



The interaction of ethical questions and farm animal welfare science

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Published in:

Animal welfare and ethics: From principle to practice

Publication date:

2012

Document version

Publisher's PDF, also known as Version of record

Citation for published version (APA):

Sandøe, P., Forkman, B., & Jensen, K. K. (2012). The interaction of ethical questions and farm animal welfare science. In *Animal welfare and ethics: From principle to practice: Proceedings of the 2012 RSPCA Australia Scientific Seminar* (pp. 35-44). RSPCA Australia.



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PROCEEDINGS OF THE 2012
RSPCA AUSTRALIA
SCIENTIFIC SEMINAR



Animal welfare and ethics
From principles to practice

Tuesday 28 February 2012

National Convention Centre
Canberra

RSPCA Australia gratefully acknowledges
the financial support for the
2012 Scientific Seminar from

Commonwealth Government through a grant-in-aid administered by
the Department of Finance and Deregulation



Australian Government

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Published by RSPCA Australia Inc

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Setting the scene

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Many discussions about 'ethics' begin with a flourish only to grind to a halt as people encounter disagreement about the answer to a fairly fundamental question, "What is ethics all about?".

The disagreement flows from the fact that most people only have a partial understanding of the basic questions that are addressed in the field of ethics. The most commonly held views include a mixture of the following:

- Ethics is the same as morality
- Ethics is about rules for behaviour ('soft laws' if you like)
- Ethics is to do with theory (part of the useless species of things dreamed up in ivory towers)

While each view is severely limited, it is easy to see how it can be held as most people tend to see only part of the overall picture. Those wanting to capture the broader perspective may be best assisted by returning to what is regarded to be the founding question in ethics.

Few will be surprised to learn that the basic question of ethics has an ancient pedigree. Indeed, it can be traced back to a Greek philosopher who lived and taught in Athens during the fifth century BC. Socrates asked:

"What ought one to do?"

For the love of lab rats: kinship, human-animal relations and good scientific research

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Abstract

This paper examines an ambiguous terrain, in which research animals occupy multiple positions. In such an ambiguous terrain, where scientists who speak fluent rat are to be found alongside the hierarchical arrangement of humans and animals in the lab, the grip of instrumental reason on science might be said to be less than certain.

Contemporary relations between humans and animals in the research laboratory are often assumed to be conducted wholly within the Baconian tradition of the often violent human manipulation of nature. Despite a growing body of literature produced by scientific practitioners themselves that speaks to the contrary, emotional and communicative detachment from animals is also considered necessary to the practice of 'good science' by many theoreticians of the laboratory. Based on data collected over a year in large research laboratories in Australia, I examine the ways in which a variety of kinships with animals were considered by scientists to be critical to the practice of good science, and where research animals yet retained characteristics of the Baconian research object. I examine the ways in which rats and mice particularly occupy ambiguous and ambivalent positions between the ostensibly polar opposites of humanity and animality and (disposable) laboratory equipment and animate beings capable of making relationships and fluent conversations with people in the laboratory. Mice and rats were understood by scientists to have more than one meaning, and they simultaneously represented opposed and conflicting characteristics and values.

I use the language of kinship to examine the ambiguities, ambivalences, and polarities I found in operation in the lab. As many theoreticians have noted, the strict (modernist) divide has been challenged by biotechnology. It can be useful to employ the language of kinship to explore the ways in which modernist divisions between humans and animals have been destabilised by biotechnology and its practices. In the examination I make of laboratory-based human-animal relationships, I seek to examine the fruits of such destabilisation. I make recourse to kinship as an anthropologist examining human-animal encounters. Specifically, I use it first to demonstrate the ways in which animals and humans are considered to be biologically and genetically related to one another in the lab, which effects a crossing of the human-animal divide in the laboratory at the same moment it reinforces hierarchically arrayed difference, and second to speak to a fleshy and indistinctive relatedness that rodent research animals and human scientists made with one another in their interactions in the laboratory space. Movement across the divides that have separated scientist investigators and research animals as Baconian dominators and research equipment, respectively can be tracked using an analysis that privileges relatedness, and might well give us cause to reflect about what we think we know about how scientists and animals relate to and with one another within the scientific coordinates of the modern research laboratory.

Introduction

Contemporary relations between humans and animals in the research laboratory are frequently assumed to be conducted wholly within the Baconian tradition of the often violent human manipulation of nature. Despite a growing body of literature produced by scientific practitioners themselves that speaks to the contrary, and despite the overarching climate of posthuman biopolitics, where understandings of being, not just human being, are routinely sought and scientifically mandated, substantive and processual detachment from animals is still considered necessary to the practice of 'good science' by many theoreticians of the laboratory (see for example Acampora, 2006)¹. This paper, based on a year-long

¹ And, if my research is anything to go by, members of the general public.

ethnographic study conducted in large research laboratories in Australia, examines the ways in which a variety of inter-special kinships² were considered by scientists to be critical to the practice of good science, and where research animals yet retained characteristics of the Baconian research object.³ The paper therefore examines an ambiguous terrain, in which research animals occupy multiple positions. In such an ambiguous terrain, where scientists who speak fluent rat are to be found alongside the hierarchical arrangement of humans and animals in the lab, the grip of instrumental reason on science might be said to be less than certain.

Bio and gene kin

One kind of kinship took the form of expressions of biological kinship and genetic kinship. The human-animal border is necessarily crossed in science concerned with producing results from animals for application to human bodies and minds, but this does not imply equality; human and animal are hierarchically arrayed under the rubric of mammalian membership. Animals must be sufficiently similar to humans for the outcomes of experimentation to have application to human bodies. The required sameness of bodies is accomplished through the subsumption of the 'speci-al' differences of, in this case, rodent research animals, and humans to a category of shared mammalian membership, based on close biological and genetic relatedness, so that rodents were called in the laboratory I studied, human 'genekin' and 'biokin'.

As much as mammalian membership is the bridge by which rodents and humans are connected (in their similar bodies, their equivalent DNA structures, the ease with which they might be engrafted with human substance to yield humanised animals), mammalian membership is equally the ground upon which rodent difference from humans is hierarchically presented. 'Speci-al' ratness and mouseness are subsumed to the generic position of genetic and biological mammalian membership, yielding the analytic animal, the animal upon which Bacon's God-scientists operate. In a Judeo-Christian heritage of human supremacy over nature, the animal appears as both biological and genetic mirror for self-reflection and the raw material for (improved) self-reproduction (see Bacon (1620/1999 148). God scientists appear as the fulfilment of Bacon's humanist vision of Nature made wholly available to the claims and desires of instrumental reason, and inhabit the ontotheological domain that the union of science and technology has produced; as Heidegger (1962) insisted, under the banner of modernity, science itself is arrogated to the place of Plato's Good and the Christian God.

The calculus of killing and mundane kinship

Mammalian membership not only situates rat and mouse animals as human biokin and as mammalian units of equipment; it also qualifies them for entry into the laboratory's sacrificial economy. Calculations are made in this economy on the basis of the amount of mouse and rat lives lost that yield gains for humans. On the basis of such calculations are yielded sacrificial animals. This definition of sacrifice belongs with Foucault's (2004) 'calculus of war' -- the relationship between 'my life and the death of the other', which enables and justifies the sovereign, and in this case, the scientific, exercise of killing. Such a calculus is developed in line with the thanatophobia - the fear of death - that is fundamental, in Heideggerian terms, to human existence.

Alongside the calculus of killing which enables laboratory animals to be entered into the laboratory's sacrificial economy for human gain persisted a calculus of care, a kind of cost 'paid' to the animal in 'speci-ally' relevant terms, a cost that the laboratory animals exacts on the laboratory, a cost that taking the life of the rat or the mouse presents to science for recognition and payment. Virologist Mark told me that, 'as animals, laboratory mice have particular needs'. Attending to these needs meant, for Marks' mice, the provision to them of toilet roll tunnels, the company of other mice, and chew blocks. These things came down to the 'natural' needs a mouse might have as a social animal, as a predated animal, and as a gnawing animal: according to Mark, they 'needed' toilet roll tunnels to replicate a natural habitat

² I use the language of kinship to examine the ambiguities, ambivalences and polarities I found in operation in the laboratory, and I mean this term to refer to biological and genetic relatedness among persons and animals; to a post-Schneiderian non biological relationality, and to the kind of theriomorphous relations, or broadness of not only animal, not only human, being, that common biology and relation fleshy kinships each point to.

³ It was the case that the scientists participating in this study referenced what Milton (2002) has called 'the myth of capitalism' which undergirds the opposition between emotion and scientific rationality and which promotes the treatment of nature, including animals, as resources, that is critical to the doing of science with applicability to humans. However, they often engaged in practices that undermined such a myth, such treatment, such rigidly structural positioning of kinds—animal equipment here, human scientific investigator there. That scientists did so is surprising only if one subscribes to the notion that scientists are devoid of the habitus of other human beings when it comes to developing relationships with animals (Descola, 2005), and only if one fails to accurately comprehend the broadest intention of the human genome project.

that lab mice would never experience, but which was deeply vested in them as 'speci-al' animals which needed to feel safe from predators. After Haraway (2008), I have called these payments to 'speci-al' mice, mundane kinship⁴. This is a kinship that is born in the attendance to the minutiae of specifically 'speci-al' lives, which are valued in and on their own 'speci-al' terms. This is a kinship that is, after Haraway (2008), enacted in repeated gestures and actions that articulate the relatedness of all animals, and which yet draws on a key difference in the arraying of being, a difference of power which appeals to those more powerful to attend to the relative weakness of others, after Levinas' notion of Face (1969; 2004). This caring was offered to the rats and mice out of a deep and nuanced understanding of what mice and rats like; how they responded better or worse to particular accommodations; how they liked to be touched, picked up, and engaged with; and what things they liked to eat and play with; an awareness born, I will argue, in the thick of strange fleshy simpatico, but equally made on the recognition of the immanent logic of the other; that especial vector that makes a mouse life comprehensible to a human, yet specifically unliveable insofar as mouse life is specific to paw, to whisker, to olfactory system, to ultrasonic hearing. To a love of small dark toilet roll tunnels.

Recognition of and caring for the specie in the lab well may be read in Heideggerian terms; his view that animals were of a different kind to humans did not mean that humans were incapable of phenomenologically transposing themselves into other animal lives, to think and view things from their perspectives. But perhaps being able to speak fluent rat indicates that there is more going on that transposition, and that the grounds of instrumental reason are being shaken in the laboratory.

Strange kinship: speaking rat

Brenda, a neuroscientist, conducted what she called 'good science' by deliberately creating close bonds with her six white rats, which were involved in a neuro study. I asked Brenda about how her fondness and affection for her research rats sat with her use of them as analytic animals. She immediately reconciled these apparently polarised uses of rats in and through her attention to how her affections and interest in them might have offset some of the impacts of the neurological conditions imposed on the rats. Her emotional connection with her laboratory animals had been taken into account in Brenda's dealings with the rats - and it became entailed in her scientific observations. 'The way a researcher interacts with animals could, and sometimes does, result in profound behavioural and physiological changes in the animal subject. Things like stress reduction, weight gain - paying attention to them, playing with them - this could be important in understanding results' she told me. 'Certainly, rats which were stressed out, say from not being familiar with me, could give a different result'. The tying together of emotional connections with animals, such as affection, and research results is not unusual in the broader literature on research methods involving laboratory animals.⁵

Also, Brenda reported that she 'had trouble' entering her rats into the sacrificial economy of the laboratory. She dreaded the day she had to do so. While she could have handed responsibility for the actual deaths of her rats to a technician, Brenda did not want to, as she felt she owed the rats a good death and that she, as the person who had had the most contact with them during their lives should also be the one to carry out their deaths. But she approached the day with unease and said that she did not like to do it. Even though Brenda had effectively worked these bonds into her findings so that the analytic rats that yielded data for her study did not stand at odds with the animals she gave affection to every day, this did not spare her from experiencing feelings of loss when she terminated her rats. Just as Darwin (1871) suggested, experiencing an animal's affection in a research setting haunts the scientist when she or he is confronted by the typical requirements of laboratory work - to wound, to cause suffering, to kill.

The basis for Brenda's grief over her rats' deaths began in the establishment of particular relations with them of an interspecial kind, in which a variety of strange kinship was established. During our visit to her rats while they were alive, Brenda told me, 'The rats back themselves into the corners of the cage'. This made the rats' tails unavailable to Brenda when she approached them using the proper grasp, which should be applied to the base of the rat's tail, where it is strong and will not be injured. The rats, Brenda

⁴ 'Speci-al' mice also emerge at the moment of death: Alan had been telling me about the ways in which his mouse models were 'ideal models' for the people who would one day reap the benefits of his research work. But now, their commensurability with humans was about to reveal its limits. Alan told me as he was about to dispense with his research mice by gassing them, 'remember that they're only mice. People kill mice in their houses every single day'. Alan's invocation of the 'speci-al' term 'mouse' here flicks a kind of 'switch' between high mammalian affinity/commensurability and a 'speci-al' distancing/discarding, and re-establishes the division between humans and animals that operates in the laboratory with as much frequency as its erosion.

⁵ Wolfe, for instance, notes that the researcher or technician instills in the animal qualities that, "the researcher] must strive to develop a social bond with all animals... [we used to] ...treat them as important parts of our environment, but we do not warm up to them. I have come to realise that that attitude is opposed to everything that I now believe about the well-being of animals and the quality of the research (1996:86)."

explained, knew this move, and responded to it. More than this, she thought, the rats were 'telling' her something that she could understand in making themselves ungraspable -- 'I knew they were refusing me', she said. 'They tell you what they are feeling, and they know what I want when I go for their tails, as lab protocol requires. The rats have not read the lab protocol; they just say 'no' to me. You might think that just means I have to insist, but it is difficult and potentially damaging to them to just grab them - instead, I have to persuade them, by negotiating with them. I might have to give them a treat, or pet them for a bit. It's not just that I impose myself on them - there is a space for negotiation, talk. You see, I and others here, we speak fluent rat'

Brenda's interpretation of her rats' behaviour, and theirs of hers, speaks to the simultaneous givenness of animality and humanity that Merleau-Ponty (1994) described in the terms of 'strange kinship', his phrase to capture the sense in which the world is shared among and generally available to the species in the fleshiness of their being, despite their evident differences. Such kinship is constituted and enacted in the thickness of interaction; as Haraway put it, 'species of all kinds are consequent on a subject and object shaping dance of encounters' (2008:4). Along with the dance of scientific encounter that produces specific rat research subjects and scientific enquirers was also a dance that produced indistinct partners, in which rat subjects and human scientists diminished as bounded categories of distinct being and could instead 'speak'.

