymakers can draw on the comparative analysis of policies across countries to identify best practices and opportunities for regional cooperation. Practitioners can apply the insights from case studies and participatory research to develop more culturally sensitive and inclusive approaches to food system transformation. Researchers can build on the research framework and research agenda for further advance the understanding of food ethics and sustainability in the Asia Pacific context. It is an opportunity to highlight and discuss multiple aspects of the often-conflicting topics in food ethics and governance. APSAFE2020 and APSAFE2023 conferences highlighted such as the debate between bottom-up and top-down approaches to food system transformation or the acceptance or withholding of advanced technologies, highlight the complexity and diversity of perspectives on food ethics in the Asia Pacific. The tensions between different approaches

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

to food system governance and technology adoption reflect deeper philosophical and ideological differences that require careful consideration and dialogue to resolve.

References

Cinner, J.E., Caldwell, I.R., Thiault, L., Ben, J., Blanchard, J.L., Coll, M., ... Pollnac, R. (2022). Potential impacts of climate change on agriculture and fisheries production in 72 tropical coastal communities. Nature Communications, 13(1), 3530.

Huang, S., Lee, H.K. and Vickers, E. (2022). Frontiers of memory in the Asia-Pacific: difficult heritage and the transnational politics of postcolonial nationalism. Hong Kong University Press, Hong Kong.

Islam, M.S. and Kieu, E. (eds) (2021). Toward a sustainable food system in Asia-Pacific amid climate crises. In Climate change and food security in Asia Pacific. Response and Resilience. Springer, Cham, pp. 223–234.

Leong-Salobir, C. (ed.). (2019). Routledge handbook of food in Asia. Routledge, London.

Mami, T. and Bentcheva, E. (2022). Immigrating garden: An interview with Tuan Mami. Southeast of Now: Directions in Contemporary and Modern Art in Asia, 6(1), 223–229.

Rousham, E., Clark, M., Latham, M., Oo, S. P., Read, S., Griffiths, P., Blankenship, J. and Goudet, S. (2023). Resilience and vulnerabilities of urban food environments in the Asia-Pacific region. Maternal & Child Nutrition, e13513. DOI: 10.1111/mcn.13513

Thompson, P.B. and Thompson, K.O. (2018). Agricultural ethics in East Asian perspective. Springer, New York, NY.

Thow, A.M., Ravuvu, A., Iese, V., Farmery, A., Mauli, S., Wilson, D. ... Reeve, E. (2022). Regional governance for food system transformations: Learning from the Pacific Island region. Sustainability, 14(19), 12700.

Weinberger, K.M., Easdown, W., Yang, R.Y. and Keatinge, J.D.H. (2009). Food crisis in the Asia-Pacific region. Asia Pacific Journal of Clinical Nutrition, 18(4), 507–515.

Franck Meijboom and Patrick Baas (eds), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Asia Pacific environmental food ethics for a sustainable future

*J.D. Sellmann**
University of Guam, 303 University Drive, Mangilao, Guam 96923
**E-mail: jsellmann@triton.uog.edu*

Abstract

This paper expands Prasenjit Duara's proposal that Asian religions and philosophies offer hope for a sustainable future. After outlining Duara's sociology of history that describes the crisis of global modernity in terms of three global changes, namely the rise of non-western nations, the crisis of climate change, and the decline of religious or transcendent sources of authority, Duara proposes that grassroots organizations coupled with Asian religious and philosophical beliefs and practices offer different ways of understanding the relationship between the person and the environment, and between our universal-planetary interests and our national interests. Drawing from Asian and Pacific indigenous teachings, I propose a type of depth ecology called 'existential parity' that all things and creatures have value, generating a moral corollary called the 'existential commitment' that humans take responsibility for the environment and each other. The existential commitment offers an environmental ethics that promotes sustainable agriculture to feed the world's population. Pacific agroforestry practices can be implemented in urban settings to help mitigate climate change and food shortages.

Keywords: Asia Pacific, depth ecology, existential parity, Prasenjit Duara

Introduction

When Max Weber coined the expression 'the Protestant work ethic,' he inadvertently identified a root of the environmental crisis, namely, an irrational expectation of continuous economic development through the exploitation of the Earth's resources. Prasenjit Duara suggests that his sociology of history can replace Weber's Protestant work ethic and its climate change results with the hope for sustainability found in Asian religions, which offer alternative ways from the Abrahamic religions for understanding the relationship between the person and the environment, and between our universal-planetary and our national interests (Duara, 2015). Duara studies the Asian traditions through their historically circulated dialogues, and how those teachings converge with contemporary developments. The Twenty-first Century is defined by three global changes: the rise of non-western powers, the climate crisis, and the decline of authoritative sources of transcendence - the moral ideals once found in religious or political ideologies (Duara, 2015). The physical salvation of the world must become the ultimate goal of our times, and it must transcend national sovereignty. This paper expands Duara's work to include Pacific agricultural and food practices that complement the hope for a sustainable future.

How do we get scientists, the public, and politicians to expand their self-interests to include others and yield their reductionistic thinking to embrace the relationality, the interdependent character of all that exists? How can we stop being '... immersed in the consumerist dream of endless abundance on a finite planet ...?' (Parkes, 2023). Duara demonstrates how Asian religions and philosophies offer optimism for a sustainable future that is both locally emplaced, and globally circulating on different levels (Yanarella, 2017). 'Hope as an essential ingredient of a transcendent force may allow for more dialogical and honest engagement with messy realities. Achievements ... are liable to be politically appropriated for ... the nation, but this may be a fight worth fighting. Indeed, the decentred, multiply ordered networks are already beginning to create new objects, spaces and flows of sacrality and inviolability founded on their hopes of a sustainable world' (Duara, 2015).

