POSITION PAPER

Animal Welfare: Thoughts about how to achieve the most (for the animals!) Consensus-driven dialogues vs. scandalisation, gradual improvements vs. maximisation

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1 Animal welfare improvements lag far behind societal expectations and realistic opportunities

The human-animal-relationship has drastically changed in the last two decades: animals are no longer regarded as just objects that an owner can treat how he or she wants, but they are regarded more and more as subjects, i.e. as sentient creatures, who have an intrinsic value and should deserve the guarantee of a decent life provided by the people that own or care for animals (Kunzmann, 2013). There are several animal welfare frameworks that define the wellbeing of animals in different ways. Fraser (2008) describes the welfare criteria "health, "natural living" and "affective state"; the EU research Welfare Quality® project (FOOD-CT-2004-506508) defines the four animal welfare domains: good feeding, good housing, good health, appropriate behaviour (Temple et al., 2011), to which Mellor (2017) added a fifth domain, the mental state of the animals. On a global scale, the animal welfare definition of the OIE (World Organisation for Animal Health) in 2008, given in the Terrestrial Animal Health Code (OIE, 2011), is widely accepted. All in all, a good description of a decent life of animals in human care is still the concept of the "Five Freedoms", which was already developed in the 1960s in the UK (Brambell, 1965), and describes quite well the European understanding of good animal welfare:

- Freedom from hunger and thirst, by ready access to fresh water and a diet to maintain full health and vigour.
- Freedom from discomfort, by providing an appropriate environment including shelter and a comfortable resting area.
- Freedom from pain, injury, and disease, by prevention or rapid diagnosis and treatment.
- Freedom to express normal behaviour, by providing sufficient space, proper facilities and company of the animal's own kind.
- Freedom from fear and distress, by ensuring conditions and treatment that avoid mental suffering.

Of course, keeping and using animals for human purposes is mostly connected with imposing some sort of stress on the animals, curtailing normal behaviours and even causing them some unavoidable pain and suffering. Therefore, in the light of the growing understanding of the responsibility that humans have for the animals in their custody and/or use, there is the moral imperative that, while providing the animals with the

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"five freedoms", only minor infringements should be allowed and there must be a strong justification for causing any avoidable pain or stress to animals.

However, despite the rapidly growing consensus in society over the last 20 years that animals deserve a decent life, there has been little change in the quality of life of our food animals: most animals are kept in confinement without sufficient enrichment; lack of choice of climatic zones; no access to open areas; few opportunities to express their behavioural repertoires; chicken beaks are still trimmed; pig tails are still docked; and not all herds and flocks are healthy and receive sufficient competent care from the humans that have the responsibility for them.

2 Reasons for this discrepancy

2.1 The high complexity of animal welfare

To understand the reasons for the suboptimal housing and management of our food animals, it is necessary to explain that improving animal welfare is, like acting against climate change, not a "tame" (one-dimensional and solvable), but one of the "wicked" problems (multi-dimensional, complex and not solvable). The phenomenon of "wicked" problems was defined in the late 1960s by the German Wilhelm Horst Jakob Rittel, who was a design and sociology professor in Ulm, Germany, and in Berkeley, USA (Rittel and Webber, 1973). According to him, wicked problems are highly complex and involve many different stakeholders with very different expectations. Due to their social complexity, wicked problems have no stopping point. The consequence is that the aim of action against wicked problems needs to be shifted from "solution" to "continuous intervention". And it means that changes in the right direction of not solving but tackling wicked problems more successfully require a great number of people to change their mindsets, habits and behaviours. They are also characterised by very complex interdependencies, which means that the effort to solve one aspect of a wicked problem reveals or creates other problems, which is especially complicated if genuine conflicts of societal goals are involved. In the case of animal welfare, conflicting societal goals include examples such as "affordable food for all", "food security and food safety" and "a decent income for farmers", and "international competitiveness". Maximising one of the societal goals will automatically lead to reducing the other interdependent goals (see the parable of the principle of communicating vessels in *Figure 1* and *Figure 2*).

The consequence of maximising, e.g. the focus on animal welfare, is that those who are affected by the decrease of the appreciation and support for "their" values will oppose any animal welfare improvement efforts.