Merleau-Ponty's application of a general behavioural schema to each organism is one in which the animal, at 'each moment of its history is empty of what will follow, an emptiness which will be filled later' (1994:155). As Deranty (2008) notes of Merleau-Ponty's position, 'this definition of negativity as the absence of meaning to come, which haunts the present and guides it already, characterises organic life. Crucially it has the exact same structure as [human] expression'. The expressive flesh of animals and persons that allowed Brenda to understand rats, and for rats to understand her, proceeds along the lines of a vitalist ontology, in which particular openings between the ostensibly firmly closed bounds between humans and animals are on offer.

In *The Open* (2002) Agamben hints at these openings when he suggests that the zone of indistinction of his original conception of bare life might be reconceptualised as a zone of possibility, within which the relation between humans and animals might be reworked. Agamben's intention, throughout his work, has been to find ways of thinking about and speaking to humanist nihilism. But *The Open* speaks more to the anthropocentrism that is not addressed in his earlier works. Calarco (2008:91) has pointed to the presence of this consideration in his analysis of the opening pages of *The Open*, in the section entitled *Theriomorphous* (literally, having the form of an animal). Here, Agamben considers a 13th century illustration in the Hebrew Bible (in the Ambrosian Library of Milan), depicting the messianic banquet of the righteous on the last day. The righteous feast on the meat of Leviathan and the Behemoth, without concern for whether or not the meat is kosher; they do not concern themselves because the righteous inhabit a time and a space that is outside the law. Agamben is puzzled by the image, as the righteous are depicted as having human bodies and animal heads. These righteous figures are represented as the conclusion of humanity. Agamben wonders, 'why are the representatives of concluded humanity depicted with animal heads?' (2002:2). He answers himself that in attributing an animal head to the righteous, who are present for the coming of the Messiah,

The artist of the manuscript in the Ambrosian intended to suggest that on the last day, the relations between animals and men will take on a new form, and that man himself will be reconciled with his animal nature (2002:3).

Perhaps, as Calarco (2008:92) suggests, Agamben means instead to point us to a transmutation in the relations between *human beings and animals*. This would, as Calarco notes, certainly constitute a rupture in Agamben's itinerary of thought. This rupture, intended or not, gives us fertile grounds with which to rethink humanimal relations - perhaps it is possible that Agamben means to suggest that the division between humans and nonhumans might be reworked, outside of its current dichotomous, hierarchical and disastrous arrangement. Perhaps the avoidance of disastrous consequence is already emergent in the lab. A bodily experience of some sort of compassion - a fleshy bodily sympathy - is at the basis of the kinship between Brenda and her rats; such a kinship is based in the persistence of ambiguous fleshy unspecificity; somewhere between rat and person, an unspecific fluency is found.

The reckoning of rat-human kinship is not a radical suggestion, especially to a group of scientists who can speak fluent rat. Equally, the notion that rats and mice are equipment is unsurprising. The recognition of the interspecies kinship operational between humans and rats, as well as the recognition of mice and rats as scientific equipment, and the operation of a calculus of care alongside a calculus of killing,

demonstrates that 'multiples' of the relations between rodents and humans are played out in the lab. It should not be surprising that scientists seem equally cognisant of both these kinds of relations, given that they are players in a scientific field where theriomorphous questions and answers are increasingly usual.

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Recreational, conservation and traditional hunting - The ethical dimensions

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Abstract

A consideration of 'ethics' involves the question: 'what ought I to do?' It is a question we ask ourselves when we make decisions about how to live our life generally or how to deal with a specific situation. Ethics is not only about what we ought to do, but also why we ought to do it. It helps us justify what we do or don't do, to ourselves and to others.

This presentation focuses on three forms of hunting practised in Australia: recreational, conservation and traditional. All three forms are controversial and are frequently attacked on moral grounds. This presentation will examine the main arguments given by hunters to justify their activities and will consider how hunting in its various forms conforms to ethical standards articulated by the general community, as well as environmental and feminist ethics. It will conclude with a few remarks about the place of ethics in the relevant law.

Introduction

Committing to an ethical approach to living involves asking oneself 'what ought one to do?' The question arises when we find ourselves in problematic, complex circumstances and need to consider a range of contingencies. The 'what ought one to do?' question allows us to determine what behaviour is right or wrong, good or bad. Our response to this question is generally based on a combination of morality, cultural traditions and pragmatic considerations. In the 21st century it also demands that we consider a range of worldviews. Ethics is not only about what we ought to do, but also why we ought to do it. It provides an explanatory framework for ourselves and in our relationships with others. In short, it helps us justify, to ourselves and to others, what we choose to do or not to do.

The hunting question

How does this apply to hunting? Ought one hunt? Why or why not? And, if one's answer is that one ought to hunt, what are the appropriate or acceptable circumstances? In this presentation, I consider this question as it relates to recreational, conservation and traditional hunting in Australia.

Recreational hunting

Recreational hunting can be defined as an activity undertaken occasionally to pursue, and deliberately kill wild animals (native or introduced). This involves killing the animal with a firearm or a bow and arrow. Hunting may include stalking. The animal killed may be eaten; however, in general, the hunter is not dependent on that meal for survival. Duck hunting as it is practised in Victoria and South Australia provides a relevant example. Other animals killed in recreational hunting in Australia include kangaroos, rabbits, magpie geese, pigs, deer, and buffalo.

Note that I do not use the term 'sport hunting'. While there may be an element of physical prowess involved in hunting, hunting lacks an essential element: the consent of all participants (Kheel 1996).

Hunting involves the *deliberate killing* of target animals. According to Causey (1989), the kill occurs because it is, '[t]he one element that stands out as truly essential to the authentic hunting experience'. For Ortega (1972), one of the most influential writers on hunting, the kill is essential to achieve the hunting experience: 'one does not hunt in order to kill; on the contrary, one kills in order to have hunted'.

Hunting also causes *incidental suffering*. The major cause of suffering will be when animals are not killed instantly, either because of incompetence on the part of the hunter, accident, use of inappropriate equipment or technique or poor visibility or conditions (see Russell, 1994a and 1994b; Cahoon, 2009)⁶. The suffering will be prolonged if the injured animal is not recovered. For example, it can take an hour for

⁶ Although Russell (1994) admits for the sake of the discussion that hunting causes animal suffering, Cahoon (2009) conveniently claims that most small game are hit by 'instantly lethal' shots.

an animal hit by an arrow to die and in a study 13% of bow hunters admitted to not recovering their prey (Cahoone 2009). If the animal is chased before the kill, it will also experience stress. In addition, we need to take into account the physical and emotional suffering of young animals left without a parent to feed them (sometimes leading to death by starvation), and of animals left without their mate.

Hunting does not generally involve the deliberate harming of animals - indeed many hunters take pride in achieving a 'clean kill' where the animal is shot instantly (McCleod 2007) - but even where the suffering is not inflicted deliberately, it is an ordinary and probable consequence of the hunt. Suffering in pig hunting is more than incidental, as the dogs are trained to target the pig's ears, tail and testicles in order to immobilise the animal before it is finally killed.

Hunters' ethics

I have briefly sketched what hunting looks like. Now I will consider how hunters justify their decision to hunt. There is an enormous amount of literature, particularly from the United States, that attempts to justify hunting (see e.g. Ortega Y Gasset 1972; Leopold 1949/1987; Cahoone 2009; Petersen 2004). The main arguments advanced by hunters, and some of the counter arguments include:

- *pleasure* - There is little contemporary hunting literature that squarely asserts that hunting is fun, pleasurable, or that it is undertaken for the enjoyment of killing alone (see e.g. Gunn 2001; Kheel 1996 description of the Happy Hunter; McLeod 2007 who quotes hunters describing hunting as 'unspeakable delightful'). Clearly, given the context of growing community concern for animal welfare, hunters would be undermining their position if they were to put forward pleasure as a substantive basis for the acceptability of hunting. To do so would be to go against the generally accepted notion that it is acceptable to kill animals only when it is 'necessary'. This would appear too trivial. Yet, this is likely to be the main reason hunters hunt (Webster 2005). We know that nowadays it is not necessary to chase wild animal to obtain meat, so it is important to inquire as to what it is about the experience of hunting that perpetuates the practice. It is difficult not to imagine that the 'thrill of the chase' and some sense of excitement does not play a pivotal role. After all, why do hunters refer to the animals as game? The word game connotes 'play' and play equates with fun!

- *hunting maintains a cultural tradition* (see Ortega Y Gasset 1972; Sporting Shooting Association of Australia 2002; Field and Game Federation of Australia n.d.) - In some instances this may be correct. However, many traditions change over time and are worth critical scrutiny from time to time. Some have argued that female genital mutilation is a tradition. Fortunately we have seen this practice outlawed in Australia.

- *it is the natural activity of a predatory and carnivorous species* (Ortega Y Gasset and Shepard in King 1991) - Many forms of hunting are not 'natural'. Recreational hunters usually target the biggest animals, not the weak and old as carnivorous predators do. Further they do so using 'unnatural' manufactured technologies which gives them an unfair advantage. In any case, if we all acted 'naturally' our landscape would be emptied.

- *it allows the testing of manhood* (McCleod 2007) - Manhood or masculinity is a complex concept. Hunting tends to foreground and validate violence as constitutive of manhood. It is important to challenge these ways of understanding what it is to be a man.

- *it allows bonding with family and community* (Petersen 2004) - It may provide a particular form of bonding. However, again it is important to reflect critically on how we bond with our family, friends and the wider community. Bonding through activities such as hunting, may also encourage children to see violence as part of an acceptable way of interacting with the world.

- *it promotes self sufficiency* - In remote regions of Australia, this may be true to some extent. However, few if any recreational hunters in Australia rely on hunting to feed themselves.

- *game meat is more natural and more humane than factory farmed meat* (Cahoone 2009) - this is arguable given the proportion of hunted animals which are not killed humanely. In any case, both hunting and farming animals for meat are less humane than not eating meat at all!

- *it contributes to the feeling of oneness with nature* (sometimes referred to as an authentic relationship (see King 1991)) - Most people would have difficulties understanding how a human might feel 'at one' with an animal... and then kill it! It seems that hunting is not so much about oneness with nature, as it is about

defeating and conquering nature. Deploying this argument in support of hunting brings to mind the spoof army recruiting slogan: 'Join the army, see the world, meet interesting people - and then kill them'!

- *it promotes mental health* - Some have made the unusual and worrying argument that hunting may act as an 'escape valve' for people with violent tendencies and should therefore be encouraged to provide violent individuals with an alternative to killing humans (King and Swan quoted in Petersen 2004). This goes against the emerging evidence which shows correlation between interpersonal violence and human violence perpetrated against animals (see Nelson 2011).

- *it is a conservation tool* - This will be considered in more detail below.

Hunters' ethics and animal suffering

In relation to animal suffering, hunters argue that:

- *there is little suffering* because they minimise it through skills and good practice (McCleod 2007). This may well be true of the most competent hunters but is unlikely to apply to all.
- *hunting is ethical because hunted animals suffer less than if they were killed by predators, or starved to death* (McCleod 2007 and Causey 1989)⁷. According to Cahoon (2009), the suffering of animals as a result of hunting 'is not a moral violation unless it exceeds the pain of the animals' likely wild death.' This is a flawed argument. Firstly, many hunted animals do not die an instant death. Secondly, if prey animals are killed, then it is the predators that will starve. Presuming to 'Play 'God' or some other higher authority by deciding who should and should not be allowed to pursue its life naturally is clearly at odds with the concept of 'being at one with nature'. Rather, it is positioning oneself at the top of a hierarchy.
- *even if there is suffering, it is justified because hunting promotes more important human interests (cultural tradition, wildlife management, etc.)*. As we will see below, many would argue that the human interests promoted by hunting do not justify the suffering of animals.

Hunting and the quest for winning public opinion

It is difficult to determine the number of hunters in Australia, however, it appears to have declined in the last few decades (Thiriet 2009). This decrease has been facilitated by recent bans on duck shooting in Queensland⁸, Western Australia⁹ and New South Wales¹⁰ and by gun control legislation. Hunters are aware that their activities offend general community standards in relation to our obligations toward other species. Further there is apprehension among hunters that further bans may be imposed if they are unable to convince the public of hunting's social legitimacy (Petersen 2004). To do so they must demonstrate that their activities meet contemporary ethical standards (McCleod 2007 and Petersen 2004).

Hunters' concern with swaying public opinion and rectifying their current 'image problem' (Elliott quoted in Kheel 1996) has prompted the development of codes of ethics (alternatively referred to as codes of conduct or codes of practice¹¹) to guide hunters' behaviour. Informal writings, often on hunters' websites, also advocate ethical conduct, care and stewardship¹². The adoption of ethical guidelines is encouraged for the purpose of securing the future of hunting, and not simply because it is right to do so.

Codes generally include standards of behaviour regarding:

- respect and safety with regards to other hunters, landholders, the general public
- not undertaking illegal activities

⁷ See also <http://www.youtube.com/watch?v=1lynFWF8cfQ>

⁸ Now under the *Nature Conservation Act 1992* (Qld) s 97A.

⁹ *Wildlife Act 1950* (WA) s 15A.

¹⁰ Now under the *National Parks and Wildlife Act 1974* (NSW) ss 120 and 121.

¹¹ See e.g. Game Hunters of Australia Inc. Code of Ethics <http://www.ghaa.com.au/uploads/pdf/Game%20Hunters%20of%20Australia%20Inc%20Code%20of%20Ethics.pdf>; Field and Game Australia's Hunting Code of Conduct & Ethics <http://www.fga.net.au/hunting-code-of-conduct-ethics/w3/i1028105/>; Game Council NSW's Code of Practice <http://www.gamecouncil.nsw.gov.au/portal.asp?p=CodeofPractice>; Australian Deer Association's Code of Conduct http://www.austdeer.com.au/index.php?option=com_content&view=article&id=45&item; Department of Primary Industries' Guidelines for Ethical Hunting of Waterfowl <http://www.dpi.vic.gov.au/game-hunting/game/australian-water-fowl/ethical-waterfowl-hunting>; NZ Hunting Code of Practice (copy provided with licence).

¹² See Hunt Fair Chase <http://www.huntfairchase.com/index.php/fuseaction/ethics.why>; HuntingNet - A Hunter's Rule <http://www.huntingnet.com/rules.aspx>.