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

The Russian and Chinese attempts to restructure political and economic relations internationally have increased non-western influences. Changes in the global economy have drawn attention to indigenous and Asian practices. The climate crisis has exacerbated the need for change, to recontextualize traditional beliefs and practices, promoting social and environmental relationality, embracing the relative value of organic and inorganic material. Duara argues that, especially in the Euro-American cultures, the breakdown of religious and political beliefs in transcendent values can be replaced with the hope for a sustainable future derived from Asian dialogical teachings. The Abrahamic religions are characterized by a concept of radical, dualistic transcendence, that is a belief in an other-worldly life (Duara, 2015; Muscolino, 2017). For believers in an after-life, the natural environment can be exhausted to serve earthly desires. Duara shows that the circulatory and dialogical characteristics of Asian teachings offer an alternative non-dual model that embodies the transcendent within the immanent. Duara's use of "transcendence" is not always clear (Lawson, 2018). One way to grasp Duara's distinction between Abrahamic dualistic transcendence and Asian non-dual immanent-transcendence is a difference between supernatural other-worldly optimism versus natural this-worldly optimism. Dualistic transcendence requires that the soul leaves the body, going to another realm. Dualistic transcendence stands in contrast to Hindu, Jain, Buddhist, Daoist, Confucian, Kami no Michi (Shinto) this-worldly optimism which accepts that people can gain enlightenment, realizing the ultimate reality, in this lifetime, in this body. The persevering approach of the Asian teachings is their ability to converse and share ideas in a non-linear, circulatory manner that promotes a dialogical and non-dual understanding that the ultimate reality is fused with the contingent, transitory earthly existence, that is, immanent-transcendence—the transcendent hope is embodied in nature. The hope for a sustainable future is generated from community non-government organizations pressuring their governments to force corporations to promote sustainable agricultural practices. The Asian and Pacific teachings emphasize mindfulness and meditation to control desires, promoting hope for a sustainable future (Gupta *et al*., 2023).

All is not well in Asia or the Pacific. In the past Buddhism and Daoism did little to protect the environment (Muscolino, 2017). Despite President Xi Jinping citing classical texts promoting harmony, the Chinese Communist Party has not protected the environment (Parkes, 2021, 2023). In the Pacific, colonialism adversely affected food production and consumption; small island developing states have the highest global rates of obesity, diabetes, cancer, and other non-communicable chronic diseases (Guell *et al*., 2021). I turn to a discussion of Pacific Island depth ecology, promoting environmental sustainability, and food sovereignty (Abram, 2005; Chen, 2015; Snyder, 1990). Rather than merely trying to reintroduce homegrown garden foods and agroforestry practices, the local strategies need to be recontextualized, explicitly promoting local produce as the acceptable, highly valued, and healthy food choice (Guell *et al*., 2021).

A Pacific Island context

The peoples of the Pacific construct philosophies based on their experience of living on the edge between conflict and harmony with their environment (Hena and Anschuetz, 2000; Mollison, 1988). They are concrete, pragmatic environmental philosophies, not speculative or abstract. Pacific philosophies develop out of the experience of struggling against the forces of nature, while living in harmony with and making use of animals and plants, home gardens and agroforestry (Clarke and Thaman, 1993; Manner, 2008; Sellmann, 1994, 2021; Sellmann and Andreas, 2012).

The subsistence lifestyle keeps people in contact with the natural environment. Pacific islanders describe their world in dynamic terms. It is their resilience in the face of impermanence that creates persevering practices. Their world is hylozoistic; perceived to be a living, and self-regulating system. The living character of the world is evidenced in the volcanic islands. The atolls consist of what was living coral; it appears that the atoll grew out of the ocean. Myths describe the islands as remnants of a primordial giant;

Franck Meijboom and Patrick Bijsterveld, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

or that culture heroes fished the islands out of the sea, or that the ancestors built the island on top of a submerged reef (Lessa, 1987; Poignant, 1967: pp. 70–82). The hylozoistic world is full of creative energy, life power, nature-spirit power, and ancestor spirits. Like the Chinese concept of *qi* (氣; Jp: *ki*, the life-force permeating the universe, linking people to the land), the Polynesian term is *mana*. In Pohnpei and Chuuk it is called *manaman*. In Yapese the power is labelled *kael*. The CHamorus call it *aniti.* This kind of philosophy views the world itself as the ultimate reality, fusing the transcendent moral authority with the immanent, contingent world, marking an important difference from the reductionistic, bifurcated view imposed by science, and dualistic religions. Like the Asian teachings, the Pacific Island teachings extend the relationality of the extended family to all of nature; clans have totem-sibling relations with other animals, and taboos are constructed on an understanding of relationality that all things are connected. Their understanding and practices of relationality yield a sense of resilience in permanence. This relational worldview places all things on an ontological value spectrum where everyone matters to a greater or lesser extent, but no one is expendable. Relationality establishes an existential parity obtaining among us.

Environmental philosophy

William C. Clarke contextualises the agroforestry practices of a Palaeolithic agricultural technology (paleotechnic) to inform modern neotechnic agriculture to establish healthy human ecological practices within a 'bound lifetime'. Clarke proposes that the paleo-technology provides a structure of permanence-as-resilience by relying on the regenerative forces of the forest. Following Roy Rappoport, Clarke studied the Bomagai-Angoiang in Papua New Guinea. He outlines seven principles that '... gives their ecosystem the property of resilient permanence ...' derived from the structure and function of their use of the forest (Clarke, 1979). First, their paleotechnic agriculture is '...not dependent on an energy subsidy or extra-system nutrient sources ...' by using the forest to maintain fertility, soil structure, and to control weeds. Second, their '... agricultural behavior is not self-poisoning'. Third, their net agricultural energy yields are positive; for every calorie spent farming, they harvest eighteen to twenty calories. Neotechnic agriculture expends five to ten calories of fuel energy to produce one calorie. Fourth, their paleotechnic practices expend less energy by '... utilizing the products of bound time ... within the scale of a human life ... within the absorptive capacity of the existing ecosystem.'. The climate crisis is due to the unabsorbable byproducts of time caused by using fossil-fuels. Fifth, '... the energy moving through the Bomagai-Angoiang ecosystem is fairly evenly spread among the human population'. This type of resilient-permanence promotes the long-term survival of democratic societies because all adults participate. Sixth, they promote the regrowth of the forest, considering '... their resources as productive capital to be preserved'. Seventh, their subsistence agriculture is based on polyculture (Clarke, 1979). Clarke builds a case that modern agricultural strategies can be impacted by paleotechnic methods.

Clarke warns against romanticizing paleotechnic life which was certainly filled with its own hardships. However, he extracts seven advantages that can be deployed today. He notes the following: 'One, a lower material standard of living than that of industrial nations. Of course, less neotechnic production means a higher standard of living in terms of unpolluted food, air, and water. Two, a slower rate of technological change, which implies a lowered energy need as well as offering several other advantages. Three, decentralization of power and production and formation of smaller communities. Opinions vary as to optimum size of communities ... but most authorities would agree with Rappaport (1971) that small autonomous systems are more sensitive to ecological problems than larger, more complex organizations. Four, changed education to develop a changed relation between man-man and man-nature. ... from an exploitative I-it (subject-object) relationship to an I-thou reciprocal relationship . . . Five, limitation on population growth. Six, move in the direction of paleotechnic agriculture; for example: less intensive agriculture technology, polyculture, more diversified cropping patterns, substitution of land for artificial fertilizer, more organic fertilizer, acceptance of lower yields per unit of land, more of a live-and-let-live

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

relationship with insects. … Seven, maintenance and deliberate creation of varied environments … need for a honeycomb of exploited and protected areas…' (Clarke, 1979).