2.2 Public discourses as good governance

As seen above, the growing complexity of society and its increasing diversification lead to the fact that more and more norms are no longer generally accepted, but controversial and hotly disputed. Discourses about moral behaviours, attitudes and judgements have become part of our daily life. In the 1970s and 1980s, the German philosophers/sociologists K.O. Apel and J. Habermas developed the theoretical basis of the "discourse ethics" that are the precondition if public discourses are to become engines of societal change to the better. They pointed out that for discourse ethics to be successful there must be an effective level of civility between people or persons involved. According to Habermas (1991), the following (idealistic) presuppositions are necessary to make public discourses successful:

- that participants in communicative exchange use the same linguistic expressions in the same way,
- that no relevant argument is suppressed or excluded by the participants,
- that no force except that of the better argument is exerted,
- that all the participants are motivated only by a concern for the better argument
- that everyone would agree to the universal validity of the claim thematised,
- that everyone capable of speech and action is entitled to participate, everyone is equally entitled to introduce

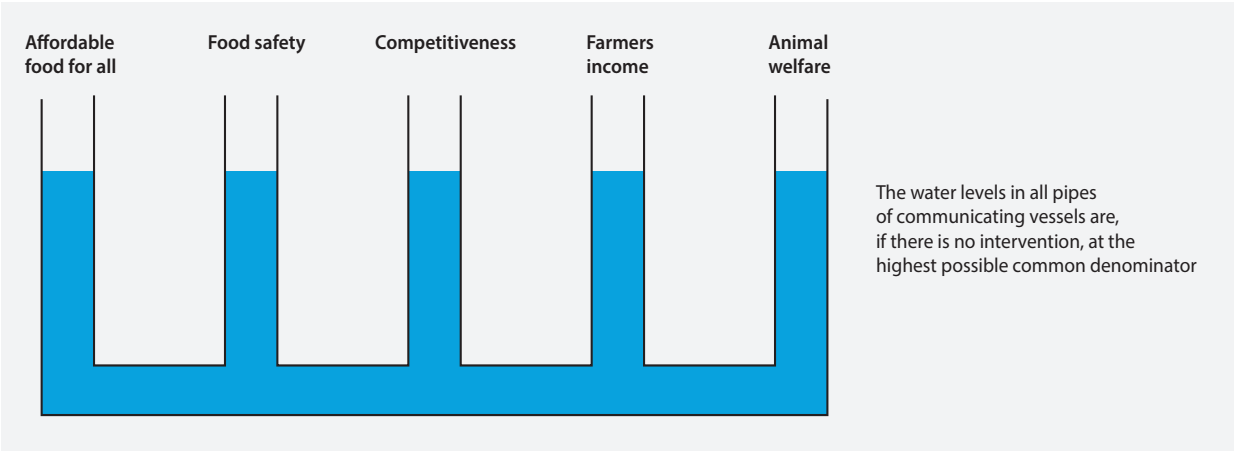

FIGURE 1
With no one-dimensional intervention, the five interdependent societal values are treated with equal public appreciation and governmental support