- humane treatment of animals, i.e. ensure fatal shot and if not, retrieve wounded animal for quick dispatch. Sometimes this is couched in very vague terms.
- fair chase, i.e. giving the prey a chance to escape or fight back, or in other words making the prey and predator as equal as possible. Fairness in this sense might be a possibility when the hunter is faced with a large man-eating carnivore, but it is unrealistic to expect equality between a 100kg man armed to the teeth and a small duck. According to Joy Williams, the only equality in hunting is 'Bam, bam, bam, I get to shoot you and you get to be dead' (Williams in Cahoon 2009).

It is important to note that in most codes, animal welfare constitutes only a small proportion of the ethical guidelines. Interestingly, there appears to be a fair proportion of hunters that are contemptuous of trophy hunting because it is not ethical (Gunn 2001).

One limitation of ethical considerations is that they are self imposed and not legally enforceable. Provided that our conduct is lawful we are all free to abide by our personal code of ethics. Most hunting codes of ethics are likewise unenforceable¹³. Perhaps experienced and responsible hunters do all they can to avoid animal suffering - but how many are not responsible? If a hunter fails to abide by the relevant code, and as long as she or he is not acting illegally, there is little that can be done in terms of regulating ethical practice. In jurisdictions where the law exempts hunting from prevention of cruelty legislation¹⁴, nothing can be done if a hunter fails to kill an animal humanely and does little to retrieve the wounded animal.

In conclusion, the arguments articulated by hunters and the codes that they have developed are satisfactory justification for their actions. They believe that their actions are consistent with their personal and group ethics and hence legitimate. Indeed, some go as far as claiming that they are 'healers' (Swan 1995 quoted in Petersen 2004) and that men who do not hunt are 'not fully human'. Hence there is a theme within the hunters' ethical narratives that hunting is a 'moral good' (Cahoon 2009).

Community ethics

Whilst hunting might conform with hunters' own ethical worldview, it fails to meet general community standards of ethics regarding our obligations towards other animals. Public support for hunting is low. In the United States where hunting is a well entrenched part of wildlife management, only 40% of Americans approved of hunting a few decades ago (Petersen 2004) and numbers are said to have declined since. In Australia, where hunting is not as widespread, support is likely to be much lower. In 2007, 75% of Victorians polled¹⁵ wanted duck shooting banned. The RSPCA has described hunting as an 'absolute disgrace', has claimed that it is 'hardly humane' and that it is immoral 'to kill animals for killing's sake'¹⁶.

People who abide by animal rights ethics argue that animals should not be killed unless there is a very serious reason to do so. For them hunting animals is entirely inconsistent with their ethical position. Even so, the majority of people would agree with the statement articulated by Gunn (2001), 'I assume animals have interests, and that we have an obligation to take some account of those interests: roughly, that we are entitled to kill animals only in order to promote or protect some nontrivial human interests and where no reasonable alternative strategy is available.'

In this statement, Gunn refers only to killing, not harming animals but the need for balancing animal and human interests would also apply in this situation, even though the threshold of triviality might be lower. This balancing of interests is consistent with the general conditions of necessity and reasonableness articulated in animal protection legislation.¹⁷

Hence, the relevant questions are 'Does hunting constitute a nontrivial human interest, or does it promote non-trivial interests?' and 'Are there any reasonable alternative strategies to achieve this interest?'

Most people would agree that it would be reasonable to kill an animal in self-defence (e.g. if one is about to be attacked by a predatory animal such as a crocodile); or to kill an animal if the alternative is starvation (Gunn 2001). Clearly one's survival would not be construed as 'trivial' in the context of Gunn's

¹³ With the exception of the Game Council NSW Code of Practice which is incorporated into the *Game and Feral Animal Control Regulation 2004* (NSW) Schedule 2. Note however that much of the language of the code is quite vague, and that many hunters who are not required to be licensed are exempt from abiding by the code.

¹⁴ See for instance 4(1) of the *Animal Welfare Act 1993* (Tas).

¹⁵ Roy Morgan poll, 2 November 2007, Finding 4239.

¹⁶ See Senate Rural and Regional Affairs and Transport Committee, 'Commercial Utilisation of Australian Native Wildlife' (1997), Chapter 19.

¹⁷ See for instance *Animal Care and Protection Act 2001* (Qld), s 18(2)(a).

quote. The interests which recreational hunting promotes (such as pleasure, maintaining western cultural traditions, self sufficiency, or feeling at one with nature) are viewed however by some people as trivial interests, i.e. they do not have strong enough moral claims to justify killing and maiming. Others consider these human interests as non-trivial and worth pursuing, but most would argue that there are reasonable available alternatives which then make hunting 'unnecessary'. For instance, some will argue that it is more ethical to purchase meat from animals that have been bred for that purpose; others might argue that meat eating is a trivial interest and that it is more ethical not to eat meat at all. It may also be argued that 'going bush' with friends and a good pair of binoculars is a perfectly valid alternative to hunting animals as this can give just as much a feeling of oneness with nature¹⁸ and maintaining our bush traditions - and if that requires donning camouflage gear and face paint, so be it.

In conclusion, hunting fails to meet general community ethics standards because it is unnecessary. Nevertheless hunting continues to be lawful in every jurisdiction. The weakness of the regulations and poor enforcement mechanisms that apply to hunting are beyond the scope of this paper and have been examined elsewhere (Thiriet 2009).

Conservation hunting

As noted earlier, hunters often - and increasingly - justify their activity on the grounds of making contributions to wildlife management and pest control. They claim that their hunting is helping the environment when they cull over-abundant native species (particularly species which they claim are exceeding their habitat's carrying capacity, e.g. kangaroos); or when they destroy introduced species (e.g. pigs, foxes, deer, rabbits, etc.).

The term 'conservation hunting' is derived from the US where hunting has, for a long time, been an accepted part of wildlife management practices. The term is increasingly being used in Australia as it helps to justify hunting activities as legitimate according to contemporary community standards (English 2010). In this sense 'conservation' is morally good, whereas 'sport', 'culture' or 'pleasure' do not have the same level of acceptability. Using the term 'conservation hunting' is an attempt to transform hunting from an activity conducted to promote an individual's own interests to one that promotes the interests of the whole community and the environment - which is *not a trivial interest*. In this sense, conservation hunting is then more likely to be 'intuitively appealing to the moderate majority' (Petersen 2004). Nevertheless, if we apply our basic community ethics assumption, conservation hunting will only be acceptable if there are no reasonable alternatives. Hunters claim that 'managing' wildlife, that is killing some individuals of a species, is essential. I dispute this for several reasons:

- Wildlife management is needed because humans have destroyed the animals' habitat and animals now live in much smaller ecological niches. If we left wildlife alone and gave them all the space they needed, there would be no need for management. We can protect the existing native environment, create reserves, rejuvenate degraded landscapes and reduce urban encroachment, for instance. Animal populations will adapt eventually to the available resources. Surely killing animals for the good of the species cannot be anything but a very blunt tool.
- For introduced species, we can implement non-lethal strategies to reduce the animal population - depending on the situation, this may be achieved by fencing, reintroduction of natural predators, closure of man-made access to water, immuno-contraception, etc. I accept that there is not always a practical alternative but it appears that in many situations alternatives are not even considered. Shooting is the prime response because hunters are keen to offer their services and this is viewed as a 'cheap' option.
- Hunters also claim that they make a large contribution to habitat conservation in wetlands used for duck hunting for instance (Field and Game Federation of Australia n.d. and McLeod 2007). They may well do so but they are not alone in contributing to habitat conservation: many individuals and environmental organisations also create and fund nature reserves.

In addition, to be justified hunting must effectively achieve what it claims to do. Yet there is a large body of research that indicates that recreational hunting is not only ineffective at controlling introduced animals, but in many situations it increases the level of environmental damage (see Booth 2009 for a comprehensive review of research on the matter).

¹⁸ Fenton and Hills (1988) notes that both hunters and animal liberationists share exactly the same values in relation to wildlife: they value their ecological role, their aesthetic (seeing them) and their existence value (knowing they exist).

Over the past few decades, so called conservation hunters have gained influence in the development of wildlife management policy in Australia. In NSW this has been facilitated by the election of Shooters Party representatives on the Legislative Council. Shooters Party candidates have run for elections in the South Australian parliament. Nevertheless, the election of Shooters Party candidates is more likely to reflect the vagaries of the electoral process coupled with disenchantment with mainstream political parties rather than a public endorsement of hunting.

Perhaps buoyed by recent election of the conservative government in Victoria, the Victorian branch of the Sporting Shooters Association of Australia is lobbying the State government to allow its members to shoot cats found in national parks and those that come within 200 metres of dwellings (Snashall-Woodhams 2012). This proposal is put forward as a way to address the harm cats cause to wildlife. Yet, the proposal would achieve little unless it was conducted systematically, and in a large scale. This is impossible in a country of the size of Australia. It also involves a high risk of many of these cats experiencing a cruel death.

Despite its obvious flaws, conservation hunting discourse seems to be gaining some traction among hunters and allied government organisations in Australia. Its future will depend on how the environmental and animal welfare outcomes of hunting activities are perceived by the public and on the political alliances that will form in State parliaments.

Feminist ethics

Ecofeminist writers have consistently critiqued hunting (Daly 1978; Kheel 1996; Kheel 2008; Collard and Contrucci 1989; King 1991; Davion in Preston and Ouderkirk 2006). From a feminist ethics perspective, it has been argued that the claim that hunting is a cultural tradition grossly exaggerates the value of hunting in traditional hunter-gather societies. It also marginalises women since large parts of the food eaten were plant materials collected by women.

Feminist writers say that hunting is essentially an activity undertaken by males and that it is a symptom of aggression inherent in patriarchal cultures (Collard and Contrucci 1989). They claim that hunting perpetuates violence and is thereby directly connected with the oppression of women. They claim that hunting objectifies nature (hunters must consider animals as objects to kill them) and that it is not about oneness with nature but domination of nature in the same way men want to dominate women. Some argue that hunting is like rape, because it is designed to establish men's dominance and control (Kheel 1996). Feminists have drawn interesting analogies: both hunting and rape involve penetration of the victim without consent; and both are often justified by the perpetrators as a 'biological drive' (Kheel 1996). Some go so far as to say that hunters' so-called love of nature is 'necrophiliac' (Daly 1978). They conclude that we need a new relationship with nature that embraces life, not death and that this needs to be connected to more respect of all beings, be they women or animals.

Traditional hunting

Traditional hunting as conducted by Aboriginal and Torres Strait Islander peoples adds further complexity to the examination of ethics in hunting. Indigenous Australians who engage in hunting justify this activity on the basis of subsistence and the continuation of tradition. In remote communities hunting has a more important role to play in providing nutrition, and the cultural traditions that it maintains are stronger than western recreational hunting traditions. In addition, hunting is a traditional right recognised under the *Native Title Act 1993* (Cth). These factors help to justify hunting as being non-trivial and as having a stronger moral claim. Nevertheless, it is argued that traditional hunters operating in modern contexts are likely to hunt for the enjoyment and the social rewards, just as well as, and possibly more so than for the meat and the tradition (Kheel 1996).

Whether the human interests promoted by this form of hunting can justify the suffering of animals is another question. The cruelty involved is sometimes appalling according to western standards, even though it could be lessened by adopting alternative hunting methods (Thiriet 2004). In Queensland, 'traditional hunting' is exempt from the *Animal Care and Protection Act 2001* (Qld). However important it may be for cultural traditions, talking to animals and begging their forgiveness before the kill as is often done in traditional hunting does little to lessen the cruelty (Gunn 2001; Kheel 1996). There are also increasing numbers of Indigenous peoples who no longer hunt, for a variety of reasons, and who presumably have found alternative ways of maintaining their culture. In this sense there is not one single Indigenous ethical perspective in relation to hunting.

From an environmental ethics perspective, there is little support now for traditional hunting, at least where dugongs and turtles are concerned, as there is now strong evidence that traditional hunting of these species is no longer sustainable and certainly unlikely to be helpful for conservation purposes. From an environmental ethics perspective, this makes it unethical.

From a feminist perspective, traditional hunting suffers from the same problems as western recreational hunting. It is a showy activity that marginalises the contribution of women in finding food¹⁹; it perpetuates violence; and it seems to be also more about domination than oneness with nature. In addition, discussions on traditional hunting rarely involve the voices of Indigenous women. I understand that some object to the cruelty involved and do not agree that it is a cultural tradition that is worth maintaining.

Finally, another level of complexity in examining the ethics of traditional hunting is the concern that critics will be labelled as racist. This does little to promote informed debate on the issue.

Conclusion

There are several points that can be made to conclude:

- Some of the literature on hunting examines the shared values between hunters and non hunters. Fenton and Hills (1988) for instance claim that hunters and animal rights advocates have shared values in relation to wildlife. Petersen (2004) advocates for shared values and ethical space to provide social legitimacy to hunting. Yet there are irreconcilable differences between ethical positions with a gap so wide that it can be difficult to appreciate each other's perspective. It is not clear how, or indeed whether, the core of these differences can be resolved.
- As ethics change and evolve with time, it is likely that hunting will be increasingly regarded as unethical by the community, as has been the case for other activities involving the recreational use of animals such as cock fighting and bear baiting. Moreover, it is likely that increasing numbers of hunters will give up hunting as they find that they can no longer justify their activities to themselves and/or to others. This may well apply to conservation hunters also, once they start examining the scientific evidence against hunting as a management tool.
- Finally, since ethics are generally a basis for the development of the law, there is a chance that laws will change to reflect the evolution of ethics. I am hopeful that in due course the regulation of hunting will be strengthened through animal protection laws, and that perhaps even one day, this practice will be banned.

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Teaching animal welfare and ethics: from principles to practice

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Abstract

As societal concern for animals grows, the need for those working with, or caring for, animals to have a sound understanding of how one best meets the needs of animals is imperative. Added to the knowledge of what animals need, is the requirement to fully understand our values, responsibilities and commitment to such care. There will always be a range of attitudes about the extent of these ethical responsibilities to different types of animals in various contexts, but this should not deter the essential exploration and dissemination of scientific facts outlining how our handling, confinement and/or use of animals impacts on their quality of life. The veterinary profession is seen by the public as a useful source of knowledge and opinion and thus, veterinarians need to be confident in their ability to provide advice both confidentially to their clients and to society.

Animal welfare education is complex, is interdisciplinary by nature and provides a melting pot for ideas concerning philosophical values and evidence based science. Such education or training must be targeted to the type of student and be comprehensive enough to include aspects of animal ethics, welfare science and law. Studies indicate that most veterinary schools now incorporate a stand-alone unit dedicated to animal welfare science but others provide a more integrated approach linking welfare to the traditional units of husbandry and preventative medicine. The teaching of ethics as an entity is less clear and is often linked to units describing professional veterinary practice. However, as veterinarians are often placed in conflict of interest situations, the need for students to develop skills in ethical reasoning where principles must be applied to everyday practice is apparent. This paper will discuss the range of learning activities needed to provide education in both ethics and science, including debates and role plays and ways to better understand human animal relations.

