

## From sentience to science: Limits of anthropocentric cognition

Commentary on [Broom](#) on *Animal Welfare*

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**Abstract:** Donald Broom's *Sentience and Animal Welfare* (2014) is an intellectually and morally engaging book written with radical new concepts in mind. It deals with many issues that are central to the animal welfare debate such as brain complexity, cognitive ability, when in life sentience begins, and how it all affects the way we endorse welfare. It addresses how our insatiable quest to define the uniqueness of our own species has led us to ignore logic and scientific evidence. It also brings greater clarity to these precarious positions and outlines pragmatic approaches to tackling this complex topic of sentience and welfare.

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Donald Broom (2014) starts his book with a question I've pondered most of my adult life: why do we humans consider ourselves to be superior to all other organisms? I always thought this notion was based on nebulous cultural and religious dogma. It was refreshing to receive a different, far more radical explanation from Broom: plants have the unique ability to carry out photosynthesis, an inadequacy shared by all animals; we humans do not acknowledge this inadequacy and assume that animals are superior, and therefore, “our major perceived rivalry is with other animal species” (p. 1). This, in my opinion, is a brilliant assertion, which explains – at least in part – our role as the callous dominators of other sentient life on this planet when in fact we should be their stewards. To me, *Sentience and Animal Welfare* is a book that is intellectually engaging and morally disturbing at the same time. It is not disturbing because of the content per se, but rather because simple reflection upon these writings will lead you to develop an appreciation for the profound inadequacies of your own species. Though I would love to engage with the diverse topics covered in this book, I have space to explore only a few threads and their implications for animal sentience and welfare.

Why do humans attribute greater importance to their own species and their current wisdom and entrenched assumptions about our place on this planet? So far as our basic biological endowment is concerned, we have approximately 22,000 genes, more than a chicken, fewer

than a grape (Perteau & Salzberg, 2010). Humans somehow managed to transform their biology into something more – we have formed a unique cognitive realm, distinct from other animals. However, as many (including Broom) have said before, the vast majority of *Homo sapiens* live in a state of cognitive dissonance. We decouple our own actions from their consequences.

In his book, Broom covers a wide range of concepts centered on how we measure sentience and in turn how that affects the way we endorse welfare. As Broom points out, “a rabbit is viewed differently according to whether it is a family pet, a laboratory animal, an animal kept for meat production, or a wild animal that eats your crops” (p. 5). These views in turn influence how the welfare of a rabbit is determined under different circumstances: a rabbit viewed as a family pet will receive pain relief and humane euthanasia, but a rabbit in a product testing laboratory will be left to endure excruciating pain as corrosive compounds permeate its bare skin or it will be skinned alive amid agonizing screams in a fur farm. Indeed, this has no rational basis — much less a scientific one — since a rabbit is a rabbit, a sentient animal who feels pain regardless of the environment it is in.

It was clear how our insatiable quest to define the uniqueness of our own species has led us to ignore logic and scientific evidence – this book brings greater clarity to these precarious positions. According to Broom, the criteria for deciding “which animal to protect have involved analogy with humans, in that if the animals seem to be more like us they are considered to be more worthy of protection” (p. 15). As I am a scientist (a biomedical researcher who has experimented on animals), this statement reached deep within me. Biomedical researchers treat mice as the quintessential animal model that can mimic every aspect of human physiology and pathophysiology; however, mice and rats (who make up ~95% of animals used in medical research) are explicitly excluded from coverage under the Animal Welfare Act in the United States. They are considered to be invaluable stand-ins for humans, but simply not good enough to be defined as “animals” under the Animal Welfare Act. I need not elaborate on the irrational, unscientific double standards of that premise.

While I pondered why this is the thought process of a highly evolved species allegedly superior to all other living beings on this planet, the author, who is not as critical and cynical as I am, gently pointed out that we “deny complex brain functioning (including feelings) in animals, perhaps because knowledge of this might prevent aspects of the usage” (p. 56). As a result, “the reluctance of scientists to attribute complex abilities and feelings to non-humans has slowed the development of our knowledge of sophisticated brain function in non-humans” (p. 6).

