

Animal Experimentation Is Justified

 The Rights
of
Animals, 2004



Listen

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- Animal research has played a major part in the development of medicine, and will continue to do so.
- Yet scientists are becoming increasingly apologetic about their work.
- Regulations brought in to protect [animals](#)' welfare are hindering vital research.
- There is no 'middle ground' between animal research and a broader concern with [animal welfare](#).
- Scientists who research with animals have made a moral choice—to put human life first. They should mount a robust defence of their work.

Animal research has been an integral part of the development of modern medicine, has saved an incalculable number of lives, and prevents tremendous human [suffering](#). Yet it continues to be an issue of major political controversy....

But where are the scientists in this debate? A strong case for more animal research could easily be made. Yet scientists appear increasingly apologetic about their actions.

I would argue that scientists have made a series of disastrous tactical errors in dealing with the [animal rights movement](#), and they continue to do so. Most of the errors have to do with trying to accommodate to the [animal rights](#) movement, or to reason with it and make compromises.

Scientists on the Defensive

The most widespread accommodation is the adoption of 'the three Rs', first proposed in 1959 following a report for the Universities Federation for Animal Welfare (UFAW). The three Rs are 'refinement', 'reduction' and 'replacement'. Scientists pledge to refine their techniques so as to induce the minimum amount of suffering; reduce the number of animals used; and replace animals with other techniques wherever possible.

At first blush the three Rs appear reasonable, if somewhat patronising. All animal experimenters know to reduce the amount of stress an animal is subjected to (refinement) so as to not hinder discovery—a stressed animal will be less likely to behave or respond normally. Equally, all researchers will naturally tend to use fewer or less-costly animals or techniques (reduction and replacement) so as to get quicker results for fewer resources.

Patronising or not, the three Rs were not developed from the perspective of good scientific practice. They were developed from the perspective of animal welfare. This makes the three Rs disastrous,

reinforcing a lowlife opinion of animal researchers and encouraging the notion that animal experiments are problematic.

Once the 'perspective' of the animal is adopted it is inevitable that all experimentation will be seen negatively, as no animal experiments are in the interests of the animal. Adoption of the three Rs comes across as a confession of guilt. The impression is that research animals are a 'necessary evil', when in fact they are necessary, period.

Losing Nerve

The defensiveness of scientists indicates that we have lost the collective nerve to make our case. Scientists have retreated from the public platform, preferring to keep their laboratory doors closed and their research techniques a secret. Experiments are performed under conditions of security matched only at military institutions.

When scientists are occasionally forced into the spotlight of debate, they speak in euphemism to hide the unpleasant details of their work. One example is the way medical researchers talk about animals' deaths. Animals may be 'sacrificed' or 'euthanised', but never 'killed'. This strategy is painfully shortsighted because it insulates the public from the realities of science, and hands animal activists an easy propaganda weapon. The activists show the reality—gruesome pictures and films of animals in their death throes—and in the process highlight that biomedical science is covering up, hiding a gruesome scene, implying shame of their own activities.

The concessions to animal rights, made by the adoption of the three Rs and the shroud of secrecy covering animal research, belittle the history of the medical breakthroughs made possible by such research. Worse, these concessions limit the potential for further research and ultimately make the principle of continuing animal research impossible to uphold.

A History of Success

In 1908, Viennese researchers Karl Landsteiner and Erwin Popper conducted an experiment on monkeys. They removed part of the spinal cord of a boy who had died of polio. They ground it up, filtered it and injected it directly into the spines of two monkeys. One became paralysed. Both died. The spinal cords showed the same damage as those of humans with polio.

In a brilliantly simple way, Landsteiner and Popper had demonstrated that monkeys could be used to model human diseases. Other scientists quickly caught on. In 1911, monkeys were found to be susceptible to measles. In 1914, mumps. In 1928, yellow fever.

