

Navigating the Ending of Animal Lives in Veterinary Practice: Life's Call, Duty's Toll

Ellen Deelen



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Navigating the Ending of Animal Lives in Veterinary Practice

Life's Call, Duty's Toll

**Het Navigeren van het Levenseinde van Dieren in de Dierenartsenpraktijk:
Een Roeping voor het Leven, een Plicht om te Dragen**
(met een samenvatting in het Nederlands)

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Enjoying the view from the top of the mountain: a moment of reflection and gratitude

In 2019, I started my journey as a PhD candidate. During my PhD, I often compared my journey to climbing a mountain. As experienced hikers will know, half of the success of your journey is in the preparation. Although I wasn't an experienced hiker back then, I carefully considered starting this journey. Hours of talking to friends, family, former teachers and supervisors helped me to see that a PhD would be suitable for me: I was curious, eager to learn, interested in 'the bigger picture', ambitious, and most of all – intrigued by the topic for this PhD position. Besides the hours of reflection, I thought I would meet all the requirements specified in the job vacancy. After applying for the vacancy and two job interviews, I received an email from Franck informing me that I was not the only one who thought that this PhD position would suit me well: 'Based on the two job interviews, I can inform you that the selection committee has unanimously chosen to appoint you to the Ph.D. position. Your background and experience align perfectly with the outlined profile, and your clear vision and motivation regarding the theme of euthanasia, along with your sharp and critical attitude during the interviews, make you the ideal candidate.'

Delighted by this news, I started my PhD project in January 2019. During the first few months, I had the feeling of roaming around in a landscape full of mountains. Although 'euthanasia of animals' seems a straightforward subject, there are many aspects you can study when it comes to euthanasia. You can study methods used to euthanase animals, ethical perspectives on the death of animals, or the comparison of human euthanasia and the killing of animals, etc. All these 'mountains' seemed interesting and important, however, which mountain was the one I had to climb? Luckily my supervisors, Franck, Tijs, Jan Willem, and Bas, were there to help me while I was roaming around a landscape full of mountains.

During our meetings, they helped me to clarify that the mountain I had to climb was the one focusing on the position of veterinarians towards euthanasia of animals. Although the original title of my PhD position was 'euthanasia of animals and the position of veterinarians', I was slightly surprised when I found out that the position of veterinarians was my main subject. How was I supposed to study the perspectives of veterinarians? I wondered why they hired a veterinary graduate if they wanted to perform qualitative research. Why didn't they hire a social scientist? This was the moment when Tijs taught me that 'being social as a person was much more important for this PhD than being a social scientist'. The skills I needed as a social scientist, I would learn along the way. However, the ability to recruit potential

participants and engage in in-depth conversations with them about this sensitive topic was not easily developed.

My social skills would help me to recruit participants, as well as to have in-depth conversations with them about the sensitive topic of my PhD, where the skills as I would obtain the needed skills as a social scientist during my PhD.

Realizing all of this, I must admit that I doubted the quality of my preparations before starting this journey. Was I fully aware of what this PhD was about? And was I qualified enough to climb this mountain, without experience with the required skills? As you can imagine, I was quite overwhelmed by the mountain in front of me. It felt like Mount Everest, even without seeing the top. During the following months, I had several conversations with my supervisors about this overwhelming feeling. They helped me to see that climbing a mountain is a journey in which you only know the point where you start and the point where you would like to end. The route between those points is, at this stage of a PhD, not yet that clear.

With this wise lesson in my backpack, I started climbing. During the first kilometres of my journey, I realized that I was trying to walk in a straight line to the top. That was tough, as this meant that I had to climb a very steep slope. Trying everything I could, I found out that 'a straight line to the top' is perhaps not the best trail to take when doing a PhD. Moreover, I learned that climbing a steep slope on your own is not only quite lonely but also quite dangerous. You can imagine that obtaining these insights was not very pleasant, though, absolutely necessary for me before continuing my journey. When talking to my supervisors about my experience so far they helped me to see that between the starting and end points of your PhD, there are multiple trails you can take. It is not about finding the 'best' trail, but it is about finding 'your' trail.

Finding your 'own' trail sounded great, now it was my task to find out what that trail was. Jan Willem advised me to 'take my time' and 'to get a beer on a sunny terrace, just to think rather than try and run up that mountain slope'. Jan Willem's advice to take time for self-reflection helped me get a better feeling of what I needed for my journey. First of all, I didn't want to walk alone. Climbing a mountain on your own is not only quite lonely and dangerous as said, but it is also a waste of knowledge, experience, and the comfort of the company of others. By climbing together, I felt more confident about the journey's preparations, as two (or in this case five) know more than one. Moreover, it gave me the courage to take another step even when the slope was steep. I knew that if I fell, my team was there to catch me. Furthermore, the presence of a team provided a safety net, ensuring that any misstep on my part

wouldn't lead to a significant fall, as we could collectively secure each other. Thus, climbing as a team was the first important aspect for me.

Secondly, I felt that it would help me to pick a trail where we had the option to stop at some base camps. Although it is my natural preference to choose the 'quick and efficient' trails, I noticed that these types of trails are sometimes also misleading. Misleading in the sense that these trails are most of the time not that much quicker. Moreover, the things you can learn during such a quick and efficient trail are not always that beneficial in the long term. Against my nature, I learned that picking trails including several stops may suit me better over time. Trails that include base camps may initially appear to take more time. However, investing this time has valuable benefits, such as some time to rest (#take more holiday), an opportunity to reassess the planned route for the next stage, and, last but certainly not least, time to enjoy the view of the path you have already climbed.

Lastly, I noticed that I would benefit from some specialized expertise for specific parts of my PhD. The social science part of my PhD was like climbing a glacier, a specialized form of mountain climbing. In agreement with my supervisors, I got the opportunity to start collaborating with a specialized glacier climber named Ferry. The knowledge and experience of Ferry helped me to learn how social science works. Consequently, I found the joy of glacier climbing. A skill I never knew I would enjoy that much. If I had known that this was also a form of research (qualitative rather than quantitative) I would have considered an academic career much earlier in my studies. This opportunity to collaborate with a specialist from outside our university provided me a valuable insight: the importance of supervisors who are willing to allow room for other expertise. As Bas taught me 'it is a skill of supervisors to provide trust and let go'.

From this point onwards, my journey across the mountain progressed more and more smoothly. I felt sufficiently prepared to climb towards the first of four checkpoints. The aim of these checkpoints is that independent experts in your field of research review the results of your journey. In the case of climbing a mountain, you could visualise this review process as handing in a picture of you and your team at the top of the hill as well as a travel guide explaining what you did to reach that point. After handing in our results, reviewers provide comments on your work. At the first checkpoint, some reviewers were very positive, whereas others critically questioned our chosen trail or requested more insights into the details of the photo we handed in. To answer these questions, I made a clear proposal detailing how to collaborate as a team; after drafting a first response, Franck was the first person who helped me

refine our reply. Thereafter, I checked our response with the others. This manner of working, with me as the first climber, followed by Franck, and then the others, represents how our team relied on each other. As a result, we managed to pass the first checkpoint (#the first paper was a fact!).

After passing this first checkpoint, we crossed two more and reached the fourth for check-in. Since the setup of our team with me as the first climber, followed by Franck, etc. worked well, we retained this construction. This setup made me see how important it was to have a clear division of the order of climbers. As the second climber, Franck was the one who was available on a day-to-day basis for content-related advice, and strategic suggestions. Moreover, he was the one who listened to me when I had another 'great idea' for new education or a project for the ministry. Last but not least, Franck was the first person to catch me when I (had the feeling that I) fell or when I felt like I lost sight of the trail. In all these situations Franck could give me the support needed to continue my journey. My gratitude is great for your role as second climber Franck!

Besides the importance of the second climber's role, the other climbers illustrated the importance of all other roles in a team when climbing a mountain together. It demands not only the knowledge, courage, and endurance of each climber, but also involves trust, willingness, and a clear focus on the greater good of the team rather than individual objectives. Tijs, Jan Willem, Bas, and Ferry, a huge thank you to each of you for being willing to fulfil these crucial roles in the team.

Today, on the 22nd of April 2024, I reached to top of the 'Mount Everts'. Reaching this point gives me the opportunity to share the results of our journey. Although I am the one defending, the thesis is a result of our teamwork. Franck, Tijs, Ferry, Jan Willem and Bas, many thanks for being part of the team and for everything you have contributed to helping me find my own trail during this journey! I look forward to new journeys with all of you in the future.

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Chapter 1

Introduction

In every facet of the veterinary profession, veterinarians face inquiries concerning the lives and deaths of animals. Within the context of veterinary practice, the decision to end an animal's life is often described by veterinarians as both 'the best and the worst' part of their profession [1]. This duality emerges as the decision is perceived as 'the best' when it brings relief to the animal and the animal owner [2]. When the decision-making process is perceived as 'complex', characterized by questions, dilemmas, and feelings of frustration or disappointment, it is described as part of 'the worst' [1].

This thesis focuses on the decision-making process that veterinarians navigate in these complex end-of-life situations within veterinary practice. To better understand the context of these situations, an exploration of discussion about animal life and death in society will be provided first.

1. An animal's death: provoking thought and posing questions in society

Questions and dilemmas regarding the ending of animal lives are not unique to veterinary practice. Animal death evokes comparable questions in society [3]. Central questions that frequently arise are: 'What reasons justify the killing of animals?', 'Which animals may we kill?' and if an animal is to be killed 'How is the animal killed and by whom?'. Underlying these questions, we can recognize sentiments related to the 'care-killing paradox'. Arluke (1994) describes the care-killing paradox as the contradiction between providing care to animals on the one hand and killing the animals to whom we provide care on the other hand. As a consequence of the perceived contradiction between providing care and killing the one cared for, sentiments of grief, guilt, and moral stress arise [4].

Although the sentiments as a consequence of the care-killing paradox are primarily experienced by persons who are involved in the care as well as the killing of these animals, the paradox may have a more far-reaching effect as well. As an example, personnel taking care of animals in an animal facility may feel grief or guilt when animals they took care of are killed by other staff members as a consequence of a disease outbreak [5]. Also, lay people who are not directly involved in the care or killing of animals may experience care-killing paradox-related sentiments. In these cases, the sentiments regarding care and killing relate to the changing position of animals in our society.

In most societies, animals have a special position, but especially in Europe, this comes with a discussion about the moral position of animals [3]. Animals are increasingly recognized as beings with their own interests and value of their own position [6]. This growing acknowledgement is reflected in the growing consensus on the significance of animal welfare [6, 7] and the societal debate regarding various animal-related practices [6]. As a result, there is also more critical attention to decisions involving the ending of animal lives. This critical attitude can be recognized on four key issues related to end-of-life decisions: discussions concerning 1) which animals are to be killed, 2) how animals are killed, 3) by whom an animal is killed, and 4) the reason why an animal is killed.

Regarding the question 'which animals are to be killed', literature shows that the societal debate encompasses a broader spectrum of species these days. Whereas ending the lives of, for example, cows has been questioned for a long time, discussions about rats and mice, perceived as pests, are upcoming in the debate [8]. Comparably, the routine killing of one-day-old male chicks has become a topic of debate. Research among European citizens reveals that three-quarters (75%) of the respondents find this practice unacceptable [7]. In response to this societal change, Germany became the first European country to ban the mass killing of one-day-old male chicks. At the same time, there is a growing discussion on the methods used to end animal lives. As an example, discussions have emerged about methods used for stunning, such as the use of carbon dioxide for pigs [9] and electrical water bath stunning of poultry [10, 11]. Regarding the question 'by whom is an animal killed', there is a growing focus on the level of competence of persons involved in the handling and killing of animals. The Eurobarometer indicates that a majority (80%) of respondents believe that individuals handling animals should be skilled and trained. Lastly, the reason why an animal's life is ended is critically debated. Reasons to end an animal's life vary, ranging from purely humane interests to the interests of other animals or in favour of the interests of the individual animal. This raises the question 'Do we care for an animal to eventually end the animal's life, or is the ending of an animal's life part of the discussion from a care perspective, i.e. the animal's life is ended for the interests of the animal?' This question, along with the aforementioned issues on animal species, methods, and the performer's competence, highlights the growing societal attention to the position of the animal and the related care-killing paradox sentiments.

2. Navigating end-of-life situations in veterinary practice

With expertise in animal health and welfare, veterinarians provide care to animals in various animal contexts, e.g. animals kept as companions or for the production of animal products. As part of providing care, veterinarians frequently play a role in end-of-life situations. Veterinarians indicate that their role in end-of-life situations is important to them: “How you end your patient’s life can be just as important as healing the patient” [1]. Matte et al. (2019) describe that with their role in end-of-life situations, veterinarians desire to facilitate a ‘good death’. Their desire for a good death is meaningful to them on three levels. First, facilitating a ‘smooth’, ‘peaceful’, and ‘quick’ act leading to an animal’s death is crucial for the welfare of the animal. Second, facilitating a good death is seen as important as support to animal owners. Lastly, the sense of well-being of veterinarians is affected by their ability to facilitate a good death. When successful, veterinarians describe a sense of professional accomplishment [1, 12].

Despite their efforts to facilitate a good death, the literature shows that there are situations where veterinarians face challenges in making decisions on the ending of an animal’s life [12]. These challenges relate once more to the animal, the animal owner, and the veterinarian, as the veterinarian has to take these interests into account in the decision-making process [13-15]. Although the interests of the different stakeholders align frequently, there are situations where they compete. Dealing with these competing interests has been described as a challenging part of the veterinary profession [1, 16-23]. Facing these complex end-of-life situations may lead to dilemmas for veterinarians, described as an ethical decision that is hard to make because of contextual factors, e.g. a potential negative response from an animal owner [24]. Many dilemmas regarding end-of-life decision-making have been described, such as situations in which veterinarians are requested to end the life of a healthy animal, to provide futile treatment at the request of the animal owner, or to compromise patient care because of the owner’s limited finances [1, 16, 17, 20, 24-26].

The fact that veterinarians experience challenges when dealing with end-of-life situations can partly be explained by a lack of sufficient training. Several studies document that veterinarians do not feel “well-prepared” to deal with end-of-life situations in veterinary practice [27-30]. Research from the late twentieth century shows that veterinary students were not routinely trained on how to deal with animal death [31, 32]. Compared to the past, most curricula have however changed

by implementing training on end-of-life situations [33]. Although there is growing attention to the theme, veterinary graduates still long for additional training, specifically on effective communication with clients, as well as dealing with (ethical) dilemmas since these are the main sources of feeling not well-prepared [12, 34, 35]. In addition to training, the code of professional conduct and the legal framework are two likely sources for finding guidance on dealing with end-of-life situations. Although the initial direction is provided by these two sources, the code of professional conduct and the legal framework do not provide sufficient guidance to deal with complex end-of-life situations. The educational program, the code of professional conduct, and the legal framework are discussed in more detail in the general discussion of this thesis.

In light of the preceding discussion, it is understandable that veterinarians may struggle with complex end-of-life situations, leading to a reduced sense of professional accomplishment when navigating these complex situations [1, 12]. Consequently, their overall well-being may be affected by signs of (moral) stress, emotional strain, and compassion fatigue [19, 36]. Considering the significant impact of dealing with complex end-of-life situations on veterinarians, there is a need to offer them support to navigate these situations [2, 17]. To provide effective support to veterinarians, an in-depth understanding of the background of the complexity that veterinarians experience in end-of-life situations is needed. To gain this understanding, conducting research into the perspectives and experiences of veterinarians themselves in complex end-of-life situations is necessary.

3. Research questions and methodology

This thesis researches the question: 'How does the reasoning of veterinarians affect their decision-making in complex end-of-life situations in veterinary practice?'.

To answer the main question, the following sub-questions are determined:

1. What roles and responsibilities do veterinarians perceive when it comes to end-of-life situations?
2. Which considerations do veterinarians take into account in their decision-making process, and how do these considerations affect this process?
3. How do veterinarians approach end-of-life situations, and what does their decision-making process look like?

To gain an in-depth understanding of these research questions, a qualitative research method is used: in-depth semi-structured interviews. Pope and Mays (2020) describe qualitative research as an interpretative approach to data collection and analysis that is concerned with the meanings people attach to their experiences of the social world and how people make sense of that world. Qualitative research aims to provide an in-depth and interpreted understanding of social phenomena, including interactions, behaviours, experiences and perspectives of persons in their day-to-day settings [37, 38].

As a qualitative research method, in-depth semi-structured interviews help us to get more insights into *how* social phenomena emerge. Information on *how* veterinarians' reasoning affects their decision-making in end-of-life situations adds a new perspective to the existing literature, as the majority of the studies obtained information on *what* kind of decisions veterinarians make in end-of-life situations [16, 17, 19, 20, 25, 26, 39, 40]. As an illustration: a survey presents vignettes of end-of-life situations to veterinarians, asking them to rate their level of (dis)agreement with the case. Through the survey, information is obtained on *what* kind of agreement there is among veterinarians regarding that specific case. If the same vignettes are presented during an interview, knowledge of *how* veterinarians come to that level of agreement is added. Hence, value is added by conducting interviews providing insight into the thoughts and motivations behind the veterinarians' choices in end-of-life situations.

4. Thesis outline

This thesis contains six chapters exploring the effect of veterinarians' reasoning on their decision-making process in complex end-of-life situations in veterinary practice. To place end-of-life decision-making of veterinarians into the right context, this thesis starts with a paper that introduces the conceptual background of end-of-life discussions. Chapter 2, *Euthanasia is welfare-neutral, right..?*, presents a conceptual analysis of the concept of euthanasia of animals in veterinary practice. The concept of euthanasia of animals is frequently used in veterinary practice for various end-of-life situations. Euthanasia literally translates to 'good death'. In the manner the concept is currently used, the concept loses its evaluative capacity to distinguish forms of death considered as 'good' from forms not considered 'good'. By addressing the conceptual playing field and normative standpoints, the conceptual analysis illustrates how euthanasia as a concept can help (future) veterinarians to evaluate complex end-of-life situations on the 'goodness' of death. For the remainder of this thesis, this conceptual analysis helps to understand the perspectives of veterinarians when reasoning and deciding in complex end-of-life situations.

As a follow-up on the conceptual background of this thesis, three empirical papers present how veterinarians' reasoning affects their decision-making in complex end-of-life situations. To illustrate this, the reasoning of veterinarians regarding their own position in end-of-life situations is discussed first (Chapter 3). Thereafter, the bridge between veterinarians' reasoning and their decision-making process is introduced (Chapter 4). Lastly, detailed insights are shared about the decision-making process of veterinarians in complex end-of-life situations (Chapter 5). As veterinarians deal with complex end-of-life situations in various contexts, the papers discuss two of these contexts: the context of farm animal practice (Chapters 3 and 4) and small animal practice (Chapter 5). Together the three papers provide insight into the connection between the conceptual understanding of euthanasia and the practical implications of this understanding for veterinarians in practice.

Chapter 3, *The views of farm animal veterinarians about their roles and responsibilities associated with on-farm end-of-life situations*, explores the reasoning of veterinarians in complex end-of-life situations. Specifically, the roles and responsibilities veterinarians perceive when it comes to ending an animal's life are researched. In addition to detailed descriptions of the roles and responsibilities veterinarians perceive, the paper provides insight into affecting dimensions and contextual factors.

How veterinarians reason about their roles and responsibilities translates into how veterinarians approach end-of-life situations. Chapter 4, *Considering life and death: a qualitative vignette study among farm animal veterinarians in the Netherlands on considerations in end-of-life decision-making*, investigates the considerations that play a role in veterinarians' decision-making processes. Additionally, the paper describes three frames reflecting the considerations that affect the decision-making process of veterinarians in end-of-life situations. These insights present the bridge between veterinarians' reasoning and their decision-making process.

Lastly, detailed insights into veterinarians' decision-making processes in complex end-of-life situations are provided. Chapter 5, *Handling End-of-Life Situations in Small Animal Practice: What Strategies do Veterinarians Contemplate During their Decision-Making Process?*, illustrates how veterinarians navigate end-of-life decision-making processes. The paper details a three-step approach, including multiple strategies that are used to come to a decision in an end-of-life situation.

Together the above-mentioned papers shed light on the conceptual background of end-of-life situations in veterinary practice, as well as the empirical insights into how the reasoning of veterinarians affects their decision-making in complex end-of-life situations in veterinary practice.

Chapter 6 concerns the *summarising discussion* of this thesis. In this general discussion, the four key findings from this thesis are described, leading to the conclusion that there is conceptual and empirical diversity in veterinarians' reasoning in terms of roles, responsibilities and considerations taken into account when discussing end-of-life situations. Similarly, diversity in end-of-life decision-making processes is observed. Together these conclusions strongly suggest that veterinarians' reasoning on the ending of animal lives affects their decision-making in complex end-of-life situations in veterinary practice. Based on these observations, three questions on professional ethics of the veterinary profession are discussed: 1) How does the identified diversity relate to established context-specific frameworks navigating veterinarians?, 2) How can the diversity in reasoning and decision-making within a profession be evaluated?, and 3) what are the potential courses of action, depending on the evaluation of the observed diversity? The central outcome in discussing these questions is striving for the right balance between autonomy and trust, consistency and the dynamics of end-of-life situations.



Chapter 2

“Euthanasia of animals is welfare-neutral, right..?”

On the need for conceptual clarity and ethical analysis to support future veterinarians on euthanasia of animals

Abstract

Veterinary medical students are confronted with end-of-life situations during their education. When discussing these situations, students often refer to the concept of euthanasia as an act that is 'welfare-neutral'. Concurrently, students raise doubts and questions about how to define the concept and how to evaluate animal death. Comparably, a diversity of views regarding the concept is seen among veterinarians. The observed conceptual unclarity and diversity of views point out the need to create conceptual clarity. In this paper, I aim to define the conceptual playing field of the concept of euthanasia of animals in veterinary practice using three central questions: 1) for whom is the animal's life ended?, 2) when is it allowed to end the life of an animal?, and 3) how and by whom should the animal's life be ended? Additionally, the paper describes how normative standpoints can serve as building blocks to support veterinary students and veterinarians in formulating their viewpoints regarding the concept. By formulating such viewpoints, veterinarians are enabled to make their views on euthanasia and end-of-life decision-making (more) comprehensible. Moreover, veterinarians could better understand the views of others, helping them to deal more easily with the dynamics surrounding end-of-life decision-making in veterinary practice.

This chapter is based on the following work: Deelen, E. (Under review), "Euthanasia of animals is welfare-neutral, right..?" On the need for conceptual clarity and ethical analysis to support future veterinarians on euthanasia of animals, *Journal of Agricultural and Environmental Ethics*.

1. Introduction

During the animal ethics lectures I teach, veterinary medical students frequently refer to the concept of euthanasia of animals as a 'welfare-neutral' act. When I ask the students what they mean by 'welfare-neutral', they indicate that ending an animal's life that is suffering, is not problematic from an animal welfare perspective. They often use the same argument to support this claim: euthanasia is 'welfare-neutral' because the animal is unaware of a future welfare state that the animal would experience if the animal had not been euthanized. In this line of reasoning, students reflect on the concept of euthanasia by focusing on the termination of the animal's current suffering, rather than on the fact that the ending of the animal's life may also prevent the animal from experiencing any welfare states in the future. When discussing their reasoning in more detail, the students often express doubts about their hypothesis that an animal's death is welfare-neutral, as well as about the statement that animals would lack the capacity to relate to their future state of welfare. Additionally, students raise questions about the appropriateness of using the concept of euthanasia in situations where an animal's life is ended to stop prolonged suffering even though that situation of suffering could also be achieved by treatment.

The kind of questions and doubts raised by the students indicate that there is uncertainty among students about how to evaluate an animal's death. Moreover, the students' questions and doubts reflect a diversity of views on how the concept of euthanasia of animals should be defined. Both the uncertainty and the diversity of views on euthanasia show the need to support students in creating certainty and clarity when confronted with euthanasia. Education can provide this support by preparing the students for the dynamics surrounding end-of-life decision-making that they will have to deal with as practitioners in the future [41]. However, this suggests that we have clear answers on what we define as euthanasia, what one can reasonably expect from veterinarians in case of end-of-life decisions, and how to deal with the moral dimensions related to euthanasia. Such answers are not easy to provide.

The diversity of views seen among students can also be recognized among veterinarians in veterinary practice, as well as in literature [2, 42]. In practice, the concept of euthanasia is used for a broad range of situations where animal lives are ended. Examples include ending an animal's life when humane endpoints are reached in the context of animal usage for scientific purposes; after intensive treatment without the desired improvement of the animal's condition, or because

the animal can no longer fulfil the human-centred purpose. Although the concept of euthanasia is used to describe the ending of an animal's life in all these situations, the examples also illustrate noteworthy differences between the cases, such as the arguments to justify the decision to end the animal's life, that question the consistency of the use of the concept of euthanasia [21].

Besides the diversity in the situations when the concept of euthanasia is used, euthanasia opens up questions of conceptual clarity and professional responsibility in end-of-life (EoL) situations [1, 21, 42]. In general, veterinarians have a variety of responsibilities towards animals, animal owners, their colleagues in the profession, and society [13-15]. Balancing these professional responsibilities in EoL situations is known to be a complex part of the profession for veterinarians [19, 43]. The veterinarian is particularly challenged in situations where the interests of stakeholders conflict, or where there are differing views on what can reasonably be expected from the veterinarian. In such situations, it is not easy to come to a decision that is acceptable to all and in keeping with the veterinarian's moral outlook. As a result, veterinarians run the risk of experiencing a dilemma, referring to an ethical choice that is hard to make because of contextual factors, such as a potential negative response from an animal owner [24]. Several examples of perceived (ethical) dilemmas concerning end-of-life decision-making have been reported, e.g. requests to end the life of a healthy animal, treatment continuation based on the owner's desire to keep a terminally ill animal alive, or compromised veterinary care and euthanasia requests on financial grounds as a consequence of limited financial means of the owner [1, 17, 20, 25, 26, 39].

Stress is a known consequence of dealing with EoL-related problems [1, 21]. On the one hand, veterinarians can face situations in which they are asked to end an animal's life based on grounds perceived as morally unjustifiable. Consequently, veterinarians may experience stress that is also described as 'moral stress'. Moral stress has been described as the stress experienced by professionals who kill animals for other reasons than the alleviation of intractable pain and suffering, i.e. for reasons that are not to the direct benefit of the animal [22]. On the other hand, failure to end an animal's life when considered necessary is also described as a source of stress [17]. Both sources of EoL-related stress can heavily impact veterinarians' well-being, job satisfaction, and sense of accomplishment [1, 12, 44].

Given the central role end-of-life decisions play in veterinary practice, the unclarity about the concept of euthanasia, the differences in views on what can be expected of a veterinarian in EoL situations, and the related (moral) stress for veterinary professionals,

it is important to clarify the conceptual and normative dimensions of euthanasia. Therefore, this paper aims to clarify the conceptual playing field of euthanasia of animals in veterinary practice on the basis of three central questions. Additionally, the paper discusses normative standpoints that can serve as building blocks to support veterinary students and veterinarians in formulating their personal and professional viewpoints regarding the concept of euthanasia. Formulating such viewpoints is an essential asset for (future) veterinarians to better deal with the dynamics surrounding end-of-life decision-making.

2. Three central questions to define the conceptual playing field of the concept of euthanasia of animals in veterinary practice

Euthanasia originates from the Greek *ευθανασία*, which translates literally as 'good death' [2]. The literal translation of euthanasia reveals that it is possible to distinguish forms of death that are considered as 'good' from forms that are not considered 'good'. However, the evaluative nature of the concept of euthanasia does not provide any insight into how forms of death can be distinguished from each other. This analysis discusses three questions that help to evaluate when one can speak of a 'good' death. The three questions are 1) *for whom is the animal's life ended?*, 2) *when is it allowed to end the life of an animal?*, and 3) *how and by whom should the animal's life ended?* These three central questions are inspired by the various aspects that together form the decision-making process that precedes the decision that eventually leads to the death of an animal. As will become clear in the analysis, the three questions are meant to operate interactively and should therefore be understood in the light of each other when assessing the 'goodness' of death. In the following sections, a normative standpoint regarding each of these questions is presented. Together, these normative standpoints propose a theoretical definition of the concept of euthanasia of animals in veterinary practice.

Question one: For whom is the animal's life ended?

The first question is '*For whom is the animal's life ended?*', questioning the reason(s) to consider an animal's death. Examples of reasons that lead to the end of an animal's life in general include the aim to produce animal products, the collection of animal material for scientific research or to stop an animal from further suffering. Underlying the variety of reasons for considering the ending of an animal's life are the interests of different stakeholders. On the one hand, ending the life of animals life may be

performed in the presumed interests of the animal. On the other hand, the sole interests of others such as the animal owner can be served by ending the animal's life.

The moral status one ascribes to an animal plays a fundamental role in answering this first question. Whether an animal is considered to be part of the moral community determines whether the interests of the animal should be taken into consideration. Moral status is described as a means of specifying those entities towards which we believe ourselves to have moral obligations, as well as something of what we take those obligations to be [45, 46]. Ascribing moral status to an entity implies that we are morally obliged to give weight to the needs, interests, including well-being of that entity in our moral deliberations [45].

Literature shows multiple views on the moral status of animals. These views differ in the set of necessary and sufficient criteria to assign moral status to animals, how the moral status of animals relates to the moral status of other entities, and what the normative implications are if an animal is considered to have moral status. Accordingly, each of the views has a specific account of the ethical evaluation of an animal's death. To understand the influence of one's position concerning the moral status on the ethical evaluation of an animal's death, a number of views will be discussed in the following section.

A common theory of moral status focuses on sentience as an intrinsic property of an entity, that is a necessary condition for the possession of moral status. The sentience criterion is based on the capability of entities to experience pain and pleasure that comes with the risk of being harmed instead of being damaged. End the life of sentient beings or letting them suffer without good reason can therefore be seen as a way of harming these entities. Although it is debatable if general claims regarding all animals can be made, animals treated in veterinary practice are generally recognized as sentient beings. Consequently, ending an animal's life in veterinary practice potentially carries the risk of harming the interests or values of the animal, and therefore the animal's interests have to be taken into consideration in the case of end-of-life decisions. However, recognizing the moral status of animals as sentient beings does not directly lead to a fundamental and overall objection to killing animals. Some reasons can justify the killing of an animal. Examples of potential reasons that could justify killing are the long-term unbearable suffering of an animal or the lack of effective treatment options.

Next to the sentience-based account, there are also theories of moral status that focus on the importance of extrinsic properties, such as relational properties. One

of these theories is part of the Ethics of Care by Nel Noddings, a theory where the relationship of caring is the basis of moral obligations. An important aspect of the caring relationship is that the 'one-caring' is receptive to the feelings and needs of the one 'cared-for'. Consequently, the 'one-caring' is spontaneously motivated to meet the needs of the 'cared-for'. A caring relationship does not need to be fully symmetrical, however, some (eventual) reciprocity is essential [47]. Concerning animals, Noddings argues that there is great variety among humans in their capacity to emotionally respond to animals. As these responses tend to be personal and direct towards specific animal species, the associated moral obligations are personal and species-specific as well. Although variation in humans' capacity to emotionally respond to animals is described, most humans do share the ability to 'receive' an animal's pain. Based on this ability we will naturally respond to an animal in pain. Noddings argues that we are therefore obliged not to inflict pain upon an animal without justification. Likewise, killing an animal can only be justified by good reasons, e.g. when the interaction required to provide care is extremely stressful to an animal that is not used to human interaction.

