



Utrecht University

Broadening the debate on Breeding: on the Ethical and Societal dimensions of innovations in livestock breeding

Dr. Franck Meijboom

Centre for Sustainable Animal Stewardship (CenSAS)
Utrecht University | Faculty of Veterinary Medicine &
Ethics Institute

Wageningen University | ASG | Adaptation Physiology



Outline

A. Why is attention to socio-ethical dimensions needed?

B. The need to broadening scope of the debate on socio-ethical dimensions

1. More than experts only
2. More than risks
3. More than animal welfare
4. More than reflection on new issues
5. More than just technology





From “how and what” to “why and for whom”

Without expertise in fields such as biology, veterinary and data sciences, innovations in animal breeding are not possible.

However, innovations in animal breeding are more than scientific/ technical challenges.



From “how and what” to “why and for whom”

To face human population growth, increasing environmental constraints and changes in socio-cultural values, **animal breeding must evolve toward a more sustainable model** that guarantees production while promoting efficient resource use, animal health and welfare, and preserving genetic diversity. Thanks to recent developments in omics technologies, **it is now possible to rethink breeding**, taking advantage of improved knowledge on genome-to-phenome relationships that accounts for both genetic and non-genetic mechanisms controlling traits.



From “how and what” to “why and for whom”

Contributing to



and





The need to pay attention to socio-ethical dimensions

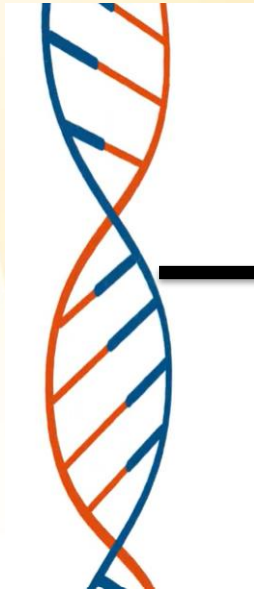
- **Breeding** is goal directed → What do we aim for and why is that valuable? what is the preferred direction?
- **Technology** is not neutral → (how) should it be used?, Who are allowed to use it? What is the impact in terms of power, responsibility? How to deal with uncertainty?
- **Animals** → what is the value of animals? Do we have duties towards animals? Are we allowed to change animals?

Answers are never neutral but embedded in views on what is desirable/valuable.



The need to pay attention to socio-ethical dimensions

The ethical and societal dimensions of innovations in livestock breeding often are perceived/ discussed as an add-on.....



Attention to ethics
= part of ~~implementation~~
and creating
acceptance



The need to pay attention to socio-ethical dimensions

The ethical and societal dimensions of innovations in livestock breeding needs to be included from start of the innovation process.





Broadening the debate on socio-ethical dimensions

1. More than experts only

Experts are essential to discuss the socio-ethical dimensions of new technologies in livestock breeding.



However, public engagement is essential. Only engaging with technical experts on innovations in livestock breeding runs the risk of ‘omitting the true breadth of these issues by limiting our perspective to dominant perspectives’ (Kayumova et al., 2019: 223).



Example



GEroNIMO: Focus Group Discussions to be organized (2023) in 4 countries exploring national/ cultural dimensions.



Cattle Breeding:
what should we do next?

a Democs game
to discuss how we should use our new
knowledge of genetic science to
breeding cattle for milk and meat



This Democs game has been created by Edinethics Ltd.
as part of the BovReg Project, funded by the European
Commission Horizon 2020 Research Programme



www.bovreg.eu
www.edinethics.co.uk



Democs game (BovReg,
Donald Bruce), @WCGALP 5
July 2022



Broadening the debate on socio-ethical dimensions

2. More than risks and consequences

The dominant institutional debate on innovations in animal breeding still is framed in terms of measurable risks and consequences.

This suggests as if the public issues surrounding new technologies in breeding can be reduced to specific harms to health and the environment as explicable by case-by-case scientific risk assessment.

This frame is poorly equipped to think through the broad set of questions that are relevant in the context of animal breeding + it leads to endorsing small improvements only.





Broadening the debate on socio-ethical dimensions

3. More than animal welfare

The animal makes a difference: additional questions/ concerns in comparison to plant breeding.

Animals are recognized as sentient beings: they have interests that have to be considered in the breeding process.

Mostly this is taken on board in terms of attention to **animal welfare**.

Despite the importance of animal welfare, the animal related question **cannot be reduced to welfare**.





Example

“Several authors argued that (applications of) genome editing are undesirable not because they might harm the welfare of these animals, but because they might be **harmed in other ways.**” (De Graeff et al 2019)

“The potential to change the nature of animals, sometimes referred to as ‘**de-animalisation**’, i.e. to add or remove certain capacities from animals (such as cognitive capacities or the ability to feel pain), is of ethical concern.” (EGE, 2021 Ethics of Genome Editing)

“...even if breeding technologies do improve animal welfare, they might be objected to on other ethical grounds (..). The current paper applies the **concept of telos**, (...), to genomic selection and genome editing aimed at improving animal welfare.” (Kramer & Meijboom, 2021)



Broadening the debate on socio-ethical dimensions

4. It's about more than new questions: the meaning of “new”

Researchers in interviews on gene-editing: this is not new, a lot of continuity with existing technology → does not raise moral concerns

Members of the public in focus group discussions on gene-editing: this is not new, a lot of continuity with how companies already manipulate animals → does raise moral concerns



Broadening the debate on socio-ethical dimensions

4. It's about more than new questions: the relevance of “new”

Ethical reflection is not only about new topics

- a. The pace of the development, unclarity about responsibilities or uncertainties can raise relevant (but well-known) questions that need attention
- b. New technologies can make existing concerns explicit: e.g., instrumentalization of animals, questions about ownership of genetic material.



Broadening the debate on socio-ethical dimensions

5. It's about more than technology

The societal debate is also about the context of the emerging technology

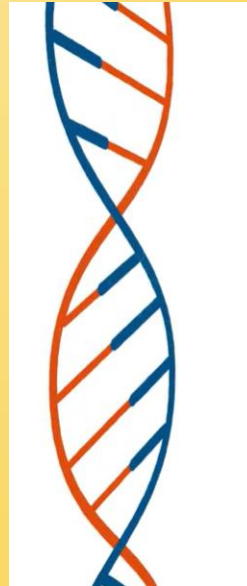




Broadening the debate on socio-ethical dimensions

5. It's about more than technology

The societal debate is also about the context of the emerging technology





Broadening the debate....

Will not

- make the discussion easier
- automatically lead to answers, but

Can

- do justice to the complexity at stake
- Include views of all involved in livestock breeding
- Help to better embed innovations in breeding in society
- Enable professionals to act responsibly



Acknowledgments



GERONIMO project has received funding from the European Union's H2020 research and innovation programme under the grant agreement N°101000236.

Geronimo-h2020.eu

Leon Borgdorf, MSc



BovReg project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 815668

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Dr. Koen Kramer
Dr. Ann Bruce
Dr. Donald Bruce

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Dr. Senna Middelveld
Prof. Phil Macnaghten