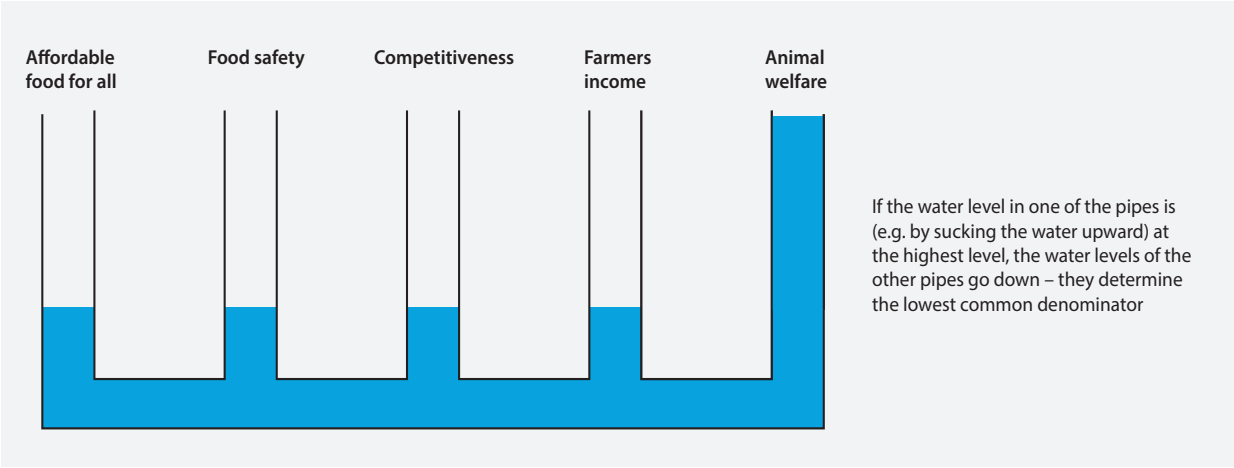

FIGURE 2
With one of the societal values maximised, the other interdependent values lose governmental support

new topics or express attitudes, needs or desires, and the concerns of those that are affected, but not included in the discourse, are taken into consideration, and
- that no validity claim is exempt in principle from critical evaluation in argumentation.

This long list of presuppositions explains why public discourses do not "automatically" lead either to change at all or to changes that are accepted and become a valid norm. The less the rules of a civil and constructive discourse are complied with, the less can and will be achieved.

As for the animal welfare debate, the stigmatisation of farmers as "animal tormentors" and radical demands such as "abolishing intensive animal husbandry completely" or "keeping all animals only on pastures" obstruct reasonable and achievable animal welfare improvements. The affected farmers – who often are not included in the discourse – develop a siege mentality and are not ready to consider or implement practical changes. They feel stigmatised, disrespected and unfairly treated and are therefore not ready for any constructive dialogue. Feeling abused is no basis for listening, for understanding reasonable concerns, and not at all for acting in order to fulfil any of the demands. Thus, outraged animal welfare activists with maximum demands who do not attempt to understand the needs, the fears and the anxieties of those who they expect to change their ways of production and of generating their income, contribute to the stagnation that these critics complain about.

3 Ways to a socially agreed continuous improvement of the quality of life of animals

As shown above, consensus-driven dialogues about continuous gradual animal welfare improvements are the most suitable way to increase the quality of life of food animals over time as suggested in the Expert Opinion on "Directions to a societally accepted food animal system in Germany" by the Scientific Advisory Board of the Federal Ministry of Agriculture in 2015. However, this way of orchestrating change is only convincing and acceptable for both the affected farmers and the concerned critics, if there are concepts that are affordable for the farmers and that make real differences in overcoming animal welfare shortcomings, which the critics can recognise and appreciate.

In the following, three evidence-based examples of initiatives to improve animal welfare are explained: national or regional animal health databases for benchmarking purposes, animal care ratios for large animal herds and flocks and the use of animal-oriented sensor techniques. These three concepts have been suggested for years by scientific working groups, they are "ready to use", and need minimal time to be implemented, i.e. almost no transition time in contrast to rebuilding and reorganising the entire conventional husbandry system.

3.1 Animal health databases for benchmarking purposes

It is well known and documented that the majority of the dramatic animal welfare violations that are broadcast by the media has little to do with the husbandry system or the herd or flock size, but more with marked deficiencies in the quality of the animal care. The pictures of sick, injured, neglected and suffering animals that the media present are clear proof of the fact that the veterinary authorities responsible for monitoring the animal owners' compliance with the Animal Welfare Act and the Directives for the Animal Protection of Food Animals have no early warning system which is able to identify herds or flocks with suboptimal care for the animals much earlier. Before farm animals present such a poor status of health, the ratios of dead animals and sick animals that reach the slaughter plant will have been increasing for quite a long time. The European regulations on inspections of food producing operations, including farmers, as "risk-oriented" controls are reasonable and represent considerable progress towards efficient state interventions compared with the traditional, mandatory randomly selected farm visits by official veterinarians, which e.g. in Ireland are implemented by the Irish Animal Identification and Movement (AIMS) database to

identify at risk farms (Kelly et al., 2011; Kelly et al., 2013). However, this progress is, at least in Germany, only theoretical as there is no monitoring of health and animal welfare indicators at farm level which is comparable to quality assurance systems of successful food companies (More et al., 2017). The EU regulations on registering food animal operations and on the traceability of animal movements are mainly aimed at preventing emerging and re-emerging animal diseases at national level. Since these data are neither standardised nor centralised at national level, they do not provide the databases that could be used for continuous monitoring for identifying individual food animal farms with a very poor or suboptimal animal health and animal welfare status.