These two examples of accounts of why animals matter morally show how these fundamental assumptions influence the ethical evaluation of what makes dead 'good'. Although both accounts consider animals to possess some or full moral status and acknowledge that animals have interests that should be taken into consideration when deciding about the ending of an animal's life [46], they still leave quite some room for discussion about the ethical assessment of euthanasia. This starts with how one defines the interests of the animal. One aspect that remains underexposed in the presented examples is whether an animal's interests are finite to the here and now or whether animals are capable to anticipate or reflect on their future. Research showed that there are indications that certain animals are capable of future thinking, such as apes [48, 49]. Although their future thinking may differ from that of humans, these indications complicate the idea that these animals would not have an interest in the ending or continuation of their life referring to what is good for themselves. The Life Comparative account and time-relative interests account theory are examples of moral theories that help to provide insight into when the ending or continuation of an animal's life may be good for the animal. The starting point of the Life Comparative account is that death is *prima facie* harmful to the animal whose life is ended [50, 51]. However, depending on the prospective quality of the life, death can be in the interests of the animal if the continuation of life comes with greater harm due to suffering. To determine whether death is beneficial or harmful to the animal, one assesses the harm of ending the animal's life at time t compared to the harm of death when life is prolonged until time x . The time-relative interests account

theory adds a level of complexity by including the extent to which the animal is psychologically connected to their current and future self [51, 52]. By considering the good experiences of which an animal is deprived in combination with the level of connectedness between their current and future self, the harm of death is proportional to the animal's time-relative interest in continuing life. Depending on how one considers an animal to possess the capability of future thinking, one will take this into account when considering the ending of an animal's life.

In summary, multiple views on the moral status of animals exist and each of the views has a specific account of the ethical evaluation of an animal's death. Returning to the first question, '*For whom is the animal's life ended?*', I argue that *the first necessary aspect to evaluate an animal's death as 'good'* is that one has the intention to serve the presumed interests of the animal when ending the animal's life. Therefore, the interests of the animal should be considered and prevail in the decision-making process regarding the ending of an animal's life. When considering potential alternatives to ending the animal's life as part of this decision-making process [53], the interests of the animal should be leading in the final decision. Furthermore, the animal's interests should also prevail in questions two and three, which will be discussed in the following sections.

Serving the animal's interest

Determining when an animal's best interests are served can be a challenge for veterinarians. This challenge originates from our inability to communicate with animals about their interests. Accordingly, decisions regarding the ending of animals are ultimately made by humans, without the animal's consent [42]. Besides the veterinarian's professional experience and expertise, veterinarians can make use of two alternative sources to determine the presumed interests of the animal: knowledge obtained through research and information provided by the animal owner [50].

In recent years, research in the fields of animal welfare science and ethology gained growing attention. As a result, significant knowledge of, for example, pain recognition in animals has become available for veterinarians [54, 55]. Alongside, the scope of these research fields has expanded leading to more knowledge about the welfare of numerous animal species [56]. The obtained information could support veterinarians in assessing the animal's health status, to determine the presumed best interest of the animal.

In addition to research obtained knowledge, the animal owner can be a valuable source of information as well [50]. The animal owner can provide insights regarding

the day-to-day health status of the animal including potential changes based on the long-term relationship between the animal and the animal owner. As the veterinarian only observes the animal during consultations, the information provided by the animal owner can help to get a better understanding of the overall condition of the animal. However, there are three potential barriers to the assumed value of the animal owner. First, an animal owner may have limited ability to assess the animal's condition. Limited knowledge to interpret the welfare status of the animal, or a clouded view of the owner as a consequence of human-centred interests may be the cause of an owner's limited ability to assess the animal's condition. Second, even when an animal has an owner, the contact between the animal and the owner can be limited and therefore make it difficult to provide insights into the day-to-day condition of an animal. For instance, when animals are kept in large numbers potentially leading to minimal contact, or when animals do not reach the age needed to observe day-to-day changes in an animal's situation. Finally, some animals that are seen by a veterinarian live in the wild and hence do not have an owner to provide information. Concluding, knowledge from research and information provided by the animal owner can be valuable sources for veterinarians to determine the presumed best interest of the animal, as an addition to the veterinarian's professional experience and expertise.

Question two: When is it allowed to end the life of an animal?

A question that frequently comes across in end-of-life discussions between animal owners and veterinarians is 'When is it the right time?' [57]. This question aims to determine the criteria that need to be met to consider the ending of an animal's life. Although the answer to this question is evident in some situations, there are various situations in which it is debatable when it is the best moment to end an animal's life. Determining the best moment is further complicated by the fact several new therapeutic options have been developed in veterinary medicine in the past years [57, 58]. As the chosen moment can have a great impact on the amount of suffering of the animal, the second question is '*When is it allowed to end the life of an animal?*'.

One crucial aspect of the decision-making process in end-of-life situations is *the animal's presumed quality of life* [2]. As communicating with an animal about their quality of life is not possible, one way of obtaining insights into the presumed quality of life is the usage of quality-of-life assessment tools. These tools can be used by animal owners to track the progression of the animal's condition including the effects of potential treatment [57]. Using such a tool can help animal owners outweigh their potentially clouded vision of the condition of the animal by monitoring the animal's

quality of life. The obtained information can help the veterinarian and animal owner to determine when it is the best moment to decide on euthanasia of the animal.

Besides the animal's current quality of life, the animal's future quality of life and the *prognosis* are other central aspects of end-of-life decision-making. The prognosis is a prediction of the probable course of illness including the chances of recovery. Depending on the animal's condition, the prognosis may guide the decision-making process, e.g. when there is no appropriate treatment for the animal when treatment is necessary.

Lastly, *the animal's age and the breed's life expectancy* may affect the decision-making process. From a clinical perspective, ageing may come with age-related ailments. These ailments may affect the animal's quality of life as a consequence of a deteriorating overall health state. Moreover, the deterioration of an animal's health state can be accompanied by a reduced ability to recover. Age is from this perspective related to quality of life and prognosis. Besides the relevance of an animal's age, an animal's life expectancy can influence the timing of the decision to end an animal's life as well. Persson (2022) describes this influence as follows with accordance to humans: the idea that someone has already lived their full life span might provoke the thought that there is no need to expose them to a risky and painful procedure for some additional lifetime, whereas those who have not yet lived that long should get the chance at any "cost". This idea could also be applicable in the case of the treatment of animals in end-of-life situations.

Regarding the question, '*When is it allowed to end the life of an animal?*', I argue that *the second necessary aspect to evaluate an animal's death as 'good'* is that the moment to end an animal's life should be determined based on *the animal's quality of life and prognosis*. The relevance of *an animal's age and the breed's life expectancy* should be discussed in light of an animal's quality of life and prognosis.

Question three: how and by whom is the animal's life ended?

Once the decision has been made that prolonging an animal's life is no longer desirable, the decision follows how an animal's death is achieved. This leads us to the third question '*How and by whom is the animal's life ended?*'. There are several ways in how an animal's life can come to an end, from which we can differentiate between *passive and active forms*. The former, often referred to as 'letting die', will lead to the death of an animal as a consequence of the decision to omit to act, whereas the latter, often referred to as 'killing', will lead to the death of animal through a decision to act. I argue that *the third necessary aspect to evaluate an animal's death as 'good'* is

that one *deliberately acts* to end an animal's life as soon as prolonging life is no longer considered desirable, complementary to questions one and two.

When one deliberately acts to end an animal's life, two aspects are highly relevant: 1) the *level of competence* of the person who performs the act and 2) the used *method* [59]. Regarding the level of competence, it is relevant that a person who performs the act has knowledge of, among other things, animal welfare in general, determining (un)consciousness and death of an animal, and the suitability of a method for a specific animal. Moreover, the performer should know how a method should be applied to guarantee the quality of the act in terms of effectiveness and avoidance of potential suffering [59].

Performers can use legislation [59] and scientific reports, such as reports of EFSA [10, 60], to gain insight into the suitability of methods for specific animals as well as the applicability of these methods in specific EoL circumstances.

To conclude, when one deliberately acts to end an animal's life both the *method* and the performer's *level of competence* should be considered carefully to ensure the quality of the act in terms of effectiveness and avoidance of potential suffering.

3. The three central questions and normative standpoints in context

The above analysis presented three central questions that enable defining of the conceptual playing field of euthanasia of animals in veterinary practice. By connecting the aspects of 1) intention, 2) timing, and 3) execution in the three questions, a holistic approach to the concept of euthanasia of animals in veterinary practice is pursued. With this holistic approach I aim to 1) help students better understand what the origin of their conceptual uncertainties is. Moreover, by presenting the holistic approach in combination with the normative standpoints I aim to 2) provide building blocks supporting veterinary students and veterinarians in formulating their viewpoints regarding the concept of euthanasia. As a next step, the central questions and normative standpoints will be placed in the perspective of existing views and definitions of the concept of euthanasia, aiming to stimulate further reflection of students and veterinarians regarding their viewpoints on the theoretical understanding of the concept.

In literature, as well as in policy documents, multiple views of the concept of euthanasia of animals are described with varying views regarding the criteria set to define the concept of euthanasia. The definition of the Encyclopedia of Animal Rights and Animal Welfare is an example that defines euthanasia solely based on an execution criterion, stating that: *"The definition of euthanasia differs slightly in veterinary medicine and human medicine. In human medicine, the term is restricted to 'mercy killing'—killing a patient when death is a welcome relief from a life that has become too painful or no longer worth living. The definition is broader in veterinary medicine, however, including as well the euthanasia of healthy animals for owner convenience, for reasons of overpopulation, for behavior problems, or as donors of tissues [sic] for research"* [61]. The definition by Bekoff and Meaney claims that a broad range of acts that lead to the death of an animal can be defined as euthanasia. In comparison to the holistic approach proposed in this paper, it is notable that additional criteria about how this act should be performed, such as 'avoidance of suffering, pain, and distress', are lacking. Moreover, no criteria are included that capture how one can differentiate acts based on the intention to end an animal's life as well as based on the timing of the act that leads to an animal's death. Consequently, the definition fails to explain the morally significant difference between, for example, ending the life of an animal to prevent it from inevitable suffering versus ending the life of a healthy animal for human interests, such as 'slaughter'.

In comparison to the Encyclopedia of Animal Rights and Animal Welfare definition, the scope of the definition introduced by the American Veterinary Medical Association (AVMA) is more extensive in terms of criteria that need to be met before one can speak of euthanasia. The AVMA Guidelines for the Euthanasia of Animals describe two codependent conditions for euthanasia: 1) a humane disposition to induce death in a manner that is in accord with an animal's interest and/or because it is a matter of welfare, and 2) the use of humane techniques to induce the most rapid and painless and distress-free death possible [62]. Compared with the approach suggested in this paper, the AVMA definition sets criteria regarding the intention to end an animal's life and the execution of the act. The timing of the act is not specified as a criterion, leaving room for interpretation when it is allowed to end an animal's life. Moreover, the AVMA leaves uncertainty about how strictly the first condition set should be interpreted: *"Debate exists about whether euthanasia appropriately describes the killing of some animals at the end of biological experiments and of unwanted shelter animals. ... current AVMA policy supports the use of animals for various human purposes, and also recognizes the need to euthanize animals that are unwanted or unfit for adoption. ... Impacts on animals may not always be the center of the valuation process, and there is disagreement on how to account for conflicting*

interspecific interests" [62]. The latter illustrates that the AVMA argues that the context is relevant in determining when one can speak about euthanasia.

The relevance of context is also highlighted by Yeates, who differentiates three classes of killing including 'absolutely justified euthanasia', 'contextually-justified euthanasia', and 'killing that is not truly in an animal's interests' [53]. Yeates considers killing 'contextually-justified euthanasia' where an animal could have a life worth living in an ideal world, but the circumstances mean that that opportunity is not worthwhile [53]. Case examples of such circumstances include situations in which an animal's life is ended as a consequence of an owner's unreasonableness or the fault of society. In such situations, Yeates proposes to compare the option to end the animal's life to other options such as options to cure the animal by treatment or to rehome an animal to determine whether death is in the animal's interests given the context. As in the proposed holistic approach, the intention to end an animal's life is clearly set as a criterion to define euthanasia. What may be difficult with Yeates's approach is how to differentiate between the three classes of killing based on the intention. Especially, because it is debatable when one has sufficiently attempted to serve the animal's presumed best interest to call an act 'contextually-justified euthanasia' versus 'killing that is not truly in an animal's interests'.

Another concern is the moral evaluation of killing that is classified as 'contextually-justified euthanasia'. Yeates states that '*the veterinarian should not feel guilty for making the best of a bad job*' [53]. Fawcett (2016) points out that a deficiency of the 'contextually-justified euthanasia' model is that ending a life is not framed as a morally significant behavior. Consequently, the veterinarian is precluded from taking moral responsibility and accordingly potentially ethical reasoning [21]. A comparable danger could be in the statement that euthanasia of animals refers to an act that is 'welfare-neutral', as discussed by the students. The ending of an animal's life could be framed as an act that is morally neutral because the animal is unaware of its future welfare state. The question is how relevant the awareness of an animal regarding a future welfare state is when evaluating the 'goodness' of ending an animal's life. Taking the conceptual playing field and its three central questions into consideration, I propose that we could better question ourselves what the moral responsibility of a veterinarian is, when it comes to ending animal lives, regardless of whether an animal is aware of a future welfare state.

4. Conclusion

The concept of euthanasia of animals in veterinary practice is used and defined in numerous ways by veterinary students and veterinarians. This paper aims to clarify the conceptual playing field of euthanasia of animals in veterinary practice by discussing three central questions. Additionally, this paper discusses normative standpoints aiming to provide building blocks to support veterinary students and veterinarians in formulating their personal and professional viewpoints regarding the concept of euthanasia. By formulating such viewpoints, veterinarians are enabled to make their views on euthanasia and end-of-life decision-making (more) comprehensible. Moreover, veterinarians could better understand the views of others, helping them to deal more easy with the dynamics surrounding end-of-life decision-making in veterinary practice. To support (future) veterinarians in formulating their viewpoints, this paper could be used as a reflection tool to discuss EoL cases during the educational program of veterinary students and post-graduate training of veterinary graduates.



Chapter 3

The views of farm animal veterinarians about their roles and responsibilities associated with on-farm end-of-life situations

Abstract

Farm animal veterinarians are often involved in on-farm end-of-life (EoL) decisions and questions concerning euthanasia. These decisions can be challenging for the veterinarian, particularly if the interests of the animal and owner conflict. Moreover, the challenge is related to fundamental assumptions about roles and responsibilities veterinarians ascribe to themselves in EoL situations. Getting insight into what roles and responsibilities veterinarians perceive in these situations is important to understand the challenges veterinarians face and to explore ways to enable them to manage such situations. Existing literature and professional guidelines do not provide sufficient clarity and guidance in terms of the role conception and responsibilities of veterinarians in on-farm EoL situations. The objective of the current qualitative study was to better understand the views of farm animal veterinarians in the Netherlands regarding their roles and responsibilities associated with on-farm EoL situations. In-depth semi-structured interviews were conducted with 19 farm animal veterinarians. In terms of *roles* in EoL situations, our analysis shows that 1) seven roles can be distinguished based on the interviews, 2) two contextual dimensions influence role perception: a) the stage in which a veterinarian gets involved at the end of an animal's life and b) the question of whose interests should be taken into consideration and how to prioritize (conflicting) interests by a veterinarian, 3) veterinarians enact a number of the identified roles and the combination of roles varies between individuals and 4) the individual veterinarian changes between roles depending on contextual aspects. In terms of *responsibilities* in EoL situations, analyses show that 1) individual veterinarians perceive a combination of five identified responsibilities, and 2) the perception of responsibilities relates predominantly to specific animal sectors. This insight into the roles and responsibility perceptions of veterinarians facilitates understanding the challenges veterinarians face in on-farm EoL situations and creates a starting point for how veterinarians can be supported to deal with potential conflicts of interest. These insights could also be valuable in the training of future veterinarians and lifelong learning of veterinarians as it provides a starting point to reflect on, and discuss, one's role and responsibility in EoL situations.

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1. Introduction

When a farm animal raised for production is ill or injured to the extent that recovery is unlikely, transport and slaughter of the animal are out of the question. Consequently, end-of-life (EoL) decisions and questions concerning euthanasia will arise. The decision to end an animal's life often comes with various questions for animal owners¹[3]. One can think of questions regarding matters such as valid indications, the preferred method, requirements regarding the executioner, timing, emotional bonding, and economics. In on-farm situations, these questions are even more prominent than in the contexts of animal slaughter or disease control, because in the Netherlands there is less regulation and consequently more professional freedom for the veterinarian [59].

Farm animal veterinarians play a role in on-farm EoL situations in the decision-making process of the animal owner and/or in the act of ending an animal's life. In this paper, 'ending of an animal's life' is used to cover situations of killing ill or injured animals. This excludes on-farm killing for reasons of disease control or the production of animal products. This focus entails euthanasia as well as the humane killing of animals. We are aware of the conceptual complexity of both terms [21, 50, 51, 63] and that it is debated whether all forms of humane killing constitute 'euthanasia'. The term 'euthanasia' is used in this paper to refer to both killing an animal in the interest of the animal as well as the humane killing of an animal when not truly in its interest. We do so because the participants of the current study used the concept of euthanasia in a broad way that includes situations in which animals are killed for reasons other than their own interests.

In these EoL situations, veterinarians are confronted with the (presumed) interests of the animal and those of the animal owner. Serving the interests of both the animal and the animal owner can be challenging for the veterinarian, especially when these interests conflict [25, 28, 40, 53, 64, 65]. Moreover, animals are considered the legal property of an animal owner in Western jurisdictions [66]. As a result, the final decision-making power in an EoL situation is in the hands of the animal owner. This further complicates an EoL situation for the veterinarian when an animal owner does not adhere to the veterinarian's recommendation [66]. The challenge is more comprehensive than dealing with conflicts, it is related to fundamental assumptions about role and responsibility perception in EoL situations. At this fundamental level, there seems to be a diversity of views that starts with the profound question

¹ In this research, we use the term 'animal owner(s)' to refer to both animal owner(s) and animal caretaker(s).

raised by Rollin: does the veterinarian owe primary allegiance to the animal or the owner [67]? Therefore, getting further insight on what roles and responsibilities veterinarians ascribe to themselves in EoL situations is important to understand the challenges they are confronted with and to explore ways to enable them to handle such situations.

Different roles among farm animal veterinarians have been reported. In a qualitative online survey, Dürnberger researched situations that were experienced as morally challenging in the professional lives of farm animal veterinarians. Six roles and self-understandings were identified: 'advocates of the animals', 'entrepreneur', 'social worker', 'part of agriculture', 'colleagues, supervisors, employees and competitors', and 'private person' [26]. This study provides helpful insights into the multiple roles farm animal veterinarians see for themselves, however, whether farm animal veterinarians actually ascribe these roles in on-farm EoL situations is not yet known.

Next to the views of farm animal veterinarians themselves, different views in society exist on what can be reasonably expected from a veterinarian in on-farm EoL situations. Consider the situation of a calf with a broken limb. Some people might expect a veterinarian to advocate for the treatment of the calf, whereas others think the veterinarian should strive for ending the calf's life. Depending on one's own perspective on this case example, one might consider the role of the veterinarian differently [22, 24, 25, 53].

Despite the limited literature on the roles and responsibilities of farm animal veterinarians in on-farm EoL situations, one could argue that the code of professional conduct is a relevant entry point [68]. In the Dutch 'Code voor de Dierenarts' professional standards and responsibilities are set out for individual veterinarians. Regarding the ending of animal lives, article 2.3 of the 'Code voor de Dierenarts' states

Veterinarians provide first aid and/or pain relief to animals in distress to the best of their ability. This also applies to wild animals or animals whose owner is unknown. To prevent serious and hopeless suffering, it may be necessary to euthanize the animal in a responsible manner. Such emergency veterinary assistance will be immediately notified to the owner and/or keeper of the animal, to the extent known [68].

Article 2.3 does not provide specific guidance. When suffering is defined as serious and hopeless, for example, remains unspecified. Moreover, the code provides limited information as article 2.3 is the only article about the ending of animal lives. Guidance on the role and responsibility of the veterinarian is minimal as information

on, for example, situations in which the animal owner disagrees with the ending of the animal's life is not included. The Dutch code of professional conduct is therefore inconclusive about how veterinarians should fulfill their responsibilities and what their roles should be in different EoL situations.

Concluding, existing literature and the Dutch code of professional conduct only partially help to clarify what the roles and responsibilities of farm animal veterinarians are in on-farm EoL situations. The code of conduct does not provide sufficient clarity and guidance to understand the challenges veterinarians face in end-of-life situations and to support veterinarians in handling the related conflicts of interest. As a consequence, veterinarians in practice are left wondering what their roles and responsibilities should be and how to fulfill them. Therefore, it is relevant to explore the perceptions of farm animal veterinarians regarding their roles and their views on responsibilities in on-farm EoL situations. The objective of the current qualitative study was to better understand the views of farm animal veterinarians in the Netherlands regarding their roles and responsibilities associated with on-farm EoL situations.

2. Materials and methods

The character of the current study is explorative and results in a two-step approach. Our first step is to document the diversity of roles and responsibilities farm animal veterinarians perceive. We define a role as a position a person sees for him/herself in a specific situation, accompanied by specific behavior. Underlying such a position, specific perceptions of responsibility are grounded. We define responsibility as a conviction a person perceives. The interplay between a role and a responsibility is that a perceived responsibility incites a person to enact one or more roles. In other words, the perceived responsibility is the grounded conviction and the roles form an expression of that underlying conviction. As a result of our first step, we describe an overview of the perceived roles and responsibilities of farm animal veterinarians.

The roles a person enacts can be influenced by context, therefore, in our second step we explore the relevant contextual aspects related to the roles farm animal veterinarians perceive. By identifying these contextual aspects, we make explicit what characterizes the identified roles. Making this characterization explicit can be particularly helpful to uncover the origins of the challenges veterinarians face in end-of-life situations. Consequently, the characterization helps to understand the factors that should be taken into account when supporting veterinarians.

Study design

In-depth semi-structured interviews were conducted by the first author with Dutch farm animal veterinarians between June and October 2021. As a veterinary graduate, the interviewer has experience as a veterinary student with the practices explored in the current research project. The recruitment criteria for the inclusion of participants were that the individuals worked in the Netherlands as farm animal veterinarians in a non-referral clinic of which the caseload consisted mainly of the healthcare of ruminants and small ruminants, pigs, poultry, or a combination of these species. These three animal sectors were chosen as most farm animal veterinarians in the Netherlands work in these sectors. Consequently, farm animal veterinarians working in numerous animal sectors were surveyed and compared. The selection of participants in this study aimed to achieve a participant pool that 1) varies in years of working experience, 2) is geographically spread throughout the Netherlands, and 3) has an approximate 50/50 ratio between male and female veterinarians. Purposive sampling via the snowball method was used to select the participants [69]. As a result, a mixed group of participants was selected including a minority from the professional network of the authors and a majority from the network of the participants. Eligible participants were contacted personally by the first author. After the initial contact, participants were invited through email. In this email, participants received background information about the research project, research goals, and data collection in a letter of information, accompanied by an informed consent form. In the supplementary materials, we included the informed consent form (Supplementary material 1), the information letter (Supplementary material 2), and interview guide section A (Supplementary material 3). These materials are translated from Dutch to English and slightly edited for readability. The number of veterinarians interviewed was determined by theme saturation [70].

Contextual background

In the Netherlands, future veterinarians are educated at the Faculty of Veterinary Medicine of Utrecht University. The educational program consists of a three-year generic bachelor, followed by a three-year master's program in which the students devote themselves to the healthcare of one of three disciplines: companion animals, horses, or farm animals. In addition, each student participates in a clinical rotation period in the healthcare of the other two disciplines. As a result, students have general knowledge of all disciplines and more specialized knowledge of the discipline to which they have devoted themselves. Besides training in veterinary core competencies, animal welfare, veterinary public health, and the training of 'soft skills' such as veterinary ethics and communication are addressed specifically. Veterinary graduates have a general qualification and are legally allowed to provide care to all species.

Most farm animal graduates work in a species-specific practice with either ruminants and small ruminants, pigs, or poultry. Some of them combine this with veterinary care for horses or companion animals. The Dutch farming context is characterized by little direct official control by governmental organizations. Many food safety and welfare controls are performed by private quality control systems. In their day-to-day work, farm animal veterinarians visit farms regularly. Based on the national law and sectoral agreements of the 'Stichting Geborgde Dierenarts', each farm has a contract with one veterinarian [71, 72]. Based on this contract, that specific veterinarian is appointed to visit the farm for matters of animal health, public health, and food safety. The frequency of visits is officially regulated. Most farms are visited at least once every four weeks (pigs), once every twelve weeks (dairy), and once every production cycle (poultry). Veterinarians visit most farmers more frequently for reasons such as (acute) health problems, to monitor animal health in high-risk periods such as the weaning period or to monitor fertility. Regarding on-farm killing, Council Regulation (EC) No 1099/2009 on the protection of animals at time of killing is applicable. Article 7 states: 'Killing and related operations shall only be carried out by persons with the appropriate level of competence to do so without causing the animals any avoidable pain, distress or suffering' [59]. In practice, this means that not only veterinarians but also competent animal owners perform the act to end an animal's life.

Next to the legal and practical context, farm animal veterinarians may experience the influence of changing societal views on animals and human-animal interactions. A study by the Dutch Council on Animal Affairs [6] shows that public perceptions regarding animals are changing and that animal welfare is widely recognized as an important concern in how to relate to animals. It is plausible that this growing public awareness influences the status of veterinarians as one of the stakeholders involved in the care of animals. Consequently, veterinarians may experience that their roles and actions on a farm are evaluated more critically.

Interview structure and data management

The interviews were all held in person at a location of choice by the interviewee to create an open and safe environment. Before the interview, the interviewer introduced herself and informed the interviewee about the interview structure and the informed consent form. The interviewer explicitly asked if any questions should be addressed before the start of the interview. Additionally, the interviewee's approval for recording the interview was requested. Interviewees received a digital copy of their signed informed consent form. With the oral and written consent of the interviewee, the interview started using open-ended questions from the interview guide. The interview questions were not made available to the interviewees before their

interview. Interviewees shared their ideas and thoughts and were not guided toward answers by the use of, for example, a list of potential answer options. The interview guide focused on three main subjects including 1) the role and responsibilities of the veterinarian in EoL situations, 2) the considerations veterinarians take into account in the decision-making process in EoL situations and 3) the barriers experienced by veterinarians in the performance of and decision-making process towards euthanasia. Due to the amount of data and the importance of the first subject of the study, this paper focuses on the *roles and responsibilities* of the veterinarian in EoL situations. The second and third subjects will be discussed in future work. The length of the interviews varied between 45 and 120 minutes. Audio files were transcribed using Amberscript™ (Version August 2021, Amsterdam, The Netherlands). All transcripts were reviewed by ED to ensure quality and accuracy. Any information in the transcripts which related to a specific person or veterinary practice was replaced by non-identifiable descriptors (e.g. 'colleague' or 'veterinary practice').

Data analysis

Transcripts were explored for themes using template analysis in NVivo™ qualitative analysis software (Version Release 1.5.1, QSR International Pty Ltd. (2021)). Template analysis is a form of thematic analysis in which the use of hierarchical coding is emphasized but balances a highly structured process of analyzing textual data with the flexibility to adjust to the needs of a study [73]. A coding template was developed to explore the transcripts. To define an initial coding template, open coding was used by three of the authors to create codes based on a subset of the transcripts. During an iterative reflective process between the authors, the created codes were revised and refined based on subsequent transcripts. After this iterative reflective process, the finalized coding template was applied to the full data set.

Using the finalized coding template, the interview data were analyzed to characterize patterns and diversity of responses. As a result, abstractions of the roles and responsibilities mentioned by the interviewees were formulated, see Overview 1 in the results section. Additionally, dimensions underlying the identified roles were defined based on the patterns in the interview data.

Ethical approval

This research project was reviewed and approved by the Science-Geosciences Ethics Review Board (SG ERB) of Utrecht University on May 28th, 2021, subject ERB Review DGK S-21552.

3. Results

Demographics

Nineteen Dutch farm animal veterinarians participated, ten males and nine females. Seven of the participants worked with ruminants and small ruminants, eight participants worked with pigs, and four participants worked with poultry. Five of the participants worked partly with companion animals or horses. Six veterinarians had less than five years of working experience, four had five up to 10 years of experience, another four had ten to fifteen years of experience, and five had more than fifteen years of experience.

Thematic template

The final thematic template comprised seven roles and five responsibilities that interviewees ascribed to themselves (Overview 1). In the following section, the results will be presented by quotes. All quotes were translated from Dutch to English and slightly edited for readability. Direct quotes from veterinarians are in italics. Additional words inserted by the authors to clarify the meaning of the quotations are placed between square brackets. Filler words were replaced by a set of three periods in the quotation. Quotes are referred to by an abbreviation of the species to which the veterinarian is devoted, Pi for pigs, Po for poultry, and Ru for ruminants, and a sequential number to identify the individual interviewee but still retain anonymity (e.g. Pi5 = the fifth pig veterinarian interviewed).

Overview 1 Final thematic template

A. Role description

- a. Advisor
- b. Animal advocate
- c. Decision-maker
- d. Educator
- e. Counselor
- f. Surveillant
- g. Executioner

B. Responsibilities

- a. Discussing EoL
- b. Good veterinary daily practice
- c. Safeguarding animal welfare
- d. Surveillance
- e. Service

Roles of the veterinarian

In the section titled 'Description of roles' we present an overview of the conceptualization of the perceived roles described by the interviewees, followed by the patterns we discovered in the data regarding the interviewees' roles in the section named 'Role patterns'. We introduce the contextual aspects that underlie the described roles in the section titled 'Dimensions'. Last, in the section named 'Changing roles' we describe how changes in these underlying contextual aspects relate to the roles of veterinarians.

Description of roles

Regarding the role of a veterinarian in EoL situations, seven roles were identified 1) advisor, 2) animal advocate, 3) decision-maker, 4) educator, 5) counselor, 6) surveillant, and 7) executioner. Based on the interview data, a role conceptualization is composed for each of the identified roles.

