

ETHICAL ISSUES IN ANIMAL RESEARCH

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ABSTRACT

The following article discusses the arguments for and against animal research, emphasizing the philosophical, scientific, and social context of this controversy.

People's widespread concern about the use of animals for research, and the recognition of the need for more medical research, much of this involving the use of animals, are two views that are not easily reconciled. In this article the term 'animals' is used for simplicity and not to imply a difference in moral status, for strictly speaking the term 'non-human animals' should be used, because according to biological classification humans belong to the order of primates, and so are not categorically distinct from animals.

It is estimated that up to 50 million animals are used in research every year worldwide. The vast majority of procedures use mice and rats. Dogs, cats, horses and non-human primates are used in less than 1% of procedures whilst research on great apes has been banned in several countries (in the U.K. since 1997) [1]. The types of research involved are basic biomedical research, applied research, and toxicity testing. Basic research may be either observational, e.g. behavioural studies investigating how rats react in a learning maze, or invasive physiological studies, e.g. measuring activity in the brain of monkeys in order to understand the function of different parts of the brain. Applied research involves testing new drugs or vaccines, or experiments to develop methods of diagnosis and prevention on animals that have been given a disease e.g.

by exposing them to a virus or by genetically modifying them. It also involves testing new medical devices or surgical techniques. Toxicity testing involves testing all substances that come in contact with people, e.g. new drugs, food additives, agricultural and industrial chemicals and new ingredients used in household products such as shampoo or washing powder.

When it comes to animal research, there is plenty of reason for legitimate dispute. On the one hand those believing in animal rights insist that animal research is unnecessary, and that the killing of six billion animals a year, mostly for food, represents a holocaust. On the other hand there are animal researchers who believe that the issue of animal rights threatens public health. Most people though, believe in the performance of some form of cost-benefit analysis to determine whether the use of animals is acceptable. The costs consist mainly of animal pain, distress and death, whereas the benefits include the acquisition of new knowledge and the development of new medical therapies for humans[2]. The following are the ethical issues involved in this controversy.

The moral status of animals

When asking the question 'what is the moral status of an animal?' one is actually asking 'how important or how valuable is an animal?' The animal rights movement sees humans as just one of many animal species, with no grounds to claim superiority over any other kind of animal. The movement takes its name from

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Tom Regan's *The Case for Animal Rights*. Regan believes that all humans and most animals have inherent rights. He states that animals cannot be experimented on, because they are not merely a means to an end[3]. Others suggest it might be preferable to focus on the duties humans have to animals, rather than to attribute rights to animals.

Peter Singer, a philosopher in the utilitarian tradition who began the modern animal rights movement, believes that in all decisions the total amount of good that results should be weighed against the suffering (both human and animal) caused in the process. Life may be of far greater value to a human than, for example, to a creature of no self awareness, but if there is something one would not do to a severely incapacitated child, then neither should one do it to an animal that would suffer as much[3].

Many people believe that humans have the highest moral status, while animals are in some way inferior. Lay people might have the view that humans have a soul which animals lack. Scientifically this view identifies cognitive and emotional abilities as the functional properties morally distinguishing humans from animals. People who hold this view claim that language, the ability to distinguish truth from falsity, and the ability to act morally or enter into contracts are traits unique to humans[4]. If animals are beings not capable of exercising or responding to moral claims, then they can have no rights. Kant noted that the thing important in distinguishing humans from animals that is not reducible to the observation of behavior, is best explained by the possession of a certain capacity, namely "personhood." The notion of personhood identifies a category of morally considerable beings. Historically, he is the most noted defender of personhood as the quality that makes a being valuable and thus morally considerable. In his *Lectures of Anthropology* he writes: The fact that the human being can have the representation "I" raises him infinitely above all the other beings on earth. By this he is a person, that is, a being altogether different in rank and dignity

from things, such as irrational animals, with which one may deal and dispose at one's discretion[5].