Ultimately, the goal of any animal welfare and ethics program in a veterinary curriculum should be to produce graduates who are firstly, advocates of animal welfare and secondly, competent evaluators of welfare capable of monitoring animals and communicating sound advice. The ability to intervene and effectively assist in an animal welfare investigation is one aspect of their professional role. The teaching of animal welfare and ethics is an evolving discipline in its own right and one that should be reviewed regularly to ensure that future veterinarians have the skills and attitudes required to meet community expectations.

Background

The concept of animal welfare is complex and evolving, as it includes the issues surrounding three key entities; animal ethics, animal welfare science and laws pertaining to animals. Today's ethical norms indicate that anyone working with animals must be mindful of what *should*, rather than what *could*, be done to animals, and animal welfare science provides detailed studies of the effects of human interaction with, or utilisation of, animals from the animal's perspective. This science can then be used to inform the regulators to promote sound guidelines and laws. These entities are multifaceted, and effective policy that safeguards our animals will only result if there is good understanding of both the scientific fact and societal values of the day. Animal welfare is a subject of increasing concern to Australian society and the veterinary profession is expected to play a leadership role. Veterinarians are well placed to be the advocates for animals and translators of science to community and industry groups.

Animal welfare education is by nature broad and interdisciplinary, yet it is essential as education can change people's behaviour. Educated consumers can make informed choices, stockmen or producers can be better livestock handlers and veterinarians can be more confident in providing advice to clients, producers, government agencies or the community. There is growing consensus that formal training in animal welfare should be included in all veterinary curricula and this paper

will review the teaching of animal welfare and ethics in Australian veterinary schools. Curricular requirements vary and a comparison of the approaches taken to teaching animal welfare at different veterinary schools was first outlined in a review by Hewson *et al.* 2005. This review stated that seven out of 13 veterinary schools worldwide had an animal welfare course in its own right. There appears no one program of study for animal welfare that has been adopted by Australian veterinary schools as some schools teach animal welfare as a stand-alone course while others provide a more integrated approach where topics are embedded in number of different units of study, such as animal husbandry or medicine, over several years in the veterinary course (Hazel and Collins 2011).

There is even less consensus as to what animal ethics should be taught or how it should be taught. This is not surprising as ethics is not so much a discrete area of content, but a place for the consideration of values and for dialogue between different perspectives. A survey of the teaching of ethics at 27 US veterinary schools in 1993 found that formal ethics course were required in only six veterinary schools, but that the informal teaching of ethics, such as during clinical rotations, occurred in all veterinary schools (Self, Pierce and Shadduck, 1994). More recently, a survey of eight Australian veterinary schools indicated that the number of hours of instruction devoted specifically to animal ethics teaching ranged from 11-53 and the ethical content was taught over years one to five in the course (Hazel and Collins 2011). Further benchmarking of animal welfare and animal ethics teaching is recommended as there is much interplay between the disciplines of animal welfare, animal behaviour and veterinary and animal ethics.

Course objectives

The main objective for a veterinary animal welfare and ethics course is to produce graduates who are highly capable of responding to animal-welfare issues in their diverse areas of practice. To achieve this, students need to develop knowledge, skills and attitudes fundamental to facing animal welfare controversies and to develop the ability to communicate to clients, producers and the community with confidence.

An animal welfare and ethics course should enable students to:

- Identify and understand common welfare and ethical issues in practice
- Explain basic ethical theories and the concepts of rights
- Develop skills in problem solving and critical thinking
- Exhibit skills in moral reasoning and to construct rational arguments
- Research and analyse scientific data to assist in providing solutions to welfare issues
- Communicate advice to clients and the public

Given the nature of ethical reasoning is cross disciplinary; the question of what type of professionals should be engaged in this teaching arises. Teaching must remain cognisant of the importance of the individuals' experience and be committed to the dialogues between individuals and professionals. Hence, the need for multiple teachers to provide students with views about animals from various perspectives. Three of seven Australian veterinary schools engaged the services of a professional philosopher for at least some learning activities while the remaining schools utilised veterinary staff with some philosophy or psychology experience (Hazel and Collins 2011). Given animal welfare is a relatively new field of veterinary speciality, there is no requirement from veterinary professional associations for schools to engage veterinarians with postgraduate qualifications in animal welfare and ethics to coordinate such teaching.

What components should an Animal Welfare and Ethics course contain?

Any program of study in animal welfare can be integrated into existing modules but ideally should cover the following elements (modified from Webster 2006).

1. Principles of ethics and animal welfare
 - Ethical frameworks commonly used when considering animal use
 - Determining welfare standards with respect to human values
 - Definitions of animal welfare and sentience
 - Concepts of good welfare in terms of the Five Freedoms, 3 Rs
2. Assessment of animal welfare and animal welfare science
 - Physiology of pain and adaptation to stress
 - Normal and abnormal behaviour
 - Perception, emotion and motivation in animals
3. Application to practice - dealing with welfare issues and ethical dilemmas in practice
 - The human animal bond
 - On farm assurance programs
4. Animal welfare laws and regulations

Veterinarians are in a unique position in their profession as they will be challenged by two elements: 1) the fundamental problem as to whom their primary duty of allegiance is to: the animal or the client (Rollin 1988) and 2) that there is no universal agreement on the moral status of animals in our society. These challenges cause serious concern, as veterinarians must strive to meet public expectations even when such expectations will vary amongst clients and across species. The frequency of ethical dilemmas encountered in veterinary practice in UK is significant as a recent survey indicated that 57 per cent of respondents reported that they faced one to two dilemmas per week, while 34 per cent stated they typically faced three to five dilemmas per week (Batchelor and McKeegan, 2012). These dilemmas were seen as stressful to veterinarians and did not reduce with years in practice. Thus, the need for veterinary training in welfare and ethics is essential to achieve the best outcome for both animals and veterinarians.

Veterinary students are exposed to animal welfare issues early in their course in the use of animals in their veterinary education such as, during first-year anatomy courses. The use of early opportunities like this can allow teachers to start engaging their students in discussions about animal welfare. These provide ideal situations where students can be encouraged to reflect on the issues and formulate their own ethical position.

In addition to dedicated courses, animal welfare consideration should be integrated throughout the curriculum. Whether discussing issues seen on extramural farm experience or deciding to use analgesia when castrating cattle or counselling clients on the possible euthanasia of their terminally ill pet, veterinary students need to make these connections when faced with difficult clinical problems.

Learning activities and assessment

In addition to lectures, teaching methods should be diverse, challenging and clinically relevant, and given ethics is fundamentally discursive it should involve learning in small groups. Scenarios used for tutor-led discussions, online discussion, debates and role playing should be current and authentic to engage students and ideally, involve local clinicians to provide a further 'real-life' dimension. Opportunities for students to clarify and critically evaluate one's own values and integrate the values of others in an unbiased and emotionally supportive environment are important. Emphasis

should be placed on students' understanding the complexity and implications of animal-welfare decisions and on enabling students to research and analyse animal-welfare science information.

As assessment drives student learning, a range of assessment methods is required. There is no one method suitable for the assessment of appropriate animal welfare knowledge and ethical reasoning skills, thus assessment is likely to include a range of measures from written exams, group case reports to a verbal defence of ethical arguments. As answers to welfare problems are rarely black or white, students are often challenged by the need to provide a moral judgement based on sound reasoning.

Finally, a school's commitment to animal welfare is a shared responsibility - all faculty in the school should show sustained care about the humane treatment of animals. It is important to consider the values and behaviours displayed of both preclinical and clinical teachers. Subtle messages that students acquire from their teachers and institutions are arguably the most important determinant of what values are learnt.

Attitudes

It is hoped that the teaching of animal welfare and ethics to students is effective in developing appropriate attitudes in future veterinarians. Attitudes to animal welfare can be measured by surveying students about their understanding of animal sentience, animal-use scenarios and by comparing results of students enrolled and not enrolled in welfare courses. Paul and Podberscek(2005) showed that students in their latter years of study showed lower levels of empathy towards animals. However, Hazel *et al.* 2011 demonstrated that veterinary student attitudes to animals did change following a course teaching animal welfare and animal ethics. Further studies are underway in Australian veterinary schools to clarify the effect of teaching on students' attitudes to animals.

Concluding points

Animal welfare and ethics is taught both as stand-alone modules and integrated into veterinary programs. Despite the competition for curriculum time, tutor-led small group activities are vital for effective student learning. Students must appreciate the complexity of animal welfare issues and strive to disseminate scientific knowledge concerning the use of animals to both clients and the community. Educating the veterinarians of tomorrow in the ethical principles that guide them to make practical decisions about animal welfare is one that deserves our continued best efforts.

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Animal welfare research: the funding dilemma

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Abstract

Objective improvement of animal welfare relies heavily on research to substantiate claims regarding the effects of various practices on animal welfare status. Scientists may be attracted to work in this area for a number of reasons. There are opportunities to improve the welfare of animals, to further an interest in animal science, in its broadest sense, to conduct research with relevance to the animal industries and to utilise the sometimes significant funding available. Funding is provided by governments, the animal industries, universities and the charitable organisations concerned with animals, all of whom recognise the importance of research to some degree. Animal welfare scientific literature has therefore accumulated rapidly in recent years, but the impact of various potential biases in the field of study in this field as it has been found in the medical field to influence publications significantly. If proven to exist, publication bias could affect people's understanding of progress in the field and hence animal welfare improvement. Such bias could exist in forms that are well recognised in other disciplines, favouring significant or positive results, for example. Pharmaceutical publications are reported to be affected by a bias that arises from the type of funding agency, with a more positive assessment of the benefits of treatments or products if the research was funded by industry.

We therefore conducted a meta-analysis to examine the effects of funding agency on the actual and authors' assessment of welfare status in animal welfare research publications. A total of 8541 articles were found which included animal welfare or wellbeing in their topic, from which we selected a random sample of 115 articles, divided into four funding categories: government; charity and/or scientific association; industry; and educational organization. These included comparisons of new treatments with conventional treatments or with a control group (no treatment). We classified, blind to funding source, the welfare state of animals in the new and conventional treatments and those in control groups as Low, Medium or High using the Five Freedoms.

More articles were published in which the welfare state of animals in new treatments was higher than that of animals in the conventional or no treatment groups, demonstrating a positive result bias. There were no differences in welfare state caused by type of funding agency. The opinion of the articles' authors about the welfare state of the groups was similarly blind classified as Low, Medium or High. The welfare state of animals in New treatments was rated as lower when the research was funded by industry, and higher when funded by charities, compared with government funding agencies. This showed that it was a bias from authors' assessments. Both our assessment by the Five Freedoms and that by the authors showed that North American funded publications rated the welfare of animals in New treatments higher and those in a Conventional or No treatment lower, compared with European-funded publications.

We conclude that bias in animal welfare publications does exist in several forms, which may influence standards and guidelines for animal management, people's attitudes towards scientific developments in animal welfare and ultimately the welfare of animals.

Due to copyright restrictions we are unable to publish Clive Phillips' paper. We have provided his abstract and presentation instead.

Animal welfare research: the funding dilemma

by Clive Phillips and Agnes van der Schot

Centre for Animal Welfare and Ethics
School of Veterinary Science, University of Queensland

Outline

- ▶ Responsibility of animal welfare scientists
- ▶ What is publication bias ?
- ▶ How might funding bias apply to animal welfare studies ?
- ▶ A scientific investigation of bias in animal welfare science publications
- ▶ Conclusions

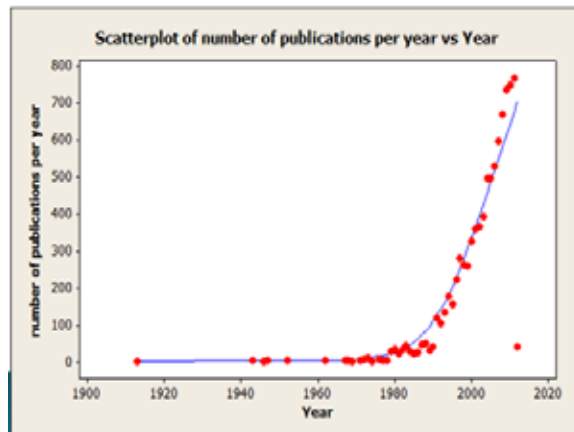


The role of science

"Science" ... can deliver "an expansion of material well-being beyond anything that has yet occurred in human experience"

Only "human folly or sub-human crime" could "deny all nations the inauguration and enjoyment of an age of plenty"

Winston Churchill, 1946



Information flow



Publication bias sources

- ▶ Positive results
 - (3 x more likely to be published)
- ▶ File drawer effect: scientists/editors/reviewers?
- ▶ Trial registers in biomedical science
- ▶ Vested interests in medicine, environment, animal welfare

Other potential sources of bias

- ▶ *Hypothesizing After the Results are Known* (HARKing)
- ▶ faith-based hypothesis proving: researchers include issues that are hard to define and measure e.g. 'animal feelings'

Funding bias

- ▶ *'Published research is manipulated to support the interests of the study's sponsor'*
- ▶ Funding sources
 - Pharmaceutical research: industry funding leads to more → results being reported
- ▶ Falsification of scientific results is rare
- ▶ Researcher:funder reciprocity
 - conscious or subliminal
- ▶ Non-disclosure agreements
- ▶ Non-selection of psychological variables e.g behaviour/emotion related reliance on health and production measures
- ▶ Multiple variables measured; favourable ones reported

a priori hypothesis

There is bias in animal welfare scientific publications due to funding agency

Methods

- ▶ *Web of Science* → 8541 articles
- ▶ Funding agencies
 - 1. government
 - 2. charity and/or scientific association
 - 3. industry
 - 4. education

Methods

- ▶ 500 randomly selected for funding verification
- ▶ 30 Articles funded by each agency group (120 total)
 - 23 deleted:
 - Not experimental (20);
 - Too many funding agencies (1)
 - No results (1)
 - No full text available (1).