An **advisor** is characterized as a veterinarian who provides advice to the animal owner in the decision-making process by balancing multiple interests. The animal owner is the one who is deciding in the end. The veterinarian values the considerations of the animal owner and respects the interdependence of the veterinarian's and owner's responsibility, as Pi5 narrates: *"My role is mainly advising. I don't want to adopt the role of the animal owner. I try to give direction, but the animal owner must decide in the end. [...] I propose and ask permission to euthanize animals."*

The **animal advocate** is dedicated to the (presumed) interest of the animal and is committed to motivating the animal owner to put the animal's interest above other interests. A veterinarian describes this role as follows: *"I am not a great world saver, but I think that we are ultimately animal advocates, so those animals cannot decide at which farm they live. If I could choose on which farm they would live, I could distribute them easily but that is not possible. So then we need to optimize the conditions in which they live in such a way that we get the best out of it."* (Ru7)

In the role of **decision-maker**, the veterinarian is authorized to make a decision on behalf of the owner in EoL situations. The veterinarian is allowed to select animals for diagnostic purposes or in case an animal is eligible for euthanasia from the veterinarian's perspective as an interviewee states: *"With some of my farmers, I have an agreement that I can perform it [euthanasia] without consultation of the owner, so they trust me blindly to make a good choice. In case I doubt, they know I will come to them to discuss what to do."* (Pi7)

Sharing knowledge, discussing patients, and providing training skills are part of the role of **educator**. Veterinarians who take this role focus on the one hand on educating animal owners on how to select the right animals, at the right moment and on the other hand on how to end the lives of these animals by the use of a proper method. As Po1 narrates: *“One person is more experienced, more skilled than the other. So sometimes you visit a farm and then there is a new employee or a younger poultry farmer who has clearly never received proper instruction or who does not have sufficient experience. [...] I have no problem doing it [euthanasia] myself, but then it must be as quick and effective as possible, so then it is my role to actually educate those people to do it in a proper way themselves.”* Regarding the selection of animals in the role of **educator**, Po2 elaborates: *“That [euthanasia by the animal owner] comes with some education on how to select animals. The timing is in that perspective also relevant as some animals may be in a bad condition right now, but some may end up in a bad condition in a few days.”*

In the role of **counselor**, a veterinarian focuses on the social-emotional needs of the animal owner. An interviewee described it as follows: *“I know that there are more emotions involved as I am aware that these people do not keep this cow to gain more milk [...], but] as a companion animal, for its ‘retirement’. Then I think ‘we should not end this life abruptly, we have more options.’”(Ru7)*

Where the role of educator focuses on the education of the animal owner by sharing knowledge and providing training of skills, the role of **surveillant** covers monitoring how the animal owner puts the knowledge and skills into practice in an EoL situation. Monitoring the decision-making process and performance of euthanasia by others than the veterinarian is the main focus of a surveillant, as Po2 describes: *“Farmers euthanize animals themselves, so you have to keep an eye on if they do that in the right way.”(Po2)*

The role of **executioner** consists exclusively of the act of ending an animal’s life *lege artis*², such as the following interviewee points to: *“I should be able to do it properly at all times, I think. So I ensure that I always have the needed equipment with me.”(Pi4)* Veterinarians indicate that performing the act *lege artis* was essential to avoid unnecessary suffering or stress for the animal.

Role patterns

Each interviewee ascribed a combination of the above-mentioned roles to themselves, ranging from two up to four roles. Regarding interviewees’ characteristics, no relationship is seen between role description and sex or years of work experience. The majority of the interviewees recognized themselves in the role of **advisor**. The role of

animal advocate and **executioner** were mentioned by half of the interviewees. The role of **counselor** was described least frequently.

The roles of **decision-maker**, **educator**, and **surveillant** were only described by veterinarians working with pigs or with poultry. The responsibility of the animal owner to end an animal's life when needed turned out to be of relevance for the veterinarian in these roles. As the quote of Pi7 in the description of the role of *decision-maker* shows, a delegation of the animal owner's responsibility to the veterinarian is a very relevant aspect of the *decision-maker's* role. In the role of *educator* and *surveillant*, veterinarians focus on the decision-making process and the act of ending an animal's life by others than the veterinarian respectively, such as the animal owner or caretakers at a farm. Veterinarians describe the relevance of the animal owner as they are, from the perspective of the veterinarian, responsible to euthanize animals whenever needed. Therefore, *educators* provide relevant information on killing methods, discuss decision-making and selection of animals, and train others to become competent. *Surveillants* on the other hand mention that their role is to monitor if the correct animals are euthanized properly at the right moment by animal owners.

Dimensions

In the data, we discovered contextual aspects that underlie the described roles. In this section, we present these contextual aspects as two dimensions. These dimensions help to explicate how the described roles relate to each other.

The *first dimension* that follows from the interview data is the stage in which a veterinarian gets involved at the end of an animal's life. In the interviews, the involvement of veterinarians ranges from being involved in the entire decision-making process up to the situation in which the veterinarian is only involved in the act of ending the life of an animal itself. When veterinarians are involved in the decision-making process, they indicate that they enact the roles of advisor, animal advocate, decision-maker, and counselor. When veterinarians perform the act to end an animal's life they define their role as executioner. In between these two endpoints of the continuum, veterinarians identified the roles of educator and surveillant that relate to both the decision-making process and to the act of ending an animal's life. In these roles, veterinarians are involved in EoL situations by sharing knowledge, discussing patients, providing technical skills, and monitoring how animal owners use this in handling EoL situations.

The *second dimension* that is identified based on the interview data is the question of whose interests should be taken into consideration and how to prioritize (conflicting) interests by a veterinarian. As mentioned in the introduction, in EoL situations various interests are at stake [64, 65]. Accordingly, the data show that these interests relate to the animal patient or the animal owner. Depending on which interests are taken into consideration and how these are prioritized, the roles of the interviewees can be positioned on a continuum between animal interest based and owner-related interests. On the one endpoint of this dimension, the role of animal advocate and executioner are identified. In these roles, the (presumed) interests of the animal prevail in either the decision-making process or in the performance of the procedure to end the animal's life. On the other endpoint, the role of counselor is mentioned. In this role, the interest of the animal owner prevails. In between these endpoints, the roles of advisor, educator, decision-maker, and surveillant are identified. In these roles, the interests of both the animal and the animal owner are taken into consideration. The (presumed) interests of the animal prevail slightly in the role of surveillant, while the roles of advisor and educator have a neutral position. Figure 1 presents an overview of the roles positioned on the continuums of two dimensions.

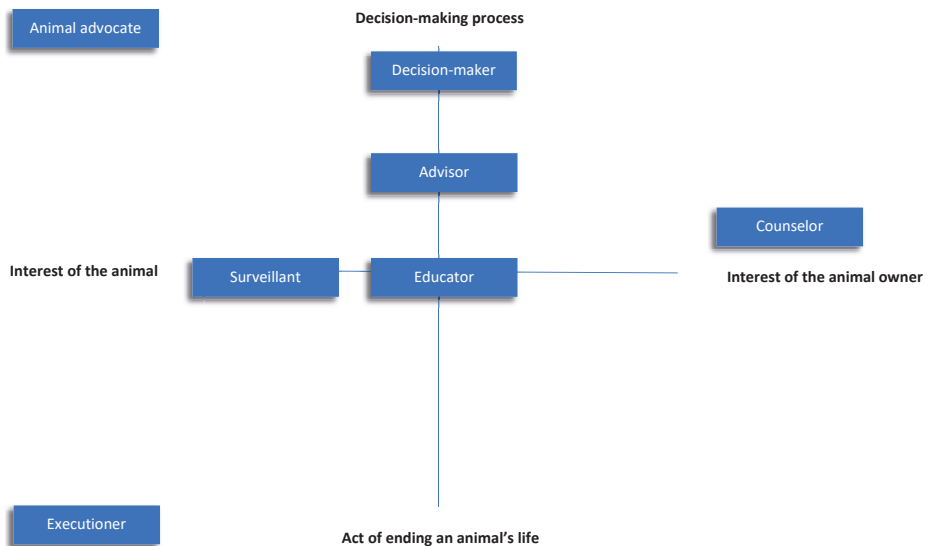


Figure 1. An overview of the roles veterinarians perceive in EoL situations

Underlying these roles are two contextual dimensions. On the vertical axis is the stage in which a veterinarian gets involved at the end of animal's life, and on the horizontal axis are the interests taken into consideration and prioritized by the veterinarian.

Changing roles

The interview data show that veterinarians change between roles in EoL situations, e.g. veterinarians shift from the role of advisor to that of animal advocate. These changes are related to the underlying contextual dimensions in terms of the stage of involvement of the veterinarian or the way the interests at stake are prioritized. Veterinarians indicate that changing roles is not a 'deliberate choice', but more a 'natural' adjustment strongly influenced by the identified contextual aspects such as discussed in the above section.

An example in which the influence of these contextual aspects becomes clear is the relevance of the bond between the animal owner and the animal for veterinarians. Veterinarians shared three cases in which they changed roles based on the bond between the animal owner and the animal. First, veterinarians mentioned that they adjust the procedure of ending an animal's life depending on the bond of the animal owner and the animal: *"If a cow has a special meaning to the farmer or his family, for example, because the cow is named after his daughter, I know I have to euthanize her differently [in how the procedure is performed, not in the medication used]. I don't believe that either my standard procedure or this adjusted procedure makes any difference for the cow. Though for the farmer it is important as there are more emotions at stake."*(Ru7) The role of counselor became prominent as the veterinarian adjusted the procedure by devoting more attention to the emotional needs of the animal owner. In the former example, validation of the animal owner's decision could be a very relevant aspect of the emotional support provided by the veterinarian as described in previous literature regarding companion animal owners [74].

Second, veterinarians are involved in the healthcare of animals kept as companions which they usually see on professional farms. One can think of pigs, goats, or chickens. Veterinarians indicated that the role of counselor is becomes more prominent in such a situation due to the bond between the animal and the owner: *"...with owners who keep animals a hobby you must now and then take a more guiding role. They really ask you what you would do and expect you to guide them in the decision-making. With farmers that is not the case, they ask your advice but they don't ask you to steer."*(Pi1)

Last, some of the interviewees work in a practice in which they also provide healthcare for horses or companion animals. For these veterinarians, the role of counselor is very relevant as one of the interviewees narrates: *"My role is way more important in the companion animal practice. For the animal itself, there is no difference as I always try to do it [ending the animal's life] in the best way. For the animal owners, however, I can make a difference. I can help them in the decision-making process,*

and help them to determine the best moment. With dairy cows that is rarely the case, that is mostly already decided when I come to the farm and then I try to perform the procedure in a proper way for the cow and not necessarily for the farmer.”(Ru5)

Responsibilities of the veterinarian

In the section titled ‘Description of perceived responsibilities’, we present an overview of the conceptualization of the perceived responsibilities described by the interviewees. The patterns we discovered in the data regarding the interviewees’ perceived responsibilities will be described in the section named ‘Patterns in interviewees’ perceived responsibilities’.

Description of perceived responsibilities

After analyses of the interview data, five responsibilities concerning EoL situations were identified 1) discussing EoL, 2) good veterinary daily practice, 3) safeguarding animal welfare, 4) surveillance, and 5) providing service. Based on the interview data, a conceptualization is composed for each of the identified responsibilities.

The responsibility of **discussing EoL** refers to veterinarians who feel the need to open the discussion and address EoL-related questions and concerns, e.g. the use of undesirable killing methods or animals in need of acute care, as referred to by Pi3: *“you notice that some farmers are very consistent and take good care of it, but there is also a group who almost doesn’t seem to care at all. Then it is a subject I discuss a couple of times, however not necessarily every visit.”* The responsibility of **discussing EOL** is interlinked with the responsibility of safeguarding **animal welfare**, as animal welfare concerns can be part of the discussion between the veterinarian and the animal owner. Also, other matters such as financial considerations and personal convictions that potentially affect EoL-related questions and concerns can be discussed.

Veterinarians share various aspects related to EoL situations that we conceptualize as a responsibility towards **good veterinary daily practice**. First, this is presented as a responsibility to have up-to-date medical knowledge, as described by Ru6 *“I need to keep myself up to date about treatment options and how to diagnose [a disease] correct, that is a major responsibility in my opinion.”* Second, they mention the need for an appropriate level of competence in killing methods, as Ru1 points out *“It is really a responsibility to perform it [euthanasia] in a very proper way.”* Interviewees indicate that being competent in killing methods is relevant in two ways. On the one hand, when a veterinarian is experienced in performing a specific method, it remains relevant that every time a method is used it is performed most properly. On the other hand, when a veterinarian is less experienced in performing a specific method, it is

necessary to achieve an appropriate level of competence. Last, knowledge of and working according to legislation and regulations is seen as part of their responsibility.

In the interviews, veterinarians mentioned their responsibility to **safeguard animal welfare** as the reason to protect animals from disease or injuries. The primary emphasis of the interviewees is on the basic health and functioning of animals [75], as Ru4 narrates: *“Animal welfare is a top priority [of my responsibilities]. Anything you can do about that, you must do and that is also with a more rational or sober attitude. If we talk about dairy cattle, you are not able to put a cow on a pillow for example, but you can make sure it doesn’t stay on the grids.”*(Ru4)

This perception of animal welfare is remarkable because, in literature, animal welfare is defined broader than safeguarding the basic health and functioning of an animal [76-78]. One aspect that is emphasized in these definitions is ‘affective states’ [79]. One can think of the positive or negative experiences of states like pain, distress, and pleasure. Another aspect that is highlighted is the ability to live a reasonably natural life. The ability to carry out natural behavior and to have natural elements in their environment are emphasized [79]. This broader perspective on animal welfare is not reflected in the way the interviewed farm animal veterinarians discussed animal welfare as one of their responsibilities during the interviews.

The responsibility of **surveillance** refers to the duty of monitoring the decision-making process and the performance of euthanasia by others than the veterinarian. As an example: *“... it is especially towards the farmer, as they do it [the act of ending an animal’s life] in my absence, which actually means that they do not necessarily kill animals every day, but they do keep an eye on if it needs to be done. And they [farmers or animal caretakers at farms], if needed, do euthanize these animals. That is I think my responsibility as a veterinarian in poultry. That they [farmers or animal caretakers at farms] kill the right animals at the right moment in the right way.”*(Po2)

Veterinarians address that it is their responsibility to provide a **service** when it comes to EoL situations. This service can be the act of ending an animal’s life itself or it refers to making this act financially accessible for animal owners, such as described by one of the interviewees: *“I inform them that we use a reduced rate, because there is often a financial component in why they don’t call us, or not that easy, in-between visits. We, therefore, reduced the rate, to lower that barrier a little.”*(Pi3)

Patterns in interviewees' perceived responsibilities

Each interviewee identified multiple perceived responsibilities, ranging from two up to four. Veterinarians shared their perceived responsibilities independently of their roles. The analyses of the data show that specific responsibilities are not exclusively mentioned in combination with a specific role, e.g. the responsibility of safeguarding animal welfare was not exclusively mentioned by animal advocates. Regarding interviewees' characteristics, no relationship is seen between the described responsibilities and sex or years of work experience.

Good veterinary daily practice was the most frequently described responsibility. Interviewees referred to either 1) sufficient knowledge on subjects like animal health, killing methods, and legislation or 2) an appropriate level of competence to perform the act of ending an animal's life properly. Half of the interviewees mentioned **safeguarding animal welfare** as one of their responsibilities. The majority of veterinarians working with pigs and ruminants mentioned animal welfare explicitly. Poultry veterinarians mentioned animal welfare not explicitly but more implicit. The following example quote is illustrative: *"... such as an animal in a separation pen of which you know that they will never get better, you need to euthanize them. You need to be proactive on that point. Very often this is neglected and left to the farmer. I think it is your responsibility as a veterinarian to pay attention to it."*(Po4)

The responsibilities **discussing EoL**, **service**, and **surveillance** were mentioned less frequently. Veterinarians working with pigs shared most often that they see it as their responsibility **to discuss** questions and concerns in **EoL** situations. **Service** was perceived as one of their responsibilities by some of the interviewees. On the one hand, some of the veterinarians working with ruminants referred to the act of ending an animal's life itself as a service. On the other hand, making their service to end an animal's life financially accessible for animal owners was mentioned by some veterinarians working with pigs. **Surveillance** was identified as a responsibility by all poultry veterinarians and the minority of the veterinarians working with pigs.

4. Discussion

The current paper aims to better understand the views of Dutch farm animal veterinarians regarding their roles and responsibilities with regard to on-farm EoL situations. The analyses of qualitative data reveals in terms of *roles* that 1) seven roles can be distinguished, 2) two contextual dimensions which influence role perception were identified, 3) veterinarians enact a number of the identified roles

and the combination of roles varies between individuals and 4) the individual veterinarian changes between roles depending on contextual aspects. In terms of *responsibilities*, the data show that 1) individual veterinarians perceive a combination of responsibilities when it comes to EoL situations, and 2) the perception of responsibilities relates predominantly to specific animal sectors.

The conceptual background of the perceived roles of farm animal veterinarians

Our first key finding is that **farm animal veterinarians describe a variety of roles for themselves when it comes to EoL situations**. In previous literature, multiple roles for the veterinarian have been identified [26, 80]. However, the roles do not specifically focus on on-farm EoL situations. The present study adds to this gap in the literature and reveals a variety of roles when focusing on EoL situations.

When we relate our findings to the field of EoL situations in human medicine there are relevant similarities. This especially holds for cases in which the patient, like animals, cannot actively participate in the decision-making process and when there is a physician-surrogate relationship. Examples are EoL situations in the case of care for newborns or the intensive care setting in which relatives have to represent the patient [81, 82]. Despite the similarities with the veterinary context, the identified role of physicians and those of veterinarians differ in scope and content. The identified roles of surveillant or educator, in which the veterinarian educates or monitors animal owners in EoL decision-making and euthanasia performance, are absent in the context of EoL decisions in human medicine. This can partly be explained by differences in the legal context. Where national law in some countries – only under strict conditions – legalizes that physicians can end the life of a human [83, 84], legislation concerning the killing of animals is less strictly regulated and only requires an appropriate level of competence [59]. Consequently, not only veterinarians but any competent person is allowed to end animal lives. These legal differences could explain the additional roles identified by farm animal veterinarians when it comes to the ending of animal lives by others than the veterinarian.

This situation of multiple actors who are involved at the end of an animal's life links to our second key finding: **two contextual dimensions that underlie the observed variety of roles**. The short comparison shows how the position of the veterinarian is complicated by the fact that they have to deal with the interests of both humans and animals, as described in the *second dimension*: the question of whose interests should be taken into consideration and how to prioritize (conflicting) interests by a veterinarian. While it is assumed that human physicians are advocates

for their patients, whether and how the interest of animals should be taken into account by veterinarians is less clear. This links to debate on the moral status of animals and the implications for the veterinary practice [85, 86]. This debate includes many positions ranging from those who deny any moral status to animals to the position that animals and humans have equal moral status. For most of the interviewed veterinarians, animals have moral standing and as a result they take their interests into consideration in decisions at the end of life. This, however only serves as a starting point, but does not yet result in guidance on how to prioritize conflicting interests.

Dealing with human and animal interests is also influenced by the bond between animal and animal owner. As an example, some animals are recognized as individuals such as cows that are identified with a name rather than a number only. Other animals, such as broilers, are kept in large groups and have a uniform appearance that makes recognizing and bonding with an individual animal quite hard. These differences in the human-animal bond affect the extent to which one takes the interests at stake into consideration. Finally, the (in)ability to communicate with an animal about its interests can complicate the extent to which one can include the animal in the decision when one would want to.

The dynamics of roles

A third key finding was that **veterinarians enact a number of the identified roles and that the combination of roles varies between individuals**. The results show that two aspects predominantly contribute to differences between individuals. First, beliefs, motives, and experiences may differ between veterinarians. This includes one's personal perspective on animals, the position of the owner, and one's own role perception. These personal beliefs, motives, and experiences may lead to a preference in the enactment of particular roles. As an example, someone for whom animal welfare is the motive to be a veterinarian could have a preference for the role of animal advocate. Second, beliefs, motives, and experiences of clients contribute to differences in the roles enacted by veterinarians. In some regions of the Netherlands, for example, animal owners adhere to reformed orthodox Christian belief that supports religious objections against ending an animal's life. Consequently, veterinarians that are consulted by these owners may enact other roles than veterinarians that are consulted by owners without these convictions. This difference in clientele may contribute to interpersonal differences in roles.

The differences among veterinarians show that there is a level of autonomy for individuals to fulfill their roles. One way of interpreting interpersonal differences

is that veterinarians enjoy a large amount of trust from animal owners and society. Without trust, there would probably be stricter regulations and, as a result, less variety in the roles veterinarians can fulfill. Another way of interpreting these differences is that clarity about the professional framework is lacking. The lack of clarity could find its origin at the start of veterinarians' careers, i.e. that the knowledge and experience gained during their education is not sufficient for the veterinarians' work in practice.

Dickinson (2019) found that almost all veterinary medicine schools in the United States (US) and United Kingdom (UK) included EoL topics in their curriculum. The average number of teaching hours devoted to EoL was 7 in the US and 21 in the UK [33]. Addressing students' feelings regarding death and dying early and throughout the curriculum was recommended to further improve the training of veterinary students. Regarding euthanasia-related technical skills, Cooney *et al.* (2021) discovered that the average number of teaching hours devoted to these skills was limited to 2.8. More advanced training in euthanasia techniques is recommended to prepare students for practice [87]. Based on these findings, it seems important to critically review the Dutch veterinary curriculum on the extent to which the curriculum is devoted to EoL situations.

This leads to our fourth key finding: **the individual veterinarian changes between roles depending on contextual aspects**. When there is a change in one or both of the underlying dimensions, a change in the role a veterinarian adopts can be identified. This changing of roles is a 'natural' adjustment rather than a 'deliberate choice' as the interviewees described. Contextual factors relating to the animal or the animal owner strongly influenced changing roles according to the interviewees.

The enactment of multiple roles in EoL situations is previously reported and in some studies even recommended. Lagoni *et al.* advocate that veterinarians use the educating, supporting, guiding, and facilitating role besides the role as a medical expert in the context of client support [88]. By balancing these roles, veterinarians can usually effectively help clients grieve. Moreover, studies on clients' experience with EoL decision-making report that animal owners have different preferences for the role of their veterinarian [74, 89]. This finding emphasizes that the adaptability of veterinarians in their role is helpful in the interaction between the veterinarian and different owners during EoL decision-making.

The adaptability of veterinarians in their role can help them in handling EoL situations. When a veterinarian experiences handling an EoL situation as constructive or satisfying, this could benefit the veterinarian's job satisfaction and sense of accomplishment [1].

It can also happen that a veterinarian is unable or unwilling to adapt their role when handling an EoL situation. For instance, when there is a conflict of interest between the interest of the animal owner and the (presumed) interests of the animal. In such a situation, a veterinarian's adaptability may reach its limits of what is possible or acceptable to the veterinarian. Experiencing such a situation can be stressful and could lead to emotional strain and moral distress [17, 19]. In this perspective, it is noteworthy that the second dimension we identified includes the (presumed) interests of the animal owner and the animal. The interest of the veterinarian him- or herself was rarely mentioned. This is notable as one can imagine that the veterinarian's own motives and beliefs may be relevant as well in defining what the 'right' role of the veterinarian should be.

The perceived responsibilities of farm animal veterinarians

Our first key finding in terms of responsibilities is that **individual veterinarians perceive a combination of responsibilities when it comes to EoL situations**. Five responsibilities were identified after analyses of interview data 1) discussing EoL, 2) good veterinary daily practice, 3) safeguarding animal welfare, 4) surveillance, and 5) providing service. The responsibilities mentioned appear to be most relevant to the interviewees, which does not necessarily mean that they do not recognize additional responsibilities or that they consider other responsibilities as irrelevant.

Guidelines developed by the veterinary profession can help to further discuss the first key finding. In these codes of professional conduct, the general professional standards and responsibilities are set out. Since we interviewed Dutch veterinarians, we start with the Dutch 'Code voor de Dierenarts'. However, in this code limited information is provided regarding EoL situations [68]. Therefore, we also examined other codes of professional conduct. From these professional guidelines, we recognize a wide range of responsibilities ascribed to veterinarians, ranging from responsibilities to animals, clients, colleagues, the veterinary profession, and the public [14, 62, 68, 90, 91]. It would be valuable if, as in these codes of professional conduct, more information on EoL situations would be included in the Dutch code with the help of clinicians and academics with expertise in, for example, veterinary ethics.

The veterinarian's responsibility for *safeguarding animal welfare* and *good veterinary daily practice* were predominant in our data. Accordingly, the responsibility of the veterinarian toward the interest of the animal in terms of animal welfare is emphasized in professional guidelines. An illustrative example from the European Veterinary Code of Conduct is the following: '*In urgent cases where there are no*

available means to prevent excessive suffering of the animal(s), veterinarians should consider euthanasia even without the owner's permission. When taking such a decision veterinarians should consider all possible treatments to the best of their knowledge assuming full responsibility' [14]. These guidelines provide high-level guidance, however, professional judgment by the veterinarian is still required as the guidelines are not conclusive about how veterinarians should fulfill their responsibilities and what their role should be in EoL situations.

Although in law, ending animal lives is not solely an act of veterinarians, variation is seen between professional guidelines in being explicit about the responsibility of veterinarians in case others end the life of an animal. Some guidelines only point out that others can carry out the act of ending an animal's life [91], whereas other guidelines explicitly prescribe a responsibility for the veterinarian to train others in the decision-making process and skills [17, 62]. This variation could indicate different views of veterinary professions on the ending of animal lives by others than the veterinarian.

This leads to our second key finding: **the perception of responsibilities relates predominantly to specific animal sectors, such as poultry or ruminant practice.** Where the responsibilities of *good veterinary daily practice* and *animal welfare* were identified by veterinarians of all farm animal sectors, the responsibilities *discussing EoL*, *surveillance*, and *service* were predominantly mentioned in specific sectors. This indicates that each sector has sector-specific dynamics when it comes to EoL situations that affect the responsibilities a veterinarian perceives.

In the Dutch poultry sector, for example, on-farm killing is mostly performed by the owner. Likewise, in case of piglets most pig farmers perform the act to end the life of weak and diseased animals. This could explain why the poultry and pig interviewees indicated perceiving *surveillance* as their responsibility. Regarding sows and finisher pigs, owners may need to request an additional visit in case they want their veterinarian to end the animal's life in between regular visits. The related costs for such a visit could be a barrier for an owner to consult the veterinarian. This could be a reason why pig veterinarians also indicate that it is their responsibility to provide a *service* by making such a visit financially accessible. Moreover, it could explain why pig veterinarians mentioned *discussing EoL* as a responsibility. By discussing EoL, veterinarians may better understand what could hold an owner back to reach out in an EoL situation. These insights could help the veterinarian to better support the owner in EoL situations.

Previous literature on the dairy and pig sectors describes what the role of animal caretakers and owners is in EoL situations according to veterinarians [92, 93]. It appeared that caretakers and owners were predominantly the ones who decide in EoL situations. Accordingly, caretakers and owners performed euthanasia in most cases. Veterinarians indicated that they perceive it as their responsibility to train those involved in on-farm euthanasia and assist with developing euthanasia protocols. These findings correspond partly with our data, as interviewees working in the poultry sector identified *surveillance* as their responsibility as well as a minority of the interviewees working in the pig sector. A difference is seen regarding the findings of the dairy sector, as some of the interviewees in the current study perceived *service* as their responsibility rather than *surveillance*. The fact that the lives of dairy cows on Dutch farms are ended by a veterinarian in case this is needed could explain this finding. We suggest that this difference in findings may be explained by differences in sector-specific dynamics, such as the involvement of the owner.

Linking roles and responsibilities

Our data analyses showed that there was more variety in perceived roles than in perceived responsibilities. We hypothesize that farm animal veterinarians share common ground regarding responsibilities, though the operationalization of these responsibilities in their roles differs. As an example, two veterinarians perceive animal welfare as their responsibility in an EoL situation. It can occur that one veterinarian enacts the role of animal advocate to fulfill the perceived responsibility, whereas the other veterinarian may enact the role of advisor. Although the two veterinarians enact a different role, they both enact these roles to fulfill their perceived responsibility for animal welfare.

Limitations and future research

Due to the use of specific inclusion criteria and theme saturation to determine the number of interviewees, the current study probably does not cover all potential views on the research question. The generalizability of these findings is, therefore, limited. Additionally, the inclusion of interviewees who were willing to participate, and who therefore may have given answers that they thought the interviewer wanted to hear may have led to data bias. Last, due to the use of the snowball method, the interviewer knew a minority of the interviewees which may have contributed to a data bias.

An interesting direction for future research would be to check and complement the identified roles and responsibilities in an observational study. Additionally, it would be of interest to extend the current research to explore whether farm animal

veterinarians experience any obstacles regarding their roles and responsibilities in EoL situations. Moreover, a comparative study among veterinarians dedicated to companion animals or horses would gain an interesting insight into how these veterinarians perceive their roles and responsibilities. Also, research on the perspectives of owners regarding the role and responsibilities of the veterinarian in EoL situations would be interesting, to gain insight into how these perspectives fit with those of the veterinarians. Finally, it is remarkable that in the current data animal welfare is mentioned in a rather limited and function-based interpretation. It is difficult to evaluate this finding because we focused on the end of life which is only one part of the veterinary practice. Our results may thus not provide the full picture of the veterinarians' view on moral matters including animal welfare. Therefore, it would be relevant to further elaborate on this in future research.

5. Conclusion

The objective of the current qualitative study was to better understand the views of farm animal veterinarians in the Netherlands regarding their roles and responsibilities associated with on-farm EoL situations. Our findings reveal that farm animal veterinarians define seven roles when it comes to EoL situations. Veterinarians enact a number of these roles and the combination of roles varies among veterinarians. Underlying the variety of roles, two contextual dimensions help to better understand how and why individual veterinarians change between roles. Moreover, our findings show that farm animal veterinarians perceive a combination of five responsibilities in EoL situations. Between veterinarians, variation is seen in the responsibilities they perceive, which can be related to the specific animal sector in which the veterinarian works.

These insights help to better understand the role and responsibility perceptions of farm animal veterinarians, which is valuable in two ways. First, it facilitates understanding of the challenges veterinarians face in EoL situations. Secondly, it creates a starting point for how veterinarians can be supported to deal with potential conflicts of interests and related emotional strain and moral distress. Therefore, we see the potential to use the results of the current study in the training of future veterinarians and in the lifelong learning of veterinarians. The gained insights can enable these (future) professionals to reflect on, and discuss, their roles and responsibilities in EoL situations. Courses of the Dutch curriculum in which this could be incorporated are the elective course on euthanasia of animals and the courses on animal ethics and communication. Moreover, reflection and discussion on the

roles and responsibilities of the veterinary professional could be done during clinical rotations. As a result, (future) veterinarians have the opportunity to reflect on what they think their roles and responsibilities should be in a clinical setting before they become involved in an EoL situation as a veterinary graduate. Once they are involved in a comparable situation, veterinarians may feel more competent to manage the situation instead of being caught off guard.



