Argumentative essay on should we use animals for drug testing

Environment, Animals

Abstract

This paper examines the arguments for and against the sue of animals in experiments. It offers a brief examination of the historical development of the opposition to using animals; it considers the question form the practical and the ethical standpoint; it examines some of the evidence which shows the inefficiency and unreliability of animal use; and it also shows the way ethical standpoints have changed in the 21st century.

Key words: the three Rs; in vitro testing ; principle of equality; human volunteers; computer simulations.

All over the world in research laboratories, animals are made use of to test new medicines and treatments, and to check the safety of a range of products intended for human beings. It is generally accepted that most of these tests, experiments or trials can cause suffering and pain to the animals used, or significantly harm their quality of life. If it is true that it is wrong to inflict pain and suffering on animals, then animal experimentation poses serious moral dilemmas which arouse strong passions in humans. This is a contentious and complicated issue, because it goes to the heart of questions about morality and ethics, and how far human ethical values should be transferred to animals.

In brief, those who argue that we should use animals in experiments, argue that it is justified, provided that we reduce the suffering as much as possible and also that the benefits to human beings can only be obtained by these methods. This attitude was summarized succinctly by Medawar (1967) who

argued against any ban or prohibition on the use of animals in experiments by stating: “ Any such prohibition of learning or confinement of the understanding would have widespread and damaging consequences.” (p. 127) Those who are opposed to the use of animals in experiments argue that to cause pain to another living creatures always wrong; that on occasions the benefits to human beings are not at all clear; and that there are other ways now to test the reliability of new drugs, treatments and products.

The argument in favour of animal experimentation is straightforward: it is morally acceptable to cause pain and suffering to a relatively small number of animals in order to benefit a huge number of human beings. Dalyell (1974) summed this point of view up very succinctly:

Those of us who have seen a loved one struck down by some fatal disease would be the first to concede that in such cases experiments on animals, which might lead to a cure being discovered for the disease would be necessary, however many experiments were needed,. (p. 33)

Animal right activists would argue that the level of pain and the number of animals involved are also so high that they cannot outweigh the possible benefits to humanity. In this sense both arguments come down to the question of the balance between harm (to the animals) and the potential benefits to humanity, and also the moral weight we attach to human pain as against animal pain.

Because this is such a controversial area, those scientists involved in research that use animals now try to follow guidelines to reduce the suffering

of animals involved in tests. This is partly a historical issue. After the Second World War animals were used widely in experiments in the developed world and it was not questioned until 1959 with the publication of The Principles of Human Experimental Technique by Russell and Burch. Russell and Burch were scientists who became interested in the ethical dimension of animal testing. Their book proposed certain guidelines for the use of animals in experiments and the results of their work started the contemporary debate about the use of animals in experiments. However, their ideas were slow to catch on, according to Rowan (1994):

Initially their book was largely ignored but their ideas were gradually picked up by the animal protection community in the sixties and early seventies. In the eighties, spurred on by public pressure, the European biomedical research organizations and industry in America embraced the idea of alternatives. Concurrently, the demand for animals in research fell by up to 50%. (p. 1)

Animal rights groups and the scientific community were slow to pick up on the three Rs – as Russell and Burch's principles became known. However, over the decades their ideas did permeate to wider society and started to have an effect on the use of animals, especially for non-medical experimentation:

Worldwide, probably the most significant event of the eighties was the launching of campaigns in many of the developed countries against animal testing of cosmetics, toiletries and household products. (Rowan, p. 7)

One of the principles of the Russell and Burch guidelines is reduction: cutting the numbers of animals used in test by using more refined experimental techniques; by ensuring that the analysis of experimental data is improved; and by co-operating more with other scientists engaged in similar research. The second principle is refinement. Refinement aims to lessen the pain caused to animals by improving animal living conditions, by giving the animals better veterinary care and by using techniques that are far less invasive than older techniques, once considered acceptable. The third principle is that of replacement. This might involve: making use of computer models as an alternative; running tests on cell cultures rather than a living animal; and making use of human volunteers in strictly controlled conditions. Computer science is so far advanced that it is now possible to produce highly sophisticated simulations of human tissue and organs that allow scientists to run ‘ virtual’ tests and trials to forecast how certain drugs will affect particular types of patients and what the likely outcomes and even side-effects might be.

