

Animal welfare science, varieties of value and philosophical methodology

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Abstract

There are competing conceptions of animal welfare in the scientific literature. Debate among proponents of these various conceptions continues. This paper examines methodologies for use in attempting to justify a conception of animal welfare. It is argued that philosophical methodology relying on conceptual analysis has a central role to play in this debate. To begin, the traditional division between facts and values is refined by distinguishing different types of values, or norms. Once this distinction is made, it is argued that the common recognition that any conception of animal welfare is inherently normative is correct, but that it is not ethical normativity that is at issue. The sort of philosophical methodology appropriate to use in investigating the competing normative conceptions of animal welfare is explained. Finally, the threads of the paper are brought together to consider the appropriate role of recent empirical work into folk conceptions of animal welfare in determining the proper conception of animal welfare. It is argued that empirical results about folk conceptions are useful inputs into conceptual philosophical investigation into the competing conceptions of animal welfare. Further mutual inquiry by philosophers and animal welfare scientists is needed to advance our knowledge of what animal welfare is.

Keywords: animal welfare, folk conceptions, methodology, philosophy, prudence, values

Introduction

Philosophers and scientists alike have raised questions about the nature of inquiry into animal welfare. Many have claimed that the study of animal welfare is not purely scientific, because the concept of animal welfare itself is “inherently a normative concept” (Fraser 1999; p 182). Specifically, Tannenbaum (1991) claims that “animal welfare science is as much ethics as it is science” (p 1361) largely because “[d]etermining that the welfare of a particular animal is worth studying is an ethical activity” (p 1363). As well, the decision whether to adopt one or another of the competing conceptions of animal welfare is a decision involving values (p 1368). David Fraser is the animal welfare scientist who has most carefully considered the connection between animal welfare science and values. He emphasises that “our conception of animal welfare inherently involves value notions about what is better or worse, more important or less important, for the quality of life of animals” (1995; p 113) and that “any assessment of animal welfare is underlain by value notions of what makes for a better or worse life for animals” (1999; p 182). Sandøe (a philosopher) and Simonsen (a scientist) agree that scientists make evaluative philosophical assumptions in their research on animal welfare that need to be made explicit (1992; p 257-258). Philosopher Bernard Rollin (1993, 1995) also agrees, and points out that even purportedly

objective measures of animal welfare that stress health and the absence of disease “are inextricably bound up with value judgments, including moral ones” (1993; p 46).

While the recognition that the concept of animal welfare is inherently normative is quite important, and while the dialogue between philosophers and scientists investigating animal welfare has been productive, more remains to be done. What is lacking in all of the accounts just mentioned is an adequate characterisation of the *sort* of norms or values that the concept of animal welfare involves. In this paper, a distinction is drawn between different types of value in order to make precise what sort of value is inherent in the concept of animal welfare. It will be argued that the concept of animal welfare, although it is inherently normative, is not inherently moral. That is, we can sensibly speak of what is good or bad *for animals* without simultaneously speaking of what is *morally* good or bad.

Once we are clear on this distinction, we can profitably move to an explanation of a typical methodology often used in philosophy. Understanding this methodology will be important in moving forward a programme of co-operation between animal welfare science and philosophy that many have called for or contributed to (eg Tannenbaum 1991; Sandøe & Simonsen 1992; Sandøe 1996; Fraser 1999; Appleby & Sandøe 2002; Fraser & Preece 2004; Nordenfelt 2006; Haynes 2008; Schmidt 2011).

In particular, once we have an understanding of this philosophical methodology and how it differs from empirical data gathering and scientific inference used in animal welfare science, we can assess the proper place of very recent empirical work in animal welfare science. This work seeks to study everyday folk judgments of animal welfare in order to help evaluate and inform competing conceptions of animal welfare. It is argued that this empirical work is a useful input into philosophical conceptual analysis of the normative concept of animal welfare. The empirical results usefully *inform* the conceptual analysis. However, the proper conception of animal welfare need not match the folk conception uncovered through empirical study. The reason for this conclusion is that the justification of any conception of animal welfare must be primarily *conceptual* as opposed to primarily *empirical*. The justification, it is argued below, has to be primarily conceptual as opposed to primarily empirical for the very reason reviewed at the beginning of this *Introduction*: the choice of a conception of animal welfare is inherently normative and so goes beyond scientific inference from empirical data.

Facts and varieties of value

We first need to draw and refine a well-worn distinction in this section in order to set the stage for later discussion. One *instance* of the distinction is between scientific facts (eg at 1 atmosphere of pressure, H₂O boils at 100 degrees centigrade) and moral values (eg one should not lie to one's mother). A scientific fact is an instance of a *description* of how the world *is*, whereas a moral claim is an instance of a *prescription* or *norm* for how the world *should*, or *ought* to be.

Philosophers often put this distinction in terms of directions of fit. Descriptions are to fit the world. This means that when there is a mismatch between a description and the world, the description is wrong and needs to change in order to fit the world. For example, a lack of fit between a scientific theory and the observed phenomena of the world (eg Ptolemaic astronomy did not fit retrograde motion), is remedied by changing the theory (eg by introducing epicycles) or replacing it by another (Copernican astronomy). The direction of fit between prescriptions and the world is the reverse. When there is a lack of fit between a prescription (eg a regime should not be killing millions of Jews) and the observed phenomena of the world (Hitler's regime was killing millions of Jews), the world, not the prescription, is to be changed.

Thus, we have a distinction between *facts*, *descriptions*, and how something *is* (the *descriptive*), on the one hand, and *values*, *prescriptions*, *norms*, and how something *ought* to be (the *prescriptive* or the *normative*) on the other. Importantly, not all descriptions belong to empirical science. An accountant who reports one's total income for the year makes a descriptive claim. More importantly, while moral values sit squarely within the normative domain, there are many norms that are not moral. The rule according to which entries in a bibliography are to be ordered lexicographically by the first author's last name (instead of by the author's first name or reverse alphabetically by name of the

publisher, for example) is a norm prescribing how the entries should be ordered, but violating that norm has no moral significance. Thus, the distinction between the descriptive and the normative casts its net much more widely than between empirical science and moral value.

