HUMAN VS. ANIMAL RIGHTS: IN DEFENSE OF ANIMAL RESEARCH

Research with animals is a highly controversial topic in our society. Animal rights groups that intend to stop all experimentation with animals are in the vanguard of this controversy. Their methods range from educational efforts directed in large measure to the young and uninformed, to promotion of restrictive legislation, filing lawsuits, and violence that includes raids on laboratories and death threats to investigators. Their rhetoric is emotionally charged and their information is frequently distorted and preposterous. Their tactics vary but have a single objective—to stop scientific research with animals.

The resources of the animal rights groups are extensive, in part because less militant organizations of animal activists, including some humane societies, have been infiltrated or taken over by animal rights groups to gain access to their fiscal and physical holdings. Through bizarre tactics, extravagant claims, and gruesome myths, animal rights groups have captured the attention of the media and a sizable segment of the public. Nevertheless, people invariably support the use of animals in research when they understand both sides of the issue and the contributions of animal research to relief of human suffering. However, all too often they do not understand both sides because information about the need for animal research is not presented. When this need is explained, the presentation often reveals an ignorance of the scientific community and an unwillingness to be accountable to public opinion.

The use of animals in research is fundamentally an ethical question: is it more ethical to ban all research with animals or to use a limited number of animals in research under humane conditions when no alternatives exist to achieve medical advances that reduce substantial human suffering and misery?...

ANIMALS IN SCIENTIFIC RESEARCH

Animals have been used in research for more than 2000 years. In the third century B.C., the natural philosopher Erasistratus of Alexandria used animals

to study bodily function. In all likelihood, Aristotle performed vivisection on animals. The Roman physician Galen used apes and pigs to prove his theory that veins carry blood rather than air. In succeeding centuries, animals were employed to confirm theories about physiology developed through observation. Advances in knowledge from these experiments include demonstration of the circulation of blood by Harvey in 1622, documentation of the effects of anesthesia on the body in 1846, and elucidation of the relationship between bacteria and disease in 1878. In his book An Introduction to the Study of Experimental Medicine published in 1865, Bernard described the importance of animal research to advances in knowledge about the human body and justified the continued use of animals for this purpose.

In this century, many medical advances have been achieved through research with animals. Infectious diseases such as pertussis, rubella, measles, and poliomyelitis have been brought under control with vaccines developed in animals. The development of immunization techniques against today's infectious diseases, including human immunodeficiency virus disease, depends entirely on experiments in animals. Antibiotics that control infection are always tested in animals before use in humans. Physiological disorders such as diabetes and epilepsy are treatable today through knowledge and products gained by animal research. Surgical procedures such as coronary artery bypass grafts, cerebrospinal fluid shunts, and retinal reattachments have evolved from experiments with animals. Transplantation procedures for persons with failed liver, heart, lung, and kidney function are products of animal research.

Animals have been essential to the evolution of modern medicine and the conquest of many illnesses. However, many medical challenges remain to be solved. Cancer, heart disease, cerebrovascular disease, dementia, depression, arthritis, and a variety of inherited disorders are yet to be understood and controlled. Until they are, human pain and suffering will endure, and society will continue to expend its emotional and fiscal resources in efforts to alleviate or at least reduce them.

Animal research has not only benefited humans. Procedures and products developed through this process have also helped animals. Vaccines against rabies, distemper, and parvovirus in dogs are a spin-off of animal research, as are immunization techniques against cholera in hogs, encephalitis in horses, and brucellosis in cattle. Drugs to combat heartworm, intestinal parasites, and mastitis were developed in animals used for experimental purposes. Surgical procedures developed in animals help animals as well as humans.

