Animal Testing: Scientific Testing and Animal Welfare

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Introduction

Animal testing can be dated back thousands of years to ancient Greece, when early scientists such as Aristotle performed experiments on live animals. Early physicians used animals to test surgical procedures before using them on humans. In the 20th and 21st centuries, more laws and restrictions have been put in place to care for our animals and preserve their well-being and health. Countries like China, Japan, the United States, Canada, Australia, South Korea, and the United Kingdom are some of the top animal testing countries. Those against animal testing point out that the benefit it poses to humans does not justify the harm it does to the animal, while those in support see it as a necessary step in acquiring more knowledge in both medical and biological fields. In many countries, there are laws in place that make animal testing a necessary procedure in assessing the safety of a medicine or drug. Despite this, about 192 million animals are used globally for scientific purposes. This paper argues that the inhumane nature of animal testing should not be permitted in countries around the world. **Countries should not allow testing and experimentation on animals due to the harm to the animals' health and their inability to be released back into the wild.**

See

Many types of animal testing are used for various purposes. Medicinal animal testing consists of using animals in different experimental groups to assess whether the medicine is safe

for the public and has no adverse effects on the body. Cosmetic testing uses animals to test the safety of cosmetic products for human use and consumption. For example, makeup, soaps, and other hygiene products are required in certain countries to be tested on animals for regulatory purposes. In cosmetic tests, chemicals are rubbed onto the animals' skin, put in their eyes, or ingested (Humane Society International Australia). Alternatives to animal testing include *In Vitro* or human cell testing. Human cell testing uses human tissue or cultures to study the effects or behaviors after exposure to various chemicals or drugs. In human tissue testing, patients can donate their tissue for research, giving researchers responses that are not always seen in animals. Tissues can be donated in various ways. One way is that after surgery, the pathologist decides whether the leftover or extra tissue can be stored and used for studies later on. Patient consent is required in this case. A second way uses organs that can not be used for transplants that were originally donated for research. A third way is through biopsy donations. Similar to blood donations, skin or muscle can be donated by patients for studies. Statistics show that over 95% of patients support these methods of research. (Roland Linder, Reprocell) The benefits of these methods allow some pharma companies to save money by having samples donated rather than acquiring animal samples. Another benefit is that it can be used to show specific results that are projected for certain patients and test the efficiency of a medicine or drug. On top of using results from human tissue, results can be further validated through testing on human stem cell models, which mimic early embryo development. All these help ensure the safety of a drug before it is used on humans, and these methods provide results that are easily compared to humans, rather than using animals, which can vary results due to their different genetic makeups. These methods cut out the need for acquiring animals for testing (Roland Linder, Reprocell). Computer simulations are another alternative to animal testing. Computer models can be used to assess the

safety of drugs without having any ethical problems or inaccuracies due to animal testing (Victor Chang, Cardiac Research Institute). Computer models can be cheaper and faster than animal models and can be more accurate, as certain pharmaceuticals perform differently in animals than in humans (Alfie Gleeson, BioTechniques). Computer Models cut out the need for animal testing and avoid certain ethical issues. Results from computer testing can be used to predict the results for human groups. One disadvantage of computer simulation is that sometimes, programs can not account for any specific outliers or people who may have adverse effects. Programs are not alive, and therefore, it can be hard to predict varying genetic makeups or the unpredictable nature of people's reactions to medicines or drugs. Alternatives such as these avoid the use of animals for research of both chemicals and drugs and can, in most cases, be more accurate than testing on animals.

There are still benefits to animal testing. Not only do we share most of our DNA with certain animal species, but they can also contract and suffer from the same diseases as we do. This makes animal testing highly beneficial in testing the efficiency and effects of drugs and possible medications to treat human patients. Examples of this can be seen in the research for diseases such as polio and AIDS. In the creation of the polio vaccine, rhesus monkeys were injected with the live virus and were eventually studied until an immunization was discovered, and this led to the creation of the Salk vaccine. This vaccine greatly decreased the number of cases of polio in the United States to only four in 1984 (National Library of Medicine). Research like this helps create breakthroughs in medical research, particularly in the creation of vaccines. It benefits human populations by finding cures or successful medicines and lowering the incidence of disease. Another medical field that historically benefited from animal testing was the research that went into successful transplants. Mice were crucial in this research, as we share

about 98% of our DNA with them. Mice are crucial for studying genes as we share a common ancestry. Mice are easy to breed, making them perfect for lab settings where large study groups are required for accurate results. Research on transplants within mice led to the creation of immunosuppressive drugs, which help the immune system not reject new organs. Animal testing has been a crucial part of medical research for years and provides certain results that can not be seen from tissue, cell, or computer testing.