A terminological note: In philosophy, a variety of terms are often used all to refer to a person's *welfare*. Philosophers use *welfare*, *well-being*, *prudential good*, *prudential value*, *self-interest*, *quality of life*, and *personal good*, more or less interchangeably (Campbell 2016; p 403; Fletcher 2016a; p 1; Weijers 2020; p 15). This usage will be followed here.

With this terminology in place, notice, importantly for our purposes here, that prudential rules are non-moral norms. A prudential rule gives a prescription for how one ought to behave in order to get what is good (ie, prudentially good) for one. Again, the prudential good is what is in one's own self-interest. Prudential rules include these: 'One ought to look both ways before crossing the street'; 'One ought not to run with scissors'; 'One should brush and floss daily'; 'One should pay one's credit card balance fully each month in order to avoid interest'. Clearly these are norms that express values in a certain sense as opposed to descriptive facts about the world. (A related descriptive fact about the world that contains no value statement is that unremoved tooth plaque reacts with sucrose to produce acid, which causes a loss of calcium and phosphate from the tooth).

It is important to note that these prudential rules are not moral rules. There is nothing immoral, in the usual case, about paying credit card interest or not brushing and flossing. The distinctness of prudence and morality can also be seen in cases in which it seems clear that self-interest and morality conflict. 'If you commit a crime, you should deny the accusation if there is no evidence implicating you' is a prudential rule telling you how to get what is good for you — staying out of jail in this case. In this situation, the prudential good is at odds with what is plausibly morally good (telling the truth), so the prudential good and the moral good are conceptually distinct. Indeed, an enduring philosophical question is how to motivate or ground morality when morality and self-interest seem so clearly to conflict in some cases. Plato (in *Republic* [1992]) entertains a strong argument for the claim that "one is never just willingly but only when compelled to be" because everyone "believes that injustice is far more profitable to himself than justice". Thomas Hobbes similarly wonders whether "injustice... may not sometimes stand with that reason which dictateth to every man his own good" especially when the benefit of injustice is great and the chances of being caught are nil (1651; Ch 15). The more recent renewed contractarian tradition beginning with David Gauthier's *Morals by Agreement* asks whether "moral duties [are] rationally grounded" in self-interest, ie prudence (1986; p 2). All these writers argue, in the end, that the dictates of morality are also dictates of self-interest — ie, that it is prudent to be moral. As Gauthier claims, a theory of morals is "part of the theory of rational choice" (1986; p 17). Whether it

is true or not that morality can be derived from self-interest, that it makes sense to ask whether behaving morally is in one's self-interest shows that morality and prudence are conceptually distinct.

Thus, the descriptive and normative domains are usefully distinguished. Science lies, with other things, in the descriptive domain. The prudential and the moral are both within the normative domain, but the prudential and the moral are not the same.

Any conception of animal welfare is inherently normative

As noted above, in the philosophical literature, *welfare* is often called *well-being*. The terminology is instructive. The idea is that an animal (human or non-human) that is high in well-being is not merely *being*, or *existing*, but is doing it *well*. That is, an animal with high well-being is existing in a way that is good for it, or in a good way. Similarly, an animal high in *welfare* is not just *faring*, but it is *faring well*. An animal high in welfare is faring in a way that is good for it.

Goodness, of course, is a normative notion. Again, there are several kinds of goodness. We mentioned moral and prudential goodness above, but there is also nutritional goodness, culinary goodness, psychological goodness (or wellness), musical goodness, and so on. The idea, in each case, is that there is some state or condition that sets a standard that ought to be strived for. Flour and water mixed together and served in a bowl as food is a culinary creation with some nutritional value, but it falls far short of the standards of a *good* culinary creation and *good* nutrition. Similarly, the animals described in *Animal Machines* (Harrison 1964) were faring, but not faring well. Their lives fell far short of the standards of good animal lives. Prisoners in solitary confinement are living, but they do not have good lives. Therefore, animal welfare, involving goodness as it does, is not a purely descriptive notion. Any conception of animal welfare, therefore, is inherently normative.

Again, as discussed in the *Introduction*, many in the animal welfare community agree with this claim that animal welfare is inherently normative and goes beyond mere description. Among animal welfare scientists, Fraser *et al* (1997) claim in their seminal paper that “[a]ny conception of animal welfare inherently involves values because it pertains to what is *better* or *worse* for animals” (p 188). Haynes — one of the few philosophers who have engaged the animal welfare science literature in any depth — uses an analogy due to Fraser (1995; p 104–105) to claim that “[a]nimal welfare is an evaluative concept, like product quality and building safety” (Haynes 2011; p 112). Again, with an analogy due to Fraser (1999; p 182), Haynes asserts that animal welfare scientists “are not doing *pure* science any more than food scientists who are investigating what sorts of ingredients make high quality bread are simply trying to explain the causes of natural phenomena” (2011; p 113).

Once we see this point that the concept of animal welfare is inherently normative and once we have recognised the point that there are multiple types of normativity, we can ask what

sort of normativity is inherent in animal welfare. The answer, clearly enough, is that welfare has to do with *prudential* value. An animal high in welfare is getting what is *prudentially* good for it. Again, this may or may not be what is *morally* good. In the animal welfare science literature, the distinction between moral normativity and prudential normativity is generally not made. Even among those scientists cited in the *Introduction* who agree that animal welfare is inherently normative, as seen in the passages quoted, ‘the normative’ either remains an undifferentiated catch-all category of *value* as opposed to *fact*, or it seems implicit that all value is ethical.

