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Understanding the multiple conceptions of animal welfare

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Abstract

Academics working on animal welfare typically consider the animal's affective state (eg the experience of pain), biological functioning (eg the presence of injuries), and sometimes naturalness (eg access to pasture), but it is unclear how these different factors are weighed in different cases. We argue that progress can be informed by systematically observing how ordinary people respond to scenarios designed to elicit varying, and potentially conflicting, types of concern. The evidence we review illustrates that people vary in how much weight they place on each of these three factors in their assessments of welfare in different cases; in some cases, concerns about the animal's affective state are predominant, and in other cases other concerns are more important. This evidence also suggests that people's assessments can also include factors (like the animal's relationship with its caregiver) that do not fit neatly within the dominant three-circles framework of affect, functioning and naturalness. We conclude that a more complete understanding of the multiple conceptions of animal welfare can be advanced by systematically exploring the views of non-specialists, including their responses to scenarios designed to elicit conflicting concerns.

Keywords: *animal welfare, animal well-being, experimental philosophy, good life, happiness, moral dilemma*

Introduction

Academics hold multiple conceptions of animal welfare, and in some cases adhering to one conception rather than another can lead to different conclusions about what types of treatment are better for the animal's welfare. We suggest that academic argumentation has been unsuccessful in providing a clear basis for resolving such disagreements, and that a better understanding of the diverse conceptions of welfare can be derived via the systematic investigation of how non-specialists ('folk') respond to specific scenarios designed to elicit different concerns. We further suggest that this research on folk conceptions of welfare can be used to describe a broader set of welfare conceptions than are typically considered in the academic literature.

Academic conceptions of welfare

Bentham's (1789) famous "Can they suffer?" quote directs the reader to focus on the animal's affective experiences as the relevant feature in the moral consideration due to animals. Current thinking by many animal welfare scientists would agree that considering how an animal feels is an important part of animal welfare. For example, Ross and Mason (2017; p 46) specify that animal welfare interventions are "beneficial if they have measurable, positive influences on animals' affective states." Some authors have gone farther, arguing that the subjective experiences of the animal are the only thing that can ultimately affect their welfare. Duncan (2004) provided an example of this purely hedonistic approach when he claimed that "…animal welfare is all to do with… subjective feelings, with the absence of negative feelings, particularly the strong negative feelings we call suffering and with the presence of positive feelings that we call pleasure."

Other conceptions of welfare focus on additional issues, such as impaired biological functioning. To the strict hedonist, impaired functioning is a welfare concern only when it results in some change in the animal's subjective experience. But what is conducive to good functioning and what is pleasant do not always fit together neatly. For example, some types of poor physical health need not make you feel ill (as with sub-clinical infections). Academics are not always clear about why they consider measures of biological functioning as relevant to animal welfare, but at least some scholars (eg Broom 1991) have claimed that poor functioning is a welfare concern even if there is no effect on the animal's affective state.

Naturalness, including the ability to perform species-specific behaviours, is also considered by some as a component of animal welfare. As with concerns relating to biological functioning, scholars adopting a more purely hedonistic (or instead functionalist) approach would see

naturalness as relevant only insofar that it leads to changes in affect (or function) that they consider to be inherent to welfare. For example, Ross and Mason (2017) suggested that some access to natural stimuli may be associated with "positive affective responses to stimuli that signalled safety and resources to our evolutionary ancestors". Similarly, Bracke and Hopster (2006) argue that natural behaviours are important to welfare "because these behaviors are pleasurable and because they promote biological functioning." However, as Fraser (2008; p 76) explained, the proponents of naturalness arguments at least sometimes seem to see living a natural life as welfare-enhancing in itself (ie of inherent value) and not something that merely serves to achieve good affective states.

Given this diversity of thought, Fraser *et al* (1997) advocated a pluralistic conception, based upon a consideration of all three factors. Their three-circle framework emphasised that concerns associated with all three factors need to be considered, and that ideally (to satisfy this diversity of conceptions) animals should be provided conditions that allow them to feel well, function well, and to express species-specific behaviours. However, in real-world examples involving decisions about the appropriate care for animals, solutions that are optimal for one of these circles (eg functioning) may be far from optimal in terms of one or both of the other circles, and guidance is required to know how best to proceed in such cases.