Methods

- ▶ 63 articles, 76 eligible experiments
 - New (1 yr) treatment
 - Vs
 - Conventional treatment
 - No treatment

Method

- ▶ **Blind classification of welfare status:**
 - ▶ New treatment
 - ▶ Conventional treatment
 - ▶ No treatment
- **High welfare**
- **Medium welfare**
- **Low welfare**
- ▶ Five Freedoms assessment (SFA)
- ▶ Authors' assessment (AA)

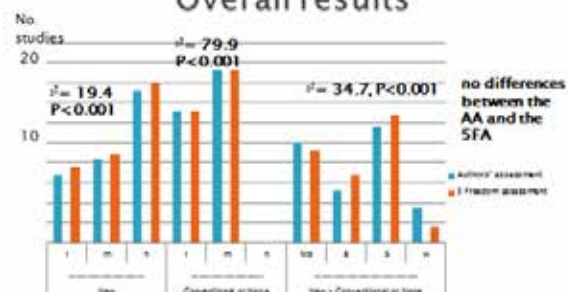
Difference numerical classification

- **High welfare = 3**
- **Medium welfare = 2**
- **Low welfare = 1**
- **New - Conventional or No treatment**
- **Much better = +2**
- **Better = +1**
- **Same = 0**
- **Worse = -1**

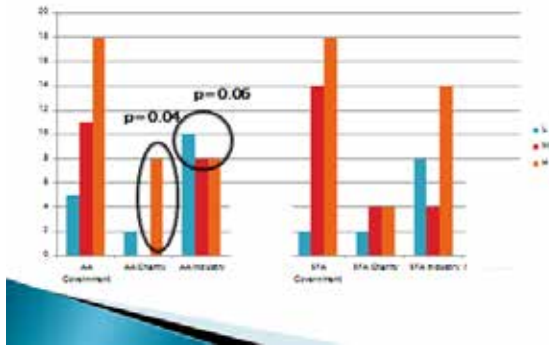
Statistical analysis

Chi square
Ordinal logistic regression with optimised function

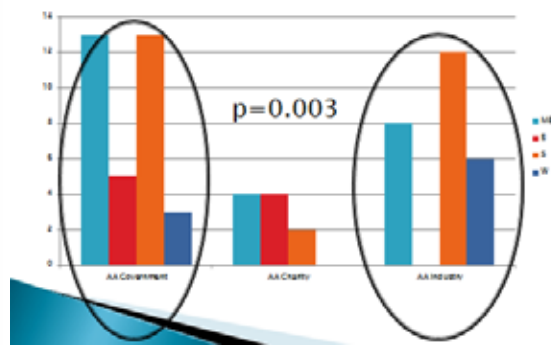
Overall results



New treatment by funding body



New treatment - others



Conclusions

- ▶ Scientific publications have an important influence on animal welfare
- ▶ Potential for bias when research is funded by groups with vested interests
- ▶ Positive publication bias: New treatment more + welfare than conventional or no treatment

Conclusions

- ▶ Authors' report less improvement of welfare in new treatments, compared with conventional or no treatment, if work is funded by industry rather than government
- ▶ A scientific assessment demonstrates that this difference is not real, suggesting researchers are consciously or subliminally providing reciprocal benefits to industry



Welfare and ethics in companion animal breeding: An opinionated perspective

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Abstract

Veterinarians in small animal practice are confronted by a bewildering number of disease conditions. As a generalisation, however, most disease conditions we see in dogs are ultimately genetic in aetiology, whereas most disease conditions in cats have a traumatic or infectious aetiology. This situation has arisen because a substantial proportion of dogs are purebreds or purebred cross dogs. Breeding practices which produce a number of 'desirable' physical and behavioural traits in dogs have also established a number of genetic defects that ultimately give rise to disease. Some of these are obvious. Others, on the other hand, do not obviously make a veterinarian think of the underlying genetic predisposition.

By their very nature, some canine breeds are genetic mutants. Other breeds have become very strongly associated with certain genetically inherited defects. But what is not well recognised by veterinarians is that a number of immune-mediated and neoplastic diseases are likely also to be genetically programmed. Indeed, it is fair to say that ultimately most disease conditions of purebred dogs have a genetic basis.

The situation in cats is different, in that historically cats have decided on their own sexual partners. Thus, most cats we see as veterinarians are domestic crossbreds. For this reason, cats have been much sounder genetically in comparison to dogs. Thus, the diseases which we see commonly in domestic short haired and long haired cats tend to be related to trauma or infectious agents. This state of affairs is likely to change as the population of crossbred cats in Australia declines as a result of cat registration, early desexing schemes, cat curfews and the like. Unfortunately, if the proportion of purebred cats increases and current breeding practices prevail, then cats are at risk of developing the same high prevalence of genetically programmed diseases which currently afflict dogs.

This talk will serve to illustrate the problems that can occur when small gene pools are used by well-meaning breeders that do not have a good understanding of genetics. Small animal veterinarians have an important role in educating breeders and the wider companion animal-owning community about how prevalent these disease conditions can become if inbreeding and line breeding are used. The potential value of new molecular technologies such as whole genome scans using single nucleotide polymorphism (SNP) chips will be covered also, and placed into perspective.

Introduction

This paper will focus on four genetic diseases of cats chosen to illustrate different types of genetic disease that may occur in purebred cat populations, and to highlight strategies that can be used to prevent or eliminate these problems. There are many other pertinent examples, but I have chosen these because, over the years, I have had a lot to do with these specific problems. I will conclude by looking at the new frontier of feline genomics, and briefly touch on how it will impact on the investigation and elimination of genetic disease in felids.

Osteochondrodysplasia in Scottish Fold cats

The Scottish Fold cat was developed from a naturally occurring mutant cat that was first observed in Scotland in the early 1960s. The cat in which the mutant gene was first observed was used to 'fix' the trait by a number of restricted matings to local farm cats and British Shorthairs. Scottish Fold cats have as their defining feature a forward folding of the pinnae. This gives them a unique look, which many people find particularly appealing. This fits in with the Lorenzian theory of beauty (named after the Nobel prize winning ethologist), but suggest people find animal "faces" appealing if they have forward facing eyes and floppy ears.

It was soon discovered, however, that if Scottish Fold cats were mated to other Scottish Fold cats, many of the offspring developed a severe crippling lameness early in life. Cats so affected had shortened, malformed legs and radiographic abnormalities affecting the growth plates that could be readily appreciated. As a result of this discovery, the breed was outlawed by the Cat Fancy in the United Kingdom. Ironically, the breed was perpetuated in the United States, where breeders determined that offspring of matings of cats with folded ears to cats with normal ears were relatively normal, and that half of such matings (on average) had folded ears. In order to keep the type fixed, this practice was followed indefinitely; cats with the Scottish Fold type, but with normal ears were thus produced in equal numbers from these matings. Such cats are known as Scottish Shorthairs or Scottish Fold variants.

Work from Australia has confirmed earlier reports that the cartilage defect that causes the ears of these cats to Fold is transmitted as an autosomal dominant trait²⁰, but established for the first time that heterozygous Scottish Fold cats invariably become afflicted by a progressive arthritis that varies in severity from Fold to Fold. Thus cats homozygous for the Fold gene develop crippling arthritis, at an early age, whereas heterozygous Folds develop arthritis but more slowly (Figure 1). The cartilage in these cat's ear is insufficiently resilient to maintain the normal shape of the pinnae, so it is hardly surprising that articular cartilage cannot cope with the wear and tear of a typical cat's agile and athletic lifestyle.

Thus, the problem with Scottish Fold cats is akin to that which affects many dog breeds which are genetic mutants. In other words, it is impossible to have a cat with folded ears that has sound joints. The only answer to this problem would be to abandon the breeding of folded eared cats. Breeders and owners who enjoy the particular personality of these cats could preserve them by having a Scottish Shorthair - a cat with the same body shape and personality, but without the defective gene that causes the cartilage problem. Whether breeders will accept this sensible solution is unknown. To make this point even clearer, we are currently involved in a project with Bianca House, Clare Wade and Leslie Lyons using the new feline single nucleotide polymorphism chip (SNP chip) to determine the genetic basis for this joint problem in Folds.



Figure 1 Lateral; radiograph of the hind limb of an affected Scottish fold cat with severe ankylosing arthritis of the hock. Note the severe plantar exostosis.

Autosomal Dominant Polycystic Kidney Disease

PKD is an autosomal dominant disorder which is seen in all breeds of cats, with the highest prevalence in Persian cats and related pure-bred, long-haired cats. In this disease, cysts develop in the renal cortex and medulla, as a result of defective scaffolding proteins which normally support the nephron. As the cat grows older, cysts increase in size and number, and their growth results in compression of the surrounding

²⁰ In fact, semi-dominant is the more appropriate modern term for a Mendelian inheritance pattern in which heterozygous individuals exhibit a phenotype that is intermediate to the two homozygous phenotypes.

'normal' renal parenchyma. Eventually this results in renomegaly and progressive deterioration in renal function. The speed with which this occurs varies a lot from cat to cat so again, this could be described as a variably penetrant defect. Some cats can live near-normal life spans, while others succumb to renal failure in middle age. The above description related to cats that are heterozygous for the defective gene. Cats that are homozygous are thought to either die *in utero*, or develop renal failure at a very young age.

PKD has been described in cats at least since the 1970s. Sometimes it is associated with the presence of cysts in the liver, and also with peritoneopericardial hernias. Recent work from Biller, DiBartola and collaborators has demonstrated convincingly that the disease is inherited in an autosomal dominant fashion. Thus, all heterozygotes can be detected as they have cysts in their kidneys. Surveys of purebred long haired cats in several different countries have shown that approximately 40% of Persian and related purebred cats have PKD - just about what one would expect for a genetically transmitted autosomal dominant condition that has little impact on an individual till after it has passed breeding age.



Figure 2 Kidney scans from a cat with autosomal dominant polycystic kidney disease. A prominent cortical cyst is highlighted by an arrow.

The expression of the gene for PKD has nothing to do with the brachycephalic conformation of Persian cats, and as would be expected we have traced the introduction of PKD into Burmilla cats, even though they have a normal facial conformation. Furthermore, PKD occurs sporadically in domestic cross bred cats, although it would appear to be more common in long haired, presumably as Persian blood lines were more prevalent in the ancestry of these cats.

PKD has recently received a lot of attention from Persian and Chinchilla breeders, partly as a result of Internet web sites alerting them to the importance and high prevalence of this condition. As a result many breeders have worked with co-operating veterinarians to screen their stock for PKD-positive cats in an attempt to get rid of this problem. Based on the experimental work of Biller, most cats with PKD can be identified at about 6 months of age using high quality ultrasound units and high frequency (7.5 to 10 MHz) transducers (Figure 2). The author prefers to screen cats somewhat later, around 12 months of age, as this makes the detection of mildly affected individuals much easier. A further option exists in the form of genetic testing - as Leslie Lyons and Chris Helps, at UC Davis and The University of Bristol, respectively, have worked out molecular based PCR tests that are exceedingly good at detecting cats affected by PKD, and this is possible to use on kittens and of course does not require the use of ultrasonography. Indeed, breeders can organise it themselves by collecting cheek swabs and sending them to a testing facility.

Theoretically, if all purebred long-haired cats were screened using ultrasonography or molecular testing, and PKD-positive individuals identified (usually on the basis of having three cysts in two kidneys, and the corresponding molecular genetic defect), then it should be possible to eliminate this problem from cats in one generation by desexing all affected individuals. A similar scheme used in Australia to eliminate ADPKD from Bull terriers has been remarkably successful at decreasing the prevalence of this condition, although this has required the concerted effort of many individual breeders, breed clubs and veterinarians.

Although the simplest way to eliminate PKD is to cull all affected individuals, it is not necessary to immediately remove absolutely all affected individuals from breeding stock. If a particular cat with PKD is otherwise of outstanding quality (genotypically and phenotypically), it is still possible to use the cat for breeding with the proviso that all resulting progeny be screened for PKD (with ultrasound and/or PCR testing), and affected individuals desexed. Thus the valuable genetic material in an individual cat can be preserved. This type of strategy is only practical with an autosomal dominant trait, where heterozygous carriers can be identified readily using ultrasonography.

Autosomal recessive problems in Devon Rex cats

Devon Rex cats are an enchanting breed which has as their defining feature an autosomal recessive defect of the hair follicle. The genetic basis of this defect has recently been determined by Leslie Lyons and colleagues. This defect results in the characteristic soft and crinkly hair coat of Devons. All Devon Rex cats are homozygous for the gene that results in their peculiar hair coat - so you have a mutant cat to start off with!

Two important autosomal recessive conditions have been reported in Devon Rex cats, and interestingly the research concerning these diseases has been done mostly in Australia. 'Spasticity' as it is known to breeders, refers to a congenital myopathy somewhat similar to the human condition limb girdle muscular dystrophy. Work done in the UK established that the condition was inherited in an autosomal recessive fashion with complete penetrance. Affected cats usually show obvious signs of a locomotor problem when six to 20 weeks of age. Muscle weakness is the predominant feature, with prominent ventroflexion of the head and neck, dorsal protrusion of the scapulae (Figure 3), head bobbing, megaesophagus and pharyngeal weakness. Affected cats have a generally unsatisfactory quality of life and are at risk of sudden death due to obstruction of the pharynx/larynx with food. In the late 1990s, the problem appears also in Sphinx cats likely because Devon Rex cats were used to add diversity to this hairless breed. Detailed studies done in collaboration with Professor Clive Harper, Kathryn North, Diane Shelton and collaborators (including this author) have shown the underlying problem to be a primary muscle disorder; although the molecular basis of the condition has not yet been determined it appears to be one of the sarcoglycanopathies. Currently, we are trying to determine the underlying genetic defect using a whole genome scan using the Illumina SNP microarray.



Figure 3 Devon Rex cats with muscular dystrophy due to a sarcoglycan abnormality - in other words, a defective cytoskeletal protein important in supporting the sarcomere apparatus.

There is no problem in diagnosing affected cats. Once a veterinarian (or breeder) is familiar with the syndrome, the condition can be diagnosed on the basis of characteristic clinical signs, a barium swallow and biopsy of the dorsal cervical muscles (although there is really no need for the latter two diagnostic

procedures in a typically affected kitten). The problem for the breed is how to eliminate this problem, while a molecular genetic test on blood is currently unavailable to detect heterozygous carriers.

The simplest approach is to stop using the queen and stud of affected cats for future breeding. This is because to produce an affected kitten, both sire and dam must be carriers (they cannot be homozygous as they are phenotypically normal). A more aggressive approach would be to exclude the littermates of the sire and dam also from further breeding. Theoretically, the best approach would be to use only cats shown to be clear of the defective gene by test mating. Test mating involves breeding a cat of unknown genotype to a known carrier or carriers. If such matings result in the production of 16 normal kittens, statistics suggest the cat is normal i.e. it does not have a copy of the defective recessive gene. The trouble with a test mating scheme is that in order to show that given cat is clear, many carrier cats have to be produced, and thus these animals must be desexed and housed as pets. For practical reasons, most breeders are not keen on embarking on a test mating scheme, so the recommendation of not using the stud and queen that have produced an affected kitten is the most robust in the real world. In the future, research may identify a molecular genetic test that will identify both homozygous affected cats and heterozygous carriers, which will greatly simplify the elimination of this problem. A number of researchers are currently working on this.