It was very interesting to read about brain complexity, cognitive ability, and morality. In Chapter 4, Broom defines cognitive ability as “the mechanisms by which animals acquire, process, store, and act on information from the environment” (p. 42) and morality as behaving “in a way which results in avoidance of harm to other, benefit to others, or increase in the stability of the social group. (p. 55).” As I read this chapter, rather than wondering which other animals have complex brains, cognitive function, and moral behavior, I chose to contemplate what all this means for our species. If measured strictly under these criteria, I think that *Homo sapiens* could be assigned to a category of complex brained species with limited cognitive abilities and morality.

The author really sparked my interest in Chapter 9 as well when addressing “sentience during development, brain damage and old age” (pp. 108-115).

Broom explains how a human infant at the time of birth has far less cognitive ability than many other animals (e.g., precocial species who are able to stand, walk, and run shortly after birth) and how a human adult with substantial brain damage or advanced dementia may have less cognitive ability than a magpie in the garden. While such comparisons would infuriate some people, I was delighted to add these to my arsenal of arguments for why all animals deserve welfare and protection. While it is not a clear-cut task to define exactly when in life sentience begins, “we can consider and evaluate the welfare of any living animal, including one with severe brain damage” since they have “the potential to do all that a sentient being can do” (p. 115).

I understand that mine is not a typical book review, for this was a book that stimulated considerable neuronal activity for me. I wondered why people admire and indulge in the cognitive abilities and sentience in their companion cats or dogs and yet completely ignore the sentience and welfare of those in a fur farm or a product-testing laboratory. What gives the human brain the ability to make that distinction? The biochemist in me wants to collaborate with a neuroscience researcher to search for genes, signaling molecules, and pathways governing such irrational activity. I learned everything about animal sentience through direct interactions with my precious feline companion, Mowgli. It did not require extensive experimental evidence to convince myself that animals are sentient: the data from direct interactions with my cat (combined with my experience with laboratory animals and information gathered from viewing countless undercover investigations into animal cruelty) were sufficient for the extrapolation that all animals are sentient and deserve welfare and protection.

What signaling pathways are present in the brains of all those who truly comprehend animal sentience and why aren't they active in the brains of many millions of humans who are capable of not only unthinkable animal cruelty, but also complete ignorance towards this topic? I appreciate Broom's critical treatment of the current situation, examined with different, radical concepts in mind. With each topic, I reflected upon our own species. The author may not have intended for this to happen, but this is my interpretation of his work. And I hope the book will have a similar impact on other readers. It is only through such realizations and reappraisal of our knowledge — not through an “anthropocentric view of what is the best brain to have” — that we can address this complex topic of sentience and animal welfare (p. 39).

As you can see, I was more entrenched in the sentience aspect of this book, for I believe that welfare will effortlessly follow the moment *Homo sapiens* finds ways to accept the existence of sentience in the kingdom *Animalia*. Until that happens, however, it is imperative that researchers like Broom educate and propose welfare standards for non-human animals. This is the second decade of the 21<sup>st</sup> century and the time is ripe for us to fully embrace the vast amount of information at our disposal to make rational, scientifically and morally sound decisions regarding the place animals truly deserve in our society and on this planet. I agree

with Broom that we humans should respect all animal life and “studies of the welfare of even the simplest invertebrate animals should be taken into account when we interact with animals. Even when we do not protect animals by law, we should try to avoid cutting an earth worm in half, mutilating a snail or damaging the wing of an insect” (p. 122). We, *Homo sapiens*, must appreciate animals beyond their purported utilitarian value and reign as stewards – not slave masters – to protect all animals without anthropocentric bias. I do hope that in the same way we view gladiator contests and slavery today, future generations will read about our gestation crates, slaughterhouses, fur farms, and animal research labs with a mixture of incredulity and contempt.

## **References**

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