In a similar vein Korsgaard argues that humans uniquely face the problem of normativity. This problem emerges because of the reflective structure of human consciousness. She writes: A lower animal's attention is fixed on the world. Its perceptions are its beliefs and its desires are its will. It is engaged in conscious activities, but it is not conscious *of* them. That is, they are not the objects of its attention. But we human animals turn our attention on to our perceptions and desires themselves, on to our own mental activities, and we are conscious *of* them. That is why we can think *about* them. And this sets us a problem that no other animal has. It is the problem of the normative. The reflective mind cannot settle for perception and desire, not just as such. It needs a reason[6].

More simply, some research proponents note that nature is cruel: lions kill antelopes, cats play with mice. Evolution has placed humans on top, so it is only natural for them to use other creatures. Others disagree and claim that such views are unjustified discrimination, or 'speciesism', and animal experiments are just as offensive as racism or sexism, a purely cruel treatment driven by prejudice. La Follette and Shanks claim that to determine if speciesism is morally defensible, it must first be determined that species differences are morally relevant. There are two forms of speciesism. The bare speciesist claims that the bare difference in species is morally relevant. The indirect speciesist claims that although bare species differences are not morally relevant, there are morally relevant differences typically associated with differences in species. To understand the difference between the two they use the following analogy: a bare sexist might claim that we should give men certain jobs because they are men, while an indirect sexist might contend men should be given certain jobs because they have certain traits which distinguish them from women[7]. Just like sexism and racism, speciesism is morally indefensible because it assumes a mere biological divide marks an important moral

divide. They claim that what is morally relevant is what a creature does and experiences not the stuff of which it is made, nor the organization of its components. Many philosophers fall into the middle ground, arguing for rights to be ordered in a hierarchy that allows some uses of animals but prohibits others. Indeed most people feel uncomfortable about experiments being performed on higher animals such as chimpanzees. These animals have highly developed intelligence and language skills and display emotional behaviour that seems similar to humans. In the same way people feel disturbed about cats, dogs, and rabbits being used in experiments. Animals which are less intelligent or attractive and are not kept as pets arouse less concern.

Can animals suffer?

It is very difficult to know how animals experience pain or suffering. It may be difficult to transfer human concepts and emotions, such as pain, distress, fear, happiness or affection to animals. Even if we can demonstrate that animals have similar brain activity as humans, does this actually mean they experience pain, harm or suffering in the same way as humans?

Pain is a subjective phenomenon, something that we feel, and we can only infer that others are feeling it from various external indications i.e. behaviors. "If we assume that other human beings feel pain as we do, is there any reason why a similar inference should not be justifiable in the case of other animals?" claims Peter Singer[8]. Nearly all the external signs that lead us to infer pain in other humans can be seen in other species, especially the species most closely related to us (mammals and birds). The behavioral signs include writhing, facial contortions, moaning, yelping or other forms of calling, attempts to avoid the source of the pain, and appearance of fear at the prospect of its repetition. In addition, we know that these animals have nervous systems very much like ours, responding physiologically like ours when the animal is in circumstances in which it would feel pain i.e. an initial rise of blood pressure,

dilated pupils, perspiration, and an increased pulse rate. Although human beings have a more developed cerebral cortex than other animals, this part of the brain is concerned with thinking functions rather than with basic impulses, emotions, and feelings. These impulses, emotions, and feelings are located in the diencephalon, which is well developed in many other species of animals, especially mammals and birds. Peter Harrison however, believes that just because animals show pain behaviours, it does not mean that they can feel pain. Pain behaviours, he claims, can be ably performed by non-living entities. "If we were to construct a robot which was devoid of speech, yet was to have an active and independent existence, it would be necessary to program it with mechanisms of self-preservation. Of the many objects it might encounter, it would need to be able to detect and respond to those likely to cause it most harm. Properly programmed, such a machine would manifest its own 'pain behaviour'. If we lit a fire under it, it would struggle to escape. If it found itself in a dangerous situation from which it could not extricate itself (say it fell into an acid bath) it would attempt to summon aid with shrill cries. If it were immobilized after a fall, it might, by facial contortions, indicate that it was damaged. But this 'pain behavior' would convey nothing about what it was feeling, for robots, on most accounts can feel nothing"[9].