The seven advantages are built on relationality and the need to reacknowledge that human life depends on the diversity of the nonhuman biosphere, concluding that we can learn from the paleotechnic to avert becoming victims of our own progress (Clarke, 1979).

Parity and the existential commitment

Constructive ways of thinking and practices of Pacific Island Indigenous philosophy can offer hope for promoting a sustainable future. The organismic elements in Pacific Island and Asian Indigenous philosophies coupled with Imanuel Kant's, John Rawls', and Ronald Dworkin's respective views on respect for persons and justice could provide such a worldview (Dworkin, 1986; Kant, 1965; Rawls, 1971). In the Indigenous world, each person or thing exists on an existential parity with everything else. Due to their temporal interaction with each other, particulars both ameliorate and simultaneously enhance their differences in a dynamic, dialectic harmony of interrelatedness.

The concept of existential parity develops a moral corollary — the existential commitment — an obligation to provide care for the life of others. The ontological understanding of relationality leads people to acknowledge their moral obligation to promote the interests of others. The value of others must be understood as having significance for oneself. The existential commitment, like many moralities claim that people have a responsibility for others. It is a moral characteristic of living in a world of relationships where both interspecies and intergenerational morality and justice are required. We must adhere to moral Earth system boundaries (ESBs). "Nothing less than a just global transformation across all ESBs is required to ensure human well-being. … this will not be a linear journey; it requires a leap in our understanding of how justice, economics, technology and global cooperation can be furthered in the service of a safe and just future" (Rockström *et al*., 2023). When local non-governmental agencies promote moral values to safeguard food sovereignty and food ethics, there is hope for a sustainable future.

Discussion: Evidence for success

Modern agriculture is not sustainable. Before modern agriculture the home garden was commonplace, globally. The mixed forest tree garden is cost-effective. Modern agriculture requires more energy than it produces. Modern agriculture is not only costly and wasteful; it also poisons people, using pesticides and artificial fertilizers. It is a major contributor to climate change, producing greenhouse gasses.

Clarke's seven points are antithetical to the social changes that occurred after the 1980s. The technological changes slowed the use of community or urban agroforestry. Despite the setbacks community agroforestry is slowly being implemented across the globe in Europe, especially Germany, Asia, and especially Southeast Asia, and North America. Education is required to enculturate people to embrace a depth ecology based on the existential commitment. Given that it took centuries and the Industrial Revolution to fully manifest Webber's 'Protestant work ethic,' it will take some time to change the way people live and take responsibility for the environment. Even though the value of agroforestry has been in discussion since the 1950s, '[h]owever, research on implementation, success factors, and supportive entrepreneurial ecosystem functions for sustainable food forest enterprises is still at a nascent stage' (Wiek *et al*., 2022). It is also clear that people cannot expect businesses simply to do the right thing (Wiek *et al*., 2022). Therefore, a slow, gradual process of cultural change will continue until the climate crisis forces people to accelerate their embrace of an existential commitment and change the way they live, grow, and obtain food.

Franck Meijboom and Patrick Baron (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Conclusion

The Pacific Island cultural environmental philosophy attempts to live on the twofold edge of trying to live in harmony with the forces of nature and to balance a sustainable lifestyle on the edge of permaculture niches. Drawing from traditional practices and beliefs, Pacific Island agriculture and fishing practices were introduced. From these practices and beliefs, an environmental philosophy based on relationality, mutual benefit and cooperation was extracted. An environmental philosophy founded on a moral principle of showing concern for and providing care for the lives of others both human and other animals can provide hope for a sustainable future.

References

Abram, D. (2005). Depth ecology. In Taylor, B.R., Carson, B. and Mountaineer, A. (ed.) The encyclopedia of religion and nature. Continuum, London, pp. 456–461.

Addison, D., Ono, R. and Morrison, A. (2013). Prehistoric marine resource use in the Indo-Pacific regions. Australia National University Press, Sydney, NSW.

Chen, W. (2015). Gary Snyder and his animal ethics. Xuan Zang Fuxueyanjou 玄奘佛學研究 (Xuan Zang and Buddhist Studies Research), 23(3), 139–174.

Clarke, W.C. (1979). The structure of permanence: The relevance of self-subsistence communities for world ecosystem management. In Bayliss-Smith, T.P. and Feachem, R.G. (eds) Subsistence and survival: Rural ecology in the Pacific. Academic Press, New York, NY, pp. 363–384.

Clarke, W.C. and Thaman, R.R. (1993). Agroforestry in the Pacific Islands: Systems for sustainability. United Nations Press, New York, NY.

Duara, P. (2015). The crisis of global modernity: Asian traditions and a sustainable future. Cambridge University Press, Cambridge.

Dworkin, R. (1986). Law's empire. The Belknap of Harvard University Press, Cambridge, MA.

Guell, C., Brown, C.R., Iese, V., Navunicagi, O., Wairiu, M. and Unwin, N. (2021). 'We used to get food from the garden.' Understanding changing practices of local food production and consumption in small island states. Social Science & Medicine, 284, 114214. DOI: 10.1016.j.socscimed.2021.114214

Gupta, S., Lim, W.M., Verma, H.V. and Polonsky, M. (2023). How can we encourage mindful consumption? Insights from mindfulness and religious faith. Journal of Consumer Marketing, 40(3), 344–358. DOI: 10.1108/JCM-11-2021-5011

Hena, L. and Anschuetz, K.F. (2000). Living on the edge: Combining traditional Pueblo knowledge, permaculture, and archaeology. Cultural Resource Management Beyond Compliance Tribes of the Southwest, National Parks Service, 23(9), 37–41.

Kant, I. (1965). The metaphysics of morals. John Ladd (trans). Bobbs-Merrill Educational Publishing, Indianapolis, IN.

Lawson, G. (2018). Book review: The crisis of global modernity: Asian traditions and a sustainable future. Journal of Global History, 12, 150–151.

