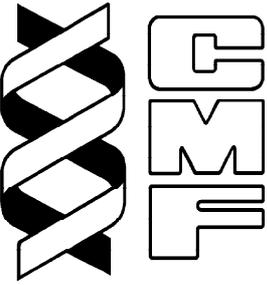


Number 2

 Files

Animal experimentation

Using animals to advance scientific knowledge, understand disease, develop new medicines, or test the safety of chemicals is highly controversial. At one extreme people think that there are no moral problems, while at the other, some people justify violence to protect animals. A recent survey found that most young people in the UK were uneasy about animal experiments, or thought that they should be banned.

Animal experimentation is a huge industry. Each year in the UK scientists use almost 3 million animals. While the majority are rats and mice, one per cent are rabbits and 0.1 per cent are monkeys.

Most animals are used to help develop and test drugs for treating human diseases, although about 17,000 animals are used each year in the safety testing of food additives and household cleaning products. The number involved in these tests is falling rapidly.

However, in addition to these uses, the Ministry of Defence uses animals in weapons testing, but publishes little information about numbers or species involved.

While some of the traditional ways that animals have been used in experiments are on the decline, new areas are opening up. Experiments that involve genetic engineering are using increasing numbers of animals. In some of these, human genes are introduced into an animal. These transgenic animals may then develop diseases that are very similar to those of humans.

By studying the way that the disease affects these transgenic animals, scientists can discover how human diseases are caused. They are then in a better position to develop

new treatments for human sufferers of the condition.

Pharmaceutical companies and research laboratories are also using transgenic animals to produce drugs. One of the first examples of this is a sheep that produces milk containing a protein called human alpha-1-antitrypsin. Doctors need this protein if they are going to be able to treat patients with a particular type of fatal liver disease.

Researchers have also cloned animals, the most famous being Dolly the sheep. Clones are exact copies of the parent animal in a method that is the genetic equivalent of photocopying. Combining transgenic technology and cloning may enable scientists to produce hundreds of identical animals that can make human proteins to treat human disease.

Experiments and the law

In the UK animal experiments are regulated by an Act of Parliament¹. This act controls 'any experiment or other scientific procedure applied to

a protected animal which may have the effect of causing pain, suffering, distress or lasting harm'. Protected animals are mammals, birds, reptiles, fish and amphibians.

All experiments must be performed in a laboratory that has received a Certificate from the Home Office indicating that it meets required standards.

On top of this, any individual involved in the experiments must have a Personal Licence. This licence should only be given to people who are competent to perform each stage of the experiment. For example, they may need to be able to give anaesthetic in a way that makes the animal free from pain.

Finally, the proposed experiments have to be approved and need to be conducted under the authority of a Project Licence.

An independent committee assesses each application and decides if the potential benefit outweighs any suffering. It also investigates whether the experiment could be done without using animals.

As part of its assessment, the committee grades the degree of animal suffering that will take place. Experiments are grouped into those in which the animal suffers little, for example, being painlessly killed

Contemporary worldviews on animal experiments

Starting assumptions	Animals belong to humans, so humans can do what they like with them.	Animals have equal value to humans, so experimenting on animals is 'Speciesism' and is wrong.	Humans have a unique value given by God, but are answerable to God for the way they treat animals.
Sources	Aristotle - Ancient Greek philosopher: Nature 'made all animals for the sake of man'. Kant - 18th Century philosopher: 'Animals are not self-conscious and are there merely as a means to an end. That end is man.'	Darwin and followers: As humans evolved gradually from animals there is no clear difference between animals and humans. Peter Singer - 'Animal liberation' ² : Humans are just another sort of animal and have no right to dominate other species.	The Bible: Humans are made to relate to God in a personal way and so are more valuable than animals. God expects people to care for animals. Humans are answerable to him when they misuse animals.
Implications	No moral problem involved in animal experiments.	Animal experiments cannot be justified on grounds of helping humans.	Animal suffering may be justified because of the supreme value of humans.
Conclusion	No need for laws to restrict experiments.	All animal experiments should be banned.	Some animal experiments are acceptable, others are not.

before its tissues are analysed; those with a moderate degree of suffering, where for example the animal has a course of injections; and experiments in which animal suffering is severe.

About five per cent of approved applications involve severe suffering. Even then, limits are set for the permissible level of suffering in any experiment. In cancer research, animals have to be killed painlessly when the lumps of cancer cells in the animal get beyond a certain size.

Any industrial company wanting to use animals to test chemicals, household products and cosmetics has to follow very similar procedures. The few companies that still had licences for testing cosmetics have voluntarily relinquished them, so testing cosmetics on animals is now a thing of the past in Britain.

The law does not cover experiments on invertebrates, so insects and worms are not given legal protection. Some of the most important recent advances in biology relevant

to medicine have come from studies of fruit flies and microscopic worms. The genes that are important in the normal development of flies from eggs and larvae are similar to genes in humans that cause diseases such

as cancer. Scientists can produce transgenic flies in a fraction of the time and at a fraction of the cost of making transgenic mice. Consequently, they will be increasingly used in medical research.

Moral issues Can we ever justify animal suffering?

People come to very different conclusions if the suffering is caused in order to help humans.

The answer depends on how we view animals and humans. There are three conflicting contemporary views (see Box).

The Animal Liberation Movement sees humans as just one of many animal species, with no

grounds to claim to be superior over any other kind of animal. By that argument, animal experiments are just as offensive as racism or sexism. It is purely cruel treatment driven by prejudice.

The opposing view is that humans own animals, which are intrinsically inferior. Animals have value because they are useful to humans. There are no limits to what humans can do to animals in the interests of human welfare or profit.

You could argue that anyone who is prepared to allow the destruction of animals by industrial pollution as well as some of the 'Factory Farming'

practices of modern agriculture, also holds this view.