Those in favor of using animals in research argue that if we stopped using animals it would mean that there would be no testing of new drugs and those human beings would have to be used for all experimental use. Testing on animals does nothing to help decide whether a drug will be safe and will work for human beings – it merely helps scientists to decide whether a drug should be trialed on humans. Experiments on animals eliminate some new drugs because they are obviously ineffective or very dangerous for human use, but even then a potential new drug has to go through years of carefully

controlled tests on human beings before it is passed as safe for use by regulatory drugs' bodies. But this process has fierce critics and has resulted in notable failures. Goodall (1999) claims that, " Animals have not been as critical to the advancement of medicine as is typically claimed by proponents of animal experimentation." (p. 225)

Her view is supported by the European Union Directive (2009): " When evaluative studies have been conducted, animal tests have been shown to be poorly predictive of human outcomes. (p. 135) There is one famous example of the inefficiency of animal testing form the last decade:

As drugs become increasingly specialized, animal tests are going to become even less effective; a clear example of this was the trial of a monoclonal antibody (TGN1412) that nearly killed the six British volunteers using it, even though it showed no effects in the twenty-six monkeys who were exposed to it at 500 times the dose. In vitro tests concluded immediately after the event predicted the effects seen in the men. (EU Directive, p. 13)
Of course, in vitro tests are exactly what Russell and Burch were arguing for in the principle of replacement.

Attitudes, understanding and awareness have changed enormously since the comments of Medawar and Dalyell cited above. The European Directive states categorically, and in complete contradiction of the views of scientists in the fairly recent past:

We believe that animal experiments are a poor way of testing if chemicals or drugs are safe and/or effective. This is because animal experiments tell us

about animals, not about people. It is not until a substitute is tried in human chemical trials that we ever really know it is safe for use. Surprisingly, the reliability and validity of animal experiments has not been properly assessed – they are only assumed to be effective through history of use. (p. 135)
“ They are assumed to be effective” – this is not a very logical reason to inflict so much suffering on aninals, especially as the practical benefits and results are being found to be often misleading. Quite apart from causing unnecessary suffering to animals, it could be argued that testing drugs on animals delays the whole process of getting a drug on the market.

But why are animal experiments not actually very useful in determining the effects of a drug on human beings? One reason is that because we and animals obviously constitute different species, the effects of the drug may not be the same. Another reason (which is just as important) is that there is a difference (scientists are now aware) between treating a disease which has occurred naturally in human beings and treating a disease which has been artificially created in an animal. This species difference and the difference between the natural disease and the artificial one, according to EU Directive, “ goes some way to explaining the monumental failure to develop effective and safe drugs and vaccines for important diseases such as HIV/Aids, Alzheimer’s, Parkinson’s and stroke.” (p. 135) The Directive (p. 62) makes reference to thirty-seven different HIV/AIDS vaccines that have successfully passed tests on primates, but did not work for humans, and ninety-five drugs for treating stroke victims proved successful in tests on animals, but were completely ineffective in human beings.

There is a tendency to over-simplify the arguments here. For example, if we have four new drugs to treat cancer and the first three kill all the rats and dogs we test it on, but the fourth one does not, then it would seem obvious that we should use the fourth drug to treat cancer in humans. But that is not the case: it is a gross over-simplification. The fourth drug would still have to undergo years of further tests in very small doses on human volunteers before it would be sued to treat patients generally. Therefore, not all experiments on animals are beneficial to human beings or an accurate guide to the effects of certain drugs on human beings. There are some drugs which were harmless to animals but actually caused suffering and human deaths, and, by the same token, some drugs which seemed harmful to animals were withheld for many years, but turned out to have enormous benefits to human beings.