Lessa, W.A. (1987). Micronesian religions: An overview includes Katharine Luomala, Mythic themes. In Eliade, M. (ed.) The encyclopedia of religion. Macmillan Press, New York, NY, pp. .

Manner, H.I. (2008). Directions for long-term research in traditional agricultural systems of Micronesia and the Pacific Islands. Micronesica, 40(1–2), 63-86.

Mollison, B. (1988). Permaculture: A designer's manual. Tagair Publications, Tyalgum, NSW.

Muscolino, M. (2017). Book review: The crisis of global modernity: Asian traditions and a sustainable future. Environmental History, 22, 374–376.

Parkes, G. (2021). How to think about the climate crisis: A philosophical guide to saner ways of living. Bloomsbury Academic, London.

Parkes, G. (2023). Can humanity survive the Anthropocene? It depends on who we think we are. Filozofia, 78(Supplement), 38–51.

Poignant, R. (1967). Oceanic mythology. Paul Hamlyn, London.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Rappoport, R. (1971). The flow of energy in an agricultural society. Scientific American, 224(3), 116–132.
Rawls, J. (1971). A theory of justice. The Belknap Press of Harvard University, Cambridge, MA.
Rockström, J., Gupta, J., Qin, D. ... Zhang, X. (2023). Safe and just earth system boundaries. Nature, 619, 102–111.
Sellmann, J.D. (1994). Chamoru social moral philosophy. Asian Culture Quarterly, 22(4), 23–31.
Sellmann, J.D. (2021). Correlative thinking in Pacific Island (Micronesian) cultural philosophies. Pacific Asia Inquiry, 11, 153–175.
Sellmann, J. and Andreas, R. (2012). Pacific Island environmental philosophy. In Encyclopedia of sustainability: The Americas and the Pacific. Berkshire Publishing, Great Barrington, MA.
Snyder, G. (1990). The Practice of the wild. North Point Press, New York, NY.
Wiek, A. and Albrecht, S. (2022). Almost there: On the importance of a comprehensive entrepreneurial ecosystem for developing sustainable urban food forest enterprises. Urban Agriculture & Regional Food Systems 7(1), e20025. DOI: /10.1002/uar2.20025
Yanarella, E.J. (2017). Book review: The crisis of global modernity: Asian traditions and a sustainable future. Sustainability 10(1), 57–-59.

Franck Meijboom and Patrick Baron (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Applying Eurocentric food ethics to non-Western contexts: Challenges and resolutions

T.I. Loonstra and J. Qian*
Faculties of Educational and Learning Sciences Group and Philosophy Group Wageningen University and Research, Hollandseweg 1, 6706 KN Wageningen, The Netherlands
Corresponding author, e-mail: thijs.loonstra@wur.nl

Abstract

Animal ethics is a big part of food ethics. However, given the growing demand for animal food products in developing countries, ethical theorizing focuses on Western practices might lack cultural sensitivity or fail to address diverse ethical perspectives. The outbreaks of zoonotic disease and drastic loss in biodiversity in the last decades creates the need for more diverse food practices in both the Global North and South. Against this backdrop, this paper applies classic Eurocentric ethical theorizing on moral individualism and holism at the intersections of animals and the ecosystem to see in what ways they can be translated to the case of China's wild animal farming. It aims to show that the main philosophical dilemma presented in the Western context also applies to the Chinese context. However, ethical concepts that attempt to address this dilemma face difficulties in their applicability to non-Western practices. Therefore, we argue while theories of value might be universal, resolving conflicting values is culturally dependent.

Keywords: China, environmentalism, farming, policy, wildlife

Introduction

Food ethics heavily focuses on animals as animal agriculture is one of the greatest drivers of public health crises and biodiversity loss, underscoring the vital link between animal ethics and the broader field of food ethics. The way humanity breeds and consumes animals following the agricultural revolution has led to the "MacCready explosion": where 10 000 years ago humans and livestock accounted for just 0.1% of terrestrial vertebrate biomass, now this is over 98%, and most of which are animals raised for consumption (Dennett, 2009). The rapid growth of humans' dominance over animals highlights the utmost importance of considering our ethical relationship with them.

However, much of the animal ethics literature stems from the Anglo-Saxon world, with key concepts rooted in Western contexts. This paper uses the core ethical aspects of animals and environmental ethics and examines their applicability in China's wild animal farming practices. Wild animal farming is here defined as state-led captive breeding projects to utilize a wide range of wild animals for commercial purposes, including food, medicine, fur and leather, pets, entertainment, and research. The industry has been actively encouraged by the Chinese government for decades as a means of conservation, poverty alleviation for rural communities, and meeting consumer demand for wildlife products.

The case of China is relevant because it provides a clear example of the normative difficulties that arise in our treatment of animals. China's food industry has come under intensified global scrutiny following the coronavirus pandemic. Furthermore, China's wild animal industry has long been subjected to global criticism for its negative impacts on nationwide and global biodiversity decline. These contentious debates underline how much our treatment of animals intersects with most aspects of modernity. This paper attempts to open the door for more refined ethical theorization that takes into account

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

the food politics and practices in the Global South. It explores the strengths and limitations of moral individualism and holism and highlights theory-empirics gaps in applying these concepts to a context that is novel yet consequential to sustainable food production and consumption.

Animals and Ecosystems

It is prima facie strange to contrast animals with ecosystems since animals are integral to ecosystems. However, in ethics, an inherent conflict exists between animal ethics and environmental ethics. This section outlines where this conflict arose theoretically and examines its applications in the case of China's wild animal farming, connecting major ethical perspectives and contradictions.

Animal ethics and moral individualism

The conflict between animal ethics and environmental ethics stems from the focus of our moral considerations being either on individual animals or ecosystems. Ethical theorizations diverge on the moral significance of animals and ecosystems. Prioritizing individual animals' well-being might entail compromises in ecosystem health, such as in tensions between "invasive species" and ecological integrity. Traditionally, animal ethics is morally individualistic, meaning that it grounds the value of animals on the attributes of individual animals (Bovenkerk and Verweij, 2016). This notion of moral individualism underpins the two most influential approaches; utilitarian and deontologist interpretations of animal ethics.

Both approaches are in the first place concerned with sentience. The exact definition of sentience is debated but it always has to do with the capacity for experience and subjectivity. For utilitarian philosophers, most notably Singer (1999), ethics centers on the ability to feel pain and pleasure. An action is morally good if it limits pain and/or maximizes pleasure. This approach is morally individualistic as only individual animals have these capabilities. A higher-order category like a species or ecosystem cannot suffer.