Research with animals has yielded immeasurable benefits to both humans and animals. However, this research raises fundamental philosophical issues concerning the rights of humans to use animals to benefit humans and other animals. If these rights are granted (and many people are averse to do so), additional questions arise concerning the way that research should be performed, the accountability of researchers to public sentiment, the nature of an ethical code for animal research, and who should compose and approve the code. Today, some animal activists are seeking whether humans have the right to exercise domination over animals for any purpose, including research. Others suggest that because humans have domination over other forms
of life, they are obligated to protect and preserve animals and ensure that they are not exploited. Still others agree that animals can be used to help people, but only under circumstances that are so structured as to be unattainable by most researchers. These attitudes may all differ, but their consequences are similar. They all threaten to diminish or stop animal research.

**CHALLENGE TO ANIMAL RESEARCH**

Challenges to the use of animals to benefit humans are not new—their origin can be traced back several centuries. With respect to animal research, opposition has been vocal in Europe for more than 400 years and in the United States for at least 200 years.

Most of the current arguments against research with animals have historic precedents that must be grasped to understand the current debate. Those precedents originated in the controversy between Cartesian and utilitarian philosophers that exploded from the 17th to the 18th centuries.

The Cartesian-utilitarian debate was opened by the French philosopher Descartes, who defended the use of animals in experiments by contrasting the animals' response to stimuli in only one way—"according to the arrangement of their organs." He stated that animals lack the ability to reason and think and see, therefore, similar to a machine. Humans, on the other hand, can think, talk, and respond to stimuli in various ways. These differences, Descartes argued, make animals inferior to humans and justify their use as a machine, including as experimental subjects. He proposed that animals learn only by experience, whereas humans learn by "teaching-learning." Humans do not always have to experience something to know that it is true.

Descartes' arguments were countered by the utilitarian philosopher Bentham of England. "The question," said Bentham, "is not can they reason? nor can they talk? but can they suffer?" In utilitarian terms, humans and animals are linked by their common ability to suffer and their common right not to suffer and die at the hands of others. This utilitarian thesis has rippled through various groups opposed to research with animals for more than a century.

In the 1970s, the antivivisectionist movement was influenced by three books that clarified the issues and introduced the rationale for increased militancy against animal research. In 1971, the anthology Animals, Meat and Methods, by Godlovitch et al., raised the concept of animal rights and analyzed the relationship between humans and animals. Four years later, Victims of Science, by Rydell, introduced the concept of "speciesism" as equivalent to fascism. Also in 1975, Singer published *Animal Liberation: A New Ethic for Our Treatment of Animals.* This book is generally considered the progenitor of the modern animal rights movement, invoking Ryder's concept of speciesism. Singer deplored the historic attitude of humankind toward nonhumans, as a "form of prejudice no less objectionable than racism or sexism." He urged that the liberation of animals should become the next great cause after civil rights and the women's movement.

Singer's book not only was a philosophical treatise; it also was a call to action. It provided an intellectual foundation and a moral focus for the animal rights movement. These features attracted many who were indifferent to
the emotional appeal based on a love of animals that had characterized anti-
violencelion efforts for the past century. Singer’s book swelled the ranks of the
antiviolenist movement and transformed it into a movement for animal
rights. It also has been used to justify ille-
gal activities intended to impede animal
research and instill fear and antipathy
in those engaged in it....

DEFENSE OF ANIMAL RESEARCH

The issue of animal research is funda-
mentally an issue of the dominion of hu-
mans over animals. This issue is rooted
in the Judeo-Christian religion of western
culture, including the ancient tradition of
animal sacrifice described in the Old Tes-
tament and the practice of using animals
as surrogates for suffering humans de-
scribed in the New Testament. The sa-
credness of human life is a central theme
of biblical morality, and the dominion of
humans over other forms of life is a natu-
ral consequence of this theme. The issue
of dominion is not, however, unique to
animal research. It is applicable to every
situation where animals are subservient
to humans. It applies to the use of animals
for food and clothing; the application of
animals as beasts of burden and trans-
portation; the holding of animals in cap-
tivity such as in zoos and as household
pets; the use of animals as entertainment,
such as in sea parks and circuses; the ex-
ploration of animals in sports that em-
dploy animals, including hunting, racing,
and animal shows; and the eradication of
pests such as rats and mice from homes
and farms. Even provision of food and
shelter to animals reflects an attitude of
dominion of humans over animals. A per-
son who truly does not believe in human
dominance over animals would be forced
to oppose all of these practices, includ-
ing keeping animals as household pets
or in any form of physical or psycholog-
ic captivity. Such a posture would defy
tradition evolved over the entire course
of human existence.