Russell and Burch were motivated by ethical concerns about the suffering caused to animals. More recent philosopher and ethical thinkers have also tried to stress the principle of equality. Singer (2011) argues interestingly that three hundred years ago, people of different races were assumed to be inferior to members of other more technologically advanced races, but that now, in most societies and with a few maverick exceptions, we accept the principle of equality extended to humans of different races. Singer also traces through the history of feminism the gradual acceptance in the developed world that the genders are essentially equal. Starting with these principles in mind, he argues that logically there is no reason NOT to extend the principle of equality to different species:

The argument for extending the principle of equality beyond our own species is simple. It amounts to no more than a clear understanding of the principle of equal consideration of interests. The principle also implies that the fact that beings are not members of our species does to entitle us to exploit them, and it similarly implies that the fact that other animals are less intelligent than we are does not mean that their interest may be discounted or ignored. (p. 49)

Gluck (1991) also attacks the ethical standpoint of scientists who use animals in experiments without a through exploration of the alternatives (Russell and Burch's three Rs) and who have not fully examined the ethical logic of their use of animals:

The use of animals in research should evolve out of a strong sense of ethical self-examination. Ethical self-examination involves a careful analysis of one's own personal and scientific motives. Moreover, it requires a recognition of animal suffering and a satisfactory working through of that suffering in terms of one's ethical values. (p. 57)

Animals are often used unthinkingly by scientists, according to Gluck, because in the initial trials of drugs they represent a quicker and cheaper alternative to the slow process of using human volunteers:

The lack of self-examination is common and often involves the denial or avoidance of animal suffering, resulting in the dehumanization of researchers and the ethical degradation of their research subjects. (p. 63)

But, as this paper has shown, the results of animal experiments are a poor guide to their effects on humans and, in addition, no drug is released or approved for general human use until it has undergone exhaustive and highly controlled tests on human volunteers. The key word there is ‘ volunteers’ – if we accept Singer’s principle of equality and apply it to other species, then we have no right whatsoever to use animals in experiments – quite apart from their practical limitations.

In conclusion, I am completely opposed to using animals in experiments for a variety of reasons. In practical terms, experiments using animals do not seem very reliable: there is enough evidence to suggest it is a poor method of predicting the effect of a drug on human beings, especially when there are so many possible alternatives (Russell and Burch’s principle of Replacement) and when any drug goes through long, exhaustive test on human volunteers anyway. In addition from an ethical standpoint the use of animals is morally wrong: I found Singer's argument on the principle of equality convincing. This is an emotive subject: for some people the suffering of thousands of monkeys might be justified if it resulted in a cure for cancer – however, the chances of that happening are very unlikely and the results of the drug trials, research shows, is often completely unreliable. I am in favour of in vitro experiments, computer simulations or the use of human volunteers. Quite apart from eliminating any pain and suffering for animals, these methods produce much more valid results – I cannot see how anybody could object to my viewpoint because at some point before a drug is approved for use it will have to be tested on human volunteers, so we may as well reduce animal

suffering and save time and move straight away – with any new drug – to texting on human volunteers, who at least have chosen to be part of an experiment and whom scientists will treat with more consideration because of their species.

References

Dalyell, Tam. (1975) ‘ Forum.’ New Scientist. Volume 66, number 146. London.

Gluck, John P. (1991). Ethics and Behavior. Cambridge: Cambridge University Press.

Goodall, Jane. (1999.) Reason for Hope: A Spiritual Journey. Sydney, Australia: Warner Books.

Medawar, Peter, (1967). The Art of the Soluble. London: Methuen.

The Revision of the EU Directive on the Protection of Animals Used for Scientific Purposes. (2009). London: HMSO.

Rowan, Andrew N. ‘ Looking Back 33 Years to Russell and Burch: the Development of the the Three Rs.’ Pages 1 – 12 in Reinhardt, Christopher A. (ed.) (1994). Alternatives to Animal Testing: New Ways in the Biomedical Sciences – Trends and Progress. Oxford: John Wiley and Sons.

Russell, R. L. & Burch, W. M. S. (1959). The Principles of Humane Experimental Technique. Cambridge: Cambridge University Press.

Singer, Peter. (2011). Practical Ethics. Cambridge: Cambridge University Press.