Chapter 4

Considering life and death:
a qualitative vignette study among
farm animal veterinarians in the
Netherlands on considerations in
end-of-life decision-making

Abstract

Farm animal veterinarians are frequently involved in animals' end-of-life (EoL) situations. Existing literature found that the decision-making process to end an animal's life can be experienced as complex and stressful by veterinarians. The complexity of the process may find its origin in the multiple medical and non-medical aspects that veterinarians consider coming to their decision. Although research provides insight into *what* considerations are at stake, the literature does not provide information on *how* these aspects affect the decision-making process. This study explores how different considerations affect the decision-making process of farm animal veterinarians in EoL situations. Semi-structured interviews were conducted with nineteen farm animal veterinarians in the Netherlands. During the interviews, case scenarios in the form of vignettes were used to identify and explore the considerations that play a role for these veterinarians in EoL decision-making. Based on the analysis of the interview data, we discovered that farm animal veterinarians consider EoL situations using one of three identified frames: function, prospect, and duty. These frames illustrate one's perspective on the interplay of medical and non-medical aspects. Whereas veterinarians for whom the function frame is dominant focus on the human-centred function that an animal fulfils, veterinarians for whom the prospect frame is dominant focus on an animal's prospects based on the animal's living conditions and the influence of the owner. Veterinarians for whom the duty frame is dominant focus on the owner's legal position towards the animal, illustrating a clear distinction between the veterinarian's professional duties towards the animal and the duty of care of the animal owner. As such, the key contributions of this study are the discovery of the importance of the interplay between considerations in EoL decision-making and the frame-specific approach of veterinarians. The identified frames may relate to the coping strategies of veterinarians dealing with the complexity of EoL situations.

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1. Introduction

During an animal's life, unforeseen events can lead to decisions regarding the ending of an animal's life. These end-of-life (EoL) situations may lead to questions regarding euthanasia of an animal. Whereas the decision whether to euthanize an animal is quite common when we consider animals kept for companionship or educational purposes, for animals kept on farms discussing this decision is less conventional as their lives are normally considered to end at the slaughterhouse. In all these EoL situations, farm animal veterinarians are frequently involved. They fulfil various roles in these situations, including the role of advisor of the animal owner in the decision-making process, as performer when executing euthanasia, and as surveillant when monitoring animal owners or caretakers handling EoL situations [94]. In all these roles, veterinarians use their knowledge and experience in animal health and welfare to make a veterinary assessment of the medical state and prognosis of the animal patient. As a logical consequence, the health and welfare interests of the animal are an essential aspect of EoL situations. However, literature shows that the decision to end an animal's life is not merely based on the health or medical situation of the animal. Non-medical interests of different stakeholders such as the animal owner, the individual veterinarian, and the immediate professional environment strongly influence the decision-making process in veterinary practice [20, 28, 95-97].

The complexity of multiple interests at stake and potential uncertainty about how to prioritize competing responsibilities can lead to ethical problems for veterinarians [24]. Several studies have documented that veterinarians face various ethical problems in EoL situations. Examples are euthanasia requests for healthy animals, suboptimal treatment due to financial constraints of the animal owner and prolonged treatment of animals with severely compromised health. In these examples, veterinarians face potential conflicts of duties when the desires of the animal owner are in conflict with the interests of the animal. Having responsibilities towards both the animal and the owner can be morally challenging for the veterinarian to deal with these duty conflicts, as the best outcome in these situations may not be obvious to the veterinarian. These complex situations can be stressful and may lead to moral stress among veterinarians [19, 22, 26]. Especially the decision-making process is considered to contribute to stress, as a qualitative study among veterinarians showed that navigating the process towards euthanasia is experienced as a greater challenge than the act itself [12].

Gaining insight into how different considerations play a role in the EoL decision-making process of farm animal veterinarians is important 1) to better understand the complexity of these decisions and 2) to provide knowledge on what may help

veterinarians dealing with this complexity to potentially reduce moral stress in EoL decision-making. In recent years, research predominantly generated knowledge about *which* considerations are relevant to veterinarians in the decision-making process [17, 20, 23, 25, 58]. However, information on *how* these considerations affect the decision-making process is lacking. Most of these studies focused on veterinarians in the field of small animal practice. Information regarding veterinarians in farm animal practice is limited. In short, there is a lack of insight into *how* various considerations play a role in EoL decision-making. In addition, specifically for farm animal veterinarians, there is very little knowledge of EoL decision-making in general. As a result, this study's first objective is to better understand how different considerations affect the decision-making process of farm animal veterinarians in EoL situations. A common qualitative method to study participants' attitudes, perceptions, beliefs and norms regarding sensitive topics is the use of vignettes [98-100]. Vignettes are described as fictional cases. They consist of text, images or other stimuli which are presented to collect the participant's responses to the presented information [99]. The study's second objective is to evaluate the usefulness of concepts from existing literature as groundwork for our qualitative study. 'Veterinary opinions on refusing euthanasia: justifications and philosophical frameworks' by Yeates and Main will be used for this purpose.

2. Methods

Study design

This study is part of a larger qualitative study regarding the experiences of veterinarians with EoL situations. Results regarding veterinarians' roles and responsibilities in EoL situations have already been published [94]. The current paper focuses on the considerations that play a role in the decision-making process of veterinarians in EoL situations.

Between June and October 2021, the first author conducted in-depth semi-structured interviews with nineteen Dutch farm animal veterinarians. As a veterinary graduate, the interviewer has experience as a veterinary student with the practices explored in the current research project. During the interviews, vignettes were used to identify and explore the considerations that play a role for these veterinarians in EoL decision-making. Ten to fourteen days in advance of the interview two written vignettes were emailed to each participant. Participants were asked to consider to what extent they would agree with euthanasia of the animal in each of the vignettes. In the guiding email, participants were informed that they could discuss their considerations regarding the vignettes during the interview. By sending the vignettes in advance,

participants had time to prepare for the interview. Consequently, participants were enabled to share all the considerations in their decision-making process rather than their preliminary thoughts on relevant considerations when the vignettes would have been presented during the interview. Participants were not restricted from discussing the provided material with peers or other persons as this could help them to formulate their thoughts and provide a more holistic answer during the interview.

Each vignette describes an example of an EoL situation by using scenarios (see “Vignettes” for the used vignettes). The first scenario includes information regarding various case characteristics, such as the current health status of the animal patient, the medical treatment if applicable, the owner’s financial situation and the relation between the owner and the animal. After the first scenario, two or three additional scenarios of the EoL situation are presented including variations in its characteristics. The design of the vignettes was based on available literature on EoL case scenarios and considerations in EoL decision-making by veterinarians [12, 17, 20, 23-25, 58, 95, 97]. Moreover, the design of the vignettes was adapted to the Dutch context in which most farm animal veterinarians work in a species-specific practice. Due to this differentiated way of working, farm animal veterinarians visit livestock kept in various contexts such as on farms, in petting zoos, or at private homes. Each of the vignettes was reviewed upfront on formulation and accuracy by two farm animal veterinarians. During the interview, participants were asked to orally elaborate on how different considerations affect the level of agreement with euthanasia of the animal in the different scenarios of each vignette.

Vignettes

We made use of two vignettes during the interviews, a vignette about a beef calf with a fracture and a vignette concerning a lame pig affected by claw lesions. Below both vignettes are presented. In each vignette, the case characteristics that differ between the scenarios are shown in bold.

Vignette ‘beef calf with a fracture’

- a. One of your beef cattle farmers calls you about a calf. The four-week-old calf is trampled by its mother. Consequently, the calf has a **closed fracture of the tibia shaft**. The fracture has an optimistic prognosis when treated with a plaster cast. The cast needs to be replaced once every 2-3 weeks in a timeframe of 6 up to 8 weeks. **The farmer asks you to euthanize the calf, as treatment is more expensive than the monetary value of the calf.**
- b. As case a, but now it concerns an **open fracture of the tibia shaft**.

- c. As case a, however now **the farmer indicates that he lacks the financial means and the time to provide the required care for the calf.**
- d. As case a, but now it concerns an **open fracture of the tibia shaft** and **the farmer indicates that he lacks the financial means and the time to provide the required care for the calf.**

Vignette 'a lame pig'

- a. You visit a pig at the local petting zoo. The pig is lame and suffers from chronic claw lesions. **So far the pig is treated for two weeks, however, no improvement is noticed.** The pig is seen as 'the icon' of the zoo and attracts a lot of visitors. **The petting zoo owner, employees and visitors are very attached to the pig and therefore euthanasia is not an option from their perspective.** They ask you to save the animal no matter what.
- b. As case a, but now **the pig is treated for four weeks and no improvement is noticed.**
- c. As case a, but now **the zoo owner asks you to save the animal to ensure that the number of visitors won't decline.**

Interviews and data management

The inclusion criterion we used for the recruitment of interview participants was: individuals working as farm animal veterinarians in a general practice clinic in the Netherlands with a caseload consisting predominantly of the healthcare of ruminants and small ruminants, pigs, poultry, or a combination of these animal species. These sectors were chosen as most farm animal veterinarians in the Netherlands work in these sectors. To discover a diversity of responses and potential patterns in the interview data, we selected participants to create a diverse participant pool that 1) varies in years of working experience, 2) is geographically spread throughout the Netherlands, and 3) has an approximate 50/50 ratio between male and female veterinarians. The selection of participants was done using purposive sampling via the snowball method [69] resulting in a mixed group of veterinarians. Eligible participants were recruited for voluntary face-to-face interviews. After the initial contact, participants received an information letter (Supplementary material 1) about the study's objective, study design and data collection, and also received an informed consent form (Supplementary material 2). The number of interviews depended on the point of saturation, i.e. when no new information was detected in the interviews.

Interviews were structured based on an interview guide with open-ended questions. The open-ended questions gave the interview a conversational character creating

the opportunity for participants to share their thoughts and experiences, without the restriction of predetermined response options. As we steered participants in discussing their considerations by using the vignettes, in-depth follow-up questions were asked. These follow-up questions were used to 1) diminish the steering effect of the vignettes, 2) get a better understanding of the background of the participant's answers, and 3) reduce the risk of socially desirable answers. The interview guide (Supplementary material 3) was developed and tested on two veterinarians fitting the selection criteria before the interviews. Based on the feedback from these test interviews, the interview guide was established as no major revisions were needed. All interviews took place at a location chosen by the participant. Before the start of the interview, the interviewer informed the participant about the structure of the interview and addressed any potential questions. Subsequently, approval for an audio recording of the interview was requested. With the oral and written consent of the participant, the interview started following the interview guide.

Audio files were transcribed using Amberscript™ (Version August 2021, Amsterdam, The Netherlands). All transcripts were reviewed by the first author to ensure quality and accuracy. Any information in the transcripts which related to a specific person or veterinary practice was replaced by nonidentifiable descriptors (e.g. 'colleague' or 'veterinary practice').

Data analysis

The interview transcripts were coded using NVivo™ qualitative analysis software (Version Release 1.5.1). The analysis was conducted using an inductive approach. To start our data analysis, the authors created codes and a codebook based on literature [23]. As research on how considerations affect the decision-making process is lacking, the codebook was primarily based on literature concerning which considerations affect this process. From the available literature, the article by Yeates and Main is one of the only ones to document their data on relevant considerations in a structured and transparent manner allowing replication in the form of a codebook. Therefore, the work of Yeates and Main (2011) was a suitable starting point for our codebook. Five interviews were coded by two of the authors with help of the first version of the codebook during the first coding round. Based on the first coding round, the codes and codebook were revised and refined by three of the authors. Using the second version of the codebook, the two authors coded the same interviews once more and a subsequent discussion regarding the coding followed among three of the authors. The results of the discussion rounds were reviewed among all authors. No major revisions of the codebook were needed. After this iterative reflective process,

the finalized coding template (Supplementary material 4) was applied to the full data set to characterize patterns and diversity of responses in the interview data.

Ethical approval

This research project was reviewed and approved by the Science-Geosciences Ethics Review Board (SG ERB) of Utrecht University on May 28th 2021 (reference: subject ERB Review DGK S-21552).

3. Results

In the following sections, results are presented using quotes. All quotes are translated from Dutch to English and slightly edited for readability. We present direct quotes from veterinarians in italics. In some of the quotes, additional words are inserted to clarify the meaning of the quotations. These additional words are placed between square brackets. Filler words are replaced by a set of three periods in the quotation. Abbreviations for participants' references are used for all quotes, based on the species to which the veterinarian is devoted, Pi for pigs, Po for poultry, and Ru for ruminants. A sequential number is added to identify the individual participant but still retain anonymity (e.g. Pi1 = the first pig veterinarian interviewed).

Study population

Nineteen semi-structured interviews were conducted with ten male and nine female farm animal veterinarians. Of these participants, seven veterinarians worked with ruminants and small ruminants, eight veterinarians worked with pigs, and four veterinarians worked with poultry. Five veterinarians also worked with companion animals or horses. Six of the participants had less than five years of experience, four participants had five to ten years of experience, four others had ten to fifteen years of experience and five of the participants had more than fifteen years of working experience. The interviews took between 45 and 120 minutes.

Analysis steps

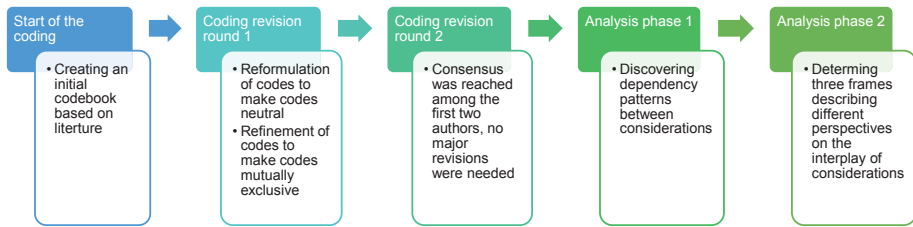


Figure 2. A visual representation of the steps of the data analysis

The coding was started by creating an initial codebook based on literature. Subsequently, two rounds of revision followed to finalize the codebook. Thereafter, the coding results were analyzed in two phases, leading to the determination of three frames. To evaluate the usefulness of concepts from existing literature as groundwork for our qualitative study, the analysis steps are presented in detail as part of the results. Figure 2 is a visual representation of these steps.

To start the data analysis, the authors created codes and a codebook based on the article ‘Veterinary opinions on refusing euthanasia: justifications and philosophical frameworks’ by Yeates and Main (2011). We used this article as it provides insight into the considerations of veterinary surgeons regarding euthanasia decisions using a qualitative research method. The resulting codebook consisted of 10 high-level codes with a total of 26 lower-level codes. With this first version of the codebook, we coded five interviews during the first coding round.

Based on this first coding round we found that the codes based on Yeates and Main (2011) were not neutral nor mutually exclusive. The codes were, therefore, revised in round 1. To explain how the codes were revised, we will use the code ‘convenience’ as an example. First, we reformulated the codes to make them neutral. ‘Convenience’ was therefore reformulated as ‘motivation’. Neutral codes help to code both the presence and the absence of a specific topic in the transcripts. Second, the codes were refined to ensure that all codes were mutually exclusive. The data revealed that there were two forms of motivation mentioned by participants, namely the motivation to care and the financial motivation. The code ‘motivation’ primarily covered both aspects of care and finance. Therefore, the code ‘motivation’ was not distinctive enough to code our data. We subsequently created the codes ‘care motivation’ and ‘financial motivation’. Revision round 1 led to a second version of the codebook consisting of 8 high-level codes with a total of 30 lower-level codes.

The second version of the codebook was used to recode the same interview transcripts once more. In revision round 2, the authors discussed any discrepancies until a consensus was reached. No major revisions were needed. Subsequently, all transcripts were coded using the second version of the codebook. The result of the second round of coding was a list of independent considerations described by the participants. The result of this coding round was discussed among the authors. During the first analysis phase, dependency patterns between the considerations emerged. We found that participants did not express their considerations as stand-alone arguments, but rather would argue in the form of 'if consideration A then B'.

One of the participants reflects on this dependency between considerations as follows: *"It is kind of remarkable to think that, whether you agree with euthanasia, seems like an emotional consideration. However, that is not what it should be of course. You should actually say 'this animal should be euthanized and this animal should not be euthanized.' Though in different circumstances you make different decisions or you can have a different feel regarding the situation. With one animal you say 'well, I think this animal should be euthanized as quickly as possible because I estimate that this animal will not receive appropriate care' and with another animal, you think 'the animal is in the same medical situation, though I accept that we keep this animal alive because I know it will receive better care.' That really makes a difference."* (Ru5)

As a result, we started a second analysis phase where we focused on the relations between considerations. The interpretation of the results of the second round will be presented in the section below.

Interpreting coding results

During the interviews, participants were asked to elaborate on how different considerations play a role in their level of agreement with euthanasia in the different scenarios of the vignettes. In each of the vignettes, we introduced case characteristics including the current medical status of the animal patient, medical treatment, the financial situation of the animal owner and the relationship between the animal owner and the animal.

While discussing the vignettes, participants discussed the considerations we included in the vignettes by describing the interplay between considerations rather than considerations as independent factors.

"My considerations were the prognosis of the animal and the amount of care needed to keep the prognosis optimistic. If we look at a fracture, then a closed fracture has a much

better prognosis than an open fracture. So then it is estimating the motivation of the animal owner, as he or she plays a role in the prognosis as well. That should be in balance in the end. If I think that this animal owner is not capable to provide sufficient care, then euthanasia is something I consider earlier than when I think the animal owner is motivated to do whatever it takes. So that is it I think, the balance between these things. And the financial considerations are always there. For us [as a veterinary practice] as well. In the end, I need to decide how much time and energy I can invest, considering whether I can send an invoice for my services to the animal owner. Is the animal owner willing to pay and it is a responsible choice for the animal, whose financial value is much lower?"(Ru5)

In this quote, the participant describes the relationship between the owner's care motivation, the owner's financial motivation, and the prognosis. As the veterinarian narrates, the interplay of these considerations affects the level of agreement with euthanasia.

Besides the fact that participants discussed the interplay of considerations, participants also add information to the vignettes. As an example: *"A calf or also a chicken are animals for utility. So there must be of course some ... it should be in proportion, of course, I don't think you should treat such an animal all the way, that is just not realistic." (Po4)*

In this example, the veterinarian introduces information regarding the function the animal fulfils. This function appeared to be a relevant consideration from the veterinarian in discussing the vignette, as the consideration is actively introduced by the participant. During the conversation, the consideration introduced by the participant is discussed repeatedly, as can be seen in the following quote:

"At the moment he says: 'but I don't have the financials means', then I thought: I don't fully agree with that. Or at least.. you won't perform extreme surgery or something like that on such an animal, I do understand that. Though, if it is something relatively simple, then I think the financial aspect.. I would oppose or if necessary I would try to find another solution for the financial constraint. You could perhaps provide some support on behalf of the practice." (Po4)

The participant describes that the function an animal fulfils influences the participant's perspective on, in this scenario, the level of agreement with euthanasia based on the financial situation of the animal owner. The function directs how the participant shapes the interplay of considerations.

During our analysis, we found in total three different 'frames' among participants. A frame is functioning as a guiding framework in which one consideration is dominant in how a participant shapes the interplay of considerations. One individual participant can recognize him- or herself in more than one of the frames, however, one of the frames prevails according to our analysis. The discovered frames will be discussed below.

Three frames

The function frame

Veterinarians describe that the human-centred function that an animal fulfils gives direction on how they shape the interplay of considerations in an EoL situation. In the vignettes used in this study, the calf's function was to produce animal products whereas the pig was kept for educational purposes.

In case an animal's function is seen as the production of animal products, participants describe that this function affects how they shape the interplay of the prognosis and finances. On the one hand, participants describe that they would give resistance if an owner wants to euthanize an animal with an optimistic prognosis based on financial reasons. They would try to motivate the animal owner to choose treatment if that treatment comes with 'reasonable' costs and is likely to lead to the recovery of the animal. This implies that veterinarians for whom the function frame is dominant ask for a minimum standard regarding the provided care by the animal owner. On the other hand, veterinarians express to be understanding when an owner prefers to euthanize an animal with a less optimistic prognosis based on financial reasons. Veterinarians describe that these animals are kept primarily to provide a profit for the owner due to which there are understandable limits to the financial willingness of an owner to treat an animal.

"A closed fracture has a much more optimistic prognosis than an open fracture. In case it is a closed fracture I would discuss the option to treat it with the animal owner. With an open fracture, the prognosis is worse. So then it can be the best option to euthanize the animal. The prognosis is then quite doubtful and yes.. finances are also relevant I think. If an animal owner needs to spend a lot of effort and time and in the end, the result is not there [a successful treatment of the animal], he lost a lot of money. So yes, I could euthanize the calf with the consent of the owner." (Ru7)

“Financial means are a valid argument I think. If it only cost money., it remains an animal for production so in the end, it needs to generate money. And if that is not the case, then it is better to say goodbye timely.” (Pi4)

In case an animal’s function is seen as fulfilling an educational purpose, participants describe that this function affects how they shape the interplay of the prognosis, the emotional bond between the owner and the animal and the finances. Regarding finances, participants indicate that there is a difference in whether an animal is kept for profitability goals or not. In the case of an animal kept in a petting zoo, the animal serves a non-profitable purpose and thus finances are in their perspective of less relevance compared to animals kept for profitable goals. The animal’s interests in terms of the current medical situation and prognosis should, from the participants’ perspective, be leading in the decision-making process. Especially when the animal owner wants to prolong the animal’s life based on the emotional bond, participants stress the great importance of protecting the animal’s interests.

“Look, if you are really attached to an animal, and the animal’s prognosis is really bad, then I think if you are really attached to the animal that you should make the choice to say: we stop here and say goodbye. Otherwise, you are apparently not really attached to the animal, as you keep the animal alive for your own interest. Even though that is not desirable for the animal itself.” (Pi5)

“I got the impression that this specific animal was very important to the employees or the visitors. So that is of course very different from a sow farm for example where they keep such an animal as well but where the role of being an icon is not present. A farmer will then look much more at the prognosis and the costs to make a cost-benefit analysis. In the case of a petting zoo, the emotional aspects are more relevant. Though I think that especially in that situation you should be able to explain it from the animal’s perspective, so you should think from the animal’s point of view.” (Po4)

Veterinarians for whom the ‘function frame’ is dominant can thus come to different EoL evaluations of the same animal fulfilling different functions, e.g. an EoL situation of a pig kept on a farm for production goals versus a pig kept as a companion.

The prospect frame

Participants reflect on the presumed prospect of the animal when discussing EoL situations, as Po2 narrates: *“You should always try of course, if an animal has a future with a life worth living. However, if I doubt that, I will euthanize the animal.”*

Veterinarians elaborate on two aspects that, from their perspective, influence an animal's prospects. The first aspect they describe is the living conditions of an animal. By living conditions, participants mean for example the housing of an animal and the expected lifespan in these conditions. This first aspect is thus not dependent on the EoL situation but is an aspect that affects an animal's general prospect. Participants describe that if the living conditions are not very optimistic for the animal itself, they would be more critical to prolonging that animal's life. On the contrary, when the prospect of an animal is presumed as optimistic for the animal itself these veterinarians would be more inclined to prolong the animal's life. Ru6 discusses this first aspect based on a personal experience: *"That was a calf with a closed fracture. Then the prognosis is quite good [compared to an open fracture]. So the calf is currently one month old. He will be slaughtered at eight months, so he will die anyway cruelly said. But if he needs to be treated for eight weeks, he is three months at the end of his treatment. Then he has six months left and then what..? The prognosis of such a fracture is quite good, however, how good is his prognosis as a beef calf?"*

The second aspect described by participants is the influence of the animal owner on the animal's prospects. They reflect on the owner's motivation to care and on the financial situation of the owner. Regarding the motivation to care, participants describe that in case the owner lacks the motivation to provide sufficient care, the prospect of the animal is likely to decline under influence of the animal owner. Consequently, veterinarians indicate considering euthanasia earlier than when the owner's motivation to care is sufficient. As an example: *"Another example is that of a sheep kept as a 'companion animal'. The sheep had a fracture between his elbow and shoulder, so a difficult spot. I thought 'we will have to see what happens..! I taught these owners how to change the bandages, so they could change these every week. They were very precise, so they checked the sheep frequently and gave the needed medication as prescribed. So that sheep recovered. And I know that when the sheep gets arthrosis at an older age, he will be treated according to his needs. So in such a situation, I think that this sheep has a good prospect. In case that prospect is not that good, what is an animal than waiting for?"(Ru6)*

Regarding the financial situation of an owner, veterinarians discuss on the one hand a lack of financial means to provide sufficient care and on the other hand a lack of motivation to make costs.

If an animal owner lacks the financial means to care for an animal due to for example financial problems, veterinarians indicate considering euthanasia less quickly. They express being motivated to give a reasonable discount if euthanasia would be

chosen due to a lack of sufficient financial resources. Their motivation to provide this discount is that the animal's prospect would be optimistic if the financial situation of the owner was not the limiting factor.

In case an owner has the financial means to provide care but is unmotivated to make costs, veterinarians discuss doubt about the general care motivation of the owner. As this brings the animal at risk to suffer, veterinarians express the urge to protect the animal. If they cannot motivate the animal owner to make financial resources available, euthanasia becomes more likely for these participants, as this at least prevents the potential suffering of the animal.

"When someone is unwilling to pay for the needed care, I doubt more about how that person provides care anyways. I am more willing to give a discount when someone is willing to provide care but lacks the financial means than when the financial means are there but someone is unwilling to spend the money. When an animal owner says 'I don't have enough money but if I had it I would have spent it', I disagree with euthanasia more than when someone has the money but is unwilling to spend 'because they don't care that much'. Euthanasia makes then more sense perhaps, as I immediately get a gut feeling that someone lacks the willingness to provide care. ... Perhaps I am even more motivated on those farms to say 'I am here for the animal', meaning I need to prevent the animal from suffering so then it will be euthanasia. For me, it is easier to choose euthanasia, which is free of pain, than saying: you treat such a calf with a discount, but also with insufficient care and long-term suffering. Then I think you chose something you could have prevented by euthanasia. So even a closed fracture can lead to euthanasia at some farms, whereas on other farms that is not the case." (Ru2)

Concluding, veterinarians for whom the 'prospect frame' is dominant focus on the animal's prospects based on the animal's living conditions and the influence of the animal owner. These two aspects can differ strongly between farms. Consequently, it occurs that an animal in the same medical condition would be treated on one farm and euthanized on another farm based on the animal's prospect.

The duty frame

While discussing the vignettes, participants emphasize the position of the animal owner towards the animal. Legally the animal owner has the decision-making power regarding the animal, as animals are considered the legal property of the owner in Western jurisdiction. Participants describe that, from their perspective, the decision-making power of the owner comes with a duty to provide care to the animal.

This results in a clear distinction between the veterinarian's professional duties towards the animal and the duty of care of the animal owner. Po3 describes this as:

"In the end, I have some kind of duty to care until the duty of care of the owner. They have the final responsibility thus I cannot do more than give advice. When the owner then doesn't consent to my advice, yes.. then it stops there.."

The distinction of responsibilities between the veterinarian and the animal owner leads to limited possibilities for the veterinarian to act in EoL situations. First, veterinarians are dependent on the consent of the owner due to the owner's legal decision-making position. In case an owner does not consent to provide medical care or to euthanize an animal in an EoL situation, the veterinarian is not allowed to act contrary to the owner's decision. Second, participants describe being reluctant to take over the owner's duty to care. Ru5 discusses this in an example: *"To what extent are you as a veterinarian responsible to provide care, in case the animal owner is unable to or unwilling to provide sufficient care? We then say that is not our responsibility. We have the responsibility to provide care, however, we are not financially responsible for that care. In the end, the animal owner is responsible to cover the costs of the needed care. In some cases, we provide some discount, though we cannot take over the care, as we neither take over the ownership of the animal."*

Participants describe that these limited possibilities to act now and then lead to situations in which they either euthanize an animal that could be cured when medical care would be provided or in which they leave an animal alive that should have been euthanized from their perspective.

"We can't solve other people's problems all day long when they are unmotivated to solve their problems themselves. In the end, they have to take care of the animal. I have a duty to provide care, to help that animal. However, if they don't help the animal, and consequently the animal suffers from a lot of discomfort, then euthanasia is a realistic option." (Po3)

4. Discussion

This study aimed to understand how considerations affect the decision-making process of farm animal veterinarians in EoL situations using qualitative data. We found that veterinarians shape the interplay of considerations rather than considerations as independent factors in their decision-making process. This finding resembles previous literature showing that the decision-making process in veterinary

practice is not merely based on the health situation of the animal, but also on the interests of other stakeholders such as the animal owner [17, 20, 28, 95, 97]. Our results add to this literature by identifying additional considerations relevant for farm animal veterinarians, including the function of an animal, the (general) prospect of an animal, and the owner's duty of care. Moreover, the current study contributes by describing how veterinarians discuss their considerations as an interplay of various arguments rather than as stand-alone arguments. This interplay of considerations has, to our knowledge, not been described in the current form for veterinarians in farm animal health.

How the interplay of considerations is shaped varies among participants and depends on the frame that is dominant for an individual veterinarian. In total three frames were identified. The fact that three frames were identified among veterinarians is noteworthy, as most participants followed their education at the Faculty of Veterinary Medicine of Utrecht University. Although the educational program has developed within the past years, a more homogeneous profile might be expected from graduates of the same faculty. A potential explanation for this diversity may be found in the position of farm animal veterinarians within the Netherlands. This position is, among other things, characterized by three aspects: the applicable legal framework, one's perception of their role as a professional, and their point of view towards animals. Regarding the legal aspect, it is notable that Dutch farm animal veterinarians are not bound to a legal requirement to justify the ending of an animal's life, whereas ending the life of an animal without justification is illegal in some Western countries. Besides this legal aspect, we found that farm animal veterinarians fulfil multiple roles in EoL situations and the combination of roles differs between individual veterinarians [94]. Differences in how one perceives one's professional role could affect how one shapes the interplay of considerations in EoL decision-making, e.g. a professional who perceives the role of animal advocate may shape the interplay of considerations differently than veterinarians who do not perceive that role. Lastly, individuals may vary in their perception of the value of animals. A first aspect of this value is the valuing of an animal's life. Within life, a second aspect is the valuing of the animal's interests. Together these aspects affect one's perception of the animal's value. The value one assigns to an animal can affect the EoL decision-making process in the way one prioritizes the animal's interests towards the interests of other stakeholders.

When we consider the three frames, we found that, although farm animal veterinarians work in animal sectors that are predominantly driven by profitability, their decision-making process in EoL situations is more nuanced. By nuanced, we

mean that in all frames it became clear that participants did not base their decision to end an animal's life merely on financial considerations. Although this nuance may be in line with duties for veterinary professionals [68], the profit-based character of the sectors in which they work may create a plausible risk that the financial and instrumental value of the animal would prevail in EoL decision-making.