'Spasticity' is so characteristic in its clinical manifestations that breeders have become adept at identifying affected individuals. The benefit of this is that it is most unlikely that an affected kitten will ever be sold as a pet. The disadvantage is that affected kittens may still be produced, and subjected to euthanasia without the challenge of eliminating the defective genes ever being addressed. There is, however, a much greater problem with another autosomal recessive condition of Devon Rex cats, known as 'haemophilia' to many breeders. The underlying problem is gamma-carboxylase deficiency, which results in a vitamin K-dependent coagulopathy (as gamma-carboxylase is involved in reconstituting vitamin K through the vitamin K cycle in the liver). Cats with this condition develop problems referable to abnormal coagulation, typically when less than one year-of-age. They may bleed excessively following trauma or minor surgery, e.g. castration. They can also bleed spontaneously into the mediastinum and/or chest. I have also seen one likely case where a kitten died of intracranial haemorrhage suspected of being caused by this condition. The tentative diagnosis can be confirmed by showing prolongation of the prothrombin time and activated partial thromboplastin time. These changes occur as there is deficiency of all vitamin K dependent clotting factors (II, VII, IX and X - like the major TV channels in Australia!) - so both the intrinsic and extrinsic pathways are affected. Cats experiencing a life threatening bleeding episode should be treated with typed blood (mindful of the high prevalence of type B in Devon Rex cats) and subcutaneous vitamin K1, and further bleeding episodes can be prevented by weekly administration of vitamin K1.

Although the mechanism of genetic transmission has not been established beyond doubt, an autosomal recessive inheritance seems likely on the basis of an analysis of the pedigrees of affected individuals on record. However unlike congenital muscular dystrophy, affected individuals may not be apparent to the breeder, with the problem only emerging sometime after the cat has been sold and placed in a pet home. Similar considerations apply to the elimination in this problem from the breed, although there is the additional problem of identifying homozygous individuals - as kittens have to be screened by determining their PTT and APTT to determine their phenotypic status. Unfortunately, very few breeders appear willing to screen kittens in this fashion prior to sale. As the underlying problem has been identified, there is the hope that a molecular test will be developed to identify heterozygous individuals, although considering the rarity of the breed this seems unlikely at present. Unfortunately the need to screen individual cats by performing somewhat tricky clotting tests makes screening of the whole breed to identify affected individuals a difficult task, and to the best of my knowledge, no-one is working on this problem currently. There is an opportunity for a keen feline genetic team here!

Concluding comments

This talk has served to illustrate the problems that can occur when small gene pools are used by well-meaning breeders that do not have a good understanding of genetics. Small animal veterinarians have an important role in educating breeders and the wider cat-owning community about how prevalent these disease conditions can become if inbreeding and line breeding are used. It is the author's firm opinion that the purposeful breeding of domestic short haired cats to produce healthy cross bred kittens with hybrid vigour is the best way to prevent cats developing the high prevalence of genetic diseases which pervade purebred dogs in Australia. This will pose more of a challenge as the proportion of sexually intact cats declines due to early neutering and related strategies.

There is hope for many highly penetrant single Mendelian locus genetic traits. Many research groups around the world - typically a combination of feline clinicians and molecular geneticists - are working using the newly minted feline SNP chip in genome wide association studies. These have proven to be a powerful methodology in people and dogs, and no doubt it will be the same story in the cat. Many genetic diseases in individual breeds should have their molecular basis determined over the next 5-10 years, which will permit relatively inexpensive genetic testing of individual breeding animals. My hope is such an approach be mandated by feline breed societies.

The interaction of ethical questions and farm animal welfare science

Peter Sandøe, Björn Forkman & Karsten Klint Jensen, University of Copenhagen, Denmark, pes@life.ku.dk

Abstract

In the early days of farm animal welfare science it was often claimed that a sharp distinction should be drawn between, on one hand, the science-based study of animal welfare and, on the other hand, ethical investigation of what is right, and what is wrong, in our dealings with animals. However, following debates starting in the early 1990s, it is now widely recognised that scientific assessments of animal welfare simply cannot avoid making ethical assumptions.

Using simple but realistic examples, the presentation will explain how ethical assumptions inform the study and assessment of animal welfare at different levels.

First, and most obviously, it matters a great deal how animal welfare is defined in the first place. Should we think of welfare in terms of animal function, or in terms of the avoidance of pain and other suffering? Or should we focus on the net balance of negative and positive states (pain and enjoyment or pleasure)? Perhaps we should try to assess preference satisfaction, or the extent to which the animal lives in a natural way. By choosing a specific definition of animal welfare the researcher will be taking a stance on what matters in our dealings with animals.

Secondly, the indicators selected as measures of animal welfare may introduce biases which are relevant from an ethical perspective. Thus, indicators connected with pathologies and other states which are signs of pain and other types of physical suffering will inevitably favour production systems which are safe but barren. Would such a narrow focus miss something of ethical importance?

Thirdly, ethical assumptions are hugely important when researchers aggregate their results in an effort to say something about the net welfare of a group of animals. Here decisions have to be taken as to how different aspects of animal welfare should be balanced against each other - for example, the incidence of disease and injury versus the ability to exercise a wide range of natural behaviours. Difficult trade-offs may also have to be struck between the situation of the worst off animals in a group and the general welfare of the flock, often defined in terms of average welfare.

Finally, it matters, ethically, how scientific uncertainty is dealt with. Many welfare researchers, for example, regard it as highly likely, but not absolutely certain that farm animals are unconscious until after birth. However, would it be ethically advisable to exercise caution here? Should we assume, unless and until we are shown to be mistaken, that unborn animals may well be conscious, and protect them accordingly?

Following the presentation of these ethical issues it will be argued that if we are to maintain the objectivity of welfare science, animal welfare researchers need to present their underlying ethical assumptions in a transparent way. Transparency of this kind allows potential users of research to assess its wider ethical significance and importance.

Introduction

Let me start by thanking RSPCA Australia for the invitation to come all the way down from Denmark and present my thoughts on the relation between animal welfare science and ethics.

I should also mention my co-authors: Björn Forkman, who is professor of ethology, and Karsten Klint Jensen, who is trained as a philosopher, like myself. Besides helping me to prepare today's presentation they are both co-authors on several of the published papers on which the presentation draws.

The title of my talk was more or less given to me by the organisers - together with a reference to a paper of mine (Sandøe *et al.*, 2003) which is now nearly ten years old and which actually developed thoughts I first presented in a paper in 1992 (Sandøe & Simonsen, 1992). So I feel a bit like an ageing rock star on a

reunion tour singing his old hits. However, over the last twenty years, together with my co-authors, I have actually been working on and developing the thoughts presented here, so with luck much of what of I have to say will be new to you.

The claim I want to make in this paper is *not* that ethics and animal welfare science are the same thing. Rather my claim is that when animal welfare is studied from a scientific perspective ethical assumptions are inevitably in play. And I shall argue that this is no problem as long as these assumptions are made transparent.

I will start by tracing the origins of the idea that animal welfare science can and should be independent of ethics. Then I will try to demonstrate how ethical assumptions enter the study of farm animal welfare at four different levels. Towards the end of the presentation I will try to explain how it is possible to acknowledge that animal welfare science relies on ethical assumptions and at the same time continue to claim that this branch of science is as objective as any other.

The idea of science as an arbiter of animal welfare

The modern idea of animal welfare was given its first clear statement in a report issued by the Brambell Committee in 1965. The committee was set up by the British government following public outcry at intensive livestock farming; the outcry in turn was triggered by Ruth Harrison's book *Animal Machines*, published in 1964. The recommendations of the committee formed the basis of subsequent British and European animal welfare legislation.

The report also presents a vision of a new branch of science - animal welfare science - which can be used to inform efforts to improve the welfare of farm animals. This vision is nicely captured in the following quotation from the report:

"Any attempt to evaluate welfare ... must take into account scientific evidence available concerning the feelings of animals that can be derived from their structure and functions and also from their behaviour"
(Brambell, 1965)

Note the new, and at that time extremely controversial, idea presented by the committee, that the study of animal *behaviour* should play a key role in the assessment of animal welfare. Brambell's insistence on the importance of scientific input is quite right, in my view. The problems I am going to discuss emerge later.

Not all of the recommendations of the Brambell Committee were followed by the British government, but one that was followed was that there should be further investment in animal welfare science. This would not be too costly, and it would buy the politicians some time before they were obliged to make genuine reforms to the housing and care of farm animals.

One of the main pioneers in the field of animal welfare is Donald Broom. Until recently he was Professor of Animal Welfare in the Department of Veterinary Medicine at Cambridge University. From the beginning, Broom clearly felt he had to defend the study of animal welfare as a genuine part of science - not something soft and ethical.

I think that partly explains the statement made here - which is the statement that I want to disagree with in this paper:

"The assessment of welfare should be quite separate from any ethical judgement about how animals should be treated, but once an assessment is completed it should provide information which can be used to take decisions about the ethics of the situation." (Broom, 1996)

The idea that animal welfare issues can be dealt with on a purely scientific basis is not confined to academics. In various ways, and to differing degrees, it has been taken up by the farming sector, by governments and by international bodies, including the European Union Commission.

Until a few years ago, the Commission had a scientific committee to give advice on animal welfare. Its mandate sounds quite innocent and uncontroversial. It is to give advice "on scientific and technical questions concerning the protection of animals".

However, a closer look at the reports coming out of the committee reveals something much less innocent. Let me focus on a 2000 report on broiler production. Among many other things, this report deals with the issue of stocking density. It makes a rather firm recommendation:

“When stocking rates exceed approximately 30 kg/m², it appears that welfare problems are likely to emerge regardless of indoor climate control capacity...” (SCAHAW 2000)

Personally, I have no problem with the idea of a maximum stocking density for broilers; nor does the figure 30 kg/m² seem horribly misconceived to me.

However, I do have a problem with this being presented as something that is based purely on science. If you look at the scientific literature, you will find that there is no clear cut-off point at 30 kg/m². So this figure is really the product of an attempt to balance various concerns – economic and welfare-related – which bear upon the regulation of broiler production by setting a maximum stocking density.

To do this and disguise what you are doing as objective science is, in my view, highly problematic.

The position I am sketching today is based on a very simple logical point, originally formulated by the Scottish philosopher David Hume (1711-1776). Hume famously claimed that it is not possible to derive an “ought” from an “is”. This claim is sometimes known as Hume’s Guillotine (or Law); but don’t worry, I am not planning to digress and talk about decapitating people!

We can reformulate Hume’s dictum in more modern and somewhat wider terms. That is, we can draw a distinction between on the one hand factual claims and on the other ethical or evaluative claims. For present purposes we need to consider the relatively uncontroversial distinction between *scientific* and evaluative claims. I take scientific claims to be a sub-variety of factual discourse.

The difference, according to my interpretation, is that the latter are action- or policy-guiding in a way that the former are not. So I want to claim that assessments of welfare have an ethical component: they say something about what is good or bad from the point of view of the animals. Biological facts, by themselves, never say anything about what is good or bad.

In what way do statements about animal welfare guide us in our decisions to act, or to adopt this or that policy? The key thing is that they say something about what is good or bad *from the point of view of the affected animals*. (Note that they do not guide action in a highly simplistic way: there is no logical oddity about saying that something should be done even though it has a negative effect on animal welfare.)

Biological facts, by contrast, do not by themselves say anything about what is good or bad for animals. To do that they must be interpreted in the light of an ideal, i.e. a view of what counts as a good animal life. This is just to say that an ethical premise is needed.

So now let me move on to look at the ethical assumptions relating to the study of animal welfare.

Ethical concerns relating to the study of animal welfare

I want to discuss four kinds of ethical assumption, any of which may, at some or other level, inform the study of animal welfare. The first concerns how animal welfare is defined.

a. The definition of animal welfare

Let me start by using an example borrowed from Fraser 2003 as an illustration: one of the highly controversial issues relating to farm animal welfare is the housing of sows. For many years this has been a central, highly contested, issue in the international literature. Specifically, it has been discussed whether the welfare of sows is best served by their being kept in stalls or group-housed.

When one looks into the literature on the subject, it turns out that animal welfare scientists are divided. Interestingly the division seems to be geographically defined.

Here are the key conclusions from a European and an Australian report.

“Some serious welfare problems for sows persist even in the best stall-housing system” (von Borell *et al.*, 1997)

“Both individual [including stalls] and group housing can meet the welfare requirements of pigs” (Barnett *et al.*, 2001)

Both reports were written by groups of eminent scientists, and they were prepared on the basis of a review of roughly the same literature. However, as you can see their conclusions are inconsistent. How can that be?

There is, of course, no simple answer to that question. My guess, though, is that the two groups have worked with different definitions of animal welfare. These definitions have very probably been tacit. In cases like this it seems a good idea to make them explicit.

Here, I shall not pursue this example further, because I want to proceed to a more general discussion of definitions of animal welfare.

That it is possible to disagree over what counts as a good life may come as a surprise to some of you. However, it does not come as a surprise to someone, like myself, with a background in philosophy. Dating back to ancient times there have been fierce philosophical debates about what counts as a good human life.

Before engaging in animal ethics I worked in medical ethics. Here I became acquainted with the detail of discussions about the nature of human quality of life. When I moved into animal issues I found that the conceptual framework could be re-applied.

The starting point here is a group of theories (which, incidentally, were often attacked by Plato and other influential ancient philosophers) which claim that mental states are what matters – pleasure and the absence of pain.

In public debate about animals the focus was initially on avoiding negative states, which were defined rather narrowly as “pain”. One of the novelties of the Brambell Report was to expand that notion and to include frustration of behavioural needs as such. How far have we moved beyond that today? Not that far, I suggest.

Here is a very recent and highly influential attempt to define animal welfare made by Marian Dawkins:

“Good welfare is defined as animals being healthy and having what they want” (Dawkins, 2012)

This comes close to saying that animal welfare involves animals, in the long term as well as the short term, being free of pain (“being healthy”) and free of frustration in their behavioural needs (“having what they want”). (Of course there is room for discussion about how to interpret Marian Dawkins here – and I may be interpreting her in a too restrictive way.)