If there was a national database, or regional databases, that continuously recorded the mortality rates, the slaughter inspection data and other health and welfare indicators (both from the live animals at unloading and in the lairage, and from the carcasses at the slaughter line) cumulated for each herd and flock (Elbers, 1991; Blaha, 2005), early interventions by consultants ("yellow herds") and/or by veterinary authorities ("red" herds) would be possible. The latter would be given a simple and doable tool to perform the necessary "risk-oriented" state controls (see *Figure 3*).

The databases could be anonymised for the public so that only the individual farmer would know where his or her herd or flock rates on the scale from a low to a high frequency of findings that indicate serious health and animal care shortcomings. Most farmers would use the data bank for their own corrective measures, since the majority of the farmers do not know their herd's or flock's health status compared with other farmers. If they know their shortcomings, most of them will consult a competent advisor to help solve the problems. Only those farmers who do not respond to this early warning system, would be subjected to an inspection by the responsible veterinary authority. Using this benchmarking tool continuously, a reliable instrument for an ongoing animal welfare improvement process could be implemented, which would prevent animals in poor husbandry and poor animal care situations not being recognised early enough and suffering much longer than is necessary (Dickhaus et al., 2009; Alt et al., 2010; Blaha and Richter, 2011; Grandin, 2017).

3.2 Animal care ratios for large animal herds and flocks

The structural changes in agriculture to larger farms and larger food animal herds and flocks (in the East during the communist period due to central planning, in the West due to increasing competitive forces) has led to the fact that the larger a herd or flock becomes, the more animals have to be observed and cared for by one person. This has been regarded for several decades as a mostly welcomed economic effect: apart from feed, labour accounts for the highest costs in food animal production. Thus, the decrease in labour cost per animal was seen as progress, since in the decades after World War II making the very small-scale agriculture of the time more efficient, lowering the prices of food, and making the physical work of the farmers and their employees less demanding, was a widespread consensus in the 1950s and 1960s.

However, there was no stopping point for this growth process in terms of animal performance (producing more meat, milk and eggs per animal). This means that the developments went far beyond the threshold of where exploiting the animals and diminishing the animals' quality of life began. The effect of this missing stopping point, and the lack of consideration for the animals, resulted in the situation where the drive to increase farm efficiency and productivity conflicted with animal welfare. Additionally, the availability of automation and computerisation (feeding computers, computerised climate control of the barns and animal houses) had the consequence of reducing the hours