When we explore the frames in more detail, we see variation between the three frames when it comes to the described duty of veterinarians to prioritize the interests of the animal patient [67, 101]. In literature, this duty is often referred to as the role of animal advocate or 'the Pediatrician Model' [67]. In the 'prospect frame', the animal's health and welfare are the central concern. In situations where the animal's interests are at serious risk, veterinarians can be in favor of euthanasia to prevent the animal from (further) suffering. Sometimes this leads to euthanasia out of precaution, when veterinarians had negative experiences with the care provided by an animal owner in the past. In comparison to the role of animal advocate, it is notable that the 'function frame' distinguishes the interests of the animal based on the human-centred function an animal fulfils. Whereas the interests of animals kept as companions or for educational purposes are comparably prioritized by the animal advocate and the function frame, the interests of the animal owner emerge more prominently when an animal is kept to produce animal products in the function frame. In both the 'prospect frame' and the 'function frame', we saw that participants were willing to provide reasonable financial support in case a lack of finances would be the ultimate reason to euthanize an animal. The willingness to provide financial support can be interpreted as the veterinarian who is prioritizing the animal's interest and who attempts to motivate the animal owner to do the same. The opposite was found in the 'duty frame', as veterinarians described being reluctant to take over the (financial) responsibility to care for the animal. This could be interpreted as 'the Garage Mechanic Model' described by Rollin [67]. In this model, the veterinarian's primary obligation is directed to the animal owner resulting in prioritizing the owner's interests over the interests of the animal. This is in contrast with 'the Pediatrician Model' where the veterinarian's primary obligation with the animal patient's interest. Although the 'duty frame' seems comparable with 'the Garage Mechanic Model' at first glance, the participants for whom the 'duty frame' is dominant did indicate being willing to prioritize the interests of the animal. We, therefore, consider the reluctance to take over the (financial) responsibility to care for the animal as a potential signal of a coping strategy to deal with complex EoL situations. Even though the participants expressed being willing to prioritize the animal, they emphasized that they had to deal with the fact that the final decision-making power to prioritize the animal's interests is in the hands of the animal owner. Experiencing this situation

can be stressful and can be accompanied by moral stress [19, 22]. As Matte and colleagues (2019) described, the decision-making process towards euthanasia is experienced as stressful, in contrast to the act itself. By focusing on which duties belong to whom, veterinarians may better cope with the possible presence of moral stress in complex EoL situations. Veterinarians for whom the 'prospect frame' or 'function frame' is dominant may have found a different coping strategy to deal with the potential presence of moral stress in EoL decision-making, or potentially suffer more from it. During the interviews, two potential external sources of help were indicated and discussed by the veterinarians that could support veterinarians to deal with EoL-related stress. In general, veterinarians emphasized the benefit of consulting peers to deal with stressful situations in practice. Specifically for EoL situations participants stressed the need for the proper education of future veterinarians on dealing with EoL situations.

5. Conclusion

This study increased our understanding of how different considerations affect the decision-making process of farm animal veterinarians in EoL situations. Moreover, it increased the usefulness of concepts from existing literature as groundwork for qualitative studies. Based on the analysis of our data, we conclude that although concepts from existing literature were useful as groundwork, adjustments to these concepts were needed to answer our research question on how different considerations affect the decision-making process in EoL situations. Rather than using isolated arguments, farm animal veterinarians base their decision-making on the interplay of considerations in EoL situations. Among veterinarians we see differences in how this interplay of considerations is shaped, depending on the three frames we identified. These frames may relate to the coping strategy of veterinarians. As our results focus on farm animal veterinarians, future research among veterinarians working with companion animals or horses could provide insight into the generalizability of our findings. Furthermore, we recommend research into the usefulness of the current frames in supporting (future) veterinarians in EoL decision-making. The frames could, for example, function as training material to help veterinarians evaluate and reflect on their EoL decision-making process. Moreover, the frames could be used for the development of decision-making support tools or could be implemented in existing decision-making support tools [102].



Chapter 5

Handling End-of-Life Situations
in Small Animal Practice:
What Strategies do Veterinarians
Contemplate during their
Decision-making Process?

Abstract

This study researched end-of-life (EoL) decision-making processes in small animal practices in the Netherlands, focusing on strategies veterinarians contemplate during this process. Fourteen veterinarians were interviewed about animal end-of-life decision-making. The results of these interviews show that the decision-making process consists of three steps. The first step is to *assess the animal's health and welfare*. During the second step, veterinarians consider *the position of the owner*. Based on steps 1 and 2, veterinarians decide in step 3 whether their advice is to a) *euthanize* or b) *contemplate one or more strategies* to come to a decision or potentially alter the decision. These results can support members of the veterinary profession to reflect on their decision-making process. If veterinarians know what strategies their peers use to deal with EoL situations, this can help to reduce the stress they experience in such situations. In addition, veterinarians may find inspiration for new strategies in the study results. For the veterinary profession itself, the current results can be used as a starting point for describing best practices for EoL decision-making in small animal practice.

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1. Introduction

In small animal practice, veterinarians are frequently involved in conversations with animal owners regarding the ending of an animal's life. During these end-of-life (EoL) situations, the veterinarian and the animal owner discuss the best course of action resulting in either euthanasia of the animal or continuation of the animal's life after veterinary treatment. However, determining the best course of action in EoL situations can be complex: when is a life worth living and when would it be the best to end a life by a 'good death'?

In this study, we focus specifically on the context of veterinarians in the Netherlands. Therefore, we consider the rules regarding the ending of animal lives prescribed in the Dutch 'Law for animals' and 'Regulation for animal keepers'. For mammals, reptiles, amphibians, and birds three general rules are defined, including 1) the avoidance of potential pain, suffering, and distress, 2) the use of a method that ensures that death occurs immediately or after stunning while the animal is still unconscious, and 3) the person who ends an animal's life possess the necessary knowledge and skills to perform the act humanely and effectively [103]. For cats, dogs, and geese additional rules are applicable, determining the situations in which these animals may be killed. These situations include killing an animal a) to avoid or end the immediate danger to a human or an animal, b) as a veterinarian has determined the ending of the animal's life is in the interests of the animal, c) as a consequence of national or European law, d) to end unbearable suffering, and e) as a consequence of dangerous behavior that cannot be corrected [103]. Notably, the legislation restricts the prescribed situations in which the lives of animals may be ended to specific species. Moreover, the described situations are still open for some level of interpretation and thus rely on the judgment of the decision-maker. With respect to when is an animal's life worth living or when would it be the best to end a life by a 'good death' the Dutch law provides no specific guidance."

Likewise, the European Veterinary Code of Conduct (hereafter: The Code) provides limited guidance regarding determining the best course of action in EoL situations, stating the following: '*Veterinarians shall ensure/restore the welfare of the animals under their care in whichever section of the veterinary profession they work, bearing in mind the five freedoms and promoting positive welfare. Animals should experience both a good life and a humane death without unnecessary suffering [14].* The Code's recommendation regarding EoL discussions is more concrete but remains ambiguous on how to come to a decision: '*Veterinarians should attempt to relieve animals' pain and suffering. If their condition is untreatable, the option of euthanasia should be discussed with the animal's owner' [14].*

Besides the complexity of ascertaining when an animal's life is worth living, determining the best course of action is further complicated by the fact that there are interests of multiple stakeholders at stake [3, 17, 18, 20, 58]. These interests include the interests of the animal, the interests of the animal owner, and the veterinarian's interests. In case the interests of these stakeholders align, the veterinarian and the animal owner will likely reach a consensus regarding the best course of action. However, sometimes situations occur in which the interests of the different stakeholders conflict. Examples include cases where an owner requests euthanasia of an animal whose life is still worth living according to the veterinarian or an owner wishing to continue the animal's life where the veterinarian advises that it would be best to end the animal's life by euthanasia. Dealing with competing interests adds complexity to EoL discussions. This complexity is further extended as the animals are considered the legal property of an animal owner according to Dutch legislation [66]. As a result, the ultimate decision-maker power is in the hands of the owner. Accordingly, previous studies reported that EoL discussions and navigation of the decision-making process are perceived as one of the most challenging aspects of veterinary practice, especially when interests at stake are competing [1, 12, 28].

In some of these challenging EoL situations, the veterinarian is unable to resolve the conflict between the competing interests. In such a situation the Code prescribes that: *'A veterinarian has a variety of legal, moral and ethical obligations towards animals and their owners, clients, colleagues, the veterinary team, society and Competent Authorities. On occasion, these obligations may conflict with each other and present veterinarians with a dilemma. In such situations, it is veterinarians' responsibility to balance their obligations, having regard first to animal health and welfare and to public health'* [14]. Although the Code states that the veterinarian must prioritize the animal's interest in case of conflicting interests, the owner may have a different perspective on how the veterinarian should serve the interests of both the animal and the owner. Consequently, it can remain unclear to the veterinarian how to prioritize competing interests of equal moral weight. In such a situation, an ethical dilemma arises [24]. Several studies have reported EoL-related situations that veterinarians experience as ethical dilemmas with regard to cases including euthanasia of healthy animals, euthanasia requests based on financial grounds, compromised veterinary care as a result of an owner's limited finances, or the owner's desire to continue the treatment of an animal that is terminally ill [17, 19, 20, 24, 25, 39, 42, 57, 104]. In these types of situations, the veterinarian must ultimately decide whether to agree to end the animal's life or to let the animal live.

Existing literature shows that decision-making in EoL-related ethical dilemmas is stressful for veterinarians [17, 19, 25, 105]. Rollin describes this as moral stress: stress resulting from the tension between what veterinarians consider to be obliged to do and their alternatives in practice [22]. Frequent exposure to these stressful situations is likely to negatively affect veterinarians' well-being and job satisfaction [17]. Besides the reported moral stress, previous research shows that the decisions that veterinarians take are not always equivalent to the decision they would have wanted to take. Yeates and Main (2011) identified that refusing a request to euthanize an animal is uncommon. Several reasons can lead a veterinarian to agree with a euthanasia request although they prefer to refuse. Reasons include being pressured into euthanasia, concerns about what would happen to the animal if not euthanized, and financial limitations of the owner [23]. Adding onto the aforementioned reasons, Yeates and Main suggest that some veterinarians who want to refuse euthanasia in the first instance, are able to find ways to let the owner revoke their euthanasia request by for example persuading the owner.

In summary, determining the best course of action in EoL situations can be complex for veterinarians. The European Veterinary Code of Conduct provides limited guidance on how veterinarians should determine the best course of action. The resulting ambiguity regarding EoL decision-making can contribute to moral distress among veterinarians. This research aims to address this ambiguity by investigating the EoL decision-making process of veterinarians, focusing on the strategies they use to come to a decision. Exploring the decision-making process in-depth can provide insights into 1) how veterinarians navigate the EoL decision-making, 2) the relevance of contemplating strategies during this process in relation to, 2a) the final decision, and 2b) the experience of the veterinarian. The ultimate goal of providing these insights is to reduce moral distress among veterinarians by 1) creating more clarity on current strategies used by veterinarians to determine the course of action in EoL decision-making and 2) providing a starting point for the veterinary profession that is useful in describing best practices for EoL decision-making in small animal practice.

2. Materials and methods

Study design

This research used semi-structured in-depth interviews to explore and analyze the decision-making process of veterinarians in EoL situations in small animal practice. Interviews with veterinarians working in a small animal practice in the Netherlands were held by the first author between June and October 2021. The inclusion criterion

used for the recruitment of participants was: veterinarians who predominantly provide care to companion animals as first-line practitioners in a small animal practice in the Netherlands. To receive a diversity of responses participants were purposefully selected via the snowball method, a method that draws on insiders' knowledge of the field and that can help to include participants that would not have been accessed directly by the research team [106]. The following selection criteria were applied: gender, years of working experience as a practitioner, and geographic location in the Netherlands. These selection criteria enabled the research team to form a mixed group of veterinarians, to meet the explorative character of the study. The number of interviews depended on the point of saturation, meaning when no new information emerged in the interviews.

Interviews and data management

Eligible participants were recruited for a voluntary face-to-face interview. After the initial contact, participants received an information letter about the research objective, study design, and data collection (Supplementary material 1). Moreover, an informed consent form was sent to each participant (Supplementary material 2). All interviews were held in person at a location of the participant's choice to secure a comfortable and safe environment. Before the interview started, the interviewer introduced herself and informed the participant about the interview structure. Any potential questions of the participant regarding the interview were addressed. Thereafter, the participant was asked to approve the recording of the interview. With oral and written consent of the participant, the interview started. The interview was structured by an interview guide with open-ended questions, resulting in an interview with a controversial character where participants had the opportunity to share their experiences and thoughts without the constrain of predetermined response options. Questions were not made available to participants in advance of the interview. To gain an overview of how veterinarians approach EoL situations, the interview guide focused on three main subjects including 1) the role and responsibilities of the veterinarian in EoL situations, 2) the considerations that veterinarians take into account in the decision-making process in EoL situations, and 3) the barriers experienced by veterinarians in the decision-making process towards and performance of euthanasia (Supplementary material 3). The draft of the interview guide was tested on two veterinarians meeting the inclusion and selection criteria before the final version was formulated. No major revisions were required after the two test interviews. The veterinarians involved in the development of the interview guide did not participate in the further study.

In total fourteen veterinarians were interviewed. All of the approached veterinarians were willing to participate in the interviews after being contacted. Of the fourteen participants, six were male and eight were female. Of these veterinarians, twelve worked exclusively with traditional companion animal species. Two participants also worked with other species, including horses and reptiles. Two of the participants had less than five years of working experience, four participants had five to ten years of experience, five others had ten to fifteen years of experience and a further three had more than fifteen years of experience.

The interviews lasted between 45 and 120 minutes. Audio files were transcribed using Amberscript™ (Version August 2021, Amsterdam, The Netherlands). To ensure quality and accuracy, all transcripts were reviewed by the first author. Any information related to a specific person or veterinary practice was replaced by nonidentifiable descriptors.

Data analysis

All transcripts were coded using NVivo™ qualitative analysis software (Version Release 1.5.1). The analysis was conducted using an inductive approach. To develop a coding template, five interviews were coded by two of the authors. The findings of this first coding round were discussed between the two authors until a consensus was reached about discrepancies. Using the revised codes, all transcripts were coded by the two authors. Subsequently, the findings of the second coding round were discussed among three of the authors. No major revisions of the codebook were required. After this iterative reflective process, the codebook was finalized and applied to the full data set by the first author (Supplementary material 4). Once all transcripts had been coded, the data were analyzed. During the first analysis phase, we discovered a certain order between the codes. As an example: the code 'financial support' only occurred after the code 'owner's financial position' was coded. Based on this first analysis phase we thus found a structure in the form of a process among the codes. In short, the process consists of three steps: step 1 the animal assessment, step 2 the position of the owner, and step 3 strategies. For step 3, 'strategies', multiple codes were aggregated including 'reference frame', 'additional confirmatory diagnostics', 'time to reflect', 'financial support', 'rehoming', and 'peer consultation'. During the second analysis phase, we analyzed the quotes per code more in-depth. During this in-depth analysis, we revisited each code with its corresponding quotes and searched for patterns within each process step. As a result, we discovered four aspects in each of the codes of step 3, including 1) what a code meant to the participant, 2) in which situations the code was applicable, 3) what participants aimed for with the code, and 4) whether potential risks were related to the code.

Ethical approval

This research project was reviewed and approved by the Science-Geosciences Ethics Review Board (SG ERB) of Utrecht University on May 28th, 2021, subject ERB Review DGK S-21552.

3. Results

In the following sections, we present the strategies veterinarians mentioned in EoL situations. During the interviews, veterinarians described their approach to EoL situations in the form of a process consisting of several steps. Before contemplating their strategy, the participants' first step is to *assess the animal's state of health and welfare*. Thereafter, they consider *the position of the owner* regarding the EoL decision-making process in step 2. Based on the animal assessment and the position of the owner, participants decide in step 3 whether their advice is to a) *euthanize* the animal or b) *contemplate one or more strategies* that can contribute to coming to a decision or potentially alter the decision in that specific EoL situation. Participants describe several strategies during the interviews including providing a frame of reference aimed at euthanasia or treatment options, performing additional confirmatory diagnostics, facilitating time to reflect, providing financial support, supporting rehoming, and peer consultation. These strategies are arranged in the text in a random order, as each of the strategies is discussed as relevant to veterinarians in the decision-making process. During the entire process, the process may be terminated at any step. Potential causes include the death of the animal without the involvement of the veterinarian (e.g. natural death) or the animal owner deciding to terminate the client-veterinarian relationship. Figure 3 is a visual representation of the decision-making process.

The results are illustrated using quotes. All quotes are translated from Dutch to English and are slightly edited for readability. Direct quotes from veterinarians are presented in italics. Additional words, inserted to clarify the meaning of the quote, are placed between square brackets. Filler words are replaced by a set of three periods. Quotes are referred to by the abbreviation 'Cav' (companion animal veterinarian), followed by a sequential number to identify the individual participant while maintaining anonymity (e.g. 'Cav1' refers to companion animal veterinarian number 1).

The assessment of the animal

Before contemplating their options, veterinarians indicate that they start by making an assessment of the animal's state of health and welfare (hereafter referred to as step 1). Participants indicate that the assessment consists of five factors and that the outcome of the assessment serves as a 'go/no-go' criterion in their decision-making process of exploring options for further treatment of the animal. In case the outcome of the assessment is a 'no-go', the veterinarian is directed toward euthanasia, as contemplating other strategies in step 3 is a 'no-go'. On the contrary, a 'go' outcome of the assessment leads the veterinarian to contemplate other strategies.

The assessment of an animal includes: 1) the animal's health history, 2) anamnesis, 3) an inventory of the animal-specific characteristics, 4) a general impression of the animal, and 5) a clinical examination. The animal assessment starts with the animal's health history, information regarding the past medical state of the animal. Information regarding the current reason to consult the veterinarian and the current medical situation of the animal according to the owner is collected during the anamnesis. While questioning the owner, animal-specific characteristics are gathered, for example, but not limited to the animal species, the age, and the life expectancy of the animal. Thereafter, a general impression regarding the current state of the animal is made, including the level of consciousness and (ab)normal behavior (e.g. signs of pain and distress). Finally, a clinical examination is performed. Combining the information gathered in these four steps makes it possible to formulate a list of problems. The list of problems is used to come to a presumptive diagnosis. Moreover, the veterinarian will be able to make an assumption regarding the animal's quality of life and prognosis.

A clear example of a 'no-go' outcome described by participants is the assessment showing that the animal is severely suffering without the prospect of improvement. In such a case, veterinarians urge the need for euthanasia instead of considering other strategies. When the outcome of the assessment shows that the animal is not severely suffering, or that this suffering can be alleviated, and the prognosis is (quite) optimistic, veterinarians indicate they contemplate various strategies other than euthanasia.

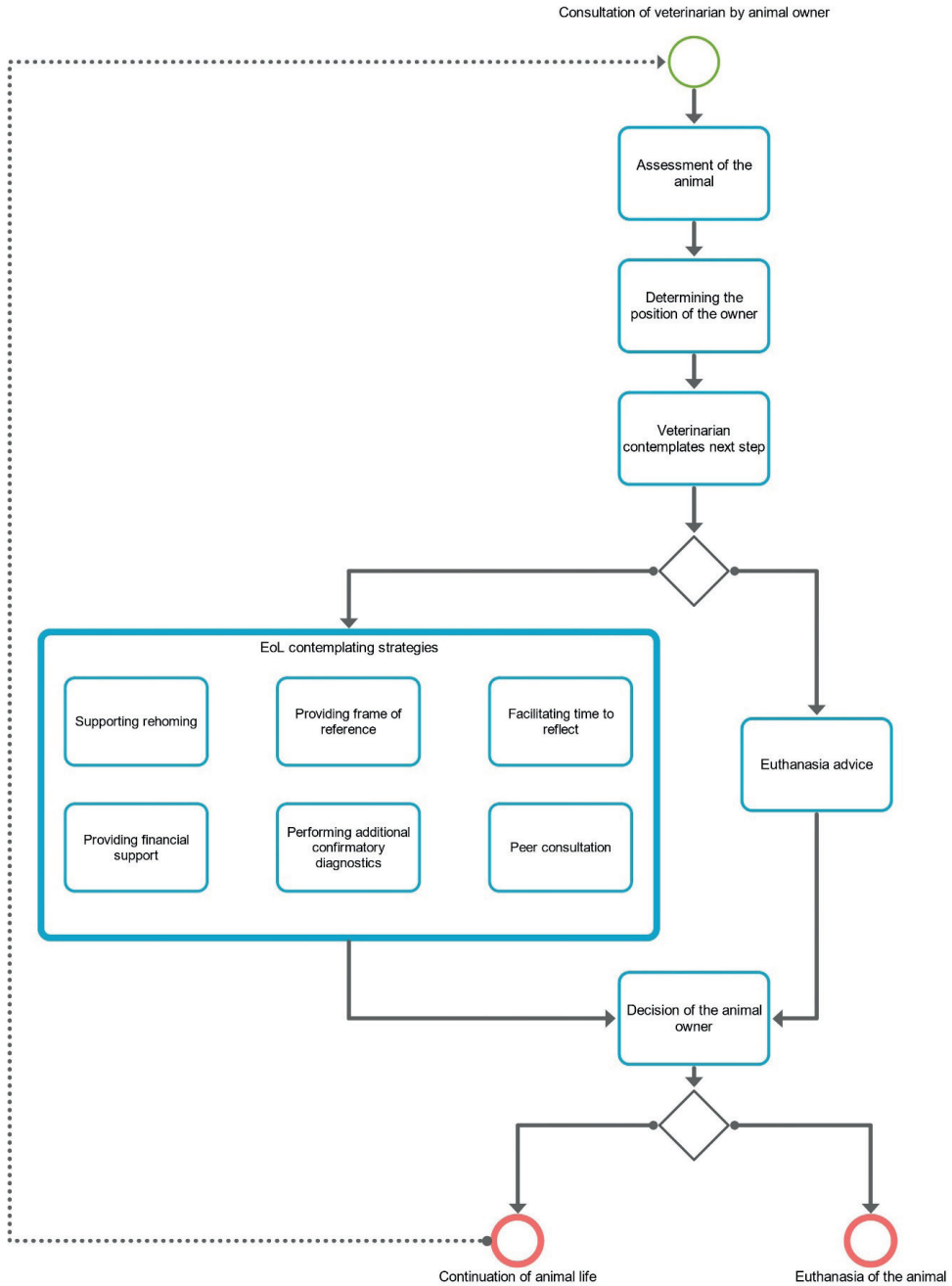


Figure 3. A visual representation of the decision-making process concerning EoL situations in veterinary practice

The scope of this figure is the decision-making process involving a single veterinarian. A green circle visualizes the start of the process, whereas a red circle represents the end of the process. Square boxes represent a process step, whereas diamond shapes visualize a decision step. The decision-making process starts once the animal owner consults the veterinarian. The first step in this process is the *assessment of the animal's state of health and welfare*. After this step, *the position of the owner* is considered in the second step. Based on the animal assessment and the position of the owner, the veterinarian contemplates the next step consisting of the advice to a) *euthanize* the animal or b) *contemplate one or more strategies* that can contribute to coming to a decision or potentially alter the decision in that specific EoL situation. Then, the animal owner decides whether to a) let a veterinarian euthanize the animal, or b) let the animal live. During the entire process, the process may be terminated at any step. Potential causes include the death of the animal without the involvement of the veterinarian (e.g. natural death) or the animal owner deciding to terminate the client-veterinarian relationship.

The position of the animal owner

Participants elaborate on the position of the animal owner in the decision-making process following the assessment (hereafter referred to as step 2). While veterinarians may discuss which strategy is preferable from the veterinarian's perspective, from a legal perspective, the owner has the final decision. Consequently, conflicting situations can arise when the advice of the veterinarian does not align with the decision of the owner. Participants indicate that they do not experience problems with the owner's decision-making power in most cases as the veterinarian's advice frequently aligns with the owner's decision. In a minority of cases, where the advice of the veterinarian and the decision of the animal owner do not coincide, participants express a certain level of dependency regarding the owner's consent in the decisions that follow after the assessment, as Cav10 points out: *"In the end, it is predominantly the owner who determines the course of action"*.

Participants describe two situations in which their advice does not align with the owner's preference. On the one hand, there are situations in which the owner considers or requests euthanasia and the veterinarian prefers other strategies: *"Owners do not want much more at a certain point, however, there is still a lot that can be done with aging animals. ... Euthanasia is something I have to discuss frequently, informing the owners that it [euthanasia] is not necessarily needed yet."* (Cav12) On the other hand, participants describe situations in which the assessment of the animal directs the veterinarian towards euthanasia, and the owner prefers to take their animal back home.

Both situations are described as challenging or stressful by veterinarians, however, participants describe experiencing a difference regarding the level of dependency, as Cav3 discusses: *"It happens that owners take their animal back home, whereas I think*

that that decision is not the right one for the animal. I experience such a situation as more difficult than situations in which an owner wants euthanasia and I don't. I mean, I cannot force them to euthanize the animal, but I can reject euthanasia in cases where I don't support it." Moreover, participants indicate that the underlying reason for the owner's decision affects their experience of the EoL decision-making process as well. Participants discuss several reasons that, from their perspective, can underly the owner's position, such as a lack of knowledge, the relationship between the animal and the owner, and the owner's financial situation. Reasons that relate to a lack of motivation to provide the needed care are perceived as more difficult or more frustrating than reasons relating to a lack of ability to provide care, as described by Cav8: *"When people lack the dedication to provide care based on financial considerations it is even more difficult than when people don't have the money".*

In considering strategies, veterinarians, therefore, perceive dependency on the owner's consent. Depending on the assessment of the animal and the position of the owner, the participants decide in step 3 whether their advice is to a) euthanize the animal or b) contemplate one or more strategies that can contribute to coming to a decision or potentially alter the decision in that specific EoL situation. Participants describe several strategies during the interviews including providing a frame of reference, performing additional confirmatory diagnostics, facilitating time to reflect, providing financial support, supporting rehoming, and peer consultation. These strategies are described in the following sections, elaborating on the goal of each strategy in relation to the decision-making process, situations in which the strategy is used, and where relevant potential risks related to the strategy.

Providing a frame of reference

Participants emphasize the need to provide a frame of reference (hereafter referred to as reference) to owners during consultations. Their ultimate goal in providing this reference is primarily to safeguard the animal's welfare during the decision-making process. This can either be in situations in which the veterinarian provides a reference to support the advice to euthanize an animal as well as in situations in which a reference is provided to motivate an owner to not choose euthanasia but for alternative strategies. Besides safeguarding animal welfare, veterinarians indicate that providing a reference is to support and facilitate owners during their decision-making process.

During the interviews, participants discuss three situations in which a reference is seen as necessary. These three situations have concerns regarding the best course of action in common. A first example discussed by participants is that some owners

explicitly ask for a reference, as Cav2 describes: *"People ask very frequently whether their animal is in pain for example, or whether it would be better to stop [and euthanize the animal]."* Second, participants describe cases in which they prefer euthanasia, whereas the owner does not. Last, in some cases the owner requests euthanasia although participants see alternative options. In the second and last situation, the veterinarian takes the initiative to provide a reference. Veterinarians describe several reasons that can underly these situations, including a lack of knowledge of the owner, a clouding of the owner's perspective on the animal's situation as a result of frequent exposure, and the relationship between the animal and the owner. The relationship between the animal and the owner can be either very close, causing a certain denial of the owner of the (severity of) the signs, or can be more distant leading to signs being unnoticed by the owner.

In all three situations, veterinarians provide a reference by 1) drawing attention to clinical signs that an owner appears to be unaware of, and/or 2) providing insight into the urgency of clinical signs and findings and potential interventions to treat these symptoms or to reduce the consequences. Besides discussions with the owner, veterinarians consider carefully how they can facilitate a reference as well once the owner is at home. Therefore, participants provide information letters regarding the animal's illness and/or EoL-specific reading materials. Moreover, some participants encourage owners to keep a diary to document changes in their animal's condition. The diary could help the owner to obtain a more 'objective' perspective on the animal's situation. This more objective perspective is often perceived as helpful by owners in their decision-making process. Participants indicate discussing the findings resulting from the diary during follow-up consultations.

Performing additional confirmatory diagnostics

Participants describe using additional confirmatory diagnostics, such as blood tests, for two main reasons in relation to EoL decision-making. One important reason is that veterinarians indicate performing diagnostics to confirm a presumptive diagnosis. Confirming a presumptive diagnosis is important for both the veterinarian and the owner. For the veterinarians themselves, this is important as they express that they want to be convinced about the decision to euthanize an animal. Participants discuss this in two types of situations, 1) animals with health problems, 2) and animals with behavioral problems. Cav4 describes an example of the former as follows: *"If you consider euthanizing an animal, I want to perform diagnostics to confirm why I euthanize the animal. That [euthanasia] is not something you 'just' do. I will not euthanize an animal because it might have kidney failure, for example, I want to confirm that."* Cav10 discusses a case illustrating the latter: *"Sometimes we have an owner who requests*

ethanasia of his dog, as the dog shows undesired behavior. However, I see a happy and healthy dog during the consultation, not showing strange behavior. In such a situation, I propose that the owner visits a behavior expert, to confirm what is going on. If the expert confirms that we can't help the dog, I am willing to euthanize the dog. Though I need that expert's report. If I don't get that report, I will not euthanize the animal."

Besides the importance to the veterinarians themselves, participants also highlight the importance of confirming a diagnosis for the owner's decision-making process. If the outcome of additional diagnostics confirms the diagnosis, this can help owners to make a better informed and therefore easier decision to euthanize their animal.

A second reason for participants to perform confirmatory diagnostics is linked to preventive care and attempts to alter unnecessary euthanasia decisions. Participants describe that better insights into a diagnosis can help owners to decide on treatment rather than choose euthanasia. Cav12 shares an example: *"When I see aging cats, I try to motivate people to provide preventive care. For cats with high blood pressure for example: if you can start treatment in time, the owner will see the results very quickly and are thus happy we performed diagnostics. Consequently, people will come back more easily for additional diagnostics in the future, allowing us to focus on the treatment of the cat rather than discussing euthanasia at that point."*

Facilitating time to reflect

As EoL decision-making is often complex, participants discuss the need to give owners time to reflect. This reflection time helps owners to make a carefully considered decision for either euthanasia or treatment. Participants point out that a carefully considered decision is beneficial for the owner's grief process, as it reduces the risk that doubts about the made decision will raise afterward.

Veterinarians indicate facilitating time for reflection in acute situations, such as when a dog bites someone and the owner requests immediate euthanasia. Cav13 explains this as such: *"If a dog has bitten someone, there is great panic. My main objective is then to get the animal out of that situation, reduce the panic, and create time to consider the best solution."* Also in less acute situations, reflection time is seen as helpful for owners. On the one hand, owners may prefer to take some time before they start a costly and/or invasive treatment. On the other hand, some owners whose animal needs to be euthanized indicate that they need time to accept the decision to end their animal's life.

In both situations, participants emphasize the need to safeguard the animal's welfare while owners are given time to reflect on their decision, as there is a risk that the owner will need more time than is acceptable for the animal. To ensure the animal's welfare during the reflection of the owner, participants support the animal with proper treatment, e.g. pain medication if needed. Moreover, they make clear agreements with the owner to limit the reflection time, e.g. check-ups at the practice. Participants indicate that, despite their efforts to make these agreements, exceptional situations exist in which owners delay their return to the practice or do not come back at all. These exceptional situations are reported as stressful and frustrating by veterinarians.