The deontological approach, most famously defended by Regan (1983), builds upon notions of autonomy linked to consciousness rather than sentience. Regan defends the moral consideration of all animals as they are subjects-of-a-life, based on their subjective being in the world and considerable interests to continue to live. Species, forests, ecosystems, biospheres, etc. have no subjective experience of their being in the world, and therefore no *prima face* moral standing on their own, let alone a moral standing that trumps those of animals.

Environmental ethics and moral holism

Against approaches of moral individualism are approaches of moral holism. These state that not individual animals, but exactly those higher-order categories like ecosystems should be our first concern. These approaches arise mainly within environmental ethics, but not all branches of environmental ethics reject moral individualism. Roughly, three different positions can be discerned. First, there is the anthropocentric approach to environmental ethics, where nature is instrumentally valuable to humanity's goals. Second, there is the biocentric view, where all living things are valuable, but ecosystems as a whole are only valuable to individual things. Anthropocentric and biocentric approaches still adhere to moral individualism (Brennan, 2021).

Third, there are ecocentric approaches to environmental ethics that proclaim a form of moral holism. As with animal ethics, there is a great variety of holistic approaches to environmental ethics, but the rejection of moral individualism is central to the philosophy of ecological ethics. One of the most influential

Franck Meijboom and Patricia Brey (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

names in environmental ethics is Leopold (1949). A central thought of his that shaped environmental ethics is that higher-order categories have a unique and delicate functioning that is worthy of protection over their constituents. Concretely this is to say that the whole is more than its parts descriptively and normatively. This leads to the logical conclusion that individual animals may be sacrificed if this protects a certain species or ecosystem.

Wildness as a bridge

Wildness is a concept where environmental and animal ethics may overlap, potentially serving as a bridge between moral individualism and moral holism. Wildness is not one clearly defined concept, but it forms the intuitions about human intervention in nature, particularly the desire to protect the pristine, of a world untouched by human intervention (i.e. Preston, 2011), now threatened by pervasive anthropogenic impacts on Earth.

More systematically, Palmer (2016) defines wildness as possible points on two axes (although more dimensions to the concept exist); constitutive wildness and self-willed wildness. Constitutive wildness is the opposite of domestication, meaning constitutively wild animals are at least: (1) not the product of selective breeding; (2) not adapted to living with humans; and (3) not being adapted for human purposes. Self-willed wildness refers to the autonomy of animals; the extent to which they live their lives according to their own choosing.

Wildness as a normative concept might reconcile the contradiction between animal and environmental ethics, bridging characteristics between the individual animal and the collective. The environment as constitutive of the wildness of an individual animal is a way to lessen the tension between holistic/environmental ethics and individualistic/animal ethics. Selective breeding, for example, is something done with individual animals but its effects play on the level of the species (Bovenkerk and Verweij, 2016). The normative value of wildness is particularly relevant but also challenged in China's wildlife-food practices, as exemplified below.

Animal ethics, environmental ethics, and wildness in China

On the dichotomy of individual (animal) ethics vs. holistic (environmental) ethics, China's food politics tend towards the latter. Compared to Western environmental ethics, traditional Chinese environmental philosophy focuses more on living harmoniously with nature rather than on the intrinsic value of nature (Yang, 2021). Food practices in modern-day China mainly reflect an instrumentalist approach to the value of nature as well as animals. Wild animals are treated as natural resources and state property. Under this rationale, the interests of individual animals are considered less important than the conservation of species or ecosystems. These are clear cases of sacrificing the well-being of individual animals (through wild capture, confinement, and selective breeding) for preserving higher-order categories, in this case, the species. Using the concept as wildness to aim for balancing this instrumentalist view with the individual interests of animals might be challenging.

"Wildness" is not a static concept in either consumption or conservation practices (Hinsley and 't Sas-Rolfes, 2020). Particularly where animals were captured in the wild and then reared in artificial environments. The rise of China's wild animal farming industry is an exemplary case. After rapid economic development resulted in significant environmental degradation and overexploitation of native species, the country has resorted to a "supply-side" approach to conserve wild animal species (Wang *et al*., 2019). This approach uses captive breeding programs to substitute wild-sourced animals, which has been prevalent in Southeast Asia. Proponents of this approach believe increasing the supply of legal, artificially bred animals can provide economic incentives to conserve wild animal species.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

While such an approach has led to mixed results for different species, artificial propagation has helped increase the populations of several critically endangered flagship species in China, including the Giant Panda (*Ailuropoda melanoleuca*) and the Crested ibis (*Nipponia nippon*) (Wang *et al*., 2019). Though wild animals are important sources of subsistence in many developing countries, they are more often consumed by urbanites (Mainka and Trivedi, 2002), and can serve functional, social, experiential, financial, and spiritual roles (Thomas-Walters *et al*., 2021). Since the 1950s, the captive-breeding programs of over 230 wild animal species have been built in China (Wang *et al*., 2019). The breeding operations of several species have reached industrial scales, including turtles, fur animals, crocodiles, frogs, and deer (Chinese Academy of Engineering, 2017). However, China's wildlife legislation does not clearly define "wild animal," leading to the somewhat paradoxical concept of "artificially bred wild animals." Consequently, for many endangered animals, while their wild populations are offered legal protection and captive-breeding restrictions, their genetically identical farmed counterparts can be traded and consumed legally

In addition, "wild animal" is often associated with terrestrial and aerial animals, while aquatic animals are typically managed as fisheries. Amphibians and reptiles (herp species) also occupy a similarly ambiguous category. As of 2016, herp species make up the largest group of wild animals bred for food in China (Chinese Academy of Engineering, 2017). After the COVID-19 outbreak, many of these animals were reclassified from terrestrial animals to aquatic, thus exempted from the wild animal consumption ban. As many biologists have stated, wildlife trade restrictions and welfare standards rarely affect herpetofauna species (Borzée *et al*., 2021; Lambert *et al*., 2019). Unsustainable capturing practices, poaching, and "laundering" of herp species have been prevalent (Amphibian Specialist Group IUCN, 2022; Cheung and Dudgeon, 2006; Wang *et al*., 2021). Since these animals have a short history of domestication, many of their farming practices require sourcing eggs and restocking from wild populations (Huang *et al*., 2021). The overproduction of these animals on the farms and their endangered state in the wild creates a phenomenon known as "being bred into extinction" (Langin, 2018; Shi *et al*., 2007). Questions arise regarding the effectiveness of the "conservation through utilization" rationale and the future direction of commercialized wild animal breeding (Jiao and Lee, 2021).