Landsteiner wanted to take his development and run with it, but getting the animals was expensive, inefficient and slow. His superiors encouraged him to abandon his monkey research and to use rats instead. Landsteiner ignored them and continued working on the few rhesus macaque monkeys that he could get.

Discovering the Rh Factor

Landsteiner had won the Nobel Prize for his discoveries of blood types in humans in 1930, and he pursued the same types of questions in the macaque. In 1940 he discovered a blood factor shared by the macaques and humans: the so-called 'Rh' factor, short for rhesus.

Rh factor refers to a cluster of highly reactive proteins on the surface of red blood cells. Most people have these proteins and are called Rh positive. A minority, however, lacks the proteins and is called Rh negative. If an Rh-negative woman becomes pregnant with an Rh-positive child, her [immune system](#) will develop an immune defence that will attack any future pregnancy with an Rh-positive child. Her immune system will rip into the fetus' alien red blood cells, jamming them together and exploding them.

Before the discovery of Rh factor several thousand children were born brain damaged or dead due to Rh incompatibility. The majority of children in state mental hospitals were the result of Rh complications. Landsteiner's discovery led to the development of a vaccine that blocked the viscous immune response.

The following decades brought more abundant fruit from the animal research tree. In the 1950s, primate researchers developed chlorpromazine, one of the most powerful drugs used to treat mental illnesses such as schizophrenia. In the 1960s, monkeys were used to develop a vaccine against rubella, and in the surgical transplanting of corneas to restore vision. In the 1970s and 80s, primate research helped track down tumor viruses, to improve chemotherapy.

The now widely used vaccine for hepatitis B was developed largely in [chimpanzees](#). The current vaccine candidates against AIDS were all developed using [primates](#).

Researchers learned to do organ transplants using macaque monkeys. Potent anti-rejection drugs, such as Cyclosporin, were first used in non-human primates. The design of the heart-lung transplant was developed in rhesus macaques. The physiological connection is close enough that surgeons have attempted heart and liver transplants from baboon to human.

Californian surgeon Leonard Bailey put the heart of a baboon into an infant girl in 1989; Pittsburgh surgeon Thomas Starzl has twice attempted to transplant baboon livers into human patients with collapsing liver function. These early experiments failed but they pave the way for the future of [xenotransplantation](#), and both surgeons have stated that they will try again.

Nonprimate Animals

Primates are generally the most useful animals, because of their close kinship with humans; but other animals have also been put to good use. Control of diphtheria came from guinea pigs and horses. Open-heart surgery was developed in [dogs](#) as was the technique of kidney transplantation. The critical diabetes work, leading to the development of insulin, was also done in dogs. From sheep came control of anthrax, and from cows the eradication of smallpox.

The surprisingly close fit between the human and mouse genomes means that there are many mouse models developed and in development to study genetic diseases, including cystic fibrosis and muscular dystrophy. The best hope for the reversal of paralysis currently involves severing the spinal nerves of rats and successfully growing the nerves back.

development of artificial arteries, ageing, spinal cord injury, leprosy, malaria, Parkinson's disease, Alzheimer's disease, epilepsy, obesity, nutrition, infertility, *in vitro* fertilisation and a variety of birth defects.

Without animal research, many of these areas of work will grind to a halt, and all will suffer setbacks causing human tragedy. It was recently the 20-year anniversary of the first kidney transplant, and its pioneer, Thomas Starzl, was asked why he used dogs in his work. He explained that his first series of kidney transplant operations left the majority of his subjects dead. He figured out what enabled the minority to survive and commenced a second series of operations; the majority of these subjects lived. A third group of subjects received liver transplants and only one or two died. In his fourth group all subjects survived.

Starzl remarked that it is important to realise that his first three groups of subjects were dogs, while the fourth group was human babies. Was he supposed to experiment and refine his technique on humans, or was he expected to abandon a promising line of research that has saved innumerable lives? It is remarkable that we even have to consider the question.