A third view derives from the Christian perspective. This holds that despite many biological similarities between humans and animals, humans are uniquely and supremely valuable. Many people find that there are clear distinctions between humans and animals, for example being able to appreciate beauty and having a conscience about what is right and wrong.

In the language of Genesis, the first book of the Bible, while all people are 'made in the image of God'³, animals are not. God values human beings so highly because he can have a personal relationship with them (*CMF Files Number 3*). This puts the value of humans above all animals. However, God brought all life into being, both animal and human.

The Bible goes on to say that we have a duty to care for the world, including the animals in it. Animals are not ours to do with as we like. People are seen as caretakers of the natural world.

We are made to live in caring relationships with God, each other and with the natural world. We are ultimately answerable to God who owns everything.

Are all animals equally valuable?

Many people feel uncomfortable about experiments involving the 'higher' animals like chimpanzees. These animals have highly developed intelligence and language skills and display emotional behaviour that seems similar to humans. In the same way, people are disturbed by the thought of cats, dogs and rabbits being used in experiments. Animals which are less intelligent or attractive and which are not kept as pets arouse less concern.

It is possible that chimps suffer in ways that lower animals such as mice do not. These higher order animals may experience more emotional types of pain, such as fear

or anxiety, during experiments. It is impossible to know if the insects and worms used in experiments can suffer, as their nervous systems are so simple that scientists doubt whether they can even feel pain.

Because we will never know whether different animals can experience suffering, it may seem right always to use a simpler animal where possible - a fly or a tadpole instead of a mouse. In addition, it seems reasonable to provide each species with conditions that are likely to minimise stress.

The Experiments

If we have responsibilities to both humans and animals, we have to face the moral dilemmas of animal experimentation. The problem is that animal experiments used to help care for people and alleviate human suffering clash with our duty to care for animals.

We may decide that carrying out a particular experiment is the lesser of two evils, whilst another involves animal suffering that cannot be justified. We have to ask searching questions of the experimenters who want to experiment on animals.

Must the experiment cause suffering?

In some cases there is no way of preventing all suffering. However, all effort should be taken and the experiment designed to minimise this.

Can the experiment give a clear answer?

All experiments should be designed so that they are capable of giving useful results. If this has not happened, the experiment is neither scientifically nor morally acceptable.

Is the experiment finding new data?

Until recently, it was common practice to use live animals in teaching some science classes like physiology in universities. These 'experiments' seem difficult to justify with the availability of modern teaching methods.

Can experiments for cosmetics and food additives be justified?

If animal suffering is seen as wrong we may seriously question its use for testing the safety of commercial products that we might consider non-essential. Do we need new chemicals in food or cosmetics enough to justify the animal suffering involved in their safety testing?

While most people use cosmetics to satisfy ideas of fashion, how about those who have facial scars and need cosmetics so that they feel socially acceptable? Is commercial gain something that can out-weigh animal suffering?

If we reject animal experiments for commercial reasons, we also need to think about the treatment of the millions of animals in some modern intensive systems of farming.

Do we need to test all new medicines?

Animal rights campaigners do not believe that we need all of the drugs developed by drugs companies and tested on animals. However, while currently available drugs can cure some diseases, there are few or no treatments for some medical conditions, such as mental illness and many common cancers.

Before new drugs are tested on patients, the law requires they are tested in animals.

Although an increasing number

of drugs are being designed to have specific effects, animal testing sometimes reveals unexpected side effects that prohibit their use in humans. Animal experiments also help doctors decide what is likely to be a safe dose for humans. Given the degree of human suffering from diseases for which we have no effective treatment, many think drug testing on animals is justified.

Can we justify experiments on animals that have no obvious benefit to human health?

Scientists are very keen to protect what they see as their right to carry out experiments on animals that have no direct or immediate relevance to human health. This may seem entirely unjustified to us if we think that animal experimentation can only be justified to find better ways to treat human beings.

The scientists point to examples like the biologists studying how some cells in the eye of the fruit fly form as the fly develops. It turns out that the gene that controls the development of these fruit fly cells is also involved in human cancer. Such research has led to the development of a new class of anti-cancer drugs, in a way no one could have predicted at the start.

What about genetically altered animals?

Man has been genetically manipulating other species for thousands of years. Modern sheep and cattle are the result of centuries of selective breeding. Generations of farmers have been aiming to produce

animals with suitable wool or with the ability to produce large volumes of milk. Equally, traditional breeding has generated violent and aggressive breeds of dog such as the pit bull terrier and wolf hybrids.

Transgenic and cloned animals are different because their characteristics have been engineered in a much more precise way than was possible with selective breeding. Arguably there is no moral difference between manipulating animals by breeding or by modern genetics, which is simply a more efficient way of achieving the same ends.

Transgenic animal experiments need to be justified or rejected on the same grounds as other animal experiments. Cloning of animals might be seen as acceptable if it is used to produce new drugs, but the same technology has the potential to be applied to humans, which most people see as abhorrent.

Responding to unjustified animal suffering in experiments

When we have weighed up all the issues we are left with a challenge. Are we concerned enough to act? We might feel that we have to boycott products tested on animals, or protest against some or all of the animal experiments now carried out.

Equally we may want to defend some animal experiments as a means to make people healthier or because we believe that within limits scientists

When we have weighed up all the issues we are left with a challenge

should follow where the scientific story they are investigating leads.

Neither the aggressive arguments of some of the scientific community, nor the bombings committed by animal rights extremists, seem likely to win anyone else over to their sides.

References

- ¹ *The Animals (Scientific Procedures) Act 1986.*
- ² *Singer, Peter. Animal Liberation. Pimlico. 1975.*
- ³ *Genesis 1:26-27.*

Further reading

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