Discussion and conclusion

Both in theory and in practice there exists a contradiction between animal and ecosystem protection. Theoretically, this has to do with a conflicting notion of moral individualism and moral holism. The case of Chinese consumption of herpetofauna shows this conflict in practice. To protect species endangered by excessive exploitation, large-scale farming has been used as a means of conservation. This approach is a clear example of prioritizing the whole (a species) over its part (individual animals), as the welfare concerns of the animals in these farms did not trump the survival concerns on the species level.

Therefore, we can argue that this ethical dilemma, which is mainly identified theoretically in the Anglo-Saxon context is very relevant in the Chinese case as well. The problems may flesh out differently on the ground-level of the politics of animal and ecosystem management, the moral-ontological conflict of value on the level of the individual versus value on aggregate levels does not corrode under the scrutiny of changing empirical contexts.

An approach aiming to bridge the gap by focusing on the intersection between the individual and the whole centers on the ethical theorization of wildness. Wildness as a concept, however, gets very blurry in the Chinese case, as its human-animal relationships and consequently, the animal-ecosystem relationship are different from the Western context. The practices of wild farming as a means of animal production are less decoupled from ecosystems. Rather, wildlife-food production is heavily integrated within natural ecosystems. This less alienated way of producing animal products, however, does not

Franck Meijboom and Bernice Bovenkerk, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

necessarily lead to a more ecologically 'balanced' production chain, as the linking between ecosystems and animal farming leads to hybrid systems that damage both. This hybridization is a practice that blurs the boundaries of the concept of 'wild'.

This contextualization of 'Western' animal ethics in China might falsely lead to a sense of cultural relativism. However, as we have shown with the empirical application, the basic ethical dilemmas on the grounding of value are universal. We thus propose that the Chinese case on the limitations of the concept of wildness informs the limits of ethical frameworks in terms of applicability.

In proposing ways forward it is important to see how the different practices might limit our understanding of resolving ethical tensions in specific cases. This in turn should inform Western understanding of ethical relationships to nature and their universalizability. Introducing wildness as a bridge for resolving the ethical conflict between caring for animals and caring for nature is more difficult in the Chinese case. A conceptual bridge between individual animal ethics and environmental ethics may prima facie appear in some Chinese cases. However this happens at a great environmental cost in the short term, and animal suffering in the long term. Further, these practices lead to paradoxes in conceptualizations of wildness, as hybridization blurs the line between wildlife and livestock. This shows how wildness is an important concept in the Chinese context as well as in the Anglo-Saxon world, but the meaning of this notion is challenged severely.

References

Amphibian Specialist Group IUCN. (2022). Draft for open consultation. The Amphibian Conservation Action Plan (ACAP): A status review and roadmap for global amphibian conservation. Available online at https://ecoevorxiv.org/repository/view/3707/

Borzée, A., Kielgast, J., Wren, S., Angulo, A., Chen, S., Magellan, K., Messenger, K. R., Hansen-Hendrikx, C. M., Baker, A., Santos, M. M. D., Kusrini, M., Jiang, J., Maslova, I. V., Das, I., Park, D., Bickford, D., Murphy, R. W., Che, J., Van Do, T. ... Bishop, P. J. (2021). Using the 2020 global pandemic as a springboard to highlight the need for amphibian conservation in eastern Asia. Biological Conservation, 255, 108973. DOI: 10.1016/j.biocon.2021.108973

Bovenkerk, B., and Verweij, M. (2016). Between Individualistic Animal Ethics and Holistic Environmental Ethics Blurring the Boundaries. In Bovenkerk, B. and Keulartz, F.W.J. (eds) Animal ethics in the age of humans. Wageningen Academic, Wageningen, pp. 369–385.

Brennan, A. (2021). Stanford Encyclopedia of Philosophy. Available online at https://plato.stanford.edu/entries/ethics-environmental/#DeeEco

Cheung, S.M. and Dudgeon, D. (2006). Quantifying the Asian turtle crisis: Market surveys in southern China, 2000–2003. Aquatic Conservation: Marine and Freshwater Ecosystems, 16(7), 751–770. DOI: 10.1002/aqc.803

Chinese Academy of Engineering. (2017). Research on sustainable development strategy of Chinese wild animal farming industry. Chinese Academy of Engineering, Beijing. Available online at https://shorturl.at/dmqFX

Dennett, D. (2009). The cultural evolution of words and other thinking tools. Cold Spring Harbor Symposium on Quantitative Biology, 74, 435–441.

Hinsley, A. and 't Sas-Rolfes, M. (2020). Wild assumptions? Questioning simplistic narratives about consumer preferences for wildlife products. People and Nature, 2(4), 972–979. DOI: 10.1002/pan3.10099

Huang, Q., Wang, F., Yang, H., Valitutto, M. and Songer, M. (2021). Will the COVID-19 outbreak be a turning point for China's wildlife protection: New developments and challenges of wildlife conservation in China. Biological Conservation, 254, 108937. DOI: 10.1016/j.biocon.2020.108937

IPCC. (2022). Special report on climate and land summary for policy makers. UN, Cambridge.

Jiao, Y. and Lee, T.M. (2021). China's conservation strategy must reconcile its contemporary wildlife use and trade practices. Frontiers in Ecology and Evolution, 9, 675400. DOI: 10.3389/fevo.2021.675400

Lambert, H., Carder, G. and D'Cruze, N. (2019). Given the cold shoulder: A review of the scientific literature for evidence of reptile sentience. Animals, 9, 10. DOI: 10.3390/ani9100821

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Langin, K. (2018). The world's largest amphibian is being bred to extinction. Science.Org. Available online at https://www.science.org/content/article/world-s-largest-amphibian-being-bred-extinction

Leopold, A. (1989). A sand country almanac. Oxford University Press, Oxford.

Mainka, S. and Trivedi, M. (2002). Links between biodiversity conservation, livelihoods and food security: The sustainable use of wild species for meat IUCN, Gland. Available online at https://www.iucn.org/resources/publication/links-between-biodiversity-conservation-livelihoods-and-food-security

Palmer, C. (2016). Climate change, ethics, and the wildness of wild animals. In Bovenkerk, B. and Keulartz, F.W.J. (eds) Animal ethics in the age of humans. Wageningen Academic, Wageningen, pp. 131–150.

Regan, T. (1983). The case for animal rights. California University Press, Berkeley, CA.