Fraser (1995; Appendix 1) makes some headway toward clarity. He distinguishes the descriptive and prescriptive, putting science in the former category. He then divides the prescriptive into (i) “preference values,” or “what we feel is relatively more or less desirable for animals” and (ii) “moral values”, or “what we consider to be morally acceptable treatment of animals” (p 114). Fraser is right to insist on a distinction between welfare and moral values. To illustrate the distinction, he says that “adequate food is important for the welfare of field mice as well as laboratory mice even though we feel no [moral] obligation to provide food for field mice” (p 114). Unfortunately, however, he equates preference values with animal welfare: “in conceptualizing animal welfare it is less problematic if we invoke preference values rather than moral values” (p 114). This is a mistake, for welfare (what is good for animals) is not merely what people *feel* or *believe* is good for animals. There is a further category within the prescriptive that is distinct from both moral values and what people feel or believe is good for animals. This is the category of what actually *is* good for animals. (This will be argued in more detail below when discussing the recent empirical literature into folk conceptions of animal welfare). Hurnik (a scientist) and Lehman (a philosopher) (1988) get it right when they remark: “To say that the concept of animal well-being is evaluative does not imply that judgments about the well-being of animals need reflect only personal preference” (p 310).

Scientists are not the only ones guilty of often failing to distinguish moral value and prudential value. Even the philosopher of animal welfare most often cited by scientists, Bernard Rollin, also at times seems to conflate the ethical with the normative more broadly: “Questions of animal welfare are at least partly ‘ought’ questions, questions of ethical obligation. The concept of animal welfare is an ethical concept to which, once understood, science brings relevant data. When we ask about an animal’s welfare, or about a person’s welfare, we are asking about what we owe the animal, and to what extent” (2015; p 760).

Once more, it is a mistake to equate the normative and the ethical. Questions of animal welfare are normative in that they ask about what is (prudentially) good for the animal. It is a further question whether anyone has an ethical obligation to promote what is good for an animal. In order to make this point as clear as possible, let us distinguish: (i) Conceptual questions about animal welfare that are

normative — ie, prudential questions; (ii) Scientific questions about animal welfare; and (iii) Ethical questions about animal welfare. In the next three paragraphs, examples of each sort of question will be given in order to make the distinctions advanced here clearer and more compelling. Consider examples of the first category first.

(i) Conceptual normative questions about animal welfare (prudential questions)

Is pain bad for animals? Is pain the only bad for animals? Are human and non-human animal welfare the same sort of thing? Is good health necessary for good welfare or can health be bad while welfare is good? If X affects an animal's welfare, does X have to enter the animal's consciousness in some way? Is living naturally good for animals for its own sake, or only because it leads to positive affect and good health? Assuming that positive affect, good health, and living naturally are all good for animals, what are the relative weights of these factors that will allow us to decide which of two systems of husbandry (eg pasture vs confinement) is better for the welfare of a flock or herd, when neither system will maximise all three dimensions? These questions all ask about what is good or bad for animals. As such, they are prudential questions. Standing alone, they do not ask ethical questions.

(ii) Scientific questions about animal welfare

The previous paragraph listed conceptual questions about animal welfare. At least some of these questions need to be answered in order for science to proceed. For example, a physicist cannot measure the average velocity of a projectile until he or she has formulated and defended a measurable conception of average velocity (as distance travelled per unit of time along with the direction of the travel). Similarly, an animal welfare scientist cannot measure animal welfare until he or she has formulated and defended a measurable conception of animal welfare (as pleasure and freedom from pain, as health and sound biological functioning, or something else). Once we have settled conceptual normative questions about animal welfare such as those listed in the previous paragraph, scientists can devise appropriate measures of animal welfare given a particular conception of animal welfare that has been formulated and defended. They can then go on to collect empirical data with the aim of answering scientific questions such as the following: does the stocking density of broiler chickens affect their welfare? If so, how much better is the welfare of broilers at a density of 0.10 m² per bird in comparison to a stocking density of 0.07 m² per bird? Assuming an answer to our conceptual question about the relative weights of the components of welfare, is pasture or confinement better for the herd of cattle on Farm Y with its management practices? What kinds of housing design and environmental enrichments are most beneficial to captive primate welfare? Is the welfare of captive Species S at Zoo Z better or worse in comparison to the welfare of their conspecifics living in nature?

(iii) Ethical questions about welfare that assume answers to the conceptual normative questions and make use of empirical facts uncovered by scientists

Finally, once we have answered questions of types (i) and (ii), we can use those answers as input into ethical questions, such as: Given that pain is prudentially bad for animals, which is morally better: to inflict moderate pain on all animals (eg by tail docking) or to allow just some animals to suffer severe pain (eg from tail biting)? Is it morally acceptable to keep sows in gestation crates at the level of welfare they have with the provision of hemp rope as an enrichment? What is the maximum stocking density for broiler chickens that provides for a morally adequate level of welfare? Assuming that it is bad for an animal's welfare for it to die, is it possible to give an ethical justification for raising animals for food? Is tail docking in dogs for aesthetic purposes morally permissible? Is it morally permissible for Zoo W to keep animals of Species T for exhibit, given that their average level of welfare is significantly less than their wild counterparts?

At this point, an objection should be considered to this discussion of the distinctions among the (i) prudential, (ii) scientific, and (iii) ethical. Animal welfare is widely regarded as a pressing social and ethical concern. It is not a purely academic or conceptual issue. The scientific study of animal welfare is motivated, in large part, by this social and ethical concern for the care provided to animals (Fraser *et al* 1997; p 188; Fraser 1999; p 172). It is not motivated by a purely academic interest in what is good for animals. So, to insist on the distinctions among the (i) prudential, (ii) scientific, and (iii) ethical, as has been done in this section, may seem to express a disregard for the fundamental ethical motivation behind the study of animal welfare from a scientific perspective. In particular, while the distinction between the ethical and prudential is technically correct, the assumption should be made explicit that, all else being equal, it is morally preferable to provide a better quality of life to the animals under our care.