Providing financial support

In terms of finances, participants share their experiences regarding two situations: 1) financially limited owners, and 2) the situation in which an owner is unwilling to make finances available for veterinary treatment. In the case of a financially limited owner, participants discuss being willing to help these owners as they want to provide proper care to their animal but are financially not able to. The goal of providing support to these owners is to avoid decisions that lead to the unnecessary ending of an animal's life from the veterinarian's perspective. Veterinarians discuss several options for financial support. This often starts with external financial support from for example family, friends, or charities. Moreover, crowdfunding is discussed to finance treatment. Besides external support, participants discuss three practice-related options to provide financial support: 1) pay-by-installment agreement, 2) reduce costs if possible, and 3) (partial) payment by the practice. In considering practice-related forms of financial support, veterinarians consider their relationship with the owner. A feeling of trust in the relationship is important, as their experience is that a trustful relationship reduces the risk of unpaid bills in the end.

If an owner is unwilling to make finances available for veterinary treatment, participants express a feeling of frustration: *"If my car is broken, I would also prefer to spend that money on something else. However, if you decided to have an animal you are responsible to care for the animal. I understand that you may not always have 3000 euros ready to treat an animal, but I do expect an owner to be motivated to provide the needed care. If someone doesn't want that, that sounds ridiculous to me."* (Cav5) In such a situation, participants try to convince the owner of their duty to care at first. If the owner appears unreceptive, the medical situation of the animal and the costs for treatment influence what veterinarians do next. If the prognosis is (quite) good and the treatment costs are not extremely high from the veterinarian's perspective, veterinarians offer the combination of financial support and the option to rehome an animal (for more details,

see “Supporting rehoming”). The animal is then rehomed by the practice against the costs that would have been charged in case of euthanasia. The remaining costs are mostly covered by the practice. If the prognosis is less optimistic and/or when the treatment costs are (extremely) high from the veterinarian’s perspective, participants make varying choices. They either offer the option to rehome the animal for the costs of euthanasia or they decide to euthanize the animal. The underlying reasons for participants to choose euthanasia are uncertainty about the ability to rehome the animal, the required time to find a new home, financial pressure on the practice, and the feeling that they need to act to stop the animal from further suffering. To avoid financially based decision-making, participants emphasize the fact that if more animals were insured, it would help to reduce such situations.

Supporting rehoming

Veterinarians indicate consider rehoming in situations when an animal is likely to live a good life if the animal receives proper care, but the owner requests euthanasia. One can think of animals in need of veterinary care such as surgery or care in the form of behavioral therapy. In most cases, the underlying reason for owners to request euthanasia is cost-related (for more details, see “Providing financial support”). Rehoming an animal in such a situation creates an opportunity for veterinarians to avoid performing euthanasia they cannot agree with, as Cav4 narrates: *“We try to rehome frequently so that we don’t euthanize animals against our will.”*

In contemplating rehoming, participants estimate 1) the likelihood that an animal will be rehomed and 2) the impact of rehoming on the animal. Indicators used are the animal’s age, the animal’s character, the prognosis, intensity of treatment, and treatment costs. Based on these indicators, participants indicate that young animals with (quite) an optimistic prognosis are seen as eligible for rehoming. Moreover, rehoming is considered beneficial for the animal itself based on the life expectancy and prognosis. Cases where participants indicate that rehoming may need to be considered more carefully include animals for whom the prognosis is less optimistic and older animals. In both cases, participants express that caution is important to ensure that the benefit to the animal outweighs the impact of being rehomed.

Although rehoming creates an opportunity for veterinarians to avoid euthanasia in the described situations, participants share their concerns regarding the way in which some owners do not fulfill their duty of care. Participants express to be worried about whether an owner may get a new animal that ends up in the same situation. Therefore, participants make a clear appeal to the owner’s duty of care during consultations to prevent recurrences.

Peer consultation

In contemplating strategies participants indicate to appreciate peer consultation. Especially in complex cases, participants express to discuss their considerations and concerns with colleagues during the decision-making process. An example of a complex situation in which peer consultation is described as valuable is an animal in an emergency who needs urgent help and the owner is untraceable or unreachable for consent. Besides peer consultation during the decision-making process, participants now and then use peers to reflect on already made decisions. Reflection on the decision-making process is perceived as helpful in more than one way: to emotionally deal with made decisions and by learning from each other, as Cav11 narrates: *"Discussions with colleagues can be really helpful, especially if you had a bizarre experience it is really helpful to share that with others."*

4. Discussion

This study aims to explore EoL decision-making in more detail by researching what the process looks like and what strategies veterinarians in small animal practices contemplate in their EoL decision-making process. Below the findings of the study are summarized, followed by sections in which we discuss 1) the relevance of the decision-making process and related strategies in relation to a) the final decision, b) the experience of the veterinarian, and 2) the potential side effects of the role of the veterinarian during the decision-making process on both the veterinarian and the animal owner. In summary, the EoL decision-making process consists of three steps. The first step in the process is an *assessment of the animal's state of health and welfare*. In the second step, veterinarians focus on the *position of the owner* regarding the EoL situation. Depending on the assessment of the animal and the position of the owner, participants decide in step 3 whether their advice is to a) *euthanize* the animal or b) *contemplate one or more strategies* that can contribute to coming to a decision or potentially alter the decision in that specific EoL situation. Strategies contemplated by veterinarians include providing a frame of reference, performing additional confirmatory diagnostics, facilitating time to reflect, providing financial support, supporting rehoming, and peer consultation.

The interview data provide insight into the extensiveness of the participants' decision-making process in EoL situations. The discovered stepwise approach and multiple strategies are found relevant for the participants in their decision-making process. The extensiveness of the process can be interpreted as a high level of care and willingness of veterinarians to contribute to the owner's decision. This finding resonates with

previous research that documented the desire of veterinarians to facilitate a 'good death' in EoL situations [12, 107]. Providing a 'good death' was perceived as a positive act that allows the veterinarian to end the suffering of an animal. Also, the relevance of a 'good death' was related to supporting the well-being of the animal owner [12]. Our findings add to this literature by presenting the strategies veterinarians contemplate to come to the decision to provide a 'good death' or to facilitate a 'good life' if life is considered a life worth living. Besides the numerous strategies veterinarians contemplate, it is notable that they fulfill a proactive role in these strategies themselves, e.g. the veterinarians themselves search for a new owner when an animal is eligible for rehoming. This proactive attitude can be interpreted as another sign of the will of veterinarians to contribute to the decision-making process. Kondrup et al. (2016) report comparable findings regarding the willingness of veterinarians in small animal practices to provide veterinary care to animals of animal owners with limited finances. The care provided by Danish veterinarians often went beyond the legally required minimum to provide first aid to animals in need of immediate care [95]. Whereas the study of Kondrup et al. (2016) provides insight into the proactive role of veterinarians with regard to providing support to financially limited clients, our study contributes to this literature by documenting the proactive role veterinarians fulfill in several other strategies considered and used in EoL situations.

Besides the relevance of the stepwise approach and the strategies in relation to the final decision, these aspects seem to affect the way participants experience EoL situations. During the interviews, veterinarians shared several feelings related to the decision-making process and the final decision, including signs of relief, satisfaction, frustration, and incomprehension. Research by Morris (2012) and Matte et al. (2019) reported comparable findings, showing that the ability to facilitate a 'good death' from both the animal's and the owner's perspective affected the veterinarian's well-being. Moreover, the manner in which veterinarians could perform euthanasia and the way they could support the animal owner in an EoL situation influenced the veterinarian's feeling of professional accomplishment [1, 12]. Whether the feelings of participants affect the decision-making process itself would be of interest as future research.

Contributing to EoL decision-making processes is perceived as highly relevant to the participants. At the same time, this high relevance raises questions about the potential side effects of this strong desire to contribute. For veterinarians themselves, we can expect both positive and negative side effects. Depending on the alignment of the decision of the owner and the veterinarian, two potential *positive* side effects can be expected. If the owner's decision aligns with what the veterinarian had hoped for,

veterinarians may experience a feeling of satisfaction or accomplishment for the commitment they showed. If the owner's decision does not align with the outcome the veterinarian hoped for, they could feel positive regarding their contribution to the decision-making process to the best of their ability. Potential *negative* side effects that could occur include compassion fatigue [108], signs of stress, or even signs of burnout.

Likewise, positive and negative side effects on the animal owner may be seen as well depending on the owner's preference regarding the involvement of the veterinarian in EoL decision-making. Previous research found that owners have different preferences regarding the veterinarian's level of involvement [74, 89, 109]. In essence, three different forms of involvement are reported: 1) a paternalistic role of the veterinarian providing the owner with clear instructions about what should be done, 2) a role as an information provider respecting the autonomy of owners to make a decision themselves, and 3) a form where both the owner and the veterinarian are actively involved by exchanging information and preferences to reach a consensus on how to proceed. This form is known as shared decision-making. Depending on the owner's preference regarding the involvement of the veterinarian, owners may experience *positive* effects in terms of support and guidance in their decision-making process [74, 89, 109]. Potential *negative* side effects could include either a desire for more autonomy and less interference from the veterinarian or an unfulfilled desire for greater involvement of the veterinarian.

5. Conclusion

This study increased our understanding of the EoL decision-making process of veterinarians in small animal practices in the Netherlands. Moreover, it identified current strategies used by veterinarians as part of this process are identified. Providing clarity about EoL decision-making and the strategies that are currently used by members of the Dutch veterinary profession can support individual members of the profession to reflect on their decision-making process. If veterinarians know what strategies their peers are using to deal with EoL situations, this may help to reduce the stress they experience in such situations. In addition, veterinarians may find inspiration in the study results for a helpful and systematic approach. For the veterinary profession itself, the current results can be used as a starting point to describe best practices for EoL decision-making in small animal practice. These best practices could be used as an extension of the current European Veterinary Code of Conduct, to provide more guidance and support in terms of strategies that veterinarians can use to come to decisions in EoL situations. As our results focus on

veterinarians in small animal practice, future research among veterinarians working with animals kept on farms or horses could provide insight into the applicability of our findings beyond our scope. Moreover, this study only involved veterinarians in the Netherlands. Future cross-national studies or studies conducted in another country in a way that allows for comparison with the present study would help to learn more about the generalizability of the current results. Finally, a subsequent quantitative study, such as a questionnaire-based survey, could provide insight into the representative results relating to the themes presented in this paper.



Chapter 6

Summarising discussion

To answer the main question of this thesis, 'How does the reasoning of veterinarians affect their decision-making in complex end-of-life situations', the conceptual background of end-of-life discussions in veterinary practice was discussed first in Chapter 2. A prominent concept used in these discussions is the concept of euthanasia of animals. The concept is defined and applied in various ways in veterinary practice, indicating a diversity of views and conceptual unclarity among veterinarians and veterinary medicine students. Thus, the first key finding was that the perspectives of veterinarians differ at a conceptual level when reasoning and deciding in complex end-of-life situations. Based on this first key finding on a conceptual level, it was expected that diversity would also be identified at an empirical level.

In Chapter 3, sub-question 1 'What roles and responsibilities do veterinarians perceive when it comes to end-of-life situations?' was explored. On this level, duality was observed. When veterinarians were asked about their position in end-of-life situations, veterinarians indicated perceiving a combination of the seven identified roles. Role perception differed among individual veterinarians and was influenced by two contextual dimensions: 1) the stage within the decision-making process in which a veterinarian gets involved and 2) the manner of prioritizing the to-be-represented interests. Concurrently, some of the identified roles were shared by the majority of the interviewed veterinarians. Likewise, veterinarians shared perceiving a combination of the five identified responsibilities. The combination of responsibilities perceived by veterinarians was related to specific animal sectors. Simultaneously, several of the five identified responsibilities were perceived by most veterinarians. Based on these results, the second key finding was a duality in veterinarians' role perception and perceived responsibilities, i.e. some roles and responsibilities were shared among a larger group of veterinarians, whereas other roles and responsibilities were perceived by individual veterinarians. In summary, Chapter 3 showed the diversity identified on an empirical level in veterinarians' reasoning regarding their roles and responsibilities in end-of-life situations.

A comparable pattern was found exploring sub-question 2, 'Which considerations do veterinarians take into account in their decision-making process, and how do these considerations affect this process?', as described in Chapter 4. In the group of veterinarians, three frames were identified, illustrating three different perspectives on the interplay between medical and non-medical considerations in end-of-life situations. The frames focus on the human-defined function of the animal, the animal's prospect, or the duty of the veterinarian. The three identified frames exemplify the third key finding, i.e. within the group of veterinarians, parts of the group shared a vision of considerations that are taken into account in the decision-making process.

In conclusion, in Chapter 4 diversity on an empirical level in the decision-making of veterinarians is discussed. The empirical diversity described in Chapters 3 and 4 corresponds with the conceptual diversity identified in Chapter 2.

Lastly, sub-question 3, 'How do veterinarians approach end-of-life situations, and what does their decision-making process look like?' was addressed in Chapter 5. This chapter describes the fourth and final key finding: the decision-making process is a three-step approach. It starts with an assessment of the animal, followed by veterinarians' consideration of the position of the animal owner. Based on these initial steps, veterinarians decide to advise euthanasia of the animal or contemplate one or more of the six identified strategies that help to come to or alter a decision.

Given these four key findings from this thesis, it can be concluded that there is conceptual and empirical diversity in veterinarians' reasoning in terms of roles, responsibilities and considerations taken into account when discussing end-of-life situations. Similarly, diversity in end-of-life decision-making processes is noticed. These outcomes suggest that veterinarians' reasoning on the ending of animal lives affects their decision-making in complex end-of-life situations in veterinary practice.

This main conclusion about the diversity identified among veterinarians raises questions about consistency and alignment with veterinary professional ethics. How does the identified diversity relate to established contextual aspects, such as the legal framework? How can the diversity in reasoning and decision-making within a profession be evaluated? And what are the potential courses of action, depending on the evaluation of the observed diversity? In the following sections, these questions related to the identified diversity in individual professional ethics will be discussed in relation to existing normative frames including the law and professional codes as well as education.

1. Diversity in veterinarians' reasoning and decision-making in complex end-of-life situations

Diversity within a profession starts at the level of the individual professional. The abovementioned results indicate that individual veterinarians reason and decide differently in end-of-life situations, demonstrating they make use of a certain level of professional autonomy. Historically, professional autonomy is described as the right to "determine work activity on the basis of professional judgment". A profession is granted such a right by public acceptance based on the profession's claims regarding

its expertise and service orientation [110]. As a result, individual professionals have the freedom to make their own judgments [111].

At the same time, the freedom to make professional judgments is related to the ability of a professional to deal with ethical issues related to the profession [111]. Dealing with such ethical issues requires the professional to have moral competence and expertise. Such competence enables professionals to move beyond obeying an ethical code or code of professional conduct and to fulfil their obligation to make their own moral judgments rather than to “accept merely at the bidding of others” [112].

The level of professional autonomy entrusted to individual veterinarians is influenced by context-specific aspects, such as the applicable legal framework. Hereafter, an exploration will examine how three of these aspects - the availability of a legal framework, an established code of professional conduct, and a formal and accredited educational program - relate to an entrusted professional autonomy in animal end-of-life situations.

The applicable legal framework

Ending animal lives in veterinary practice is governed by several laws, including the Animal Act (the Dutch ‘Wet Dieren’ and ‘Besluit houders van dieren’), the Civil Code (the Dutch ‘Burgerlijk Wetboek’), and Council Regulation (EC) No. 1099/2009 on the protection of animals at the time of killing. These laws provide initial direction describing certain obligations for those involved in the ending of animal lives, including the obligations applicable to veterinarians.

When studying these laws and the determined obligations in detail, two aspects stand out. First, some law articles are formulated using a very ‘open’ character. For example, Council Regulation (EC) No. 1099/2009 on the protection of animals at the time of killing states that ‘killing and related operations shall only be carried out by persons with the appropriate level of competence to do so without causing the animals any avoidable pain, distress or suffering’ [113]. Accordingly, individuals possessing the necessary knowledge and skills, not limited to veterinarians, are allowed to end animal lives in adherence to the prescribed rules. As a result, veterinarians encounter end-of-life situations in which other persons, such as animal owners, end animal lives as well. Yet, the article remains open-ended in the sense that the particular type of knowledge and skills considered necessary are not specified.

In addition to the open formulation of the legal framework, a second observation is that the laws define obligations that may conflict in particular end-of-life situations.

For example, the Dutch Animal Act states that everyone should provide necessary care to an animal in need [114], which also applies to veterinarians. Concurrently, veterinarians have another obligation coming forward from the Dutch Civil Code [66]. The Civil Code implies that animals are regarded as property of an animal owner. Accordingly, the consent of the animal owner is required when decisions are taken regarding the care of an animal. In practice, veterinarians are therefore required to obtain the owner's consent for any veterinary care, as well as for the ending of an animal's life. The requirement to obtain an owner's consent also applies when an animal is in need [115]. Only in exceptional situations, jurisprudence shows that veterinarians can deviate from the requirement to obtain consent to end an animal's life [115]. In all other cases, veterinarians face a complex situation when they do not receive consent from an owner to provide veterinary care to an animal that is necessary from the veterinarian's perspective, e.g. ending an animal's life or providing (further) treatment.

The abovementioned presentation of the legal context shows that the legal framework provides initial direction to veterinarians on end-of-life situations. Despite the initial guidance, parts of the legal framework leave space for interpretation by veterinarians because of the open-ended formulation. Moreover, the laws define obligations that conflict in some end-of-life situations. In conclusion, the applicable legal framework is a legal ground for veterinarians' professional autonomy that, at the same time, requires their interpretation when considering the ending of animal lives.

The code of professional conduct

The code of professional conduct veterinarians adhere to in the Netherlands is the 'Code voor de Dierenarts' (hereafter: the code). The code follows the European Veterinary Code of Conduct [14]. In the code, veterinarians' professional responsibilities and standards for the practice of veterinary medicine are described [116]. An analysis of the Dutch code reveals one article dealing end-of-life situations. This article states that 'veterinarians have to provide emergency care/pain medication to the best of their abilities to an animal in need, also when an animal is living in the wild or when the animal owner is unknown. To avoid severe suffering without the prospect of improvement, it can be necessary to responsibly euthanize an animal. The animal owner is informed about the provided care if the owner is known' [116]. Thereby the code not only informs veterinarians about their legal obligation to provide necessary care to animals in need, as stated in the Dutch Animal Act, but also mentions the option to end an animal's life in cases where the animal's suffering is severe and there is no prospect of improvement.

When comparing the Dutch code to other codes of professional conduct, it is notable that other codes provide additional information relevant to end-of-life situations. For example, the Code of Professional Conduct for Veterinary Surgeons in the United Kingdom states that ‘Veterinary surgeons must make animal health and welfare their first consideration when attending to animals’ [13]. Although this article is generally applicable, it also guides how to proceed in end-of-life situations when the interests at stake conflict. A second example concerns the Canadian Veterinary Medical Association (CVMA) position statement on Euthanasia, stating that ‘On occasion, the opinions of a veterinarian and a caretaker differ with respect to the need to end an animal’s life. [...] If the veterinarian is refusing the request to euthanize, the veterinarian should consider the welfare consequences for the animal and provide alternatives to their client’ [117]. In this statement, CVMA provides additional insight into the follow-up of a refused request to end an animal’s life.

In conclusion, the established Dutch code of professional conduct forms the basis for professional autonomy by offering initial direction on navigating the broadly defined field of end-of-life in veterinary practice. Concurrently, the code requires veterinarians’ interpretation when dealing with end-of-life situations.

The educational program

One of the aims of the curriculum of the Faculty of Veterinary Medicine of Utrecht University is to raise awareness among veterinary medicine students regarding the relevance of end-of-life situations in their future profession. This objective is initiated on a theoretical level during the three-year bachelor program. For instance, students reflect on the need to end an animal’s life for their education as part of their anatomy classes. The further they progress in their educational program, the more students get ‘hands-on’ involvement in situations that focus on questions regarding the ending of animal lives. Especially during the three-year master program, emphasis is placed on enhancing awareness during clinical rotations and dedicated modules on ethics and communication. Notably, the training of students on end-of-life situations is primarily integrated indirectly into various courses. As a result, while veterinary graduates acknowledge the relevance of end-of-life situations, they do not necessarily feel fully prepared and equipped for this part of their profession. Comparable sentiments are described in various other countries [118].

For that reason, a master elective course on euthanasia of animals has been implemented since 2019. This course focuses on end-of-life situations in veterinary practice, discussing topics such as technical procedure, ethics, legal aspects, communication, grief management and emotional regulation. To prepare the students

best for practice, veterinary practitioners provide guest lectures in the course as well. During these lectures, veterinarians share their experiences, hurdles, and recommendations with future veterinarians. They also present students an end-of-life case from their own practice. The students delve into this case, exploring the aspects they should consider when facing such a situation in practice. This exercise helps them familiarise themselves with potential approaches to dealing with such cases. Students discuss their findings with the veterinarian as part of their final assessment. The primary goal of the course approach is to position students in their future profession by stimulating students to apply the knowledge and skills they obtained during their education on an end-of-life case from practice. The ultimate goal is to prepare and equip students to carry the responsibility of fulfilling their autonomous position in end-of-life situations in veterinary practice.

In summary, the identified diversity within the veterinary profession partly arises from the limited training that veterinary medicine students used to receive in handling complex end-of-life situations. The revised teaching aims at empowering veterinary graduates in their professional autonomy by providing them with more specific training on the ending of animal lives in veterinary practice.

2. Diversity: a strength or a strain?

Building upon the previous exploration, the next step is to analyse how the identified diversity in veterinarians' end-of-life reasoning and decision-making can be evaluated. When evaluating this diversity, an initial observation is that it indicates the effectiveness of professional autonomy in veterinary practice. If veterinarians lacked the autonomy to make judgments, uniformity would have been expected. Such uniformity would raise questions about the position of veterinarians as professionals, as professional autonomy is a fundamental condition to function as a professional [111].

Subsequently, the identified diversity can be evaluated on two levels: the level of individual veterinarians and the level of the veterinary profession. Starting at the level of the individual veterinarian, three observations can be derived when evaluating diversity. Firstly, the diversity shows that veterinarians use the professional autonomy entrusted to them, as they demonstrate the ability to navigate the dynamics surrounding end-of-life situations. Thereby, professional autonomy empowers veterinarians to make judgments based on their expertise and moral competence. From this point of view, diversity is a strength.

Secondly, the diversity suggests that there might be an overemphasis on the individual's judgment, as carrying the responsibility to make these judgments can lead to (moral) distress. This stress can be explained by the presumption that professionals have moral competence when faced with end-of-life situations in practice [111]. However, for veterinary graduates, meeting this expectation may be too demanding, as moral competence is a skill that professionals have to develop over time. Meeting this expectation and carrying this responsibility can be stressful for veterinary graduates.

Moreover, the stress may originate from the dynamics surrounding end-of-life situations. Several studies documented cases that point out these dynamics, such as situations where 'the best course of action' is not straightforward, cases with opposing stakeholder interests, or scenarios where veterinarians are pressured towards a decision other than their initial decision [16-20, 23, 119]. In such cases, making a professional judgment, even when a professional has developed moral competence, can be complicated and (morally) stressful for veterinarians [19]. Taking this into consideration, diversity can be a strain on individual veterinarians.

Lastly, diversity highlights mutual differences among veterinarians. Comparison of these differences by individual veterinarians themselves or by other stakeholders, e.g. animal owners, could potentially result in insecurity or stress. In consistence with the second observation, diversity can be viewed as a strain from this perspective.

In summary, the evaluation of the identified diversity on the level of individual veterinarians reveals a duality. On the one hand, diversity shows a strength, as veterinarians are empowered by professional autonomy to make professional judgements. On the other hand, diversity shows a strain as making these judgements can lead to (moral) stress.

Evaluating the identified diversity at the level of the veterinary profession, it is relevant to highlight that professional autonomy is grounded on public trust. Even though trust has been established, society may still question the consistency of certain actions of a profession. The diversity shows that the risk of inconsistency may affect society's trust: *'professionalism requires professionals to be worthy of that trust, to maintain confidentiality and not use their knowledge for evil purposes'* [120]. In an extreme case, this could result in a loss of trust and limited self-regulation of a profession, as Rollin stated: *'You regulate yourselves the way we would regulate you if we understood what you do, which we don't. But we will know if you don't self-regulate properly and then we will regulate you, despite our lack of understanding'* [121].

In conclusion, evaluating the identified diversity in veterinarians' end-of-life reasoning and decision-making shows a duality of strength and strains on the level of individual veterinarians. On the level of the veterinary profession, the diversity shows a potential risk to the trust-based position of the veterinary profession within society. These observations illustrate the importance of striving for the right balance between autonomy and trust, consistency and the dynamics within end-of-life situations.

3. Envisioning future courses of action: embrace empowerment

In light of the preceding discussion, the necessity to explore courses of action aiming to contribute to the right balance between autonomy and trust, consistency and the dynamics of end-of-life situations became evident. Achieving this goal involves directing courses of action toward two main objectives: 1) mitigating the identified strains and 2) optimizing the previously pinpointed strength. Ultimately, the courses of action help bring veterinarians to the right position such that they can work their way towards the required balance.

Potential courses of action will be explored using the three previously discussed context-specific aspects: a formal and accredited educational program, an established code of professional conduct, and the availability of a legal framework. The order of discussing these aspects is derived from insights obtained during the interviews underlying much of the research presented above. These interviews revealed high engagement of participating veterinarians with the subject and indicated a strong willingness to share insights. Their willingness and engagement highlight the potential to enhance veterinarian empowerment by starting as close to the veterinarian as possible. Hence, the exploration of potential courses of action will start with the educational program, followed by the code of professional conduct, and will finish with the legal framework.

The educational program

Since the implementation of the elective course on euthanasia of animals in 2019, there has been growing attention to the subject of ending animal lives within the curriculum of veterinarians at the Faculty of Veterinary Medicine of Utrecht University. However, there is much more potential within the educational program to enhance its contributions significantly to this subject [2, 16, 122-124]. In the subsequent paragraphs, three examples of courses of action regarding the educational program will be described.

Firstly, prioritizing direct attention rather than indirect attention on the subject of the ending of animal lives aids in students' preparation for this aspect of their profession. In practice, this approach would entail providing training early on in the curriculum. The training should focus on knowledge and skills relevant to handling end-of-life decisions, such as the legal aspects, ethics, communication, and emotional regulation [2]. In addition to these training modules, reflection sessions [42] should be organized throughout the curriculum to follow up on cases encountered by students during their education. This structure ensures the preservation of the courses' learning objectives, while the reflection sessions dedicate specific attention to the ending of animal lives and how veterinarians should deal with these situations.

Secondly, by paying more attention to veterinary ethics [2, 105], specifically to the subjects of 'professional autonomy' and 'moral competence', when discussing end-of-life, students can be introduced to these topics before they have to carry those responsibilities into practice. Moreover, this devoted attention to these subjects could support students in developing moral competence while still in a safe learning environment.

Lastly, extensive training on 'end-of-life in veterinary practice' and 'professional autonomy of veterinarians' could be offered outside the curriculum, e.g. as part of post-graduate education [19]. Within this training, fostering discussion and reflection among veterinarians can raise awareness not only about their perspectives and beliefs on these topics but also about the potential diversity of viewpoints held by others. This approach aims to develop what is known as 'normative professionalism' [125], enabling (future) professionals to better understand how their own beliefs and values shape their professional perspective on various subjects, like decisions on the ending of animal lives.

Alongside these three proposed courses of action, research into the development of professional autonomy and moral competence among veterinarians could further contribute to enhancing the educational program. For instance, a longitudinal study that follows veterinary medicine students during and for several years after their graduation stands as a potential research method.

The code of professional conduct

Article 2.3 of the Dutch code provides information on end-of-life situations, referring to the veterinarians' legal duty to provide necessary care to animals in need and mentioning the option to perform euthanasia when an animal is suffering severely without the prospect of improvement. Although the code provides this information on end-of-life situations, further in-depth recommendations are lacking. Recommendations that could provide supporting guidance to veterinarians include, for example, statements on how the interests of the animal and the animal owner should be considered when these conflict or what may be reasonably expected from veterinarians when an animal owner does not consent to provide necessary care. Therefore, the code may provide insufficient guidance to veterinarians in end-of-life situations [126].

From this point of view, it would be valuable to investigate what in-depth recommendations on end-of-life would provide additional guidance to veterinarians. As a resource, other codes of professional conduct, such as the European Veterinary Code of Conduct and the Code of Professional Conduct for Veterinary Surgeons of the Royal College of Veterinary Surgeons, could be analysed to inventory how those address the subject of end-of-life. The profession could use this inventory as background information when exploring additional in-depth recommendations, potentially leading to a code revision.

Since the code might not cover all relevant recommendations, exploring extensions to the code could be considered [2]. An example of such an extension is designing decision-support tools [57, 89]. Decision-support tools can be used to facilitate and guide the decision-making process, by structuring relevant questions on, for example, ethical or veterinary-medical issues that veterinarians may come across during this process [89]. Since 2017, two decision support tools, focussing on end-of-life situations in pigs, have been developed in the Netherlands by a collaborative effort of veterinarians, scientists, the Royal Dutch Veterinary Association (KNMvD), and pig industry associations [127]. Comparable decision-support tools have recently been developed for sheep and rabbits [127]. To improve the impact of decision trees and comparable decision-support tools beyond veterinarians, it is preferable to introduce these tools as part of the educational program [2].

Following this, investigating the efficacy in terms of usability of the developed decision-support tools would provide insight into further enhancements. The obtained insights could be used when the development of additional tools for other species is considered.

Beside extending the code in written form, non-written examples could be considered as well. The organisation of dialogues within the profession on end-of-life-related questions would be an example that is not in non-written form. These dialogues could fulfil a dual function. Firstly, these dialogues could contribute to exchanging best practices. The best practices discussed could be used as input for ethical frameworks or decision-support tools [89]. Secondly, experiences with specific situations could be exchanged during these dialogues. Sharing positive experiences alongside negative ones can foster mutual support among veterinarians [128].

The applicable legal framework

The legal framework governing the ending of animal lives in veterinary practice outlines both the legal obligations of veterinarians and offers direction on what may be expected of veterinarians in end-of-life situations. Despite the provided guidance, veterinarians are left with room for interpretation as a consequence of the open-ended formulation of some parts of the legal framework. Moreover, veterinarians may face conflicting legal obligations in end-of-life situations.

From this point of view, a first valuable step would be to achieve more clarity about the legal framework. In achieving this clarity, existing jurisprudence could be valuable as jurisprudence provides insight into how the authorities interpret the laws and legal obligations of veterinarians. Sharing jurisprudence on end-of-life situations within the profession can help individual veterinarians better interpret their legal obligations.

Additionally, the legal framework could be revised to establish clarity. Potential revisions should preferably focus on two aspects: 1) clarifying or 2) updating the conditions in end-of-life situations. An example of the former is clarifying what knowledge and skills are necessary to prove competency. An example of the latter is updating the overview of methods permitted (for stunning and) to end an animal's life. These kinds of revisions aim to support and guide competent persons in end-of-life situations. Revisions should preferably not aim to limit the decision-making authority of professionals, but rather empower their decision-making process by clarifying the conditions.

In conclusion, the preceding sections have addressed several proposed courses of action within the educational program, the code of professional conduct, and the legal framework. These courses of action are aimed at bringing veterinarians into the right position so that they can work their way towards the right balance between autonomy and consistency, trust and the dynamics of end-of-life situations.