Shi, H., Parham, J. F., Lau, M. and Tien-Hsi, C. (2007). Farming endangered turtles to extinction in China. Conservation Biology, 21(1), 5–6. DOI: 10.1111/j.1523-1739.2006.00622_2.x

Singer, P. (1999). Practical ethics. Cambridge University Press, Cambridge.

Thomas-Walters, L., Hinsley, A., Bergin, D., Burgess, G., Doughty, H., Eppel, S., MacFarlane, D., Meijer, W., Lee, T.M., Phelps, J., Smith, R.J., Wan, A.K.Y. and Veríssimo, D. (2021). Motivations for the use and consumption of wildlife products. Conservation Biology, 35(2), 483–491. DOI: 10.1111/cobi.13578

Wang, W., Yang, L., Wronski, T., Chen, S., Hu, Y. and Huang, S. (2019). Captive breeding of wildlife resources — China's revised supply-side approach to conservation. Wildlife Society Bulletin, 43(3), 425–435. DOI: 10.1002/wsb.988

Warkentin, I.G., Bickford, D., Sodhi, N.S. and Bradshaw, C.J.A. (2009). Eating frogs to extinction. Conservation Biology, 23(4), 1056–1059. DOI: 10.1111/j.1523-1739.2008.01165.x

Yang, M. (2021). Chinese environmental ethics. Rowman & Littlefield, London.

Franck Meijboom and Patrick Baas, Back to the Future, 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Panel: The social epistemology of engineered agricultural ecosystems

C. Kendig[1], R. Ankeny[2], P. Sandin[3] and P.B. Thompson[4]
[1]Department of Philosophy, Michigan State University, 503 S Kedzie Hall, South Kedzie, East Lansing, MI 48824, USA; [2]School of Humanities, The University of Adelaide, Adelaide, SA, Australia; [3]Department of Crop Production Ecology, Swedish University of Agricultural Sciences, Ulls väg 16, 75007 Uppsala, Sweden; [4] Michigan State University, 503 S Kedzie Hall, South Kedzie, East Lansing, MI 48824, USA

This panel presentation discusses key concepts that are either explicitly stated or tacitly in use by researchers developing and/or utilizing new tools for gene editing in the context of agriculture. Our approach probes how systems of knowledge production shape the goals of agriculture, the means by which these goals are sought, how the conditions of success are judged, and the impacts these have on the environment broadly construed. In the past, the controversy over agricultural applications of gene technology has primarily concerned transgenesis ('traditional GMO'). Given that agriculture relies on goal-driven conceptualizations of yield, land capacity, and sustainability, philosophers of many stripes have missed an opportunity to explore the changing conceptual landscape afforded by philosophical analyses of agricultural practices and the concepts on which they rely. Agricultural concepts that are either explicitly stated or tacitly in use shape the goals of agriculture, the means by which these goals are sought, how the conditions of success are judged, and the impacts these have on the environment broadly construed. This session takes agricultural practice and the re-conceptualization of goals for improving agriculture as its starting point, examining the interplay between gene technology, agricultural research and farm production.

The forthcoming book *The Social Epistemology of Engineered Agricultural Ecosystems* (C. Kendig and P.B. Thompson, eds.) collects new interdisciplinary essays focused on social and philosophical dimensions of new biotechnologies for agriculture, emphasizing how technical innovation is accompanied by conceptual change. Three contributions to the book from scholars in philosophy of agriculture and philosophy of technology explore and analyze agricultural research, farming practice, and agricultural policies. Each asks and attempts to provide answers to the questions: How does the deliberate modification of agricultural products and processes change the nature of agricultural ecologies, goals, designs, and new uses of agricultural innovations including gene drives and robotics and, What values, concepts and assumptions frame evaluation of the possible social impacts of using new technologies for agriculture? This panel presentation will discuss how epistemic, ontological, and normative concepts have pragmatic impacts on the day-to-day workings of the farm and how agricultural knowledge is generated and shared. These concepts affect educational, environmental and agroindustry decisions, such as which chemical treatments are designed, what machinery growers rely on (e.g., tillers, planters, and ginners), are redesigned; how seeds are engineered; or how crops should be planted next season. These in turn result in different treatments being available to farmers and influence their farm management.

Paul B. Thompson (Michigan State University) will provide a brief introduction to the panel and moderate the session. Thompson will review how technologies such as CRISPR are alleged to reshape the debate over gene technology. There as a developing potential for inconsistency between the stated significance of gene editing in representations of the next round of genetically engineered plants and animals. Although CRISPR can be used for making a genetic change at a precise location on the genome, the technical capacities of constructs using CRISPR includes far more ambitious applications involving significant uncertainty and potential for unintended consequences. Each panel member discusses how technological interventions reshape socio-ecological relationships.

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Catherine Kendig (Michigan State University), will illustrate the approach of social epistemology by analyzing one set of concepts and practices within agriculture: soil and the multispecies communities living within it. She traces the ethnography of soil in terms of its management and use within agriculture, discussing how concepts and practices relating to the conceptualization of soil improvement, good soil, and soil health have changed. Philosophical analysis reveals the underlying ideas, values, and commitments that geneticists, soil scientists, agricultural extension specialists, agroindustry, and growers rely on to assess what is, and what is not good soil as well as how to improve it. In each instance, a philosophy of agriculture is active in shaping these practitioners' operative assumptions. Philosophical analysis reveals the ideas, epistemic commitments and values on which current grower and researcher strategies are based, simultaneously exposing alternative paths not taken. As such, a social epistemic analysis prepares the way for an ethical analysis of whether new gene technologies are useful, salient, or have become un-useful, irrelevant, or unjustified.

Rachel Ankeny (University of Adelaide), revisits what has become a stalemate between crop scientists who use gene editing and other molecular biological techniques, and publics who may not be actively opposed but are certainly not supportive of this type of research, as well as what arguably has become a conceptual meta-impasse in the scholarly literature on these conflicts. The argument is developed by drawing in part on the feminist political scientist Carol Bacchi's tool, What is the Problem Represented to Be (WPR) (Bacchi, 2009; Bletsas and Beasley, 2012). This approach to policy analysis challenges the traditional view that public policies are responses or reactions to problems which pre-exist outside of the policy process, waiting to be discovered and solved. Instead, the WPR approach argues that policies contain implicit representations of the supposed 'problems' that they purport to address, which in turn are accompanied by a range of assumptions that generally go unrecognized and unchallenged, as well as a set of silences that are not acknowledged or addressed. These representations put the supposed problem into a certain type of category, and thus restrict and direct the ways in which policies are enacted. The WPR approach forces us to articulate the underlying problem representations and to view them as requiring critical scrutiny, which in turn can lead to both new problem representations as well as novel policy solutions.