In response to this objection, it is important to acknowledge the truth of the claim that, all else being equal, humans are morally obligated not to cause animal suffering but to promote animal welfare instead. It is beyond question, as well, that the scientific study of animal welfare is largely motivated by this moral concern. To acknowledge these points, however, is consistent with maintaining the clear conceptual distinction here between the prudential and moral within the category of the normative. The claim that the questions listed under (i) are prudential questions and not ethical questions is true independently of any claims about the obligations of humans toward animals. Yet to maintain the conceptual distinction between prudence and morality is not to deny that animal welfare is a moral concern. One can embrace that moral concern, while simultaneously recognising the conceptual distinction between the prudential and the moral.

To emphasise it again, prudence and morality are distinct because questions of prudence can arise in situations where moral questions do not. To take another example, consider a fox and a rabbit living in a remote wilderness. The hungry fox attempts to make a meal of the rabbit. The fox's attempt fails, and the rabbit escapes with a painful ear laceration. There are a lot of questions about animal welfare in the vicinity: Is the fox's hunger bad for its welfare? Is the pain bad for the rabbit's welfare? If the injury to the rabbit's ear affects its thermoregulation, will this effect be bad for the rabbit? Yet there are no questions about human morality present in the case. Since questions of animal welfare are present but questions of human morality are absent, prudence and morality must not be the same and the issues of the fox's welfare and the rabbit's welfare here are not moral issues. Judgments of prudence and morality occur on different axes.

Consider an analogy to this reasoning in a scientific case. While heat and combustion are often present together, heat and combustion are distinct. To see why, consider that heat can be present when combustion is not, as when an electrical current moves through a conductor of high resistance. Since one can be present when the other is not, they are not the same thing and inquiries concerning heat are not necessarily also inquiries concerning combustion.

In sum, animal welfare is inherently normative, but this does not imply that questions of welfare are necessarily questions of ethics. Prudential goodness and moral goodness are distinct types of goodness. To assume that humans should protect or promote the welfare of animals is a substantive moral assumption that requires defence and goes beyond questions strictly about welfare.

The nature of justification of conceptions of animal welfare

Conceptual analysis

Now that we are clear on the sort of normativity inherent in a conception of animal welfare, we can inquire into the nature of the justification that can be given in favour of any particular conception of animal welfare. Consider a related task, albeit a considerably less serious one. Just as we can try to determine the best conception of animal welfare, we might try to determine the best conception of a sandwich. To be sure, the protection and promotion of animal welfare is a leading moral issue, so there is a real importance to determining the best conception of animal welfare that is absent in determining the best conception of a sandwich. The sandwich example is merely a toy example. The goal of arriving at a conception of a sandwich is to provide a theoretical unification of and support for our considered judgments about what are and are not sandwiches. What conception of a sandwich supports the view that slices of bologna with mustard between two pieces of bread makes for a sandwich, but that a milkshake is not a sandwich? We are trying to determine the necessary and sufficient conditions for something to be a sandwich.

We might begin this process by consulting our intuitions about clear cases of sandwiches — a ham sandwich on rye

bread, for example. Then, on the basis of such clear and intuitive cases, we can arrive at our first attempt at a conception of a sandwich: two pieces of bread with meat in the middle. A next step is to take this conception, or theory of the sandwich, and see what it implies about what does and does not count as a sandwich. On this conception of a sandwich, a so-called grilled cheese sandwich is no sandwich at all, because it does not have meat in the middle. We now have a choice. We can either revise the intuition we had before we started theorising about sandwiches (our *pre-theoretic intuition*) that grilled cheese sandwiches are sandwiches, or we can revise our provisional sandwich theory. Assuming that we want our theory, or conception, of a sandwich to imply that a grilled cheese sandwich is indeed a sandwich, we should revise our conception. Perhaps now we arrive at version two of our sandwich theory and say that a sandwich is two pieces of bread with something edible between them.

Again, we test this conception of a sandwich for whether it is consistent or inconsistent with our pre-theoretic intuitions. Sometimes, rather than revising the theory, we have to revise our pre-theoretic intuitions because of what our theory implies and because our theory is otherwise compelling. In this case, this theory of a sandwich implies that slices of carrot between two slices of bread is a sandwich. Although before we reflected on the matter, we may have resisted calling this a sandwich, in light of the strengths of version two of our sandwich theory, perhaps we jettison our pre-theoretic intuition and arrive at the considered judgment that carrot slices between two slices of bread is indeed a sandwich.

We now need to consider open-faced sandwiches with just one piece of bread, sandwiches that use something other than slices of bread — such as hoagie buns, rice cakes, or layers of lettuce — as well as many other things that are sometimes called sandwiches. Thus, we go, back and forth, between our theory and our considered judgments, mutually adjusting each as appropriate. We do this until our revised theory is in harmony with all of our revised considered judgments and all of our revised considered judgments are implied by our revised theory. In this case, we have reached what philosophers (following Rawls [1971; Section 4]) call *reflective equilibrium*, an equilibrium between our theory and our considered judgments.

What we are doing when thinking about the concept of a sandwich in this way — or about the concept of animal welfare, or justice, or the mind, or free will, or personhood — is rightly described as *conceptual analysis*. We are analysing a concept and trying to figure out what the essence of the concept is. We seek a conception (or theory) of the concept that unifies and provides theoretical support for our considered judgments about the thing we seek to understand.