Suppose you ask a friend whether she is happy. She answers “I am not ill and I am not frustrated. What more could I ask for?” One thought is that she has probably put the bar too low. You could reply: “God damn it! What about excitement, joy, fun and pleasure?”

Some people may want to say something similar, on behalf of animals, when faced with Marian Dawkins’ definition of animal welfare. They may wish to insist that animal welfare is not just the absence of negative mental states but also the presence of positive ones. This is not just adding something more to what counts. It may also open up certain trade-offs, as the following example serves to show.



This picture was taken one Sunday in April a few years ago - on so-called "eco-day", a yearly event where the organic dairy cows in Denmark are released on to pasture in the spring. Most people sense that the cow is not only happy - it is enthusiastic.

Let's assume that when dairy cows are released to graze on pasture they have positive mental states. If these states are allowed to count, this will matter when it comes to welfare assessments and the comparison of all-year indoor housing and systems where cows are permitted access to pasture during certain periods of the year.

Thus we know that being on pasture can also have a negative impact on welfare - e.g. because it can lead to uneven feeding and hoof infections. Therefore it matters whether positive states count and may serve to counterbalance such negative effects.

The next group of theories are called "desire" or "preference" theories. These emerged from economics. They are quite popular within the human sphere - that is, when the question is: What makes for a good human life?

How do they translate to the farm animal case? Researchers studying animal welfare use various techniques to reveal and measure the preferences of animals. However, these techniques are normally interpreted within the framework of mental state theories.

A third group of theories are so-called "perfectionist" theories. These differ from preference theories and mental state theories in that here it is not only the subjective view of the animal which counts. What matters is that the animal acts and develops in accordance with its nature, whether or not that "feels good" to the animal or is in accordance with its actual preferences.

This kind of view is not very popular among animal welfare scientists, but it seems to have a rather wide public appeal.

This is illustrated by the following quote which is an excerpt from a focus group interview conducted in Denmark, the results of which were published in the paper "Happy pigs are dirty" (Lassen *et al.*, 2006):

"... I have a pile [of cards] here containing the organic label and these pigs, I believe they are organic. They do not have a ring in the nose and they are dirty! That is crucial, pigs should be dirty! The reason why I have all the other pictures of pigs in the other pile is that they are far too clean. That means that it is a pure industrialised production. All the pigs are clean - I don't like that. And that includes the one with the curly tail too! Nice and curly, but a little too clean, I find. It should have been dirty like the others."

During the interview the participants were asked to sort some cards with pictures of pigs. Some pictures show indoor pigs. Others show outdoor pigs.

In the passage copied above someone is explaining why he thinks some of the pictured pigs are better off (or more to his approval) than those in "pure industrialised production". He returns - admittedly in a rather crude way - repeatedly to the theme of dirtiness.

Of course, it is not clear whether this interviewee connects dirtiness in pigs with positive mental states. English speakers do say "Happy as a pig in muck!" It is clear, however, that natural living also seems to matter.

The three groups of theories we've looked at - mental state theories in different varieties, desire theories and perfectionist theories - are generally regarded as competitors, but they can be combined. It is possible to hold a mixed view with elements from more than one of the theories. For example, most perfectionists - those who believe natural living counts - will concede that avoiding pain and other unpleasant states also matters. This means there will be some balancing to be done.

b. The choice of indicators

We have so far looked at alternative ways of viewing animal welfare, but even if two researchers agree over what makes for a good animal life, or the definition of animal welfare, they may still arrive at different welfare assessments. One reason for this is that they may deploy different indicators of welfare, or give those indicators different weightings.

The choice of indicators may be biased in various ways not only by how one defines animal welfare but also by concerns relating to fashions in science (Sandøe *et al.*, 2006). This is a picture of my colleague Björn Forkman, who is also a co-author of this presentation:



He has lost his keys and is looking for them. I am asking him whether he has lost them under the lamp. "No", he answers, "...but there is more light here". This is a good illustration of the way many researchers choose their indicators. I mean, it is sometimes felt to be more important to use the immediately available, cheap, measures from e.g. databases than it is to measure the right thing.

For example measures of mortality, or of pathologies, may be easy to apply. However, as stand-alone indicators they may fail to give valid results.

If one wants to compare the welfare of caged and free-range hens, it matters a lot which indicators one chooses. This comes out nicely in the following quotation from a recent review paper:

"It appears that no single housing system is ideal from a hen welfare perspective. Although environmental complexity increases behavioral opportunities, it also introduces difficulties in terms of disease and pest control. In addition, environmental complexity can create opportunities for the hens to express behaviors that may be detrimental to their welfare." (Lay *et al.*, 2011)

If one measures only mortality, pathologies relating to feather-pecking, cannibalism and other forms of detrimental behaviour, and the pathologies of various infectious diseases, cage systems are bound to emerge as superior. But that cannot be the end of the story. Clearly, one can discuss whether this is a fair evaluation - for example, whether the opportunity to exercise various natural behaviours should count in favour of free-range systems.

c. The aggregation of results

In their essentials, the ideas I have presented so far could have been presented 10 years ago. But I now want to move on to something which barely existed then, because the assessment of animal welfare at farm and group level is a recent research trend.

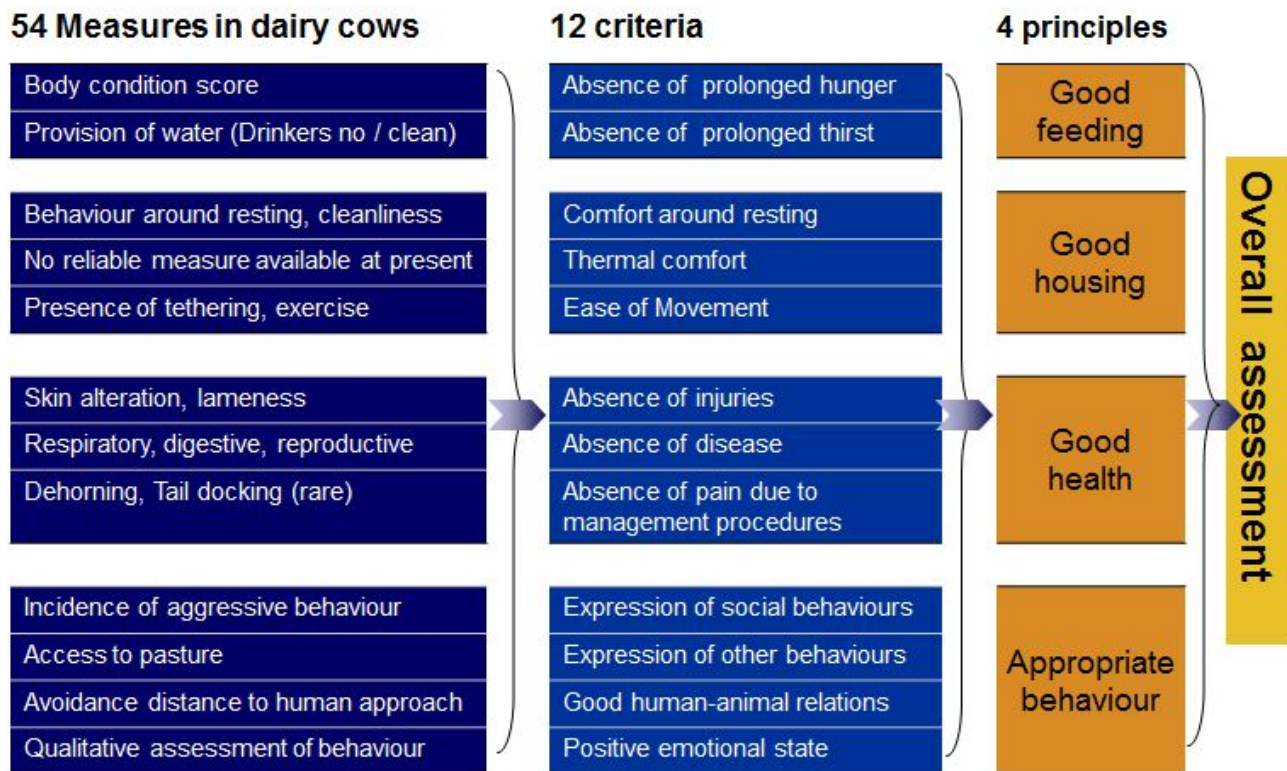
Most classical animal welfare research was experimental. This provided many insights into what, in an ideal world, would give animals what they need. However, it told us little about the levels of problems on real life farms, and how these levels vary from farm to farm, depending on the ability of the farmer to take good care of her animals.

A new wave of animal welfare research, focusing on the assessment of animal welfare at farm or group level, began around 2000. Arguably, this new wave culminated in the recently concluded large-scale EU project Welfare Quality®.

Welfare Quality® aims ultimately to collect welfare scores for individual farms. Since the scores are expressed in single numbers derived from a large number of measurements, the need to aggregate is very obvious. With aggregation come a number of ethical issues which I shall now try to say something about.

Before I do that, I need to sketch for you the mechanics of the Welfare Quality® scoring model.

Welfare, in Welfare Quality®, is viewed as a multidimensional concept: it consists of 4 principles which branch into 12 criteria which again branch into 54 measures. Here you can see what the model looks like for dairy cows:



To reach an overall assessment one has first to calculate scores at criterion level according to the data produced by measures on a farm. Then the criterion-scores are pooled into principle-scores, and these are in turn aggregated to produce the overall assessment.

All score calculations are performed in accordance with well-defined functions. The functions are designed to reflect expert opinions. The experts consulted were animal scientists, social scientists, and other stakeholders.

One question that arises when different values are added together to arrive at an overall score is this: to what extent should a low value in one of the criteria be compensated for by a high value in another criterion?

Let's see how that plays out in practice, taking the four criteria feeding into the principle "Good Health" for fattening pigs as an example.

Table 4 Example of scores for the overall principle 'good health' in fattening pigs given by scores obtained for the criteria 'absence of injuries', 'absence of diseases' and 'absence of pain due to management procedures'.

	Criteria: absence of...			Principle
	Injuries	Disease	Pain	Good health
25	50	75	32	
25	75	50	35	
50	50	50	50	
75	25	50	28	
75	50	25	34	

(From Veissier *et al.*, 2011)

You should be able to see here that higher values are not allowed fully to compensate for lower values. Had they been allowed to do so the score would have been the same in all five cases - where the average score is the exactly identical.

This limit on compensation is secured by an ethical principle which gives greater weight to the prevention of suffering (low values) than it does to the promotion of good welfare (high values).

A similar problem concerns aggregation between animals. For example, when we are assessing the disease load at a farm it may not be sufficient just to look at the average or other similar aggregated measures.

Two cattle farms, over a certain period of time, may have the same average level of disease. However, it may turn out that on one farm the disease load is evenly spread across the livestock, whereas on the other it is carried by a minority of the animals. Given a principle of fairness, it could be argued that the first farm does better than the second. (It may even be argued that the average suffering is higher on the second farm than on the first.) (See Houe *et al.*, 2011)

Finally it is obvious that there is an ethical issue when it comes to defining the boundary between acceptable and unacceptable conditions. In the Welfare Quality® project, they first defined *a priori* how to divide between four levels: Excellent, Enhanced, Acceptable and Not classified. When it turned out that too many farms came out at the lower end the thresholds were changed.

Those concerned about farm animal welfare will naturally feel that it is important to know about this kind of thing!

d. The handling of scientific uncertainty

Now I will move to the last kind of ethical assumption which may play a role in animal welfare research. It has to do with the handling of uncertainty.

I want for a start here to consider an example. In a very impressive series of research papers David Mellor and his colleagues have argued that fetuses cannot suffer before they are born. They end up with a very clear conclusion:

“We conclude that the embryo and fetus cannot suffer before or during birth. Furthermore, we conclude that suffering can only occur in the newborn when the onset of breathing oxygenates its tissues sufficiently to substantially reduce the dominant adenosine inhibition of brain electrical activity.” (Mellor & Diesch, 2006)

This contention has a number of welfare implications - for example, that, from the point of view of welfare at least, one should not worry about animals which die before or during birth (assuming that welfare is to be defined in terms of feelings).

Mellor is clearly out of step here with widespread, common-sense opinion. Thus, if he and his colleagues are right - and personally I think they are - their view will probably apply to human foetuses as well. However, that is not the way many people regard human foetuses.

It is therefore likely that many people will not believe, or accept, Mellor's results. They will conclude that we should err on the side of caution here - that animal foetuses should be "given the benefit of the doubt". And ironically that is what has happened in New Zealand law and in the law of some Australian states. Despite the results presented by Mellor, the New Zealand Animal Welfare Act still covers "any mammalian fetus ... that is in the last half of its period of gestation or development". Similar rules apply in Victoria and Queensland.

When, and to what extent, animals should be given this benefit of the doubt is clearly an ethical issue (Sandøe *et al.*, 2004). It has recently become fashionable to link animal welfare assessment to the risk analysis framework. In the light of this it is interesting to note a parallel here with discussions of the so-called "Precautionary Principle" - a principle many take to be suited for application to some risk issues, including the GMO question.

Maintaining the objectivity of animal welfare science by making ethical assumptions transparent

Well, I hope to have convinced you that ethical assumptions permeate the study of animal welfare. A question then naturally arises about what exactly this means. Should animal welfare scientists give up on any claim to objectivity, with all that this entails about the importance and status of their work?

I see no reason to believe that the objectivity of animal welfare science is under threat. If it were, the problem would not just be for animal welfare science but for large parts of applied science. For example, difficulties would inevitably surface in toxicology.

However, as I say, I don't think there is serious worry about objectivity here - as long as the values that are involved in animal welfare science are made transparent. For where values are transparent, everyone can know the limitations of the results.

Of course, the power, or authority, of welfare scientists will also shrink a little. But I don't see that as a big problem either.

When scientists base themselves on certain ethical assumptions, they do so, we very much hope, because they believe in those assumptions. For example, a scientist may strongly believe that the feelings of animals matter but that natural living does not.

What should scientists do when they are challenged over their assumptions? Should they say something like: "Since I am a scientist I don't have any views about ethical matters"?

Hopefully not. Surely it would be better to enter the debate about values. Scientists are perfectly entitled to do so, but they must recognise that so too are others. They should be aware that here they do not speak with the authority of pure science. They speak as engaged and knowledgeable citizens.

This may indeed raise levels of public respect for scientists and make scientists more reflective - both of which outcomes are to be valued.

Thank you for listening. What I have said here builds on a long list of papers dating back 20 years (my back catalogue, if you like!), and much work is still in progress. If you want to know more, please consult our webpage, www.animaethics.net, where some of the papers can be found as post-prints.