Resolving competing conceptions

Imagine a chimpanzee trained, for the sake of a proposed research project, to smoke cigarettes. A smoking chimp may strike some as unnatural and unhealthy, but according to the logic of a purely hedonistic approach, this behaviour may actually enhance welfare because it is pleasurable (the time course is important here; the behaviour may result in positive affect in the short term, but some hedonistic stances would also require net positive affect over an extended period, such that the pleasure derived from smoking outweighs any negatives associated withdrawal and disease) (eg Yeates 2011). According to this logic, measures based upon biological functioning (or on other welfare principles) are not necessarily ignored; rather, they are included to the extent that they are perceived to cause reliable changes in affect (eg affective states associated with symptoms of smoking-related disease). In other words, these are considered instrumentally (and not inherently) relevant to the case at hand. If a critic adopting a functionalist perspective were to object to the research on the basis that the smoking is likely to cause disease that diminishes the animal's welfare, even if the animal is unaware of any symptoms, on what basis might we decide how to proceed? Should the hedonistic reasoning trump the functionalist, or *vice versa*?

Fraser (2003) discussed how different conceptions can lead to different conclusions, contrasting two reviews of the scientific literature related to the welfare of sows housed in gestation crates. One of these (Barnett *et al* 2001) emphasised a conception based upon good functioning, using measures such as "growth, reproduction, injury, and health." The second review (von Borell *et al* 1997) emphasised a conception based upon affect, using measures such as "fear and the behavioural and physiological consequences of lack of control, especially frustration." The first review concluded that gestation stalls can "meet the welfare requirements of pigs"; the second concluded, "serious welfare problems for sows persist even in the best stall-housing system."

The measures we use must be designed to capture the underlying conception, rather than simply structuring the conception based upon what can be most easily measured. For example, some scientists may feel confident in their ability to assess injuries, but rather less confident in their ability to assess pain. Even if they believe that pain is the main welfare concern, they may adopt some form of injury assessment as a surrogate measure. Dawkins (2012) appears to take this stance when she argues that even though affective states are the basis of animal welfare, assessment of welfare should focus on health and preferences because these can be measured more directly. This pragmatic approach may be useful if the logic is explicitly stated, but care is required to avoid the shorthand version (ie that welfare is conceived in terms of those features that the scientist is comfortable in assessing).

Might there be a stronger, theoretical basis favouring one conception of animal welfare over another? Duncan (2004) provides a clear attempt in his "concept of welfare based on feelings". His argument relies on at least three lines of reasoning. One is that a purely functionalist account must be wrong because even its strongest proponents (eg Broom & Johnson 1993) agree that suffering is relevant to welfare even in the absence of evidence of problems in functioning. However, that some scholars adopt a more pluralistic approach (eg consider both functioning and feelings), does not provide a logical basis for the conclusion that only feelings have final welfare value (for example, in cases where there is evidence of reduced functioning but no suffering; Broom 1991). A second line of reasoning, based upon the authors' own introspection, is that our own welfare is affected by how we feel. While this is most certainly true, it does not prove that assessments of human welfare are based *entirely* on feelings. A third line of reasoning suggests that since concern for welfare is typically restricted to sentient animals (ie those that can *feel*), welfare must only be about feelings. As Duncan contends (2004; p 91), "among rational people, there is no concern for the welfare of plants, protozoa, or the lower invertebrates." Unfortunately, this conflates two distinct questions: who welfare applies to, and what welfare consists of? Even if we accept the premise that welfare only applies to conscious beings, it does not follow that *only* changes in conscious experience can affect welfare. Moreover, the initial premise that we do not speak about the welfare of non-conscious entities is contestable. People speak quite effortlessly about shade being good for a plant and changing climatic conditions being good for certain species (Kraut 2009), so it is not the case that our prudential vocabulary is restricted to sentient organisms (Rosati 2009).

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An interesting case is provided in the fish welfare literature, where authors have argued that when we are unsure of the animal's sentience, we can focus on functional concerns, such as injuries and mortality (Arlinghaus *et al* 2007; see also Browman *et al* 2018 for a more recent summary). It is important to note that in this case the authors are not arguing that hedonistic concerns are irrelevant, but rather that the concerns should be left aside because of the difficulty in making strong inferences about what the animal is feeling. In this sense, the proponents are not pure functionalists. Similarly, we are not aware of authors arguing for an exclusively naturalistic conception of welfare. Rather, proponents of naturalist views seem to see this as an additional concern while also seeing hedonist (and perhaps functionalist) concerns as relevant.