It is important to note that this process of moving toward reflective equilibrium is not best conceived as the solitary pursuit of an individual theorist in an armchair. This sort of philosophical pursuit is almost always a social process, whereby (for example) someone points out an implication of a theory that was not initially recognised by the theorist. It is also a process that should be empirically informed, in

the sense that the best conception (eg of a sandwich) is to be best not just for a theorist in an armchair, but for everyone. So, the conception arrived at has to do justice to common intuitions (eg about sandwiches). Just what role statistically common intuitions should play in determining the most justified conception will be discussed below when empirical work is taken up directly.

Of course, scientific studies of animal welfare usually just assert what animal welfare is or what aspect of animal welfare is being addressed, and then get on with the empirical inquiry. While most scientists are engaged in empirical study and not conceptual analysis, if one studies the literature in animal welfare science, one sees that animal welfare scientists do sometimes use this method of conceptual analysis, though usually just in passing and not as a central part of their scholarly investigation into animal welfare. When considering the theory that animal welfare has to do only with what an animal feels, Broom claims that welfare cannot be only feeling because someone could be injured yet not in pain (1991; p 4168; see also Broom [2011; p 127]). In other words, the feeling theory implies that the pain-free injured person does not have his welfare negatively affected. But Broom's intuition, which he assumes his reader will share, is that it is obvious that the pain-free injured person does have his welfare negatively affected, so the feelings theory must be rejected or revised. Using the same logic, Dawkins explains that an operational definition of welfare exclusively in terms of wants would imply that all animals getting what they want are getting what is good for them. Yet "what animals choose or will work for may not be good for their health in the long run" (Dawkins 2008; p 941), such as when dogs eat chocolate. Here, Dawkins is appealing to her settled intuition that health is a central part of welfare. So, we have to revise the definition to say that animal welfare is not just an animal getting what it wants. Rather, getting what it wants *and* being healthy together constitute an animal's welfare (Dawkins 2006, 2008, 2017). In both of these cases, these theorists can be seen as working through a process of mutually adjusting theory and intuitions as they work toward a state of reflective equilibrium.

More sophisticated uses of this method of working toward reflective equilibrium go beyond mere exchange of intuitions and invoke unifying principles that support other beliefs. For example, Duncan (1993; p 11) declares that an animal that is in ill health but that does not have its experience negatively affected does not, therefore, have its welfare negatively affected. He is appealing implicitly to a principle that philosophers have dubbed the Experience Requirement, which states that an event or state of affairs cannot affect a being's welfare unless it enters that being's conscious experience (see Sandøe & Simonsen [1992; p 262-263]). Broom (1991; p 4168) in considering Duncan's sort of case and claiming that a pain-free injured person does have his welfare negatively affected, is implicitly denying the Experience Requirement. That means we can now move the debate beyond exchange of competing intuitions to a more general debate over a principle, in this case the Experience Requirement. Again, this is a more sophisticated use of the

reflective equilibrium method insofar as it appeals not merely to unsupported gut intuitions, but to a principle that serves to support and unify other beliefs.

Philosophers typically also invoke *thought experiments* or *intuition pumps* in this process, in order to test theories and the principles behind them. In order to test the Experience Requirement, consider the case of the *deceived businessman*, inspired by an example from Nagel (1970; p 76). Suppose that Gordon is an accountant driving home from work on Friday, smiling and singing to the radio while he reflects on the elements of his life that are important to him: his career, his marriage, and his children. Unbeknownst to him, his termination notice just reached his e-mail inbox, his wife is having an affair with his best friend, and his children despise him but pretend to love him only because they receive a hefty allowance. This thought experiment is intended to pump the intuition that Gordon's life is going badly at this very moment — his welfare is low — even though the bad things have not entered his conscious experience. A proponent of the Experience Requirement would need to offer an equally compelling thought experiment pumping the opposing intuition or renounce the principle because its implications are contrary to our considered judgments and settled intuitions in cases such as the deceived businessman.

Conceptual analysis is a central part of the philosophical enterprise. There is a large theoretical literature in philosophy that is well understood as centred on this sort of conceptual analysis of human well-being. (For some entries into the literature on human well-being, see Bradley [2015] and Fletcher [2016a,b]. There is comparatively little theoretical literature in philosophy on non-human animal well-being). Theories of human welfare are offered, criticised, defended, and revised. Philosophers are working to find out what human well-being is, so that it can be identified and pursued. Animal welfare scientists do some, but comparatively little, conceptual analysis. They do it in order that they can get empirical inquiry off the ground. While philosophers might criticise scientists for doing too little theory before collecting data, scientists would rightly reply that they cannot wait for the conceptual inquiry to come to an end in order to start their empirical inquiry. While a few philosophers have engaged the theories of animal welfare put forward in the animal science literature, it would be productive if more would, and if scientists would consider the resulting analyses by philosophers in conducting their empirical inquiries. While others have recognised and discussed the correspondences between conceptions of human welfare and conceptions of animal welfare (Appleby & Sandøe [2002] is a prime example), further conceptual analysis of animal welfare and debate among the competing conceptions of animal welfare is called for.

Empirical analysis

Thus far, this paper has ignored an important line of inquiry into the concept of animal welfare that is presently gaining further traction in the scientific literature. Fraser (2008) motivates the thought behind this line of inquiry well when he says that his goal "is not to determine the philosophical

essence of the concept of animal welfare, but to identify what people try to capture by the term when they, for example, try to improve animal welfare conditions on their farms and zoos, create animal welfare standards, or include animal welfare in corporate policies. And when scientists do research in support of such actions, their work... should be guided by the everyday meaning(s) that the term carries in the practical world” (p 234). So, we can do as much conceptual analysis of the variety just discussed as we wish. Yet, if the conception of animal welfare arrived at does not match what people mean by animal welfare when they use the notion and when they try to advance animal welfare, then (on this view) the conception is not of practical use in advancing animal welfare as ordinary people conceive of it. Therefore, the developing line of inquiry uses empirical research to determine what conception(s) of animal welfare people actually hold, in order that we can gain a better understanding of what animal welfare *is* as people use the term, so that we can then promote animal welfare so conceived.