4. Future research

As the papers underlying this thesis are the first articles on the position of the veterinarian regarding the ending of animal lives in veterinary practice within the Netherlands, the potential is seen for additional research within this field of veterinary medical ethics. In addition to the abovementioned directions for future work in the educational program and as part of the further development of the code of professional conduct, the generalizability of the current findings could be improved based on follow-up studies.

To increase the generalizability of the current results, there are three promising directions for future research. By exploring these directions new insights into the impact of contextual aspects on the reasoning and decision-making of veterinarians in complex end-of-life situations can be obtained.

First of all, generalizability could be broadened within the Dutch context. As mentioned in Chapter 1, veterinarians deal with complex end-of-life in various parts of veterinary practice. Therefore, it would be interesting to research other areas of veterinary practice, such as equine health care or laboratory animal health care. These two areas are of interest, as the moral position of animals may differ and the legal framework is different in the context of laboratory animal health care.

Furthermore, the scope of research could be expanded to investigate how the current results are applicable outside the Dutch context. By conducting comparable studies within other countries, cross-country differences can be researched. As part of such studies, it is relevant to include country-specific information that shapes the context of the ending of animal lives in veterinary practice. These studies could provide insight into the impact of the applicable legal framework, the code or oath that veterinarians adhere to, the institutional set-up of veterinary practice, and the educational program.

Lastly, the research could be expanded by encompassing the perspectives of additional stakeholders in end-of-life situations. While the current thesis primarily focuses on the perspectives of veterinarians, insights from other involved parties would significantly enrich the current research. Notably, animal owners emerge as the most apparent stakeholder because of their direct involvement in end-of-life situations. Moreover, researching the perspectives of other stakeholders, such as veterinary technicians and animal caretakers in animal shelters, would offer new insights into the field of research.

5. Conclusion

In light of the preceding discussion, it can be concluded that there is a clear case for veterinarians' professional autonomy in complex end-of-life situations. The entrusted professional autonomy empowers veterinarians in their decision-making but also introduces challenges such as (moral) distress among individual veterinarians and a potential risk to the trust-based position of the veterinary profession within society. Recognizing this dual impact of professional autonomy, it is important to strive for the right balance between autonomy and trust, consistency and the dynamics within end-of-life situations using the proposed courses of action. These courses of action aim to empower veterinary professionals by effectively mitigating the identified pitfalls while harnessing the positive aspects of professional autonomy.

It is my hope that the results of this thesis brought openness to discuss new insights into the perspectives of veterinarians in this complex part of their profession. Above all, it shows the necessity to follow up on the proposed courses of action to empower veterinarians to navigate the complexities of ending animal lives.



Nederlandse
wetenschappelijke samenvatting

Om de hoofdvraag van deze thesis, 'Hoe beïnvloedt het redeneren van dierenartsen hun besluitvorming in complexe situaties rondom het levenseinde van dieren', te beantwoorden, werd in hoofdstuk 2 de conceptuele achtergrond van de discussies over het levenseinde van dieren in de diergeneeskunde beschreven. Een concept dat in deze discussies terugkerend is is het concept van euthanasie van dieren. Het concept wordt op verschillende manieren gedefinieerd en toegepast in de diergeneeskunde, wat enerzijds wijst op een diversiteit aan standpunten ten aanzien van dit concept en anderzijds duidt op conceptuele onduidelijkheden onder dierenartsen en studenten diergeneeskunde. Op basis van de conceptuele analyse in hoofdstuk 2 was een eerste belangrijke bevinding dat de perspectieven van dierenartsen op conceptueel niveau van elkaar verschillen wanneer het gaat over hoe ze redeneren en beslissen in complexe levenseinde situaties. Op basis van deze eerste belangrijke bevinding op conceptueel niveau werd verwacht dat er ook diversiteit zou worden geïdentificeerd op empirisch niveau.

In hoofdstuk 3 werd deelvraag 1 'Welke rollen en verantwoordelijkheden zien dierenartsen voor zichzelf als het gaat om levenseinde situaties bij dieren?' onderzocht. Op dit niveau werd dualiteit waargenomen. Wanneer dierenartsen gevraagd werd naar hun positie in deze situaties, gaven ze aan een combinatie van de zeven geïdentificeerde rollen voor zichzelf te zien. De rolperceptie verschilde tussen individuele dierenartsen en werd beïnvloed door twee contextuele dimensies: 1) het stadium in het besluitvormingsproces waarin een dierenarts betrokken raakt, en 2) de manier waarop de belangen die vertegenwoordigd moeten worden geprioriteerd worden. Tegelijkertijd werden enkele van de geïdentificeerde rollen door een meerderheid van de geïnterviewde dierenartsen beschreven. Op een vergelijkbare manier gaven dierenartsen aan een combinatie van de vijf geïdentificeerde verantwoordelijkheden voor zichzelf te zien, wanneer het om levenseinde situaties gaat. De combinatie van verantwoordelijkheden die door dierenartsen werd beschreven, hing samen met specifieke diersectoren. Tegelijkertijd werden verschillende van de vijf geïdentificeerde verantwoordelijkheden door de meeste dierenartsen beschreven. Deze resultaten leidde tot de tweede belangrijke bevinding: er wordt dualiteit vastgesteld in de rolperceptie en waargenomen verantwoordelijkheden onder dierenartsen in levenseinde situaties. Deze dualiteit betekent dat sommige rollen en verantwoordelijkheden werden gedeeld door een grotere groep dierenartsen, terwijl andere rollen en verantwoordelijkheden werden waargenomen door individuele dierenartsen. Samengevat liet hoofdstuk 3 zien dat op empirisch niveau diversiteit werd geïdentificeerd in het redeneren van dierenartsen over hun rollen en verantwoordelijkheden in levenseinde situaties bij dieren.

Een vergelijkbaar patroon werd gevonden bij het verkennen van deelvraag 2, 'Welke overwegingen nemen dierenartsen mee in het besluitvormingsproces in levenseinde situaties bij dieren, en hoe beïnvloeden deze overwegingen dit proces?', zoals beschreven in hoofdstuk 4. In de groep dierenartsen werden drie kaders geïdentificeerd, die drie verschillende perspectieven weergeven ten aanzien van de wisselwerking tussen medische en niet-medische overwegingen in levenseinde situaties. De kaders richten zich op: 1) de door de mens gedefinieerde functie van het dier, 2) de vooruitzichten van het dier, of 3) de plicht(en) van de dierenarts en de diereigenaar. De drie geïdentificeerde kaders zijn een weergave van de derde belangrijke bevinding, namelijk dat binnen de groep dierenartsen delen van deze groep een visie deelden ten aanzien van de overwegingen die meegenomen worden in het besluitvormingsproces. Hoofdstuk 4 gaf daarmee de diversiteit op empirisch niveau in de besluitvorming van dierenartsen weer. De empirische diversiteit zoals beschreven in hoofdstukken 3 en 4 komt overeen met de conceptuele diversiteit die in hoofdstuk 2 is vastgesteld.

Ten slotte werd deelvraag 3, 'Hoe benaderen dierenartsen levenseinde situaties van dieren, en hoe ziet het besluitvormingsproces eruit?', behandeld in hoofdstuk 5. Dit hoofdstuk beschrijft de vierde en laatste belangrijke bevinding: het besluitvormingsproces wordt benaderd in drie stappen. Het proces start met een beoordeling van het dier. Volgend op deze eerste stap geven dierenartsen aan inzicht te willen verkrijgen in de positie van de diereigenaar ten aanzien van de situatie. Op basis van deze twee stappen besluiten dierenartsen of om euthanasie van het dier te adviseren of overwegen ze één of meer van de zes geïdentificeerde strategieën die helpen bij het nemen of veranderen van een beslissing.

Op basis van de vier hoofdbevindingen uit deze thesis kan worden geconcludeerd dat er conceptuele en empirische diversiteit is in het redeneren van dierenartsen wat betreft rollen, verantwoordelijkheden en overwegingen die meegenomen worden wanneer zij spreken over levenseinde situaties. Op vergelijkbare wijze wordt diversiteit waargenomen in de besluitvormingsprocessen. Deze resultaten suggereren dat het redeneren van dierenartsen over het beëindigen van het leven van een dier hun besluitvorming beïnvloedt wanneer we kijken naar complexe levenseinde situaties binnen de dierenartsenpraktijk.

Deze conclusie over de geïdentificeerde diversiteit onder dierenartsen roept vragen op over consistentie en navolgbaarheid van de ethiek van dierenartsen als professionals. Hoe verhoudt de geïdentificeerde diversiteit zich tot bestaande contextuele aspecten, zoals het wettelijk kader? Hoe kan de diversiteit in redenering

en besluitvorming binnen een beroepsgroep worden geëvalueerd? En wat zijn mogelijke vervolgstappen, afhankelijk van de evaluatie van de waargenomen diversiteit? In de volgende paragrafen zullen deze vragen met betrekking tot de geïdentificeerde diversiteit worden bediscussieerd in relatie tot eerdergenoemde bestaande normatieve kaders, zijnde het wettelijk kader, de professionele gedragscodes, evenals het onderwijs.

1. Diversiteit in het redeneren en de besluitvorming van dierenartsen in complexe levenseinde situaties bij dieren

Diversiteit binnen een beroepsgroep begint op het niveau van de individuele professional. De hierboven genoemde resultaten geven aan dat individuele dierenartsen verschillend redeneren en beslissen in situaties waarbij het levenseinde van dieren ter sprake komt, wat illustreert dat zij gebruik maken van een bepaald mate van professionele autonomie. Historisch gezien wordt professionele autonomie beschreven als het recht om "werkzaamheden uit te voeren op basis van een professioneel oordeel". Een beroepsgroep krijgt een dergelijk recht door publieke acceptatie op basis van de claims van de beroepsgroep met betrekking tot expertise en dienstverlening [110]. Als gevolg daarvan hebben individuele professionals de vrijheid om hun eigen oordeel te vellen [111].

Tegelijkertijd hangt de vrijheid om professionele oordelen te vellen samen met het vermogen van een professional om om te gaan met ethische kwesties die verband houden met het beroep [111]. Het omgaan met dergelijke ethische kwesties vereist dat de professional morele competentie en expertise heeft. Deze competentie stelt professionals in staat verder te gaan dan te gehoorzamen aan een ethische code of beroeps gedragscode en hun verplichting na te komen om hun eigen morele oordelen te vellen in plaats van "alleen het bevel van anderen te accepteren" [112].

Het niveau van professionele autonomie dat aan individuele dierenartsen wordt toevertrouwd, wordt beïnvloed door context specifieke aspecten, zoals het geldende wettelijke kader. In de hierna volgende paragrafen zal onderzocht worden hoe drie van deze context specifieke aspecten - de beschikbaarheid van een wettelijk kader, een vastgestelde beroeps gedragscode en een formeel en geaccrediteerd onderwijsprogramma - verband houden met een toevertrouwde professionele autonomie in situaties rondom het levenseinde van dieren.

Het geldende wettelijk kader

Het beëindigen van dierenlevens wordt in Nederland gereguleerd door verschillende wetten, waaronder de Wet dieren, het Besluit houders van dieren, en Verordening (EG) nr. 1099/2009 inzake de bescherming van dieren bij het doden. Deze wetten geven in eerste instantie richting door bepaalde verplichtingen te beschrijven voor degenen die betrokken zijn bij het beëindigen van dierenlevens, inclusief de verplichtingen die van toepassing zijn op dierenartsen.

Bij het bestuderen van deze wetten en de daarin vastgestelde regels vallen twee aspecten op. Ten eerste heeft de formulering van sommige wetsartikelen een zeer 'open' karakter. Zo stelt Verordening (EG) nr. 1099/2009 inzake de bescherming van dieren bij het doden dat 'het doden en daaraan verband houdende activiteiten mogen uitsluitend worden uitgevoerd door personeel dat over het passende vakbekwaamheidsniveau beschikt om dit te kunnen doen zonder enige vermijdbare vorm van pijn, stress of lijden bij dieren te veroorzaken' [113]. Dienovereenkomstig mogen personen die over de vereiste kennis en vaardigheden beschikken dierenlevens beëindigen in overeenstemming met de voorgeschreven regels. Omdat ook niet-dierenartsen over de vereiste kennis en vaardigheden kunnen beschikken, komen er situaties voor waarin ook andere personen dan dierenartsen, zoals diereigenaren, dierenlevens beëindigen. Over welke kennis en vaardigheden deze personen dienen te beschikken blijft echter ongespecificeerd in de open formulering van dit wetsartikel.

Naast de open formulering van een aantal wetsartikelen is een tweede observatie dat de wetten verplichtingen definiëren die in bepaalde situaties met elkaar conflicteren. Als voorbeeld: de Wet dieren stelt dat iedereen noodzakelijke zorg aan een dier in nood dient te verlenen [114]. Deze verplichting geldt ook voor dierenartsen. Tegelijkertijd hebben dierenartsen een andere verplichting die voortvloeit uit het Nederlandse Burgerlijk Wetboek [66]. Het Burgerlijk Wetboek beschrijft ten aanzien van dieren: 'dieren zijn geen zaken' en 'bepalingen met betrekking tot zaken zijn op dieren van toepassing, met in achtneming van de op wettelijke voorschriften en regels van ongeschreven recht gegronde beperkingen, verplichtingen en rechtsbeginselen, alsmede de openbare orde en de goede zeden'. Hieruit volgt dat de toestemming van de diereigenaar vereist is wanneer beslissingen worden genomen met betrekking tot de zorg voor een dier. In de praktijk moeten dierenartsen dus de toestemming van de eigenaar verkrijgen voor elke vorm van veterinaire zorg, evenals voor het beëindigen van het leven van een dier. De eis om toestemming van de eigenaar te verkrijgen geldt ook wanneer een dier in nood verkeert [115]. Alleen in uitzonderlijke situaties blijkt uit jurisprudentie dat dierenartsen kunnen

afwijken van deze wettelijke eis [115]. In alle andere gevallen staan dierenartsen voor een complexe situatie wanneer ze geen toestemming van een eigenaar krijgen om veterinaire zorg te verlenen die vanuit het perspectief van de dierenarts noodzakelijk is, bijvoorbeeld het beëindigen van het leven van een dier of het bieden van (verdere) behandeling.

De beschreven weergave van het wettelijk kader laat zien dat de wetgeving dierenartsen richting geeft in situaties waarbij het levenseinde van dieren ter sprake komt. Ook biedt het wettelijk kader een juridische basis voor de professionele autonomie van dierenartsen. Dit enerzijds doordat de wet ruimte laat voor een eigen interpretatie van bepaalde regels en anderzijds doordat de wet een zelfstandige omgang van dierenartsen vereist met potentieel conflicterende verplichten voortkomend uit de vastgestelde regels ten aanzien van (het doden van) dieren.

De gedragscode voor professionals

De gedragscode waaraan dierenartsen in Nederland zich houden is de 'Code voor de Dierenarts' (hierna: de code). De code volgt uit de Europese Gedragscode voor Dierenartsen [14]. In de code worden de professionele verantwoordelijkheden van dierenartsen en normen voor de uitoefening van de diergeneeskunde beschreven [116]. Een analyse van de Nederlandse code onthult één artikel dat betrekking heeft op situaties aan het einde van het leven van dieren. In dit artikel staat dat 'Dierenartsen verlenen naar beste vermogen eerste hulp en/of pijnbestrijding aan dieren in nood. Dit geldt ook voor wilde dieren of dieren waarvan de eigenaar niet bekend is. Om ernstig en uitzichtloos lijden te voorkomen kan het noodzakelijk zijn het dier op verantwoorde wijze te euthanaseren. Van dergelijke spoedeisende veterinaire hulp wordt per omgaande mededeling gedaan aan de eigenaar en/of houder van het dier, voor zover deze bekend is' [116]. De code beschrijft in dit artikel niet alleen de wettelijke verplichting van dierenartsen om noodzakelijke zorg te bieden aan dieren in nood, zoals vermeld in de Wet Dieren, maar vermeldt ook de mogelijkheid om een dierenleven te beëindigen in gevallen waarin het lijden van het dier ernstig is en er geen uitzicht is op verbetering.

Wanneer de Nederlandse code vergeleken wordt met gedragscodes voor veterinaire beroepsgroepen buiten Nederland, valt op dat andere codes aanvullende informatie verstrekken die relevant is voor situaties waarbij het levenseinde van dieren ter sprake komt. Zo vermeldt de Code of Professional Conduct for Veterinary Surgeons uit het Verenigd Koninkrijk dat 'Dierenartsen moeten diergezondheid en -welzijn primair in overweging nemen wanneer zij dieren behandelen' [13]. Hoewel dit artikel in het algemeen zin van toepassing is binnen de diergeneeskunde, geeft het ook richting

voor de belangenafweging van de dierenarts in situaties waarbij het levenseinde van een dier ter sprake komt. Een tweede voorbeeld betreft de standpunt van de Canadian Veterinary Medical Association (CVMA) over Euthanasie, waarin staat dat 'Soms verschillen de meningen van een dierenarts en een dierversorger met betrekking tot de noodzaak om een dierenleven te beëindigen. [...] Als de dierenarts het verzoek tot euthanasie weigert, moet de dierenarts rekening houden met de welzijnsgevolgen voor het dier en alternatieven bieden aan hun cliënt' [117]. In dit standpunt geeft CVMA aanvullend inzicht in de benodigde opvolging vanuit een dierenarts na een door de dierenarts geweigerd euthanasieverzoek.

Samenvattend vormt de Nederlandse gedragscode voor dierenartsen de basis voor professionele autonomie door richting te aan te geven hoe dierenartsen zich kunnen begeven in het breed gedefinieerde terrein van situaties waarbij het levenseinde van dieren ter sprake komt in de veterinaire praktijk. Tegelijkertijd vereist de code een eigen interpretatie van dierenartsen in deze situaties.

Het onderwijsprogramma

Een van de doelstellingen van het curriculum van de Faculteit Diergeneeskunde van de Universiteit Utrecht is om bewustwording te creëren bij studenten diergeneeskunde over de relevantie vraagstukken omtrent het doden van dieren in hun toekomstige professie. Hiermee wordt op een theoretisch niveau begonnen tijdens de driejarige bachelor. Zo reflecteren studenten bijvoorbeeld op het feit dat, in het kader van hun opleiding, het leven van een dier beëindigd wordt ten behoeve van de anatomielessen. Naarmate de studenten verder in hun opleiding komen, worden de studenten steeds meer betrokken bij situaties waarbij het beëindigen van een dierenleven ter sprake komt. Vooral tijdens klinische stages en speciale modules over ethiek en communicatie in de driejarige master wordt het bewustzijn over deze vraagstukken vergroot. Het trainen van studenten in het omgaan met deze situaties wordt met name 'indirect' geïntegreerd in verschillende vakken. Als gevolg hiervan geven afgestudeerde dierenartsen aan weliswaar de relevantie van deze situaties te zien, maar voelen zij zich niet per se volledig voorbereid op dit aspect van hun beroep. Vergelijkbare ervaringen worden beschreven in verschillende andere landen [118].

Om die reden is er in 2019 een keuzevak euthanasie van dieren ingevoerd in het masterprogramma. Het vak richt zich op situaties aan het einde van het leven van dieren in de dierenartsenpraktijk en gaat in op onderwerpen zoals de technische procedures, ethiek, juridische aspecten, communicatie, rouwverwerking en emotie regulatie. Om de studenten zo goed mogelijk voor te bereiden op de praktijk, geven ook practici gastcolleges in de cursus. Tijdens deze colleges delen deze dierenartsen

hun eigen ervaringen, obstakels en eventuele aanbevelingen. Ze presenteren ook een casus uit hun eigen praktijk aan de studenten. De studenten verdiepen zich in deze casus en onderzoeken de aspecten waarmee ze rekening moeten houden wanneer ze met een dergelijke situatie in de praktijk worden geconfronteerd. Deze oefening helpt de studenten vertrouwd te raken met verschillende manieren om met dergelijke situaties om te gaan. Als onderdeel van de eindbeoordeling, presenteren de studenten hun bevindingen aan de dierenarts. Het primaire doel van de cursus is om studenten in hun toekomstige beroep te positioneren door hen te stimuleren de kennis en vaardigheden die ze hebben opgedaan tijdens hun opleiding toe te passen op een situatie uit de praktijk. Het uiteindelijke doel is om studenten zo goed mogelijk voor te bereiden op de verantwoordelijkheid die hoort bij het vervullen van hun autonome positie wanneer het gaat om situaties aan het einde van het leven van dieren in de praktijk.

Samengevat ontstaat de geconstateerde diversiteit binnen de veterinaire beroepsgroep in Nederland ten delen door de beperkte training die studenten diergeneeskunde voorheen ontvingen in het omgaan met complexe situaties aan het einde van het leven van dieren. Het herziene onderwijs heeft als doel om afgestudeerde dierenartsen te versterken in hun professionele autonomie door hen specifiekere training te bieden over het beëindigen van dierenlevens in de dierenartsenpraktijk.

2. Diversiteit: een kracht of een belasting?

Voortbouwend op voorgaande paragrafen is de volgende stap om te analyseren hoe de geïdentificeerde diversiteit in het redeneren en de besluitvorming van dierenartsen kan worden geëvalueerd. Bij het evalueren van deze diversiteit is een eerste observatie dat de gevonden diversiteit de effectiviteit aangeeft van professionele autonomie in de veterinaire praktijk. Als dierenartsen niet zouden beschikken over deze autonomie, zou een uniform beeld verwacht worden. Een dergelijke uniformiteit zou vragen oproepen over de positie van dierenartsen als professionals, aangezien professionele autonomie een fundamentele voorwaarde is om als professional te functioneren [111].

Vervolgens kan de geïdentificeerde diversiteit op twee niveaus worden geëvalueerd: op het niveau van individuele dierenarts en het niveau van het veterinaire beroepsgroep. Op het niveau van de individuele dierenarts kunnen drie observaties worden gedaan bij het evalueren van de diversiteit. Ten eerste toont de diversiteit

aan dat dierenartsen gebruik maken van de aan hen toevertrouwde professionele autonomie, aangezien ze laten zien dat ze in staat zijn om om te gaan met de dynamiek rondom situaties aan het einde van het leven. Zo stelt professionele autonomie dierenartsen in staat om oordelen te vellen op basis van hun expertise en morele competentie. Vanuit dit perspectief is diversiteit een kracht.

Ten tweede suggereert de diversiteit dat er mogelijk een te grote nadruk ligt op het oordeel van het individu, aangezien het dragen van de verantwoordelijkheid om deze oordelen te vellen tot (morele) stress kan leiden. Deze stress kan worden verklaard door de veronderstelling dat professionals morele competentie hebben wanneer ze in de praktijk worden geconfronteerd met situaties aan het einde van het leven [111]. Voor afgestudeerde dierenartsen kan het echter te veeleisend zijn om aan deze verwachting te voldoen, aangezien morele competentie een vaardigheid is die professionals in de loop van de tijd moeten ontwikkelen. Het voldoen aan deze verwachting en het dragen van deze verantwoordelijkheid kan stressvol zijn voor afgestudeerde dierenartsen.

Bovendien kan de stress voortkomen uit de dynamiek rondom situaties waarbij het levenseinde van dieren ter sprake komt. Verschillende studies hebben situaties beschreven die verwijzen naar deze dynamiek, zoals situaties waarin 'de beste handelwijze' niet zo eenduidig is, gevallen met tegenstrijdige belangen van belanghebbenden, of scenario's waarin dierenartsen onder druk worden gezet om een andere beslissing te nemen dan hun eigen beslissing zou zijn [16-20, 23, 119]. In dergelijke gevallen kan het maken van een professioneel oordeel, zelfs wanneer een professional morele competentie heeft ontwikkeld, gecompliceerd zijn en (moreel) stressvol zijn [19]. Rekening houdend met dit alles, kan diversiteit een belasting vormen voor individuele dierenartsen.

Ten slotte benadrukt diversiteit de onderlinge verschillen tussen dierenartsen. Het vergelijken van deze verschillen door individuele dierenartsen zelf of door andere belanghebbenden, zoals diereigenaren, zou mogelijk tot onzekerheid of stress kunnen leiden. In overeenstemming met de tweede observatie kan diversiteit vanuit dit perspectief worden beschouwd als een belasting voor individuele dierenartsen.

Samenvattend onthult de evaluatie van de geïdentificeerde diversiteit op het niveau van individuele dierenartsen een dualiteit. Aan de ene kant toont diversiteit een kracht, aangezien dierenartsen op basis van professionele autonomie professionele oordelen mogen vellen. Aan de andere kant toont diversiteit een belasting aan, aangezien het vellen van deze oordelen tot (morele) stress kan leiden.

Bij de evaluatie van de geïdentificeerde diversiteit op het niveau van de veterinaire beroepsgroep is het relevant om te benadrukken dat professionele autonomie gebaseerd is op het vertrouwen van de samenleving. Ook als het vertrouwen eenmaal gevestigd is, kan de samenleving vragen stellen over de consistentie van bepaalde acties van een beroepsgroep. De diversiteit legt het risico op inconsistentie bloot dat het vertrouwen van de samenleving in de beroepsgroep mogelijk kan beïnvloeden: 'professionalisme vereist dat professionals dat vertrouwen waardig zijn, dat ze hier verantwoordelijk mee omgaan en hun kennis niet voor kwade doeleinden gebruiken' [120]. In een extreem geval kunnen vragen over consistentie leiden tot een verlies van vertrouwen en een beperkte zelfregulering van een beroepsgroep, zoals Rollin beschreef: 'Jullie reguleren jezelf zoals wij jullie zouden reguleren als we zouden begrijpen wat jullie doen, wat we niet doen. Maar we zullen het weten als jullie jezelf niet goed reguleren en dan zullen wij jullie reguleren, ondanks ons gebrek aan begrip' [121].

Samengevat toont bovenstaande evaluatie van de geïdentificeerde diversiteit een dualiteit aan op het niveau van individuele dierenartsen. Op het niveau van de veterinaire beroepsgroep toont de diversiteit een potentieel risico aan voor de op vertrouwen gebaseerde positie van de veterinaire beroepsgroep binnen de samenleving. Deze observaties illustreren het belang van streven naar de juiste balans tussen autonomie en vertrouwen, consistentie en de dynamiek rondom situaties waarbij het levenseinde van dieren ter sprake komt.

3. Het visualiseren van toekomstige handelingsperspectieven: omarm empowerment

Gezien de voorgaande discussie wordt de noodzaak duidelijk om handelingsperspectieven te verkennen die bijdragen aan de juiste balans tussen autonomie en vertrouwen, consistentie en de dynamiek rondom situaties waarbij het levenseinde van dieren ter sprake komt. Om dit doel te bereiken richten de handelingsperspectieven zich op twee hoofdpunten: 1) het verminderen van de geïdentificeerde belastingen en 2) het optimaliseren van de eerder vastgestelde kracht. Uiteindelijk helpen de handelingsperspectieven om dierenartsen zodanig te positioneren dat ze toe kunnen werken naar de beschreven balans.

Potentiële handelingsperspectieven zullen worden verkend aan de hand van de drie eerder besproken context specifieke aspecten: een formeel en geaccrediteerd onderwijsprogramma, een vastgestelde gedragscode voor professionals en de

beschikbaarheid van een wettelijk kader. De volgorde waarin deze aspecten worden besproken is afgeleid van inzichten die zijn verkregen tijdens de interviews die de basis vormden van veel van het bovenstaande onderzoek. Deze interviews onthulden een grote betrokkenheid van deelnemende dierenartsen bij het onderzoeksonderwerp. De dierenartsen toonden grootte bereidheid aan om inzichten te delen ten aanzien van het onderzoeksonderwerp. Deze betrokkenheid en bereidheid benadrukken het potentieel om de empowerment van dierenartsen te verbeteren door zo dicht mogelijk bij de dierenarts te beginnen. Daarom zal de verkenning van potentiële handelingsperspectieven beginnen met het onderwijsprogramma, gevolgd door de gedragscode voor professionals, en afsluiten met het wettelijk kader.

Het onderwijsprogramma

Sinds de invoering van het keuzevak 'euthanasie van dieren' in 2019 is er steeds meer aandacht voor vraagstukken rondom het levenseinde van dieren binnen het curriculum van dierenartsen aan de Faculteit Diergeneeskunde van Universiteit Utrecht. Er is echter nog veel meer potentieel binnen het onderwijsprogramma om aanzienlijk bij te dragen aan dit onderwerp [2, 16, 122-124]. In de volgende alinea's worden drie voorbeelden van handelingsperspectieven met betrekking tot het onderwijsprogramma beschreven.

Ten eerste: het prioriteren van directe aandacht in plaats van indirecte aandacht voor het levenseinde van dieren binnen het curriculum om studenten te helpen zich voor te bereiden op dit aspect van hun toekomstige beroep. In de praktijk zou deze benadering inhouden dat er vroeg in het curriculum training wordt gegeven over dit onderwerp. De training moet gericht zijn op het opbouwen van kennis en vaardigheden die relevant zijn voor het nemen van beslissingen in situaties waarbij het levenseinde van dieren ter sprake komt, denk aan de juridische aspecten, ethiek, communicatie en emotie regulatie [2]. Naast deze trainingsmodules moeten reflectiesessies [42] worden georganiseerd gedurende het curriculum om situaties die studenten tijdens hun opleiding tegenkomen te bespreken. Deze opzet waarborgt het behoud van de leerdoelen van de bestaande cursussen, terwijl de reflectiesessies specifieke aandacht besteden aan situaties waarbij het levenseinde van dieren ter sprake komt en hoe dierenartsen met deze situaties om moeten gaan.

Ten tweede zouden studenten bekend gemaakt kunnen worden met de onderwerpen 'professionele autonomie' en 'morele competentie' bij beslissingen rondom het levenseinde van dieren, door meer aandacht te besteden aan dierethiek [2, 105]. Specifieke aandacht voor deze onderwerpen zou studenten kunnen ondersteunen

bij het ontwikkelen van morele competentie terwijl zij zich nog begeven in een veilige leeromgeving.

Tot slot kan training over 'het beëindigen van dierenlevens in de dierenartsenpraktijk' en 'professionele autonomie van dierenartsen' buiten het curriculum worden aangeboden, bijvoorbeeld als onderdeel van postacademisch onderwijs [19]. Binnen deze training kan het bevorderen van discussie en reflectie onder dierenartsen het bewustzijn vergroten, niet alleen over hun eigen perspectieven en overtuigingen ten aanzien van deze onderwerpen, maar ook over de potentiële diversiteit aan standpunten die anderen innemen. Deze benadering beoogt de ontwikkeling van wat bekend staat als 'normatieve professionaliteit' [125], waardoor professionals beter begrijpen hoe hun eigen overtuigingen en waarden hun professionele perspectief vormen over verschillende onderwerpen, zoals beslissingen over het levenseinde van dieren.

Naast deze drie voorgestelde handelingsperspectieven kan onderzoek naar de ontwikkeling van professionele autonomie en morele competentie onder dierenartsen verder bijdragen aan de verbetering van het onderwijsprogramma. Bijvoorbeeld, een longitudinaal onderzoek dat studenten diergeneeskunde tijdens en gedurende meerdere jaren na hun afstuderen volgt, zou een potentieel onderzoeksmethode zijn.