More work will be required to provide a theoretical basis for decisions of how these different conceptions should be weighted, but we follow Tannenbaum (1991) in concluding that the approaches adopted by different people will be linked to their values, and thus these values also need to be investigated. Despite calls to consider public views (eg Simonsen 1996), there has been little academic work specifically designed to describe how people conceive of animal welfare. Experts vary in how and if they consider the views of non-specialists (Degeling & Johnson 2015). Miele *et al* (2011) examined how scientific conceptions of welfare applied in the Welfare Quality® project related to lay concerns and found important differences. For example, non-specialist focus groups and 'citizen juries' were more concerned about opportunities for positive welfare experiences and put more emphasis on the provision of environments that allowed for natural living (eg outdoor access and lack of confinement). The danger in applying a more narrow, academic conception, in isolation of broader folk conceptions of the issue, is that conclusions stemming from that research will ignore key areas of public concern. In the sense of Stafleu *et al* (1996), the usage of more narrow, academic conceptions of welfare risks eroding the broader moral concerns. Fraser (2008) argued that since the field of animal welfare science is socially mandated (ie developed to respond to real-world societal concerns about the lives of animals under our care), it is important to understand and respond to the breadth of these concerns. More generally, Haidt (2001) argues that responses to moral issues (such as how we care for animals) are based largely on people's moral intuitions rather than moral reasoning, suggesting that these moral intuitions deserve research. Drawing inspiration from the experimental philosophy movement, we suggest that confronting a broad sample of people with carefully structured scenarios can be used to describe folk intuitions regarding the nature of animal welfare.

Experiments on folk conceptions of welfare

For more than a decade, our group at UBC has been gathering evidence on how people respond to dilemmas intended to elicit different types of concern (following Ahmad *et al* 2006 and Danielson 2010). By confronting human participants with scenarios that place different types of welfare concern in conflict, we have assessed how people conceive of welfare and apply these conceptions in different cases. In much of our work we have collected both quantitative (eg Likert responses) and qualitative responses (eg participant's own explanation for their choices) to better understand participant reasoning; this work has shown that participants appear to reference a variety of welfare-related concepts that seem not to fit neatly into existing theoretical accounts (eg Weary *et al* 2011). Below, we review two recent studies from our group at UBC. These examples serve to illustrate the potential of this approach as well as some shortcomings.

The first study aimed to test the hedonistic account of animal welfare (Robbins *et al* 2018). To do this, approximately 500 participants (recruited using the Amazon's Mechanical Turk crowd-sourcing service) were randomly assigned to one of four scenarios using a 2 × 2 design that manipulated subjective (feelings) and non-subjective features of an animal's life (naturalness and physical health). Each of the four scenarios described 'Sally', a hypothetical chimpanzee. Depending upon the scenario, Sally was described as frequently feeling either very good or very bad and as living what we might call an 'objectively' good life, in a naturalistic environment with good health or an 'objectively' bad life in a confined animal-testing centre with bad health. Contrary to the predictions of hedonistic accounts, lay judgements of Sally's welfare were not determined by how she was described as feeling. Indeed, participants considered Sally's welfare to be better when she was living a 'natural life' with negative emotions than when she was living an 'unnatural life' with positive emotions. Even judgments about Sally's 'happiness' (a supposedly more purely psychological concept) were affected by factors besides how she was feeling.

The results of a second study at UBC (Cardosa *et al* 2018) show at least some generality to these findings. This study used a 2 × 2 experimental approach to test hypothetical scenarios presented to approximately 600 Mechanical Turk participants. In this case, participants were presented with scenarios involving a herd of dairy cows that were either housed indoors or on pasture (thus intending to elicit concerns related to the natural living conception of welfare), and under conditions that prevented or failed to prevent heat stress (thus intending to elicit concerns related to affective state/biological functioning conceptions of welfare).

Participants judged the cows' welfare as superior when on pasture and when kept in conditions that prevented heat stress, again indicating that folk use multiple welfare criteria in their assessments. In this case, however, affective state/biological functioning treatment had a greater influence on welfare judgments than did the natural living. For example, the cows' welfare was considered to be relatively poor when kept under conditions where heat stress was likely, even if this included pasture access. Participants may have considered the functioning/affective state concerns to be inherently more important than the naturalistic one, or more likely, considered that the specific harms

of heat stress in this case outweighed any benefits of the more naturalistic living environment.