Robbins *et al* (2018), for example, investigated how their human research subjects rated chimpanzee welfare when the chimpanzees described in vignettes differed on two dimensions. The first dimension is whether the animal feels good or feels bad. The second is the combined dimension of whether the animal is healthy and living naturally or unhealthy and living unnaturally. Their findings suggest that the welfare judgments of ordinary people (the folk) depend more on the latter dimension than the former. Welfare hedonism is the view that the former dimension is all that matters to welfare. More precisely, it “is the view that subjective experience is the only non-instrumentally valuable constituent of welfare” (p 2). Based on their findings, the conclusion of their empirical inquiry is that welfare hedonism does not accurately predict the judgments of ordinary people (p 8).

While the authors are clear that their “goal in this study was... to test the predictions of hedonism” (p 7), they are also clear that this was not their only goal. They introduce their study by explaining that scientists “typically draw inferences about animal welfare” but that drawing such “inferences about animal welfare presupposes some conception of what animal welfare is” (p 2). The authors then introduce welfare hedonism as one popular view among scientists of what animal welfare is and go on to express their misgivings about this theory of welfare, stating that they “believe there is good reason to question welfare hedonism” (p 3). They then state that “one way to help adjudicate these competing theoretical possibilities [of what welfare is] is to determine which of them best reflects ordinary, common sense usage” (p 3). So, evidently part of the purpose of their “study of the folk concept of animal welfare” (p 3) is to provide a challenge to hedonism as a theory not just of how people use the concept of animal welfare, but of what animal welfare is.

In another study, Cardoso *et al* (2018) similarly found that people include more than just naturalness when making judgments of dairy cow welfare in scenarios in which naturalness may conflict with the combined dimension of

biological functioning and affect. They conclude that “one type of animal welfare concern (eg the naturalness of pasture) does not trump others (eg affective state and biological functioning concerns associated with heat stress)” (p 11). Thus, again, a conception of animal welfare with naturalness as the exclusive or lexically prior component of welfare is not the conception held by the folk. Unlike Robbins *et al* (2018), Cardoso *et al* (2018) do not explicitly discuss the possible implications of their empirical results for what animal welfare is. Although Cardoso *et al* (2018) do not explicitly use their empirical results as part of an argument against the naturalness conception of animal welfare, clearly one could use these results in this fashion in parallel to the way in which Robbins *et al* (2018) use their results as a challenge to the hedonic conception what of animal welfare is.

While these studies and others like them (see Heise & Theuvsen [2018]) and the literature cited therein) are very valuable from the standpoint of understanding the folk conception(s) of animal welfare and the actual beliefs that the research subjects hold, there are reasons to doubt the degree of their relevance to understanding the concept of animal welfare, ie what animal welfare *is*, what is good or bad for animals. If the concept we were investigating were the concept of a sandwich, then an empirical inquiry into how people use the concept of a sandwich may be highly relevant to the conception of a sandwich that we settle upon. For a sandwich, one could argue, is just whatever people say a sandwich is. This *may* work for a sandwich because whether something is a sandwich is a purely descriptive matter. In this case, an empirical investigation into people’s beliefs about what sandwiches are would be an empirical investigation into what sandwiches are.

In the case at hand, however, we are concerned with animal welfare which, as was argued above, is an inherently normative concept. We can certainly investigate what the folk mean when they apply the term *animal welfare*, but this will not tell us what animal welfare is. *An empirical result about what people believe is good for animals is not an empirical result about what is good for animals.* To see this, consider a parallel inquiry into another normative concept. Suppose we conduct a study to determine how people use the term *morally permissible*. Suppose the study is conducted at the height of the American use of African slaves, and one of the questions we ask is whether ownership of slaves is morally permissible. Finally, suppose that the vast majority of those surveyed indicate that they believe that ownership of slaves is morally permissible. Again, an empirical result about what people believe is morally permissible is not an empirical result about what is morally permissible.

Consider another case supporting the claim that an empirical result about what people believe is good for animals is not an empirical result about what is good for animals. Suppose we conduct a study of public attitudes toward porcine housing conditions. In Scenario 1, the pigs are housed in a barren environment with a high stocking density and a high rate of tail biting. In Scenario 2, the pigs have an enriched environment with a lower stocking density

and a lower rate of tail biting. Suppose that when asked, the vast majority of research subjects report a belief that pigs in Scenario 1 have higher welfare than pigs in Scenario 2. Surely we would not conclude that pigs in Scenario 1 have higher welfare than pigs in Scenario 2. Rather, we would conclude that the research subjects have mistaken beliefs about pig welfare. If this is how we would respond, then this shows that we are committed to the view that an empirical result about what people believe is good for animals is not an empirical result about what is good for animals.

Of course, the claim here is not that any animal welfare scientists are engaged in the crude reasoning depicted in the previous paragraph from folk beliefs about animal welfare to conclusions about what animal welfare is. The point is that great care is needed in considering the relevance of folk beliefs about animal welfare to the nature of animal welfare.

The general problem at issue is that widely held public values may not be the values that should be pursued or implemented: just because people *believe* that something is good does not mean that public policy should accept that thing as good and promote it. In a recent paper discussing empirical research into folk conceptions of animal welfare, Weary and Robbins (2019) acknowledge this problem. They are clear that widely held public values may be contrary to the most justified public policy: “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.... [I]n some instances at least, there may be valid arguments for pursuing 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” (p 38; cf also p 36). The point is well taken that policy at odds with widely held values needs justification. Yet what should the nature of the justification be? We must be able to justify values other than broadly held public values, so our justification cannot be empirical: by hypothesis of the case presented by Weary and Robbins, the broadly held public values do not support the most justified public policy, so the justification of that policy cannot appeal to those broadly held values. The justification, therefore, should be theoretical, and based on the sort of conceptual analysis explained above. Again, we see that there is a crucial role to be played by the sort of analysis that is typically undertaken by philosophers.