A result of using animal testing is the mistreatment of animals. Lab life for animals is unnatural for them. Many companies utilize large facilities for holding animals, where animals are held in sterilized rooms or cages, opposite to their natural habitats, depriving them of interaction. Animal testing not only occurs on animals specifically bred for these tests, but animals from the wild can also be taken for performing research and being used as samples. Most tests run on animals often result in their death or permanent effects that do not allow them to recover. Animals taken from the wild are seldom released back into the wild. LD-50 tests tend to be the most damaging due to the nature of the experiments. LD-50 experiments calculate how much exposure to a substance is lethal to the test group. Animal testing can be done on different species with regulations in place, but in the United States, rats and mice are not legally considered animals in animal testing, making no specific regulations controlling or protecting them. “For example, regulatory tests for Botox, vaccines, and some tests for chemical safety are essentially variations of the cruel Lethal Dose 50 test in which 50% of the animals die or are killed just before the point of death” (Cruelty-Free). Testing on animals can lead to inaccurate results due to their different genetic makeups. Many drugs that were stated to be safe on animals can have adverse effects when used on humans, making animal testing seem unnecessary when used in the process of safety tests. Animals can go through immense pain and suffering with no

benefit to the human side of the research. “Over 110 million animals die in U.S. laboratories used for animal testing every year. Their deaths are painful, as lab animals subjected to testing are often immobilized, mutilated, and exposed to toxic substances.” (Alyson Diaz, The Regulatory Review). The United States has the highest rate of animal testing, with over 15 million experiments performed each year on animals we consider pets, like dogs, mice, and birds (Alyson Diaz, The Regulatory Review). In 2018, nine million animal experiments were reported in the EU alone. About 18% were for safety and legal requirements, leaving the other 82% not required at all(Doortje Swaters, Anne van Veen, Wim van Meurs, Janette Ellen Turner, Merel Ritskes-Hoitinga, Sage Journals). Many countries and nations require certain medicines to be tested on animals to determine their safety for the public, but this leaves companies to use animals for cosmetic purposes. All of this leads to unnecessary pain to the animal and a lowering of their quality of life.

Judge

Animal testing should be banned due to the harm it causes to both domesticated and wild animals, especially if it is not required for safety purposes. Even though animal testing is good for life-saving medicines, it should not be used for cosmetic and medicinal purposes when *In Vitro* testing can be used or other alternatives. There are both pros and cons to the topic of animal testing. Many believe that animal testing is a necessary step in the work it takes to testing if a drug is safe or ready for human use. Researchers can see the effects firsthand, and not only does it help with safety, but it also helps with recording how effective a drug is. They can observe many possible outcomes and side effects due to the wide variety of genes in experimental groups. Although these reasons pose a benefit to medical research, many alternatives can provide similar results. Even though most alternatives lack the live component that testing on animals

has, many possibilities can be tested through programs and computer systems. Testing on human tissue also increases the accuracy of results as we can look at it directly from the human side. Another argument for animal testing comes from the years of history and medical breakthroughs made through the practice of animal testing. Life-changing vaccines were created from testing on animals, like the polio vaccine, and lowered the number of people contracting the disease in developed countries. Medicines that were created to improve the quality of life of people suffering from diseases like AIDS have been from research on animals. Despite the integral history of animal testing in medicine, technology has improved and brought us new methods of testing products without posing any harm to animals. The harm and maltreatment of animals are more significant than the benefits of using them as test subjects.

Researchers have decided that animal testing is helpful due to the similar nature of animals and humans, and so it should be evident that they feel pain and joy just as humans do. Almost all animal experiments result in the permanent disfigurement of the animal, which significantly lowers its quality of life or results in death. Animals taken from the wild are infrequently released back into the wild and live out the rest of their days in laboratories and in strikingly different environments from their natural ones. Animal subjects can become tools to scientists rather than being treated as living creatures. A study in Turkey that took place in 2020 showed that over nine years, 101 out of 243 orthopedic animal studies were published (42%), 4,440 animals were euthanized in these 101 experiments, and only 38% of those published were never cited or cited only once. (Alper Öztürk, Önder Ersan, PubMed Central) Orthopedic animal studies look at the bones, joints, and muscles of an organism to develop new treatments for injuries and diseases, and new surgical treatments. Tests that go undocumented or unpublished show no benefit to any scientific research. If experiments are not cited, other researchers can

perform the same experiment, leading to more deaths and similar results that should've been made available. This also results in the misuse of animal lives.