It is unfortunate that there are not more scientists of Starzl's integrity. Too many are losing their perspective. Dr Keith Reimann, for example, does AIDS-related research in monkeys at Harvard University's animal facility. He insists that a macaque be killed as soon as it becomes sick, even if additional information might be gained by following the course of the illness. Such action is immoral, and it may also be self-defeating.

The many thousands of patients with end-stage AIDS are unlikely to be grateful for Dr Reimann's 'humane' action, and if it later becomes important to study end-stage AIDS, a whole new colony of monkeys will need to be infected to do the work that Dr Reimann might already have completed. Dr Reimann should take a leaf from Donald Silver's outlook. He did cancer studies on mice at Sloan-Kettering Hospital in the 1970s, and whenever he had doubts about the work, he had only to think about the terminally ill patients in the children's ward.

It is a necessary fact that animals will die and suffer in the pursuit of human betterment. By all estimates, at least one million monkeys died in the race to halt polio. By the early 1960s, when vaccine production was running smoothly, a previously dreaded disease that crippled or killed 20,000 people a year in the USA alone was afflicting a few people per year.

Cases of polio became so unusual that an occurrence anywhere was startling. It is a sobering thought that such an effort would, in all likelihood, be impossible today.

Barriers to Research

The success of the anti-[vivisection](#) movement, and the difficulty of performing animal research, is apparent to any researcher proposing an animal experiment.

In the UK [United Kingdom], following the 1986 Animals (Scientific Procedures) Act, the researcher has to obtain a licence from the Home Office, and the proposed research must be part of a programme of work authorised by a project licence. The process of licencing involves an assessment of the invasiveness of the study and the species used, following the principles of the three Rs.

Invariably, considerable justifications for any procedures that involve distressing the animal will be required, and considerable pressure for the use of fewer animals, from further down the phylogenetic tree (such as using rats rather than primates), will be applied.

The regulatory process is less stringent in the USA, but still restrictive. In 1985 Congress passed the improved Standards for [Laboratory Animals](#) Act, which provides laboratory-animal-care standards enforceable by US Department of Agriculture (USDA) inspectors.

Currently the Act does not cover rats, mice, birds, horses and farm animals, placing more than 95 percent of US animal research beyond the reach of the USDA. Consequently, there is no specific law requiring ethical assessment of nearly all proposed animal experiments, although in practice one is almost always required.

Virtually all universities have their own Institutional Animal Care and Use Committees (IACUCs), which voluntarily assess any proposed research with respect to the three Rs and provide assurance to grant awarding bodies that the research is animal welfare-friendly. Nevertheless, the process is voluntary and each institution has some discretion to organise its animal work as it needs to rather than according to government diktat as in the UK.

Future Uncertainty

Unfortunately it is unclear how long the USA will hold off from legislation to cover rats, mice and birds. In 1990 humane organisations sued to have these animals included, on the basis of their own 'harm' at seeing animals mistreated. The plaintiff held the USDA responsible and initially won. In one of the most remarkably sensible judgments, the appeals court threw the case out on the basis that only those injured—in this case, the rats, mice and birds—can bring civil suit. Yet the USDA has since promised to include these animals within the next five years.

Moreover, a future case might succeed, meaning that an activist 'plant' in a laboratory need only claim distress at the way the animals are being treated to bring a nuisance lawsuit against the laboratory. Even without victory as precedent, a current accusation of wrongdoing, no matter how ludicrous and trumped-up, will lead to weeks or months of work stoppage while the laboratory is investigated by government agencies.

The barriers to research, whether governmental or institutional, are more than unfortunate. This tightening regulation of research stifles creativity and threatens human wellbeing. The more that regulations demand specific end points and justifications for using animals, rather than focusing on the clarity of the hypotheses and the strength of the researcher and his designs, the less creative the research will be and the more the possibility of discovery will be diminished.

It is unlikely that researchers today will follow the example of those like Landsteiner, who were able to chase their hunches and instincts in the pursuit of discovery.