To be very clear: none of this is to say that there is no place for empirical inquiry into conceptions of animal welfare. Indeed, quite the reverse is true. What the folk say is a starting place and one data-point to use to test a theory of animal welfare against intuitions, in this case, the widely shared intuitions of the folk. As Weary and Robbins (2019) say, even when what the folk say is at odds with what is justified, “the empirical evidence will be useful to policy-makers, as well as to inform the academic debate about the nature of welfare” (p 36). Surely whatever conception of animal welfare we adopt in the end will have *something* to do with how people use the term ‘animal welfare.’ So, philosophers studying animal welfare would do well to pay

attention to this developing empirical literature. Again, however, this can only be part of the beginning of the story. In addition to the role of theoretical reflection and conceptual analysis discussed thus far, theoretical reflection will also be necessary to decide how to deal with other issues uncovered in the data, such as inconsistencies and disagreements in the folk attitudes revealed by the research. In the end, conceptual analysis of the sort outlined above will have to play the primary role in moving the debate forward about conceptions of animal welfare. To say it again: to give conceptual analysis the primary role in the debate is not to make animal welfare the exclusive domain of experts, either in philosophy, in animal welfare science, in farming, or in any other domain. The position here acknowledges the necessary input of empirical facts about the views of the folk into conceptual analysis, but maintains that, in the end, analysis of concepts is primarily conceptual analysis rather than empirical data gathering and inference.

Experimental philosophy and thick concepts

The purpose of this section is to clarify the position about animal welfare that is advanced here and locate this position in relation to debates about human welfare and other normative concepts in philosophy and science. As discussed above, much as some philosophers are concerned to understand the nature of animal welfare, many philosophers are concerned to understand the nature of human welfare (usually called *well-being*). Similarly, much as animal welfare scientists are concerned to study animal welfare from an empirical standpoint, many psychologists are concerned to study human well-being empirically. And, much as some animal welfare scientists have claimed that empirical results about the folk conception(s) of animal welfare have implications for theorising about animal welfare, some psychologists have claimed that the empirical study of human well-being is relevant to theorising about human well-being.

Indeed, some psychologists have made very strong claims about their empirical results that go beyond what animal welfare scientists have claimed about theirs. Kesebir and Diener (2008) claim that certain empirical results about well-being provide direct answers to some perennial philosophical questions about well-being. Some philosophers, including Fred Feldman (2010), deny their claim. Feldman reasons that empirical results are mere descriptions of the causes and correlates of certain states. Feldman argues that the relevant philosophical questions — for instance, whether those states are good or bad, whether those states should or should not be promoted, and questions about the nature of well-being generally — are normative questions that are not answered with empirical results (p 647-648). Some philosophers have taken a more moderate position on the relevance of empirical results in psychology to theorising about human well-being. For example, Valerie Tiberius (2013a,b), argues that well-being, while it is not a descriptive concept, is not a purely evaluative concept either. Rather, she claims, it is a *thick concept*, where a thick concept is one that has both evaluative and descriptive components. (Another example is the thick concept of

courage. In calling someone courageous we are simultaneously describing their behaviour in the face of danger and evaluating their behaviour positively). Since human well-being is a concept with a descriptive component, Tiberius reasons that empirical results about how people use the concept will have to inform philosophical theorising about the concept: “Folk usage of the relevant concepts in the form of judgments (or intuitions) about particular cases is one source of information that must be brought into [reflective] equilibrium” (2013a; p 323–324).

The debate about the relevance of empirical results in psychology to the philosophical study of human well-being is an instance of a more general debate within philosophy. The more general debate concerns a movement in philosophy called *experimental philosophy*. Experimental philosophy, generally conceived, studies folk intuitions about philosophical questions and concepts. One strain in the experimental approach uses empirical results about folk intuitions in order to inform philosophical theorising (Knobe & Nichols 2017). There is vigorous debate within philosophy about the value of the experimental approach (Knobe & Nichols 2008; Knobe & Nichols 2014). Tiberius acknowledges this when she says that it “is controversial... that the empirical facts about our concept use are relevant to philosophical theorizing about these concepts” (2013b; p 222).

The position advanced here concerning the concept of animal welfare more closely resembles Tiberius’ position concerning the concept of human welfare than it resembles Feldman’s position. It represents a moderate position within philosophy about the value of the experimental approach in philosophical analysis. The position here is consistent with the view that animal welfare is a thick concept. It is also consistent with an approach in experimental philosophy according to which the intuitions that philosophers use when theorising should include intuitions of the folk: As argued above, empirical results about the folk conception of animal welfare are essential inputs into the analysis of the concept of animal welfare. Yet, as Tiberius is clear, “folk usage needn’t carry the day... [W]e may need to conclude that sometimes people are mistaken about what happiness [or well-being] really is” (2013a; p 324). So, while “how people happen to use the concept is not going to determine its nature,” information about folk usage is “relevant as one strand in the mass of material that we must knit together” (2013a; p 324). This is essentially the position argued for above with regard to the relevance of empirical results about the folk conception(s) of animal welfare.

Animal welfare as a social mandate

One may object that the emphasis here on the *nature* of animal welfare, ie what animal welfare *is*, is out of place. For, as acknowledged above when introducing empirical analysis, Fraser’s goal “is not to determine the philosophical essence of the concept of animal welfare, but to identify what people try to capture by the term when they, for example, try to improve animal welfare conditions on their farms and zoos, create animal welfare standards, or include animal welfare in corporate policies” (2008; p 234). The

study and promotion of animal welfare is a social mandate. In order to understand what is socially mandated, we need a thorough understanding of the folk concept of animal welfare, not its philosophical essence.