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Pain, death, and concern for animal life

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Abstract

The conventional view, in animal ethics no less than animal welfare, is that causing an animal pain and painlessly taking its life are two separate issues warranting very different ethical evaluation. While causing pain is regarded as a very serious matter, painless killing is held as an issue of little direct significance. Even some avowedly 'pro-animal' philosophers such as Peter Singer, who argue that an animal's interest in avoiding pain ought to be given the same moral weight as a human person's, claim that there is no serious obstacle to painlessly killing animals.

In my presentation I will argue that common sense concern for animal pain and suffering points to the issues of pain and death being more closely connected than is ordinarily assumed. Drawing upon a thesis about the 'badness' of pain, I will argue that implicit in everyday concern for animal pain is recognition that the lives of animals are likewise the appropriate object of moral concern. If a creature's pain matters, then its life matters – that's the basic idea. My aim is to stimulate discussion about how we determine an animal's interest in continuing to live. Should we give more credence to ordinary valuing practices, that is, what people care about, what they say about animals and what they imagine animals to be like, rather than approach the issue strictly with reference to empirical evidence for particular mental states?

Introduction

If the lives of animals are of little consequence, then why is it good for them to be pain free?

The conventional view, in animal ethics no less than animal welfare, is that causing an animal pain and painlessly taking animal life are two separate issues warranting very different ethical evaluation. While causing pain is regarded as a very serious matter, painless killing is held as an issue of little direct significance. Even some avowedly 'pro-animal' philosophers such as Peter Singer, who argue that an animals' interest in avoiding pain ought to be given the same moral weight as a human person's, claim that there is no serious ethical obstacle to painlessly killing animals (Singer 1993).

An important presupposition of the conventional view is the principle that the harm of death ought to be determined largely on the basis of what animals are like, that is, with reference to their psychological capacities. In line with this principle, the capacities possessed by the animals themselves are the major consideration when developing theory and policy responses to the problem of killing animals. Accordingly, as animals do not possess the kind of forward looking mental states that would make death a deprivation in the relevant sense, advocates of the conventional view hold that painlessly killing them is not against their interests.

But, is the conventional separation of pain and death sustainable? Should the problem of killing animals be approached as an essentially descriptive question – as if satisfactory answers could be found, once and for all, with a tape measure or under a microscope?

In what follows I will argue that common sense concern for animal pain and suffering, a concern made manifest in existing animal protection institutions (animal welfare and anti-cruelty legislation and norms), points to the issues of pain and death being more closely connected than is ordinarily assumed. It is appropriate, in my view, to allow for so-called lay people's concern for animals to inform debate about the harm of death because the issue bears so importantly upon the problem of killing animals which is a distinctly evaluative or 'non-scientific' problem – a political or ethical problem. In saying that killing animals is an evaluative problem, I do not mean to suggest that scientific evidence for animal mental states is not important for addressing the harm of death; it is just that such considerations are not decisive but instead constitute just one set of considerations among others.

Drawing upon a thesis about the 'badness' of pain, I will suggest that implicit in everyday concern for animal pain is recognition that the *lives* of animals are likewise the appropriate object of moral concern. If a creature's pain matters, then its life matters – that's the basic idea. To paraphrase a quote from a long-time opponent of animal rights, R.G. Frey, if the lives of experimental animals have no value, then why do we make experimenters go to such great lengths to justify taking them? My aim is to stimulate discussion about how we determine an animal's interest in continuing to live; should we give more credence to ordinary valuing practices, that is, what people care about, what they say about animals and what they imagine animals to be like, rather than approach the issue strictly with reference to empirical evidence for particular mental states?

The badness of pain

Since at least the 18th century, a widespread view in ethical theory is that sentience, the capacity to experience pleasure and pain, is a sound basis for attributing moral importance to an individual (Bentham 2007). The possession of sentience, it is argued, entitles an individual to moral 'goods', usually in the form of rights, understood as protection from certain 'deprivations and inflictions'. These harms are regarded as morally salient by proponents of the sentience view precisely because of how they register in the consciousness of the individual. They are experienced as aversive; unpleasant; painful; and to this extent, it is presupposed, they are unwanted. It is thus the phenomenological dimension of pain – how it feels 'on the inside' – that is regarded as its morally significant dimension.

But, arguably, an important implication of the capacity to feel pain has been passed over by proponents of the sentience view. In their rush to ensure that ethical theory addresses the undeniable badness of the phenomenology of pain, 'sentientists' unnecessarily restrict the ethical implications of sentience to experiential aspects of pain and suffering. But, is the fact that the unpleasantness of feeling pain is upper most in our minds when we think about why pain is bad, or why it is good to lead a life as much as possible pain-free, a good enough reason for thinking that all that matters about pain is how it feels? Perhaps instead pain has other, broader implications that any credible ethical theory needs to take account of?

By way of exploring this possibility, think about the last time you took an aspirin to relieve a headache. Presumably, you wanted to get rid of the pain not simply because you have an in principle objection to unpleasant feelings. No one is just anti-pain. Rather, you took the aspirin because the pain is bad for you in some respects. Which respects exactly? Obviously, the phenomenology of a headache is unpleasant and you want it to go away. So how pain feels is one bad aspect. But is that all that can be said for taking the pain killer? What if it was the case that after the unpleasant phenomenology went away you still had to remain in bed all day as if you were in the grips of one of your regular migraines? Wouldn't we say in such a case that the pain killer did not work properly and you are still being impacted by the pain? Doesn't it also suggest that the upside of the relief of pain is not only that bad feelings go away but also that you can get on with your life free of pain?

So, the badness of pain seems to be two-fold: it is bad because of how it feels on the inside but it also bad because it interferes with something that we ordinarily consider is worth being pain-free. A day free of pain is a better day for us than a day in which we have a headache. But, to say that it is good for an individual to have a pain-free day or, better still, a pain-free life is to imply that something valuable is being undermined and subsequently lost by the occurrence of unpleasant experiences. It is to suggest that pain blights or spoils something, which in turn implies that there is a consideration to be addressed by ethical theory that is altogether distinct from the experiences themselves.

Non-experiential considerations

At various stages throughout the history of ethics, theorists have put forward concepts—sanctity, inherent value (Regan 1983), intrinsic value (Agar 2001), respect (Franklin 2005), dignity (Nussbaum 2004), *telos* (Rollin 1992), among others – in response to the intuition that as far as our dealings with animals is concerned there seems to be more to consider than simply the phenomenological dimension of pleasure and pain. The distinction between the *quality* of life and its *value* is sometimes made to capture the sense in which there is more to the ethics of sentience than simply addressing how pain feels on the inside. Quality of life refers to the experiential dimension; *value* of life speaks to other non-pain related considerations. Of course, talk of 'value' often leads to metaphysical questions about the ontological status of value. Can it be placed in a scientific account of the world? Is inherent value a non-natural property akin to a soul? Is it reducible to a natural property like sentience?

While such questions may be intuitively interesting, their practical relevance to people's valuing behaviour is unclear and most likely they only serve to detract from and perhaps even discredit what are perfectly natural reactions to the plight of some animals. Dressing a chimp in a tuxedo or holding a cigar seems problematic even if the chimp is not in pain; confining a wolf in a cage would give us pause even if the wolf was not suffering in the sense of having aversive experiences; acts of bestiality are surely a cause for concern even if the victim is not in any pain, and not simply in virtue of what they say about perpetrators. My view is that the use of value talk in response to such cases is an appropriate way of registering one's objection or disapproval of what is going on. More specifically, it signals that as far as the speaker is concerned there is more to be taken into account than simply the phenomenological dimension of pain and suffering.

Can the idea that, for the purposes of ethical theorising, there is more to consider about pain than simply how it feels be extended to nonhuman animals? I don't see why not. After all, in addition to the intuitive judgments just mentioned above, we are at least part of the way there already. Even if we think that the upshot of existing welfare legislation and norms is to facilitate the activities of animal user industries, at least part of its rationale; indeed, if the history of animal welfare is any guide, the primary rationale, is to facilitate animals living, as far as possible, pain-free lives (Haynes 2011; Schmidt 2011). But, if it is uncontroversial to think it is good for animal lives to be pain-free then presumably something remains after the pain is 'removed' which can be the focus of ethical consideration. And, indeed, ordinary valuing practices bear this out. Often you hear people register their concern for animals by saying that animals are valuable "intrinsically" or that an animal is valuable "in itself"; or they say an animal has a life that is valuable "for its own sake". Such statements are in line with a common sense view that animals are not simply disposable like pieces of furniture. Valuing practices like these can only seem coherent if we accept that the harm of death, to borrow an expression from Tom Regan, is not reducible to or commensurate with experiences.

Concern for pain, relativism and personhood

Now, an objection is that I have misunderstood the rationale of welfare legislation and norms and that the only purpose they serve is to protect animals from aversive experiences and this, in turn, is reflective of community concern which is also exclusively focused upon experiences. But, this doesn't seem right as it renders people's concern for animal pain as fickle, like a tempestuous love affair with affections that come and go, waxing and waning in response to changes in phenomenology.

What do I mean? Think about concern for pain in terms of the balance function on a stereo. If concern for pain is simply concern for experiences then when an individual is experiencing pleasure we can conceive a decrease in concern warranting that the dial be turned to the left. Conversely, when an individual experiences pain, we can conceive an increase in concern warranting that the dial be turned to the right. Concern for pain on this conception seems too dynamic and a poor substitute for the everyday concern we have for the pain of those we care about. I care about my wife's pain even when she is experiencing pleasure. In like manner, I want my mate Jason to do well even when things are going well for him. I want my niece to make the most of her education irrespective of whether her teacher is having a good or bad day. It's not that such concerns are merely episodic, only appearing on my list of concerns when I become aware of this or that episode of aversive experience and falling away at other times. Yes, they may fall out of my conscious awareness but this is different to saying that they are not part of my set of ongoing concerns. What is required then is a conception of concern for pain that is an analog for locating the dial at zero or at a 'neutral' point equidistant between pleasure and pain. A concern for life; more specifically, concern for considerations other than simply aversive experiences fits the bill.

Some might argue that by paying so much attention to *concern* for pain I'm straying too far away from capacities. On this view, whether animals have an interest in continuing to live is a descriptive question to be determined with reference to empirical evidence, and affording too much importance to concern for pain opens the door to relativism. But, the relativism accusation is misplaced because the concern for life is closely allied with concern for pain; and sentience has been recognised by abstract, universal ethical theories as morally significant since at least the 19th century. Insofar as ordinary valuing practices and associated institutions are sentience-focused, then intrinsic capacities will serve to restrain the influence of inappropriate community concern.

Another objection is that the two-fold thesis about the badness of pain is only applicable to animals (human or nonhuman) with the capacity for higher order thought, that is, persons. But, higher order thoughts are not needed to make sense of commonsense views about animal lives. The basic notion of "a pain-free life valuable for its own sake" follows naturally from the idea that animals are not disposable

and the uncontroversial institutional goal of making animals lives pain free. In fact, given the prevalence of pain-related norms around the world, higher order thought autonomy need not enter into ordinary judgments about the value of animal lives.

A final objection is that there are better ways to gauge community concern for animal pain than valuing practices and associated institutions; namely, people's consumer behavior, especially their dietary behavior. But, intuitively, people's consumer behaviour is too unreflective and too likely the product of custom and habit to be a reliable gauge of their valuing practices. In contrast, institutions and norms are initiated after a political and policy process in which a range of views are considered. Such a process opens an ameliorative window in an animal protection system that is otherwise constrained by our liberal democratic inheritance and the almost omnipresent use of animals for our purposes.

Conclusion

If we were to break from the conventional view and allow public concern for pain to inform debate about the problem of killing animals, this would change the rationale and broaden the implications of existing pain-focused animal welfare and anti-cruelty legislation and norms. It would enable us to view such institutions as having a democratic dimension that is reflective of a public concern for pain that extends beyond concern for felt pain to a concern for the life of the sufferer. The explicit institutional objective to ensure animal lives are 'pain free' could be read as implicit endorsement of the view that their lives also matter. While it may be the case that the kind of public concern that history has shown gives rise to animal related legislation is simply the registering of a general disapproval toward the mistreatment of animals, it is arguably undemocratic to interpret and then 'manage' this concern as if it is focused exclusively on aversive experiences – indeed, doing so fails to reflect its distinctly lay character. People don't split hairs between pain and life when it comes to concern for animals. If welfare legislation was viewed as reflecting a public concern to protect animals in a broad sense, then it would apply as much to the question of painless killing as it does to the issue of causing pain.

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Poster abstracts

When animal welfare science fails policy-makers: the need for a new framework for decision-making

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We maintain that some controversial issues affecting livestock production reflect a social concern within the Australian public that falls outside the remit of animal welfare science. To rectify this, we propose a framework of decision making where a precautionary approach is taken which allows for discretionary inclusion of animal ethics concerns which may not be supported by evidence from animal welfare science.

Pain and pain alleviation in pigs: a producer perspective

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The ability of pig producers to identify and alleviate pain and heat stress in the animals under their care is central to animal health and welfare. The aim of this study was to determine how pig producers identify and manage pain and heat stress in breeding sows, weaners and grower/finisher pigs on their farms.

Data were collected during face-to-face interviews with 16 pig producers in Victoria, Australia during August and September, 2011. Production types included farrow-to-finish (n = 12), grow-out only (n = 1), breeder only (n = 2) and farrow to weaner (n = 1) farms. The questionnaire used during the interview consisted of 36 open and closed questions focussing on pain and heat stress recognition and management by pig producers. Answers provided by interviewees were validated during the farm visit by the principal investigator.

Producers described 17 behaviours expressed by pigs in pain and 12 behaviours for heat stressed pigs. The most frequent for pain was vocalisation (eight producers (50%)), followed by change in gait and lethargy/listlessness (four producers (25%)). The most frequent for heat stress was panting (15 producers (93.75%)) and locating a cool/wet spot (nine producers (56.25%)). Routine husbandry procedures (tail docking and ear notching) were perceived as "slightly to very painful", but pain relief was not considered warranted in these situations. Anti-inflammatories/analgesic products were mostly used to treat foot and joint problems, (11 producers, (68.75%)), followed by mastitis (six producers, (37.5%)) and general injuries/inflammation/meningitis (five producers, (31.25%)).

The results of this study suggest that not all pig producers implemented best practice welfare measures to relieve pain associated with common illnesses and injuries in animals under their care. Increasing information available to producers may assist in the early detection of illness and injury, resulting in an increase in animal welfare standards across the industry.



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