The 'Middle Ground': Seeking the Impossible

Unlike their contemporaries of a hundred years ago, US scientists seem only minimally interested in

preventing legislation to proscribe their conduct. Scientists in the UK appear to be willing to do it on.

Organisations that have responded against animal rights propaganda, including Seriously Ill for [Medical Research](#) (SIMR), the Research Defence Society (RDS) and the American Foundation for Biomedical Research, rightly trumpet the advances of medical research. This implies opposing regulation restricting animal research, and supporting the advancement of animal experiments wherever and however they are liable to be of benefit to [humanity](#).

SIMR, RDS and similar organisations, however, show a reticence towards promotion and have, paradoxically, supported much of the current legislation limiting animal research. Rather than trying to win the argument for why it is right to use animals in research, they have tried to meet the protesters half way, by addressing their concerns regarding animal welfare and by committing themselves to the three Rs and a gradual reduction of animal experiments.

The process of attempting to find a middle ground has gone the furthest in the UK, where the argument over animal research is most violent and vocal. In 1992 Colin Blakemore, professor of physiology at the University of Oxford, and anti-vivisectionist Les Ward, director of Advocates for Animals, began a correspondence and a series of exploratory meetings that culminated in the formation of the Boyd Group. The group includes anti-vivisectionists, animal welfare advocates, [veterinarians](#), philosophers, scientists using animals, and funding bodies.

The group's objectives are to promote dialogue and, where there is consensus, to recommend practical steps towards achieving common goals. It has published four reports, and has encouraged the Home Office to require an ethical review process in every research establishment. It has also welcomed the decision by the UK government not to issue any further licences for the use of animals in testing cosmetics.

Problematic Philosophy

Beyond the fact that the Boyd Group is adding to the legislative burden impeding any potential animal researcher to begin work, the entire [philosophy](#) of forming such a group is problematic. It is evident that the Boyd Group will never be able to propose an increase in animal research, because the anti-vivisectionists will oppose it and break the condition of consensus. On the other hand, it is likely that scientists will be able to propose alternatives to animal research, and these proposals will gain consensus.

The net effect of all this will be to add to the ratcheting down of animal experimentation, and to the palpable public suspicion that animal experiments are cruel and unnecessary.

The supposed 'middle ground' shared by researchers and [animal rights activists](#) is illusory. The reality is that greater accommodations will be provided to the animal rights activists at the cost of future animal experimentation and discovery. The agendas are diametrically opposed, and any compromise, including concessions to animal welfare, will only lead towards the ultimate abolition of vivisection.

It makes no sense for animal researchers to engage in a discussion of animal welfare beyond ensuring that the animals will be properly housed, fed and exercised, and that they will be generally physically and behaviorally nourished as much as possible to benefit their performance as an experimental

subject. The idea that we should—or even can—be any more concerned about their welfare stretches credibility.

Giving animals AIDS and other diseases, carrying out experimental surgeries and infusing untested drugs hardly sound like procedures aimed at protecting the animals' welfare. Mistreating animals is unacceptable because it ruins experiments—but any further concern for the animals' wellbeing is beside the point.

One Way or the Other

Animal researchers and their advocates cannot have it both ways. Professed concern for the welfare of laboratory animals is simply inconsistent with the reality of laboratory experiments that almost invariably result in distress and death for the animal. The fact is that medical research is not concerned with the welfare of animals, and nor should it be.

The aim of medical research is to get answers about diseases and problems that afflict humanity. Taking a course that retards that progress is an affront to humanity in general and a particularly acute blow to those individuals whose very lives depend on that progress. Defending the welfare of animals means placing the life of a mouse, rat, cat, dog, monkey or whatever above that of the seriously ill.

Those of us who research with animals, or support the benefits of such work, have made a moral choice. We place human wellbeing and health above that of animals and we unequivocally believe that human life comes first. We must be willing to come out of our high-security research bunkers, stop hiding behind euphemisms and niceties, forgo attempts to make peace with our detractors, and stand by our decision.