Another factor is the negative living conditions animals are exposed. Not only do the animals suffer due to the cold environment of laboratories, but they are also at the will of the technicians and scientists. Not all scientists misuse animals, but many undergo incidents of malpractice. In 2005, the biggest primate research facility at UC Davis was fined $4,815 by the U.S. Department of Agriculture after seven cynomolgus monkeys died due to exposure to extreme heat in their living area. Again in 2018, seven-week-old baby monkeys died in the UC Davis research center from exposure to toxic dyes used on their mothers for identification (Elif Akkaya, Harun Reşit Güngör, PubMed Central). Incidents such as these show the misuse of animals in science experiments and how the animals are not treated as living creatures. This can result in the needless death of animals from carelessness and neglect.

Animals can also be subjects of great psychological stress. Many are exposed to the other animals being tested on, increasing their stress levels as they watch what is occurring to their neighbors. Stress affects the welfare of the animals but can also alter results, as severe stress causes physiological changes in the body. At this point, data becomes inaccurate and can be useless for furthering results or research (Elif Akkaya, Harun Reşit Güngör, PubMed Central). Measures should be taken to reduce pain and suffering for the animal if testing is required for safety and to prevent the abuse of animals beyond research. Each year, over 115 million animals are utilized in experiments and die worldwide. The use of alternative methods can lower the overall number and keep animal tests for safety and research purposes only.

Not only does animal testing have many ethical standpoints, but there are religious components as well. The *Laudato Si* is an encyclical written by Pope Francis that highlights our

responsibility to care for others and our planet. Among the many points he makes in his 184-page paper is the issue of animal testing. Our job, given to us by God, is to care for our planet; we are not greater than plants or animals. We should care for God's creation in all aspects. We can protect our animals by studying them and creating more environments for them to thrive in, protecting species in danger of extinction, and protecting their habitat by studying what conditions they need to succeed in and setting aside areas for them to live. (Pope Francis, Laudato Si) In chapter 130, Pope Francis states that testing on animals is only morally right when it is for a good or dire cause; experimenting on animals for simple or cosmetic endeavors is not honoring God's creation. It is bad to exploit animals, and it shows how we do not respect what God made during creation, especially for needless experimentation and genetically modifying animals and plants. Caring for animals should be our priority, whether it is helping the environment or stopping unnecessary tests that cause pain, suffering, and the waste of a life. Life is sacred to the Catholic faith, and we violate it by using animals as a means to an end instead of valuing them as we would value another human.

Act

There are many easy ways to fight against animal testing that you can incorporate into your daily life. Advocating for animal rights does not have to be a difficult task. One way is to buy and use cruelty-free products. Simply changing your cleaning, cosmetic, and personal care items can reduce the need for products tested on animals. Using cruelty-free products inspires companies to rework their manufacturing and sourcing of products. Many companies are not the ones testing their products on animals themselves, but the sources of the ingredients or chemicals could have been tested for safety and legislative purposes. Recommending products that are cruelty-free spreads the word about animal testing and gets more environmentally friendly

products out there. Many cruelty-free products also incorporate the use of quality ingredients that are better for the body, rather than using chemicals. Buying cruelty-free products protects animal welfare and supports animal rights. The more cruelty-free products that are sold show other competing animal-testing companies that caring about an animal's wellbeing can be profitable. A consumer can identify that a product is cruelty-free by checking the packaging; products that were made cruelty-free have the Leaping Bunny logo, which is internationally recognized as the cruelty-free marker. Some products also have a statement describing how the product was made, and you can also check a company's website. A more direct way to help the cause is to donate to organizations that advocate animal rights, like Cruelty-Free International and PETA. PETA works to defend the rights of animals and operates under the principle that animals are not to be used for our own gain. Not only does the organization fight to stop animal suffering, but it also informs the public and policymakers about the consequences of animal abuse. Cruelty-Free International works to uncover the truth about the lives of animals in laboratories. Their goal is to give a voice to animals that suffer in laboratories. A step further than just donating is to take action. You can help by joining protests against animal testing and helping to vote for animal rights. Actions like these can inspire others to take part in the cause, and protesting can attract more attention to the fight for animal rights.

Conclusion

Animals suffer worldwide at the hands of scientists and researchers. God calls us to be caretakers of the world he created, and we should not exploit animals and the environment for our gain. Just like us, animals feel pain and joy and are not meant to live in laboratories with conditions opposite to their natural habitats. It is our responsibility to take the necessary steps to stop animal testing and to fight for animal rights. Animals are not our tools to be used and

discarded. Communities can take action by changing the products we buy and supporting animal rights by participating in protests. Currently, 12 states in the U.S. have taken action and have banned the sale of cosmetic products that are manufactured through animal testing. Legislation like this shows us that animal testing does not have to be a common practice; we can care for our animals and end their suffering in laboratories.

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