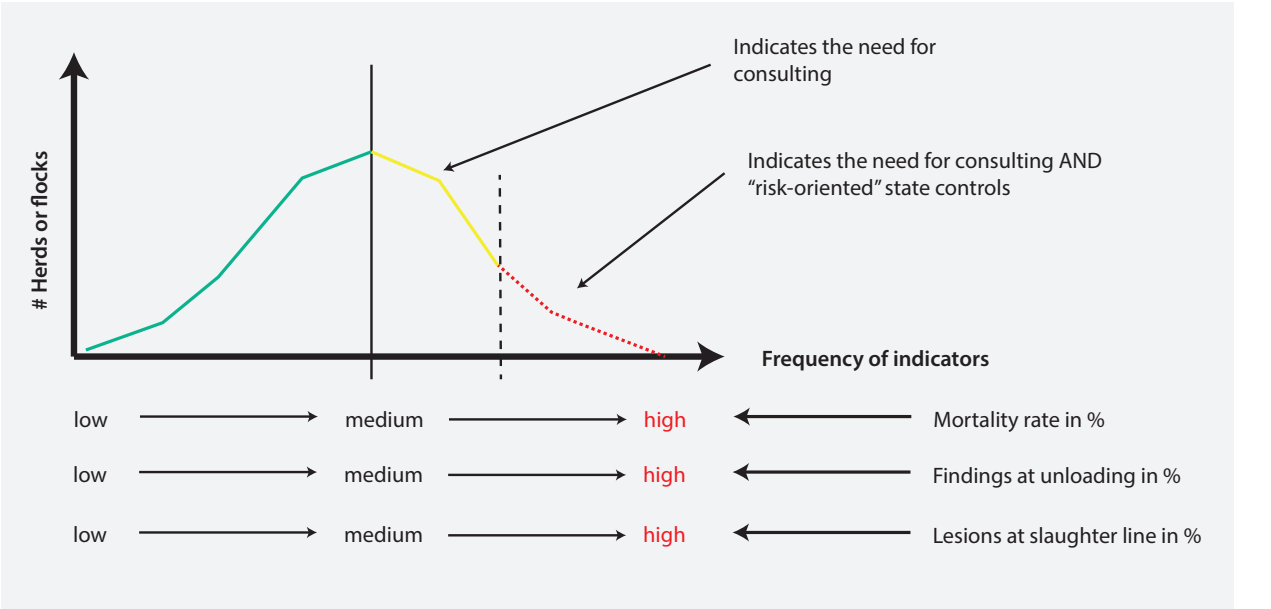

FIGURE 3
A simplified scheme of how to identify herds and flocks that need improvement

of the physical presence of the farmers and caretakers in the animals' direct environment.

Now, with the changing understanding of man's responsibility for the sentient creatures in their custody, we need to counteract the obvious reduction in the extent of animal observation and the shortening of time to care for an individual animal caused by the growth of herd and flock sizes. There is no reason not to regulate by law a minimum "animal care ratio" for given herd and flock sizes. Appropriate research groups could be asked to determine for each food animal species and each age group per species, how many animals per competent person can be sufficiently observed, twice a day, and appropriately be cared for if necessary.

Regulations on how many competent persons should care for how many food animals in larger herds and flocks would also be a guideline for auditing procedures in the framework of delegated self-controls and for the frequency and intensity of the mandatory state inspections of larger animal units by veterinary authorities.

3.3 The use of animal-oriented sensor techniques and automation

Automation and technical support by computers are perceived as being detrimental for the animals' wellbeing (= more and more technology in the barn can be considered to be "soulless"). However, automation and sensor techniques can, of course, be of great value for the animals, if they are developed not to save labour time, but to support the animal caretakers in their responsibility to provide the animals with optimal feed and water, and a healthy climate, and to help farmers to recognise early signs of disease. The sensor techniques allow for identifying subclinical lameness or coughing animals, increasing body temperature, and even ruminal disorders (Rutten et al., 2013). Additionally, they can record behavioural abnormalities such as aggressive ranking order fights in the absence of human observation.

Also more and more farmers have early warning system apps on their smartphones to receive alerts if something in the barn is having adverse effects on the animals, this lowers reaction times and can considerably lower the risk of stress and suffering of the animals.

4 Conclusions

For many animal welfare activists, most animal welfare shortcomings seem to be easily solvable, but solving them in the real world is not easy, since it is a matter of "wicked" problems: many interdependencies with other social issues, many stakeholders with completely different particular interests, and many people who have to change their minds and habits are involved. The more radical animal welfare demands are, the more they provoke resistance and counteractivities by those who are expected to change their attitudes and way of production.

The consequence is that agreeing on small steps in a process of a consensual continuous improvement of the quality of life of our food animals is achieving more (for the animals!) than insisting on drastic ad-hoc systemic changes that result in immediate opposition. Over time, applying small improvement steps like implementing long-known animal-oriented measures such as animal health databases (Van Staaveren et al., 2017), reasonable animal care ratios for large herds and flocks as well as using sensor techniques and automation that make the animal observation and the care for the animals in need better (Benjamin and Yiks, 2019), will lead to gradual systemic changes in the right direction.

The high complexity and the manifold stakeholders prevent the process of gradual improvement unfolding itself, thus, mediating the public discourse on what to achieve and triggering and coordinating the stepwise implementation of well-known animal welfare improving measures must be provided by the political decision makers. The latter means undoubtedly that the gap between the animal welfare demands and the known possibilities to improve the animals' life quality is a serious policy failure.

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