These two examples suggest that respondents apply a range of welfare conceptions, and do not rely upon just one of the factors from the three-circle framework. These examples also show that the responses of participants vary with context. In the example involving the chimp (a wild animal), concerns about naturalness seemed to outweigh concerns about her subjective experience. In contrast, for the scenarios with dairy cows (a domesticated animal, dependent upon the care of the farmer) people seemed to be more influenced by concerns about good functioning (and affect) rather than naturalness. Further research can be used to inform debate relating to a diverse range of dilemmas. For example, scenarios could include a range of species, and test a range of different affective conditions, different types and degrees of natural living, and different types of health and biological functioning features.

There are limitations to this approach. Even in the face of excellent data showing how people apply their concept of welfare, it is not clear how this evidence should direct policy. In some cases, policy-makers may conclude that the public responses are misguided, and thus propose some form of public education on the issue rather than changing practice (for a critical discussion of this 'knowledge deficit' approach, see Hansen *et al* 2003). But, even in this case, the empirical evidence will be useful to policy-makers, as well as to inform the academic debate about the nature of welfare.

Research on this topic is still in its infancy, and like all research this work has its limitations. For example, Robbins *et al* (2018) used an example involving a great ape, and attitudes towards these animals likely differ compared to other animals that are less charismatic and with whom we are less closely related. It is also known that cognitive capacities, as well people's perceptions of these capacities, vary greatly across species (Bastian *et al* 2012). The responses also may have been affected by the specific context provided. Participants were told that Sally was provided a stimulant that kept her in a positive affective state. Although several methodological techniques were utilised to control for this, it is possible some participants did not believe positive affective states could be reliably and consistently induced in this way. It is also possible that this type of drug-induced positive affect may have been perceived as having less welfare value, although this too would pose a challenge for purely hedonistic conceptions of welfare which should be indifferent about the source of pleasant experiences. As with all research, constructive replication is needed, for example, examining how people respond to conflicting concerns using a range of complementary scenarios. More specifically, we encourage the use of questions that explicitly assess the credibility of the scenarios.

Because Robbins *et al* (2018) were attempting to test ideas about hedonism, naturalness and biological functioning concerns were intentionally confounded; ie the condition described as unnatural was also described as unhealthy. Similarly, in Cardosa *et al* (2018), heat stress can be considered a concern from the perspective of both affective state and biological functioning. Indeed, many prominent welfare concerns may be considered problematic from multiple perspectives. For example, the lack of access to pasture may be concerning because cows are more likely to become lame when kept indoors, or because they cannot graze indoors, or because they may simply be happier outdoors. People can thus object to the lack of pasture access (or indeed other examples) for multiple reasons, perhaps because they view the evidence in support of different concerns as more or less credible, or because they apply different conceptions of welfare to the specific case. Thus, an aim of the research we propose is to disentangle these concerns using multiple, well-constructed scenarios and probing respondents to understand their reasoning.

Experimental approaches, in which scenarios are crafted with the intent of testing specific theories, may miss other and potentially more important concerns that the researchers have intentionally or unintentionally ignored. Open-ended responses amenable to qualitative analyses can help identify these other concerns, as can other qualitative research approaches, including interview studies. One specific risk associated with confronting participants with moral dilemmas is that they will change how they evaluate any relevant empirical claims (Liu & Ditto 2013). For example, participants committed to a naturalistic framework may have been more likely to discount any claims or evidence that Sally's affective state was good when she was medicated in a laboratory; by discounting such evidence, people can avoid the unpleasant cognitive dissonance associated with challenges to long-held conceptions. The way participants assess the believability of claims can be directly assessed, and we encourage future work to include such assessments.

There are also much discussed limits to using convenience samples for this research (Herzog *et al* 2001). Our work has mostly recruited American participants; Mechanical Turk participants tend to be younger and more urban than US census averages (Bohannon 2016) but there is also evidence that these samples can still be informative and reliable (Buhrmester *et al* 2011), and a variety of methods, including comprehension and reliability checks, can and have been used to improve data quality.