It is possible that chimpanzees suffer in ways that lower animals such as mice do not. These higher order animals may experience more emotional types of pain during experiments such as fear or anxiety. It is impossible to know whether insects or worms used in experiments can suffer, as their nervous systems are so simple that scientists doubt whether they can even feel pain.

Can making animals suffer be justified?

Research scientists will point out that experiments using animals have played a crucial role in the development of modern medical treatments, and will continue to be necessary in order to alleviate existing ailments and respond to the emergence of new disease. They claim that there is not a single area of medical re-

search that does not owe many of its most important advances to animal experiments [10]. Animal suffering then, has been justified as there have been huge benefits to humans. Some opponents of animal experimentation believe that for pragmatic reasons alone, scientists and governments should invest their time and money elsewhere. They claim that due to subtle but significant differences in the physiologies of different species, animal models are at best analogous to human conditions, and no theory can be proved or refuted by analogy[11]. By using different kinds of animals in different protocols, experimenters can find evidence to support virtually any theory. For instance, researchers have used animal experiments to show that cigarettes both do and do not cause cancer[12].

Ethically speaking though, the benefits of animal experiments to humans must be substantially greater than the costs to animals; else the moral benefits will not outweigh the immorality of perpetrating an evil as compared to preventing one. In addition, whilst inflicting suffering on animals in the name of biomedicine is definite, preventing the suffering of humans is only possible, and the probability of success is likely unknown[13].

In animal experimentation the creatures that pay the costs of experimentation are not the one's reaping the benefits. This goes against the moral presumption against inflicting suffering on one creature with moral value in order to benefit some other creature[13]. Even if we assume that non-human animals have less moral worth than do humans, most people think there are some sacrifices animals should not have to make to benefit us. An extreme example is killing a gorilla in order to make an ashtray out of its hand. Even though the gorilla does not have the same moral worth as a person, it cannot be asked to give up its life so that the human can obtain a relatively insignificant benefit. The same could apply to animal experimentation.

Conclusion

The debate on the ethics of animal research has caught the researchers in a logical trap: in

order to defend the usefulness of research they must emphasize the similarities between the animals and the humans, but in order to defend it ethically, they must emphasize the differences. The problem is that one cannot have it both ways[7].

The results have been evident in changing legislation. The U.K., Australia, Germany and several other nations require a utilitarian cost-benefit analysis to be performed before an animal experiment can proceed[3]. The researchers are also encouraged to use alternatives wherever possible, based on the application of a set of principles called the 3Rs (*Reduction, Refinement, Replacement*).

Reduction

Reducing the number of animals used in an experiment, by for example by improving the design of the experiments, using different methods of analyzing data and increasing the exchange of information between researchers.

Refinement

Improving either the experiment or the husbandry of the animals to reduce their suffering, for example by using medication for pain, using less invasive techniques such as ultrasound rather than an operation, or even simply by giving animals bigger cages and companion animals.

Replacement

Use of alternative methods. Using for example computer models to simulate the different systems in a body, or carrying out experiments with cultures of cells or tissues in a test tube. Artificial skins, where cells have been cultured on a scaffold structure, have been developed for toxicity testing, although there are still limits to a wider application of this technique. Another alternative is to increase the number of studies with human volunteers. Epidemiological studies, that track how a disease occurs in a population, can give information about the causes of a disease, such as the relationship between cholesterol and heart disease. Many of these techniques are used widely in medical research as valuable experimental methods in their own right[1].

In 1996 the Netherlands went further, passing into law the statement that animals have “intrinsic value”: they are sentient beings, entitled to the moral concern of humans[3].

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