De gedragscode voor professionals

Artikel 2.3 van de Nederlandse Code voor de Dierenarts biedt informatie over situaties waarin het levenseinde van dieren ter sprake komt. In dit artikel wordt verwezen naar de wettelijke plicht van dierenartsen om de noodzakelijke zorg te bieden aan dieren in nood en de optie van euthanasie wordt genoemd wanneer een dier ernstig lijdt zonder dat er uitzicht is op verbetering. Hoewel de code deze informatie verstrekt, ontbreken verdere diepgaande aanbevelingen over situaties waarbij het levenseinde van dieren ter sprake komt. Mogelijke aanbevelingen die extra ondersteuning kunnen bieden aan dierenartsen zijn bijvoorbeeld gericht op hoe de belangen van het dier en de diereigenaar moeten worden gewogen wanneer deze conflicteren, of wat redelijkerwijs van dierenartsen mag worden verwacht wanneer een eigenaar niet instemt met het verlenen van noodzakelijke zorg. De code biedt dientengevolge mogelijk onvoldoende begeleiding aan dierenartsen in dergelijke situaties [126].

Vanuit dit perspectief zou het waardevol zijn om te onderzoeken welke aanbevelingen over levenseinde situaties aanvullende ondersteuning zouden

kunnen bieden aan dierenartsen. Als bron kunnen andere gedragscodes, zoals de Europese Gedragscode voor Dierenartsen (FVE) en de Gedragscode voor Veterinaire Chirurgen van het Koninklijk College van Dierenartsen (RCVS), worden geanalyseerd om te inventariseren hoe deze codes handvatten bieden ten aanzien van situaties rondom het levenseinde van dieren. De beroepsgroep zou deze inventarisatie kunnen gebruiken als achtergrondinformatie bij het verkennen van aanvullende aanbevelingen, wat mogelijk kan leiden tot een herziening van de Nederlandse code.

Omdat de code mogelijk niet alle relevante aanbevelingen kan omvatten, kan worden overwogen om uitbreidingen op de code te verkennen [2]. Een voorbeeld van zo'n uitbreiding is het ontwerpen van beslissingsondersteunende tools [57, 89]. Beslissingsondersteunende tools kunnen worden gebruikt om het besluitvormingsproces te vergemakkelijken en te begeleiden door relevante vragen te structureren over bijvoorbeeld ethische of diergeneeskundige kwesties waar dierenartsen tijdens dit proces mee te maken kunnen krijgen [89]. Sinds 2017 zijn in Nederland twee beslissingsondersteunende tools ontwikkeld, gericht op situaties waarbij levensbeëindiging van het leven van een varken overwogen wordt, door een samenwerking tussen dierenartsen, wetenschappers, de Koninklijke Nederlandse Maatschappij voor Diergeneeskunde (KNMvD) en belangenverenigingen in de varkensindustrie [127]. Vergelijkbare beslissingsondersteunende tools zijn recentelijk ontwikkeld voor schapen en konijnen [127]. Om de impact van dergelijke beslisbomen en vergelijkbare beslissingsondersteunende tools te vergroten, is het wenselijk om deze tools op te nemen als onderdeel van het onderwijsprogramma [2].

Aanvullend zou het onderzoeken van de effectiviteit in termen van gebruiksvriendelijkheid van de ontwikkelde beslissingsondersteunende tools inzicht kunnen bieden in verdere verbeteringen. De verkregen inzichten zouden kunnen worden gebruikt wanneer de ontwikkeling van aanvullende tools voor andere diersoorten wordt overwogen.

Naast het uitbreiden van de code in geschreven vorm kunnen ook niet-geschreven voorbeelden worden overwogen. De organisatie van dialogen binnen de beroepsgroep over vraagstukken die betrekking hebben op het beëindigen van dierenlevens zou een voorbeeld zijn dat niet in geschreven vorm is. Deze dialogen zouden een dubbele functie kunnen vervullen. Ten eerste kunnen deze dialogen bijdragen aan het uitwisselen van 'wenselijke praktijken'. De besproken praktijken kunnen worden gebruikt als input voor ethische kaders of beslissingsondersteunende tools [89]. Ten tweede zouden ervaringen met specifieke situaties tijdens deze dialogen kunnen

worden uitgewisseld. Het delen van positieve ervaringen naast negatieve ervaringen kan onderlinge ondersteuning onder dierenartsen bevorderen [128].

Het wettelijk kader

Het wettelijk kader dat het beëindigen van het leven van dieren in de dierenartsenpraktijk reguleert, schetst zowel de wettelijke verplichtingen van dierenartsen als dat het richting biedt over wat er van dierenartsen mag worden verwacht in situaties waarbij het levenseinde van dieren ter sprake komt. Ondanks de geboden richting, bestaat er de nodige ruimte voor eigen interpretatie als gevolg van de open formulering van sommige delen van het wettelijk kader. Bovendien kunnen dierenartsen te maken krijgen met conflicterende wettelijk verplichtingen in situaties waarbij het levenseinde van dieren ter sprake komt.

Vanuit dit perspectief zou een eerste waardevolle stap zijn om meer duidelijkheid te verkrijgen over het wettelijk kader. Bij het verkrijgen van deze duidelijkheid kan bestaande jurisprudentie waardevol zijn, aangezien jurisprudentie inzicht biedt in hoe de autoriteiten de wetten en wettelijke verplichtingen van dierenartsen interpreteren. Het delen van jurisprudentie binnen de beroepsgroep kan individuele dierenartsen helpen bij een betere interpretatie van hun wettelijke verplichtingen in situaties waarbij het levenseinde van een dier ter sprake komt.

Daarnaast zou het wettelijk kader kunnen worden herzien om meer duidelijkheid te verschaffen. Potentiële herzieningen zouden bij voorkeur moeten focussen op twee aspecten: 1) verduidelijken of 2) aanscherpen van de randvoorwaarden relevant in situaties waarbij het levenseinde van een dier overwogen wordt. Een voorbeeld van het eerste is het verduidelijken van welke kennis en vaardigheden nodig zijn om competentie aan te tonen die wettelijk verplicht is alvorens men dieren mag doden. Een voorbeeld van het laatste is het bijwerken van het overzicht van toegestane methoden (voor bedwelming en) om het leven van een dier te beëindigen. Dit soort herzieningen beogen competente personen te ondersteunen en te begeleiden in situaties rondom het levenseinde van dieren. Herzieningen zouden bij voorkeur niet gericht moeten zijn op het beperken van de besluitvormingsbevoegdheid van professionals, maar eerder op het versterken van hun besluitvormingsproces door de gestelde voorwaarden te verduidelijken.

Tot slot, de voorgaande paragrafen hebben verschillende handelingsperspectieven behandeld binnen het onderwijsprogramma, de gedragscode voor professionals en het wettelijk kader. Deze handelingsperspectieven zijn er op gericht dierenartsen in de juiste positie te brengen, zodat ze verder kunnen werken aan de juiste balans

tussen autonomie en consistentie, vertrouwen en de dynamiek rondom situaties aan het einde van het leven van dieren.

4. Toekomstig onderzoek

Aangezien de papers die aan deze thesis ten grondslag liggen de eerste artikelen zijn over de positie van de dierenarts met betrekking tot het beëindigen van dierenlevens in de dierenartsenpraktijk binnen Nederland, wordt het potentieel gezien voor aanvullend onderzoek binnen dit veld van veterinaire ethiek. Naast de eerder genoemde richtingen voor toekomstig onderzoek in het onderwijsprogramma en als onderdeel van de verdere ontwikkeling van de gedragscode voor professionals, zou de generaliseerbaarheid van de huidige bevindingen kunnen worden verbeterd op basis van vervolgstudies.

Om de generaliseerbaarheid van de huidige resultaten te vergroten, zijn er drie veelbelovende richtingen voor toekomstig onderzoek. Door deze richtingen te verkennen, kunnen nieuwe inzichten worden verkregen in de impact van contextuele aspecten op het redeneren en de besluitvorming van dierenartsen in complexe situaties waarbij het levenseinde van dieren te sprake komt.

Allereerst kan de generaliseerbaarheid worden verbreed binnen de Nederlandse context. Zoals vermeld in Hoofdstuk 1 hebben dierenartsen te maken met complexe levenseinde situaties in verschillende werkvelden binnen de diergeneeskunde. Het zou daarom interessant zijn om andere gebieden te onderzoeken waarbinnen dierenartsen veterinaire zorg verlenen, zoals paardengezondheidszorg of proefdierkunde. Deze twee gebieden zijn interessant omdat enerzijds de morele positie van dieren kan verschillen en anderzijds om het wettelijk kader in de context van de proefdierkunde anders is.

Verder kan de reikwijdte van het onderzoek worden uitgebreid door te onderzoeken hoe de huidige resultaten van toepassing zijn buiten de Nederlandse context. Door vergelijkbare studies uit te voeren in andere landen kunnen verschillen tussen landen worden onderzocht. Als onderdeel van dergelijke studies is het relevant om land-specifieke informatie op te nemen die de context van het beëindigen van dierenlevens in de dierenartsenpraktijk vormgeeft. Deze studies kunnen inzicht bieden in de impact van het geldende wettelijke kader, de gedragscode of eed waaraan dierenartsen zich houden, de institutionele opzet van de veterinaire praktijk en het onderwijsprogramma.

Tenslotte kan het onderzoek worden uitgebreid door de perspectieven van andere belanghebbenden in situaties waarbij het levenseinde van dieren ter sprake komt te bestuderen. Hoewel de huidige thesis zich richt op de perspectieven van dierenartsen, zouden inzichten van andere betrokken partijen het huidige onderzoek aanzienlijk verrijken. Met name onderzoek onder diereigenaren zou voor de hand liggende zijn vanwege hun directe betrokkenheid bij levenseinde situaties. Bovendien zou onderzoek naar de perspectieven van andere belanghebbenden, zoals paraveterinair en dierverzorgers in bijvoorbeeld dierenasielen, nieuwe inzichten bieden in het onderzoeksveld.

5. Conclusie

In het licht van de voorgaande discussie kan worden geconcludeerd dat er een duidelijke noodzaak is voor de professionele autonomie van dierenartsen in complexe situaties waarbij het levenseinde van dieren ter sprake komt. De toevertrouwde professionele autonomie stelt dierenartsen in staat om beslissingen te nemen, maar brengt ook uitdagingen met zich mee zoals (morele) stress bij individuele dierenartsen en een potentieel risico voor de op vertrouwen gebaseerde positie van het veterinaire beroepsgroep binnen de samenleving. Door deze dubbele impact van professionele autonomie te erkennen, is het belangrijk om te streven naar de juiste balans tussen autonomie en vertrouwen, consistentie en de dynamiek binnen situaties aan het einde van het leven met behulp van de voorgestelde handelingswijzen. Deze handelingswijzen zijn erop gericht om de positie van dierenartsen te versterken door de geïdentificeerde negatieve aspecten te minimaliseren, terwijl de positieve aspecten van professionele autonomie worden versterkt.

Het is mijn hoop dat de resultaten van deze thesis openheid hebben gebracht om nieuwe inzichten te bespreken in de perspectieven van dierenartsen in dit complexe deel van hun beroep. Bovenal toont het de noodzaak aan om de voorgestelde handelingswijzen op te volgen om dierenartsen in staat te stellen om om te gaan met de complexiteit van het beëindigen van dierenlevens.



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Appendices

Information letter: research project euthanasia of animals and the role of the veterinarian

Euthanasia of animals is a subject that frequently comes up in veterinary practice. Research shows that the decision-making process toward euthanasia can be complex for veterinarians. These complex situations can be experienced as stressful by the veterinarian and potentially lead to signs of compassion fatigue or burn-out.

When we can get more grip on the complexity veterinarians can experience in end-of-life situations, we hope to provide insight into potential support tools and strategies for veterinarians to deal with these complex decisions regarding euthanasia.

To get a better understanding of how veterinarians experience the complexity of end-of-life situations, we want to invite you for an interview. During the interview, we ask you to share your experiences with the euthanasia of animals. The interview questions will mainly focus on 1) your role in end-of-life situations, 2) the considerations you take into account in the decision-making process, and 3) the potential bottlenecks you may experience regarding end-of-life situations and euthanasia of animals. The interview will ask 60 minutes of your time and can be organized at a location of your preference.

Prior to the interview, you will receive a short Qualtrics survey. In the survey, we ask you to share your considerations on case examples concerning end-of-life decisions and euthanasia of animals. The examples and your response will be discussed during the interview.

All collected data will be stored and handled strictly confidential by the research team. Moreover, the data will be anonymized to ensure that information shared in research papers or presentations will not be relatable to you.

For questions concerning the research project or the interview, please contact the head researcher Ellen Deelen via:



e.deelen@uu.nl



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For questions or remarks regarding privacy within this research project, you can contact the privacy department of Utrecht University via privacy@uu.nl

For complaints regarding this research project, you can contact Hans Heesterbeek via j.a.p.heesterbeek@uu.nl

This research project is funded by the Faculty of Veterinary Medicine of Utrecht University. The research theme is part of the research group Centre for Sustainable Animal Stewardship (CenSAS), Division of Animals in Science and Society. CenSAS researches themes concerning the relationship between animals and humans. This research project is supervised by an interdisciplinary team including Franck Meijboom, Tijs Tobias, Ferry Koster, Jan Willem Hesselink, and Bas Rodenburg.

Informed consent form: research project euthanasia of animals and the role of the veterinarian

1. I have had sufficient information about the background of the research project and the goal of the interview.
2. Questions regarding the research project and my participation in the related interview were sufficiently answered.
3. I understand and agree with the fact that an anonymized written report concerning the interview can be used in scientific publications, presentations, and workshops.
4. I understand and agree with the recording of the interview.
5. I understand that I can withdraw from participating in the research project at any moment and based on any reason.
6. I have read the informed consent completely, I understand and agree with my participation in the research project and the related interview based on the above statements and agree with the use of the information I share during the interview.

Name: _____

Signature: _____

Date: _____

For questions concerning the research project or the interview, please contact the head researcher Ellen Deelen via:



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Interview guide

Section A

1. Could you describe the type of practice you work in, in terms of the number of employees, location, and the species that are treated in the practice?

Role(s)

2. Could you tell me what kind of role end-of-life situations and euthanasia of animals plays in your daily work?
3. Could you elaborate on when end-of-life situations and euthanasia are topics of discussion within the practice?
 - a. With whom, when, and how do you discuss these topics?
 - b. How do you feel about the current way of discussing these topics? Would you prefer any changes regarding the way you currently discuss the topics?
4. What role do you, as a veterinarian, play regarding end-of-life situations and the euthanasia of animals?
 - a. How do you feel about your role?
 - b. Could you elaborate on how important this role is to you?
5. Is there a potential difference between the role you currently fulfill and the role you would ideally fulfill?
 - a. If yes, could you elaborate on the background of the difference
 - b. What could support you in that perspective, to fulfill the role you would ideally fulfill?
 - c. If no, could you elaborate on the absence of this potential difference
6. Regarding your work environment in practice, could you think of things you may have missed to fulfill your role?

Responsibilities

7. Could you elaborate on the responsibilities you see for yourselves as a veterinarian regarding end-of-life situations and the euthanasia of animals?
8. To what level are you able to fulfill the responsibilities you see for yourselves in practice?
9. We have now discussed the questions concerning your role and responsibilities regarding euthanasia of animals, are there things you would like to add before we continue the interview?

Section B

10. Could you elaborate on how the different considerations affect your level of agreement with euthanasia of the animal in the different scenarios of each vignette?

Vignettes farm animals

Vignette 'beef calf with a fracture'

- a. One of your beef cattle farmers calls you about a calf. The four-week-old calf is trampled by its mother. Consequently, the calf has a **closed fracture of the tibia shaft**. The fracture has an optimistic prognosis when treated with a plaster cast. The cast needs to be replaced once every 2-3 weeks in a timeframe of 6 up to 8 weeks. **The farmer asks you to euthanise the calf, as treatment is more expensive than the monetary value of the calf.**
- b. As case a, but now it concerns an **open fracture of the tibia shaft**.
- c. As case a, however now the farmer indicates that he lacks the financial means and the time to provide the required care for the calf.
- d. As case a, but now it concerns an open fracture of the tibia shaft and the farmer indicates that he lacks the financial means and the time to provide the required care for the calf.

Vignette 'a lame pig'

- a. You visit a pig at the local petting zoo. The pig is lame and suffers from chronic claw lesions. **So far the pig is treated for two weeks, however, no improvement is noticed.** The pig is seen as 'the icon' of the zoo and attracts a lot of visitors. **The petting zoo owner, employees and visitors are very attached to the pig and therefore euthanasia is not an option from their perspective.** They ask you to save the animal no matter what.
- b. As case a, but now the pig is treated for four weeks and no improvement is noticed.
- c. As case a, but now the zoo owner asks you to save the animal to ensure that the number of visitors won't decline.

Vignettes companion animals

Vignette 'a cat with a corpus alieum'

- a. An owner comes with a 1-year-old cat to your practice. The cat ate a corpus alieum a few days ago and is now seriously ill as a result. The object cannot be vomited and cannot be removed with a scope, indicating that surgical intervention is required. This operation is costly for the owner. But **although the corpus alieum is in an unfavorable location, there are still chances of success. The owner rejects the therapy because he does not have enough money.** He wants you to euthanize the cat.
- b. If a, but now the corpus alieum is in the stomach, and the prognosis for full recovery is very good.
- c. If a, but now the owner does have enough money, but he indicates that he would prefer to spend the money elsewhere.
- d. If a, but now the corpus alieum is still in the stomach, the prognosis for full recovery is very good, and the owner indicates that he would prefer to spend the money elsewhere.

Vignette 'a pregnant dog'

- a. A breeder comes to your practice with a 1.5-year-old pregnant Labrador bitch that is **43 days** into gestation. The dog has just been hit by a car and is found to have luxation of both iliosacral joints. An abdominal ultrasound shows signs of life in the fetuses. After surgical intervention, the prognosis is very good, although the dog will likely not be able to deliver naturally. However, **the surgery is quite expensive for the owner, and because the owner does not have the financial means, this is not an option. The owner wants to euthanize the bitch immediately to spare her further suffering.**
- b. Like a, but now the bitch is already at **58 days** of gestation.
- c. Like a, but now the owner wants the bitch to live until after giving birth and euthanize her once the puppies are born.
- d. Like a, but now the bitch is already at 58 days of gestation, and the owner wants the bitch to live until after giving birth and euthanize her once the puppies are born.

Vignette 'a Maltese with shortness of breath'

- a. A dog sitter comes to your practice with a 15-year-old Maltese experiencing respiratory problems. You removed a malignant tumor from this dog 6 months ago, and you are concerned that the dog may have developed lung metastases. The owners left for a trekking expedition 3 days ago and cannot be reached. The dog sitter refuses to decide on euthanasia and cannot tell you what the owners would want.
- b. Like a, but now it concerns a **9-year-old** Maltese.
- c. Like a, but now the dog sitter can no longer bear the situation and asks if it wouldn't be better to euthanize the dog.
- d. Like a, but now it concerns a 9-year-old Maltese, and the dog sitter can no longer bear the situation and asks if it wouldn't be better to euthanize the dog

Section C

Bottlenecks

1. Could you please share any potential bottlenecks you experience as a veterinarian regarding the decision-making process towards euthanasia?
 - a. (If the participant shares bottlenecks) How do you approach these bottlenecks?
2. Could you please share any potential bottlenecks you experience as a veterinarian regarding the performance of euthanasia?
3. Could you please share any potential bottlenecks you experience as a veterinarian regarding the support of owners
 - a. During the decision-making process toward euthanasia?
 - b. During the performance of euthanasia?
4. Could you elaborate on examples of situations in which
 - a. The owner refused to agree on euthanasia
 - b. An owner's request to euthanize their animal that you refused
 - c. An owner's request that you wanted to refuse but that you eventually agreed upon

Please share 1) the characteristics of the situation, 2) the way you approached this situation, 3) the effect this experience had on you, and 4) the effect this experience had on you afterward

5. Are there any other bottlenecks you may experience that we have not discussed yet?
6. We have now discussed the questions concerning the bottlenecks you may experience, are there things you would like to add to what we have discussed?
7. Would you like to add any other information to the entire interview, before we finish?

Summary

What can reasonably be expected of veterinarians in the decision-making process on the ending of an animal's life? While the answer may be evident in some cases, research shows that certain end-of-life situations puzzle veterinarians. Navigating these perceived complexities is known to reduce veterinarians' sense of professional accomplishment and overall well-being. Considering the impact of these situations on veterinarians, there is a need to support them. Effective support requires an in-depth understanding of the complexities that veterinarians experience in end-of-life situations.

In this thesis, the foundation of this understanding is established through an analysis of the concept of euthanasia of animals, illustrating the different perspectives of veterinarians on the ending of animal lives. To achieve an understanding of the perspectives and experiences of veterinarians in complex end-of-life situations, interviews were conducted with veterinarians working in the Netherlands. Based on these interviews, a duality in veterinarians' role perception and perceived responsibilities was discovered, i.e. some roles and responsibilities are shared among a group of veterinarians, whereas others are perceived by individuals. Moreover, different perspectives on the interplay of considerations in end-of-life situations were identified. Last, the interviews revealed that, as part of their three-step decision-making process, veterinarians contemplate various strategies.

These key findings provide insight into a) the complexity of end-of-life situations that veterinarians experience and b) veterinarians' approach to professional responsibility in navigating end-of-life situations. Based on these insights, directions for supporting veterinarians can be found in the educational program, the national code of professional conduct, and the applicable legal framework. These support options aim at positioning veterinarians so that they can work their way towards the right balance between autonomy, consistency, trust and the dynamics of end-of-life situations.

Samenvatting

Wat mag redelijkerwijs worden verwacht van dierenartsen in het besluitvormingsproces over het beëindigen van het leven van een dier? Hoewel het antwoord op deze vraag in sommige gevallen duidelijk zal zijn, toont onderzoek aan dat er ook situaties zijn waarbij dit antwoord niet zo evident is voor dierenartsen. Het is bekend dat het omgaan met de complexiteit van deze situaties een negatief effect kan hebben op het algeheel welzijn van dierenartsen en het gevoel van professionele voldoening. Gezien deze impact is er een noodzaak tot ondersteuning van dierenartsen. Effectieve ondersteuning vereist een diepgaand begrip van de complexiteiten waarmee dierenartsen te maken krijgen in situaties waarbij het levenseinde van dieren ter sprake komt.

In dit proefschrift wordt de basis voor dit begrip gelegd door een analyse van het concept euthanasie van dieren, waarbij de verschillende perspectieven van dierenartsen op het beëindigen van dierenlevens worden weergegeven. Om begrip van de perspectieven en ervaringen van dierenartsen te verkrijgen, zijn interviews gehouden met dierenartsen in Nederland. Op basis van deze interviews is een dualiteit in de rolperceptie en waargenomen verantwoordelijkheden van dierenartsen aangetoond, waarbij sommige rollen en verantwoordelijkheden gedeeld werden binnen een groep dierenartsen, terwijl andere enkel door individuen werden benoemd. Daarnaast zijn verschillende perspectieven geïdentificeerd ten aanzien van het samenspel van relevante overwegingen in levenseinde situaties. Tot slot onthulden de interviews dat dierenartsen verschillende strategieën overwegen in hun besluitvormingsproces dat uit drie verschillende stappen bestaat.

Deze bevindingen bieden inzicht in a) de complexiteit die dierenartsen ervaren in situaties rondom het levenseinde van dieren en b) de benadering van dierenartsen ten opzichte van professionele verantwoordelijkheid bij het omgaan met deze situaties. Op basis van deze inzichten kunnen ondersteunende maatregelen worden overwogen in het onderwijsprogramma, de veterinaire gedragscode en het geldende wettelijke kader. Deze ondersteuningsopties hebben tot doel dierenartsen te positioneren, zodat ze kunnen werken aan de juiste balans tussen autonomie, consistentie, vertrouwen en de dynamiek van situaties aan het einde van het leven.

Curriculum vitae

1. Personal statement

As a researcher, I am highly motivated to form a bridge between science and practice. To form this bridge I prefer to perform my research within practice and to use insights from this research in my teaching as well as in policy-related projects. My main aim with my research, teaching and policy-related projects, is to support professionals working with animals in their development as professionals. The provision of this support can take various forms, such as the development of decision-support tools, facilitating a stakeholder dialogue, or the organization of post-graduate training. In all forms, I aspire to stimulate reflection among professionals regarding their professionalism. By stimulating this reflection I hope that individuals get a better understanding of their moral compass as professionals as well as a deeper insight into the diversity of moral compasses among peers and other stakeholders. Obtaining these insights can stimulate a valuable dialogue on professionalism in times when the position of animals and professionals working with them is constantly under scrutiny in our society.

2. Education

- Master Healthcare of farm animals and veterinary public health, University Utrecht, Utrecht (2014 – 2017)
 - Internship Team Animal Welfare, Ministry of Agriculture, Nature and Food Quality, The Hague (2016)
 - Policy domains: animal welfare at the time of on-farm killing and animal neglect
 - Management team secretary
 - Internship Animal Neglect Team, Netherlands Food and Consumer Product Safety Authority (2014)
 - Optional course 'Animal and Law'
 - Position paper 'Euthanasia of residual calves'
 - Optional course 'Communication and Marketing'
- Bachelor Veterinary medicine, University Utrecht, Utrecht (2011 – 2014)
 - Certificate article 9 – Responsible use of laboratory animals
- Voorbereidend Wetenschappelijk Onderwijs, Reynaert College, Hulst (2005 – 2011)

3. Academic achievements

• Publications

- Deelen, E. (under review). "Euthanasia of animals is welfare-neutral, right..?" On the need for conceptual clarity and ethical analysis to support future veterinarians on euthanasia of animals, *Journal of Agricultural and Environmental Ethics*
- Deelen, E., Meijboom, F. L. B., Tobias, T. J., Koster, F., Hesselink, J. W., & Rodenburg, T. B. (2023). Handling End-of-Life Situations in Small Animal Practice: What Strategies do Veterinarians Contemplate During their Decision-Making Process?. *Journal of applied animal welfare science : JAAWS*, 1–14. Advance online publication. <https://doi.org/10.1080/10888705.2023.2268516>
- Ellen, D., Franck, L. B. M., Tijs, J. T., Ferry, K., Jan, W. H., & T, B. R. (2023). Considering life and death: a qualitative vignette study among farm animal veterinarians in the netherlands on considerations in end-of-life decision-making. *Frontiers in Animal Science*, 4. <https://doi.org/10.3389/fanim.2023.1163062>
- Deelen, E., Meijboom, F. L. B., Tobias, T. J., Koster, F., Hesselink, J.-W., & 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. <https://doi.org/10.3389/fanim.2022.949080>
- Deelen, E., and Meijboom, F.L.B. (2022). Why 'mercy' killing wild animals is so controversial. *The Conversation*

• Presentations

- EurSafe 2021 Justice and Food Security in a Changing Climate – Fribourg, Switzerland (2021)
 - Research paper: Killing in plural? On animal life assessments by veterinarians and the role of euthanasia.
- FSVO/UFaw/HSA Humanely Ending the Life of Animals – online (2021)
 - Presentation: Nitrogen gas as an alternative euthanasia agent for laboratory rodents.
- Utrecht Vet Event – Utrecht, The Netherlands (2022)
 - Presentation: Euthanasia of animals in veterinary practice.
- Westfort – IJsselstein, The Netherlands (2022)
 - Presentation: On-farm killing.
- EurSafe 2022 Transforming Food Systems – Edinburgh, Scotland (2022)
 - Research paper: Challenges of future vets–the impact of the killing of animals during education on veterinary students' wellbeing.

- Veterinary Ethics Conference – Vienna, Austria (2023)
 - Research paper: Legal requirements as a source for moral problems in end-of-life situations.
- **Teaching**
 - Coordinator and developer:
 - Master optional course 'Euthanasia of Animals' (2019-2024)
 - Lecturer:
 - Master Junior Extramural Coschap (JECO)
 - Bachelor Lijn Veterinaire Professional (LVP)
 - Bachelor Leerlijn Dier, Dierenarts & Samenleving (DDS)
 - Supervision:
 - Master student thesis
 - Bachelor student thesis
- **Scientific reports**
 - Decision-making support tools for on-farm killing
 - Deliverables:
 - Decision-making tools for piglets and pigs
 - Decision-making tools for sheep and rabbits
 - Advisory report on killing methods for non-veterinarians in animal shelters
 - Adviesrapport dodingsmethoden toepasbaar in wildopvangen door niet-dierenartsen | Rapport | Rijksoverheid.nl
 - Advisory report on the legal framework of on-farm killing [in publication]
 - Advisory report on killing methods for animals used as feed [in publication]
- **Professional training**
 - The art of presenting science (2019)
 - Qualitative research methods (2019)
 - Ethics of animal welfare (2019)
 - Writing a Scientific Paper (2020)
 - Academic writing in English (2020)
 - Constructie en analyse van vragenlijsten (2021)
 - Supervising MSc Students: Starter Kit (2022)
 - Introductie cursus Kwalitatief Onderzoek in de Gezondheidszorg (2022)
 - Qualitative Data Collection Methods (2023)

4. Related professional roles

- Member Animal Experiments Committee Utrecht (DEC Utrecht) (2020-2024)
- Member Ethical Committee Topigs Norsvin (2019-2024)
- Vice-chair Vet PhD Council (2021-2023)
- Member of VET Forward Faculty of Veterinary Medicine, Utrecht University (2022-2024)
- Chair working group housing of student associations Faculty of Veterinary Medicine, Utrecht University (2022)
- Treasurer PROUT (PhD Network Utrecht) (2019-2022)
- Policy advisor Team Animal Welfare, Ministry of Agriculture, Nature and Food Quality, The Hague (2019)
 - Policy domains: slaughter prescribed by religious rites, on-farm killing, slaughter, and depopulation.

Considering the ending of an animal's life can be a complex part of the veterinary profession. This thesis offers insight into how veterinarians navigate the complexity of these end-of-life situations. By sharing their experiences, veterinary professionals from across the Netherlands have contributed significantly to opening the conversation on this sensitive topic. Their openness during the conducted interviews has brought me, as a researcher, multiple new perspectives. I would like to share two of these perspectives with you before you, the reader of my thesis, start reading the thesis.

First and foremost, contemplating an animal's death is a decision that veterinarians do not take lightly. Conducting a dialogue, as illustrated in this thesis through interviews, helps us to understand the variety of considerations that veterinarians take into account in their deliberation. These are considerations that we, as outsiders, may not be aware of when solely focusing on the 'final result', namely the animal whose life has been ended or whose life should (not) have been ended.

Secondly, how we think and talk about animal death can teach us a lot about how we consider and appreciate animal lives. By shedding light on this bright side of life, death may reveal more of what we share rather than what divides us in thinking and talking about animals.

These and all other insights could not have been obtained without the transparency of all veterinarians involved. Therefore, my gratitude goes out to all veterinarians involved in the completion of this thesis. It is my hope that reading this thesis provides you with new insight as well, further enriching our ongoing dialogue on the ending of animal lives.