Beyond the three-circle framework

Up until this point in the paper we have limited our consideration of welfare conceptions to those included in the three-circle framework described by Fraser *et al* (1997): affective state, biological functioning and natural living. This focus has allowed us to simplify the discussion of how to address cases in which attending to different conceptions would result in different conclusions about the best course of action. The Fraser *et al* (1997) model was an attempt to form a more descriptive model of animal welfare. As explained by Fraser (2008; p 71), this synthetic approach was based on an "informal content analysis of samples of script, combined with years of personal involvement in discussions of animal welfare". The results of at least some

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qualitative work are consistent with the main elements in the 1997 model. For example, Lassen *et al* (2006) found that the concerns of citizens included not only 'suffering' but also 'physical harm' and 'a natural life.' Although Fraser *et al* (1997) provided a start in the development of a descriptive model, we are following Simonsen (1996) in explicitly calling for an assessment of public views. Exactly what would emerge from systematic assessment is impossible to say, but below we speculate on some of the conceptions likely to arise, in addition to the affect/functioning/natural aspects already described.

In the dairy cow study described above (Cardosa *et al* 2018), some qualitative responses from participants (open-ended comments explaining their Likert responses) questioned the morality of farmers who failed to provide access to shade on pasture, suggesting that it was the act of providing protection (rather than the efficacy of this protection in preventing heat stress) that mattered most to these participants. This example indicates that different situations can evoke a broad range of concerns, including those (like a duty of care) that are not normally included in academic conceptions of welfare.

One component to many descriptions of human welfare is preference satisfaction. Measures of preferences have long been used in the animal welfare literature, but more typically as a methodology to assess the importance of different environments or resources to animals rather than seeing the ability to fulfil preferences as important in its own right (Appleby & Sandøe 2002). Moreover, animals may benefit also from the ability to express preferences, and more generally for animals to make choices about their own life, as is addressed in more detail by Špinka (2019; this issue).

Preference theories of welfare are often combined with various idealising conditions. For example, Sumner (1996) argues happiness is predicated on "an informed and autonomous subject", suggesting that both choice and information are important constituents of welfare. The issue of whether animals can be 'informed' in the necessary sense has received relatively little attention in the animal welfare literature (but see Varner 1998). One exception is a paper by Franks *et al* (2013) that argues that information-seeking is essential for animal welfare, in part because choice *per se* is likely to be of little value if the animal lacks the necessary information to properly evaluate the options available. In other words, animals require information about the likely consequences of their choices for the provision of choice to be beneficial to the animal.

Most of the criteria considered can be thought of as prudential value (cf Griffin 1986); that is to say, they are considerations from the perspective of "the individual for whose life it is" (Sumner 1996; p 20). In contrast, other criteria may come into play in more general assessments of whether an individual can be said to be doing well. Consider, for example, a teenager who spends her time partying and playing video games; she may have good welfare from a prudential perspective but might not be thought to be living life to the standards considered appropriate for the species. Perfectionist conceptions of welfare specifically relate to the degree to which animals are able to live their lives according to certain species-appropriate ideals. This includes the ability to perform natural behaviours, such as grazing by cattle (Rollin 1995), but more generally can be considered as a list of features judged necessary for an animal to have good welfare (Nussbaum 2004).

The results of a recent study provide an illustration of one feature people may see as necessary. Ventura *et al* (2016) surveyed citizens visiting a dairy farm, asking them "What [if any] concerns do you have regarding the quality of life for dairy cattle?" In their responses these participants referenced the importance of 'humane care' including "…compassionate attention at the level of the individual animal, gentle handling techniques, and consistent and predictable management." Indeed, some participants specifically referred to the need for "human kindness" and "love" (p 8). It is possible that these concerns matter instrumentally. High quality care and human kindness, for example, may be seen as reliable indicators of an animal being healthy and feeling well. Moreover, Ventura *et al* (2016) asked about 'quality of life'; responses relating to humane care might not have emerged if the survey had instead used the term 'animal welfare'. We return to this semantic issue at the end of this paper, but further research is required to determine the prominence of this 'humane care' criterion in the folk understanding of both terms.

Another interesting example relates to the question of whether death should be considered a welfare issue (Yeates 2010; Kasperbauer & Sandøe 2016). At least some well-known animal welfare scientists have argued that death, in itself, should not be considered a welfare problem (so long as this occurs without suffering; eg Webster 1994; Broom 2011), but the issue of unnaturally shortened lives continues to be discussed (Bruijnis *et al* 2013). Indeed, Tannenbaum (2002) argues that most people do, in fact, think that painlessly killing an animal negatively impacts its welfare. One explanation for this is that death precludes the animal from enjoying future welfare (Yeates 2010). There may also be other harms associated with a premature death. For example, Kasperbauer and Sandøe (2016) discussed emergency slaughter in response to a disease outbreak as a welfare issue. In this case, the perceived wastefulness of the process (ie that the animal can no longer serve its purpose as human food) may account for this concern. For this reason, other examples of killing perceived as wasteful (such as that of surplus male dairy calves and male laying chicks) may be considered welfare issues, even when the method of killing is humane.