Per Sandin (Swedish University of Agricultural Sciences) will query the relationship between nature and putative improvements in plant genetics through breeding and biotechnology in light of idea of focal practice. The notion of focal practices is derived from the philosophy of technology Albert Borgmann and Paul Thompson. Each suggests that focal practice can function to curb negative commodifying tendencies associated with modern technical systems (Borgman, 1984; Thompson, 1999). Sandin will identify several candidates for focal practices that do not build on the hostility to (modern) technology and discuss how they can be developed, focusing on a variety of examples include are plant breeding, biotechnology activism, and some forms of sport. In short, for practices to be focal one must observe the restriction that the practice at least must not be inherently evil. The chapter discusses how it is possible that some types of bodily involvement is characteristic (if not defining) of focality.

References

Bacchi, C. (2009). Analysing policy: What's the problem represented to be? Pearson Education, Frenchs Forest, NSW.

Bletsas, A. and Beasley, C. (eds.) (2012). Engaging with Carol Bacchi: Strategic interventions and exchanges. University of Adelaide Press, Adelaide, SA.

Borgmann, A. (1984). Technology and the character of contemporary Life: A philosophical inquiry. University of Chicago Press, Chicago, IL.

Thompson, P.B. (1999). 'Farming as a focal practice.' In Higgs, E., Light, A. and Strong, D. (eds.), Technology and the Good Life? University of Chicago Press, Chicago, IL, pp. 166–181.

Franck Meijboom and Patrick Baron (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

Author index

A

Aa, A. van der 205
Aerts, S. 267
Andersen, S.S. 187
Ankeny, R. 477
Anthony, R. 223
Antonsen, T. 454

B

Barkema, H.W. 212, 218
Baysal, Y. 335
Bear, C. 357
Beekman, V. 44
Bjerklund, H.S. 454
Bjørkhaug, H. 199
Bjørnerud, E. 93, 357
Blix, T. 87
Bollmeier, T. 106
Borgdorf, L. 149, 285
Bossert, L.N. 261
Bovenkerk, B. 236, 242, 411
Brandeler, E.L. van den 167
Broeckx, B. 267
Bruce, A. 279
Bruce, D. 279
Bubeck, M.J. 324
Buddle, E.A. 58

C

Canu, I. Guseva 335
Carson, S. 81
Christensen, T. 21
Costa, D.N. 342

D

Deelen, E. 248
Deininger, K. 318
Denver, S. 21
Ditlevsen, K. 21
Driessen, C. 236
Dürnberger, C. 330, 376

E

Eckl, K. 155
Efstathiou, S. 437
Elger, B.S. 305
Engelhard, M. 391

F

Filibi, I. 51, 135
Fliri, S. 376
Franco, N.H. 342

G

Gamborg, C. 398
Giersberg, M.F. 255, 448
Gjerris, M. 161, 187
Glas, J.J. 411
Goy, N. 335
Gregorio, V. De 142
Grimm, H. 229, 318

H

Hagen, K. 391
Halstvedt, C.B. 357
Harfeld, J.L. 161, 193
Hartnack, S. 335
Hartstang, S. 299
Helliwell, R. 93, 357
Herten, J. van 205
Hirnet, J. 106
Hisano, S. 99

I

Innocenti, M. 130
Inza-Bartolomé, A. 32

J

Jacobs, J. 242
Janssens, M.R.E. 311
Jardin, P. du 370
Jones, V. 357

K

Kainberger, T. 229
Kaiser, M. 71
Kallhoff, A. 417
Karg, J. 318, 330
Kendig, C. 477
Kimura, A.H. 99
Kisora, Y. 236
Kortetmäki, T. 27, 143
Kräuchi, S. 428
Kunzmann, P. 106

Franck Meijboom and Bernice Bovenkerk - 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0

L
Lam, M.E. 389
Lasa-López, A. 135
Liao, C. 363
Liao, G. 363
Linder, E. 348
Lis, N. 443
Liu, X. 60
Loonstra, T.I. 471
Loo, P.L.P. van 311
Louis-Maerten, E. 305
Lund, T.B. 21

M
Macieira, A. 38
Magalhães-Sant'Ana, M. 342
Meijboom, F.L.B. 248, 285, 448
Mikkelsen, R.B. 187
Milford, A. 60, 305
Müller, N.D. 180
Myhr, A.I. 81, 454
Myklebust, A. 125
Myskja, B. 81, 125, 273

N
Nelke, A. 106
Nerby, T. 93, 357

O
Olsen, J.V. 21
Olsson, I.A.S. 342
Ota, K. 460
Otto, M. 391

P
Pedersen, M.F. 21
Perez, C. Rodriguez 180
Persson, K. 106, 180, 299
Pilskog, H.E. 357
Plötz, M. 106
Pohjolainen, P. 173
Putten, A. van 448

Q
Qian, J. 471

R
Rademaker, C.J. 293
Robaey, Z. 423
Roche, S.M. 212, 218
Roe, E. 437
Rolo, D. 342
Rooijakkers, M. 242
Ruiter, W. 212, 218
Ryan, M. 261

S
Sandin, P. 423, 477
Sandøe, P. 21, 398
San-Epifanio, L. Escajedo 32, 51, 135
Sanz, I. Alonso 51
Schaafsma, A. 218
Schou, M. 21
Sellmann, J.D. 465
Shaw, D.M. 180
Smid, A.M.C. 212, 218
Sodano, V. 112
Springer, S. 324, 376
Springinklee, D. 383
Stoep, J. van der 411
Stracke, K. 391
Strøm-Andersen, N. 60

T
Teixeira, P. 38
Thompson, P.B. 477
Thorseth, M. 199

U
Uncetabarrenechea, J. 51, 135

V
Varela, P. 357
Ventura, B.A. 212, 218
Vermeulen, L. 405
Vinnari, E. 173
Vinnari, M. 173
Vliegher, S. De 267

W
Wallimann-Helmer, I. 118, 428
Wathne, H. 87
Winther, H. 273

Franck Meijboom and Patrick Baron (eds.), 978-90-04-71550-9
Downloaded from Brill.com 09/16/2024 12:32:52PM
via Open Access.
https://creativecommons.org/licenses/by/4.0