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# Editorial: Securing animal welfare in times of crisis and animals' end of life outside conventional slaughter

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## Editorial on the Research Topic

### Securing animal welfare in times of crisis and animals' end of life outside conventional slaughter

It is estimated that 75 billion farm animals are slaughtered for meat annually (Behera & Adhikary, 2023). Securing the welfare of every individual farm animal at the end of life is difficult and, consequently, animal welfare issues exist. Within policy, the livestock sector, and animal welfare science, the prioritization of farm animal welfare issues primarily focuses on animal welfare problems present in conventional situations, which involve large numbers of animals. Based on the general agreement that animal welfare is a characteristic of individual animals (Arndt et al., 2022), it can be argued that ethical considerations and scientific inquiry should consider the welfare of the individuals involved, rather than only focussing on the scale of impact.

Under conventional production practices, animal welfare problems such as bruises and other injuries in pigs (Faucitano, 2018), cattle (Njisane and Muchenje, 2017), and poultry (Benincasa et al., 2020) may occur due to rough pre-slaughter handling, potentially leading to reduced meat quality, meat loss, and economic losses. Typically, the focus of improvements is on standard procedures such as catching, driving animals, thermal conditions, and the placing of the animals at the slaughter line. However, there is a lack of focus on unconventional situations. While these may comprise only limited number of animals, the effect on individual animals may be tremendous. Currently, some of the main overlooked and urgent animal welfare risks relate to the killing and dying of animals outside the slaughterhouse and outside standard procedures. This *Frontiers Research Topic* aims to address viewpoints on the commodification of animals, judgement in end-of-life situations, and discusses the use of innovative methods to end animals' lives outside of conventional slaughter with greater consideration of their welfare.

The slaughter of animals conventionally involves transport to the slaughterhouse. However, during transport, an unexpected and unconventional event such as a traffic

accident may occur. This is what the first paper in this Research Topic addresses. The perspective paper by [Anneberg and Mc Loughlin](#), titled *'The Invisible Suffering of Farm Animals in Traffic Accidents: As Sentient Beings They Are Low Ranked in Life as Well as in Death'*, describes the presence of emotional distancing by humans in relation to farm animal's death. This is, according to the authors, reflected in how media highlights facts about traffic incidents rather than the suffering of the farm animals involved. The authors also reflect on the relative importance of some animals to humans. They refer to an inner sociozoologic scale that humans may have. Along the scale, humans and human-like animals are ranked highest. Companion animals are also placed relatively high, whereas farm animals seem to be placed lower on this inner scale. The authors raise, rather provocatively, the question of what it would mean to have memorials for animals dying in car crashes.

Producing large numbers of farm animals for meat involves inevitably the early loss of animals on farms. The paper by [Deelen et al.](#) titled *'The views of farm animal veterinarians about their roles and responsibilities associated with on-farm end-of-life situations'*, provides insight into parts of the decision-making process before killing ill or injured animals and how veterinarians are involved in this. Interests of the animal and its owner may conflict, leaving the veterinarian puzzled as to how to prioritize these interests. The goal of the study is to better understand the views of farm animal veterinarians about their roles and responsibilities in ending animal's lives. The authors show that veterinarians are more than merely executioners and describe no fewer than seven potential roles of veterinarians in the decision-making process toward the death of an animal. This research provides insight into how practitioners can be supported in dealing with moral distress. In their follow-up paper, *'Considering life and death: a qualitative vignette study among farm animal veterinarians in the Netherlands on considerations in end-of-life decision-making'*, [Deelen et al.](#) describe how medical and non-medical aspects affect the process of decision-making. They find that these aspects mingle with an adhered frame-specific approach (using either the frames 'function', 'prospect', or 'duty' as the dominant focus for individual veterinarians), and thereby possibly with the coping strategy of veterinarians. This together may make a substantial difference in decision-making support tools for veterinarians.

[Watteyn et al.](#) address in their paper *'Comparison of Methods for Individual Killing of Broiler Chickens: A Matter of Animal Welfare and On-Farm Feasibility'* the importance of considering what happens to broilers when not sent to conventional slaughter. Poultry rarely receive medical treatment when sick or injured. The authors compare manual cervical dislocation, the most commonly used on-farm killing method in poultry, to an alternative method with a captive bolt pistol and find that both methods cause rapid and irreversible insensibility. However, the two methods have pros and cons and the authors explore the use of nitrogen gasification as

well, and conclude by stating that for alternative systems to be feasible and routinely used, extensive information, proper training, and financial support needs to be available.

The statement about feasibility of alternative systems by [Watteyn et al.](#) strongly relates to the reporting of [Ursinus et al.](#) in their paper *'Qualitative Welfare Risks of Cows offered to a Dutch Mobile Slaughter Unit'*. Here, the authors explain that the use of a mobile slaughter unit is currently not economically viable, but that—according to the applied rapid comparative risk assessment method—such a facility would provide valuable opportunities for the improvement of animal welfare when operated appropriately and with sufficient supervision. Due to societal and political pressure to reduce the transport of animals to slaughter (especially culling animals with an increased risk of being unfit for transport), the demand for mobile slaughter units is expected to increase. Therefore, it is increasingly relevant to study these units for their effectiveness and their suitability for guaranteeing appropriate welfare.

The vast majority of farm animals end their life in a slaughterhouse, but the above-mentioned studies show the importance of considering the welfare of the animals that are or have to be killed in other ways too. Through the integration of methodologies from different scientific disciplines, the Research Topic draws attention to a yet not so studied area of animal welfare science: the study of the death of animals occurring outside the normal context of a slaughterhouse, characterised by a lower number of animals involved but with a large potential for welfare consequences for individual animals.

## Author contributions

WU: Writing – original draft. LL: Writing – review & editing. IC: Writing – review & editing. MH: Writing – review & editing.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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