Some animal advocates do not take
issue with the right of humans to exercise
dominion over animals. They agree that
animals are inferior to humans because
they do not possess attributes such as
a moral sense and concepts of past and
future. However, they also claim that it is
precisely because of these differences that
humans are obligated to protect animals
and not exploit them for the selfish
betterment of humans. In their view,
animals are like infants and the mentally
incompetent, who must be nurtured and
protected from exploitation. This view
shifts the issues of dominion from one
of rights claimed by animals to one of
responsibilities exercised by humans.

Neither of these philosophical posi-
tions addresses the issue of animal re-
search from the perspective of the im-
morality of not using animals in research.
From this perspective, depriving humans
(and animals) of advances in medicine
that result from research with animals is
inhumane and fundamentally unethical.
Spokespersons for this perspective sug-
gest that patients with dementia, stroke,
and animal owners do not believe in human
research. A person who truly does not believe in human
agency of animal research claim that animals
sometimes must be sacrificed in the de-
velopment of methods to relieve pain and
suffering of humans (and animals) and to
affect treatments and cures of a variety of
human maladies.
The instantaneous benefit of animal research to humans is undeniable. One example is the development of a vaccine for poliomyelitis, with the result that the number of cases of poliomyelitis in the United States alone declined from 58,000 in 1952 to 4 in 1984. Benefits of this vaccine worldwide are even more impressive.

Every year, hundreds of thousands of humans are spared the inhuman, wheelchairs, and iron lungs required for the victims of poliomyelitis who survive this infectious disease. The research that led to a poliomyelitis vaccine required the sacrifice of hundreds of primates. Without this sacrifice, development of the vaccine would have been impossible, and in all likelihood the poliomyelitis epidemic would have continued unabated. Depriving humanity of this medical advance is unthinkable to almost all persons. Other diseases that are curable or treatable today as a result of animal research include diphtheria, scarlet fever, tuberculosis, diabetes, and appendicitis. Human suffering would be much more stark today if these diseases, and many others as well, had not been amenable to treatment and cure through advances obtained by animal research.

ISSUES IN ANIMAL RESEARCH
Animal rights groups have several stock arguments against animal research. Some of these issues are discussed and refuted herein.

The Clinical Value of Basic Research
Persons opposed to research with animals often claim that basic biomedical research has no clinical value and therefore does not justify the use of animals. However, basic research is the foundation for most medical advances and consequently for progress in clinical medicine. Without basic research, including that with animals, chemotherapeutic advances against cancer (including childhood leukemia and breast malignancy), beta-blockers for cardiac patients, and electrolyte solutions for patients with dysfunctional metabolism would never have been achieved.

Duplication of Experiments
Opponents of animal research frequently claim that experiments are needlessly duplicated. However, the duplication of results is an essential part of the conduct, process in science. The generalization of results from one laboratory to another prevents anomalous results in one laboratory from being interpreted as scientific truth. The cost of research animals, the need to publish the results of experiments, and the desire to conduct meaningful research all function to reduce the likelihood of unnecessary experiments. Furthermore, the intense competition of research funds and the peer review process lessen the probability of obtaining funds for unnecessary research. Most scientists are unlikely to waste valuable time and resources conducting unnecessary experiments when opportunities for performing important research are so limited...
Keeping primates in cages and isolating them from others of their kind is considered by activists as cruel and destructive of their "psychological well-being." However, the opinion that animals that resemble humans most closely and deserve the most protection and care reflects an attitude of speciesism, i.e., a hierarchical scheme of relative importance that most activists purportedly abhor. This logical fallacy in the drive for special protection of primates apparently escapes most of its adherents.