One reason for a special interest in death may be that this forms the ending of an individual's life story. A focus on life's narrative may include relationships as a component of animal welfare. Above, we referred to the relationship with a caretaker, but people may also view meaningful relationships with conspecifics as inherently important. An emphasis on relationships also introduces the idea of multiple characters in the narrative, perhaps explaining why

we might care about what is in the heart of the farmer, and not simply about their actions. We thus predict that the perceived virtue of the farmer (or any caretaker) affects judgements of welfare, in part because the nature of human-animal relationship may provide a context that is not reducible to facts about the animal itself. For example, Herzog (2010) suggested that fighting cocks could be considered to be faring well (perhaps better than some chickens raised for food production) from a prudential perspective, but that people may disagree with this assessment if they view the human-animal relationship as one based on dominance and instrumentality.

These examples illustrate some of the diversity in the way people conceive of animal welfare. These conceptions can include prudential concerns (factors that directly affect the animal), and our evaluation of the quality of this life (which can involve more than simply facts about the animal; Robbins 2017). This latter aspect may include a range of factors that affect our perspective of the narrative of this life, including how the life ends, the perceived value of the life, and relationships with conspecifics and caregivers. We call for new research to test these ideas.

Conceptions that emerge from this research will, of course, depend upon exactly what people are asked. In this paper, we have used the term 'animal welfare', as this is most commonly used in academic writing, however researchers should explore whether other terms commonly used interchangeably (eg well-being, quality of life, happiness) reflect the same underlying concept. Little research, to date, has addressed if folk conceptions of these terms differ. Wierzbicka (1999) examined how the word 'emotion' is used across different cultures and languages and found considerable variation; in contrast, the word 'feelings' was found to have a more consistent usage, as did words such as 'want', 'know' and 'think', forming a type of "bedrock of intercultural understanding" (p 8) (see also Widen & Russell 2010). New work may provide a better understanding of how welfare-related terms are used, as well as relevant historical, cultural and language differences (eg You *et al* 2014). Folk conceptions are likely to be diverse, varying in time as well as within and between demographics (Weinberg *et al* 2001).

In advocating for a better understanding of the breadth of conceptions regarding animal welfare, we do not mean to suggest that all ethical concerns raised about animal use are necessarily reducible to welfare. That said, the border between animal welfare and other issues in animal ethics can be muddy, especially so given that both involve action-guiding, normative commitments. Although it is widely assumed that welfare can only be altered by changes to the animal's body or mind, empirical data showing that people apply their prudential vocabulary in response to concerns that extend beyond these (eg relational or situational features of the animal's life) would certainly seem worth pursuing.

Animal welfare implications and conclusion

Our appeal for work aimed at understanding folk concerns related to welfare does not imply that all related policy should follow public opinion on such matters. Views are likely to be diverse, so even if there is some consensus on certain issues it may be helpful to understand and accommodate minority voices. Also, in some instances at least, there may be valid arguments for pursing policy options out of step with broadly held public values. However, it is important to recognise when this is the case, and to critically examine the arguments used to justify any gap between widely held public values and policy. The diverse nature of conceptions related to welfare, culturally and historically, suggests the need for ongoing research. As we have argued above, the diversity of conceptions will also lead to conflicting conclusions regarding the best course of action, and for this reason we also call for ongoing studies that explore these conflicts and how they are resolved. Folk conceptions of welfare will likely overlap with academic conceptions, including those featured in Fraser *et al*'s (1997) three-circles framework, but we have argued that folk conceptions will also extend beyond this framework and that different conceptions will be balanced differently depending upon the specifics of the scenario.

These conclusions suggest that academics working in this discipline need to think carefully about what they mean when they refer to an animal's welfare and should phrase their conclusions in relation to the specific concern of focus; general conclusions about 'animal welfare' should be avoided unless explicitly addressing how the specific measures considered map onto the diversity of welfare conceptions described here.

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