In reply to this objection, note first that textual evidence was presented above that Robbins *et al* (2018) take themselves to be presenting empirical results relevant to settling a dispute about competing conceptions of the *nature* of animal welfare, not just “what people try to capture by the term.” On one hand, if the analysis above of Robbins *et al* (2018) succeeds, then this objection is defused. The discussion of the nature of animal welfare here is not out of place, for it just continues recent discussion among animal welfare scientists.

On the other hand, if the analysis given above fails and the study of the folk conception(s) is not in service of trying to figure out what animal welfare *is* but only about “what people try to capture by the term,” then the question arises why we should be interested in what the folk try to capture by the term ‘animal welfare’ which they think should be promoted. The folk think that all sorts of things should be promoted, many of which should not be. Just because something is socially mandated does not mean that that mandate should be followed. Slavery in the confederate states was socially mandated, but that mandate should not have been followed.

The difference, of course, is that scientists studying animal welfare believe that animal welfare ought to be promoted. The present author wholeheartedly agrees. But what justifies the premise that animal welfare *as the folk conceive of it* ought to be promoted? That seems to be Fraser’s assumption in trying to understand the ordinary sense of animal welfare so that scientists can help promote it: “their work... should be guided by the everyday meaning(s) that the term carries in the practical world” (2008; p 234). Again, appeal cannot be made to the overwhelming judgment of the folk that animal welfare ought to be promoted: “X (as the folk conceive of X) ought to be promoted” does not follow from “the overwhelming majority of the folk believe that X (as the folk conceive of X) ought to be promoted.” It would be highly uncharitable to interpret scientists as blindly following the folk in this way. Yet if they are not following the folk, then they must be relying on a substantive evaluative claim to the effect that what the folk believe should be promoted regarding animal welfare really should be promoted. That is a claim requiring conceptual support. It is not amenable to empirical support.

Conceptual analysis as primary

One final objection should be considered. One might claim that the position advanced here goes beyond the justification that has been offered. It has been claimed above that the methodology appropriate for investigating the nature of animal welfare is primarily conceptual and not primarily empirical. It may be objected that the reasons offered only support the conclusion that the appropriate methodology is not primarily empirical. Further argument is needed to support the conclusion that the appropriate methodology is primarily conceptual. As it stands, one might claim, the conclusion that is best supported is that there is an equal

partnership between conceptual and empirical methodologies in investigating the nature of animal welfare.

In response, notice that when we are investigating the nature of animal welfare, we are analysing the concept of animal welfare. The claim is that *conceptual analysis* has the primary role to play in *analysing concepts*. Putting the claim that way makes the claim very unsurprising. Yet it has been argued here that conceptual analysis, done properly, cannot proceed without the *essential input* of empirical facts about the use of the concept of animal welfare in ordinary language. So why is the conceptual analysis *primary*?

To see why, consider the parallel case of the primacy of empirical inquiry in empirical matters. Suppose that instead of investigating the nature of a concept, we seek to measure something in the natural world, such as the boiling point of water. In such a case, it is clear that the appropriate methodology to use for the purpose of answering that empirical question is primarily empirical. Conceptual analysis in this case is a *necessary input* into the empirical method. For instance, we must get clear on the conceptual issue of what water *is* (pure H₂O and not an aqueous solution). We must also settle the conceptual issue of what conception of a boiling point we are using (boiling at one atmosphere of pressure rather than the pressure at a certain location on Mars). This conceptual analysis is a *necessary input* into the empirical investigation. Even though this input is necessary, it is correct to say that the investigation into the boiling point of water is primarily empirical and not primarily conceptual. Thus, the appropriate methodology for answering empirical questions is not exclusively empirical, but it is primarily empirical. Conceptual analysis has an essential role to play in empirical analysis in order that the empirical analysis can be done precisely and properly. In the end, however, empirical questions are best answered through methods that are primarily empirical.

In a parallel manner, the appropriate methodology for answering conceptual questions about animal welfare is not exclusively conceptual, but it is primarily conceptual. Empirical facts serve as essential inputs for conceptual analysis and serve as one factor in assessing the adequacy of a conceptual analysis. In the end, however, conceptual questions are best answered through methods that are primarily conceptual. This is not to assert the dominance of conceptual inquiry over empirical inquiry. It is not to say that one method trumps the other. It is to recommend a collaborative inquiry, for it is *empirically informed* conceptual analysis of the concept of animal welfare that is needed.

Animal welfare implications

Before stating the specific animal welfare implications of the present essay, it may be useful to distinguish different *sorts* of animal welfare implications that an inquiry could have. One sort of animal welfare implication has to do with (A) how to promote animal welfare. Answering questions about (A) presupposes an answer to the question of (B) how to measure animal welfare, which is another sort of animal welfare implication. Answering questions about (B) presup-

poses an answer to the question of (C) what animal welfare is, which is yet a third type of animal welfare implication. (Appleby & Sandøe [2002; p 285]) also remind us of the distinction between questions concerning (B) and (C). Answering questions about (C) presupposes an answer to the question of (D) what is the appropriate methodology or methodologies to use in investigating what animal welfare is, which is a fourth type of animal welfare implication.

The implications of this essay for animal welfare are (D)-type methodological implications. The main implication is that the most appropriate methodology to use to study the concept of animal welfare is a theoretical methodology employing the reflective equilibrium method. While empirical results about common beliefs about what animal welfare is do not determine what animal welfare is, those empirical results are essential input into the reflective equilibrium method. While this essay does not have any immediate implications of types (A), (B), or (C), if scientists and philosophers alike allow the (D)-type methodological conclusions here to inform and influence their inquiries into (C) the concept of animal welfare, there would be indirect implications for (B) measuring animal welfare and (A) promoting animal welfare.

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