Some scientific experiments require primates exactly because they simulate human physiology so closely. Primates are susceptible to many of the same diseases as humans and have similar immune systems. They also possess intellectual, cognitive, and social skills above those of other animals. These characteristics make primates invaluable in research related to language, perception, and visual and spatial skills.

Although primates constitute only 0.5% of all animals used in research, their contributions have been essential to the continued acquisition of knowledge in the biological and behavioral sciences.

Do Animals Suffer Needless Pain and Abuse?

Animal activists frequently assert that research with animals causes severe pain and that many research animals are abused either deliberately or through indifference. Actually, experiments today involve pain only when relief from pain would interfere with the purpose of the experiment. In any experiment in which an animal might experience pain, federal law requires that a veterinarian must be consulted in planning the experiment, and anesthetics, tranquillizers, and analgesics must be used except when they would compromise the results of the experiment.

In 1984, the Department of Agriculture reported that 63% of research animals were not subjected to painful procedures, and another 31% received anesthetics or pain-relieving drugs. The remaining 8% did experience pain, often because improved understanding and treatment of pain, including chronic pain, were the purpose of the experiment. Chronic pain is a challenging health problem that costs the United States about $50 billion a year in direct medical expenses, lost productivity, and income.

Alternatives to the Use of Animals

One of the most frequent objections to animal research is the claim that alternative research models obviate the need for research with animals. The concept of alternatives was first raised in 1959 by Russell and Burch in their book, The Principles of Humane Experimental Technique. These authors exhorted scientists to reduce the pain of experimental animals, decrease the number of animals used in research, and replace animals with nonanimal models whenever possible.

However, more often than not, alternatives to research animals are not available. In certain research investigations, cell, tissue, and organ cultures and computer models can be used as adjuncts to experiments with animals, and occasionally as substitutes for animals, at least in preliminary phases of the investigations. However, in many experimental situations, culture techniques and computer models are wholly inadequate because they do not encompass the physiological complexity of the whole animal.

Examples where animals are essential to research include development of a vac-
cine against human immunodeficiency virus, refinement of organ transplantation techniques, investigation of mechanical devices as replacements for and advances to physiological organs, identification of target-specific pharmacologics for cancer diagnosis and treatment, restoration of injured myocardium in patients with cardiac disease, evolution of new diagnostic imaging technologies, improvement of methods to relieve mental stress and anxiety, and evaluation of approaches to define and treat chronic pain. These challenges can only be addressed by research with animals as an essential step in the evolution of knowledge that leads to solutions. Humans are the only alternatives to animals for this step. When faced with this alternative, most people prefer the use of animals in the research model.

COMMENT

Love of animals and concern for their welfare are admirable characteristics that distinguish humans from other species of animals. Most humans, scientists as well as laypersons, share these attributes. However, when the concern for animals impedes the development of methods to improve the welfare of humans through amelioration and elimination of pain and suffering, a fundamental choice must be made. This choice is present today in the conflict between animal rights activism and scientific research. The American Medical Association made this choice more than a century ago and continues to stand squarely in defense of the use of animals for scientific research. In this position, the Association is supported by opinion polls that reveal strong endorsement of the American public for the use of animals in research and testing.4...

The American Medical Association believes that research involving animals is absolutely essential to examining and improving the health of people in America and worldwide.5 Animal research is required to develop solutions to human tragedies such as human immunodeficiency virus disease, cancer, heart disease, dementia, stroke, and congenital and developmental abnormalities. The American Medical Association recognizes the moral obligation of investigators to use alternatives to animals whenever possible, and to conduct their research with animals in humanity as possible. However, it is equivocal that depriving humans of medical advances by preventing research with animals is philosophically and morally a fundamentally indefensible position. Consequently, the American Medical Association is committed to the preservation of animal research and to the conduct of this research under the most humane conditions possible.5,6

REFERENCES