

Regulating the Animal Testing Industry

Preston Gerst

Animal testing has been a customary practice in numerous civilizations throughout human history. Humanity tends to want to understand the true nature of our physiology as a whole, and animals have been beneficial to help satisfy this curiosity. Yet ethically speaking, scientists argue for the protection of the rights of humans, while many fail to do so for our natural counterparts, animals. Current standards of the industry bring up concern for the ethical treatment of animals; additionally, many of the standards that exist are outdated and not systematized throughout the scientific world. Furthermore, new scientific developments can possibly allow for the phasing out entirely of animal testing, with new computer modeling software. It can render many of the existing tests obsolete as this new software allows scientists to bypass some of the animal testing in drug trials. Due to many of the shortcomings in the industry, this has caused an inefficiency. This inefficiency can be described as an overall loss of time and money, which could instead be put towards developing new drugs or other studies. Although it is unlikely that animal testing will be removed entirely, it is necessary that new standards be put in place for the ethical treatment of animals.

Keywords: animal testing, ethics, regulation, drug trials, computer modeling

Introduction

Animal testing affects millions of defenseless animals every year, a fact most do not tend to think about for more than a few minutes. Animal testing is an umbrella term that encompasses a range of testing, studies, or experimentation conducted on animals. This practice is used to evaluate the efficacy and safety of products, medicines, or clinical procedures. Animal testing also aids in understanding the anatomy and body structure of both humans and animals (Mason 2). In the United States alone, twenty-five million animals per year undergo a series of exams to the benefit of unethical corporations simply looking to earn more money. The US Department of Agriculture released a report that revealed that over 132,000 hamsters suffered pain in the year 2021 while they underwent animal testing (“Research Facility”). Animal testing in its current state should not be supported in any manner due to the unethical nature of the testing that is performed. Everyone is impacted by animal testing, due to its proliferation throughout the healthcare industry and the beauty industry. For that reason we should have much stricter regulations along with additional checks and balances. Millions of animals are harmed every year due to established systems, highlighting the urgent need for change. It is crucial to reform the current system to address the violation of animal rights and mitigate this widespread harm. This paper argues that the current standard of animal testing is flawed, because of the ethical responsibility to protect animal rights, the impractical science that is conducted, and the time wasted due to animal trials. Finally, it argues for new technologies to replace these archaic forms of testing.

A Brief History of Animal Testing

Historians can trace the existence of animal testing back to 500 BCE. In Ancient Greece, vivisections of animals were completed to better understand the mechanisms of life, muscles, bones, and other organs (Franco 3). From the 5th to the 18th centuries, if you wanted to become a physician or practicing doctor, it was necessary to experiment and understand the overall nature of animals. Vivisections were frequently conducted inside research institutions to educate and complete research in the field of biology. One example of this was the scientist William Harvey, who discovered the circulatory system in England in 1618. To this day, this research has continued to benefit humanity and is the backbone of many future studies, yet the methods of his research raise many ethical issues.

Although the practical use of animals, spanning thousands of years, has been deeply ingrained in human history, the concept of ethically treating animals emerged distinctly and separately during the Enlightenment period. Famous philosophers in France, such as Rousseau and Voltaire, began to debate and criticize the use of animals for vivisections around the time of the mid-17th century (Franco). These philosophers paved the way for animal ethics and facilitated the founding of multiple groups attempting to defend the ethics of animals such as the American Society for the Prevention of Cruelty to Animals (ASPCA), and the National Anti-Vivisection Society in the UK. These groups openly opposed the practice of live vivisections of animals through protests organized from the 1800s to the present.

Arguments

In the scientific community, as testing continues on both humans and animals, many experts advocate for the ethical treatment of humans but often neglect to argue for the ethical treatment of animals. It is additionally important to argue for the protection of animals as they themselves are the ones undergoing experimentation. Although it is impossible to obtain consent from animals, this does not mean that we should violate their rights. Ethics are important to protect the rights and the health of any animal participants or human participants in many scientific experiments (Festing 526). Normally, participants in a study are informed and prepared by researchers, a process not possible for animals. This underscores the critical importance of protecting their ethical rights. As animals cannot consent, they are never aware of the dangers that could come from these experiments. Modern times have seen a significant increase in respect for the ethical treatment of animals during scientific experiments, it is important to note that the entire system is not perfect yet.

Another critical point about ethics is that it allows for research organizations to remain responsible for the animals along with maintaining a level of transparency that allows for the protection of animals and their ethical rights. This entails that proper documentation is kept throughout the research process, that risk is minimized for all participants, and that all data is collected in a reasonable as well as ethical manner (Festing 528). Finally, ethics protects the researcher from potential harm as well. Following an ethical set of rules will allow for the researcher to avoid potential lawsuits or future issues (Loew 185). Without these checks and balances, science could not be conducted in a way that is beneficial for all parties. Because the whole point of the scientific experiment is for the betterment of not only the animals but also humanity, it is absolutely necessary for researchers to conduct their experiments in an ethical manner.

In the field of animal testing, there are more failed than successful trials at a ratio of about 90% (Akhtar 49). Animal experimentation can be broken down into two different variations: behavioral testing and drug/cosmetic related testing. Across the spectrum, both methods continue to have consistent failures due to the nature of animal testing. Behavioral testing is usually ineffective in captive settings. This is due to the human interaction that takes place with the animals. Variables such as artificial lights, human made noise, and being frequently removed from cages can all increase the cortisol levels of animals (Akhtar 408). It has been observed that in mice, this can lead to intestinal leakage, inflammation, and other negative side effects that harm the animals and lead to false results in experimentation. A variety of other conditions can change the neurochemistry, genetic expression, and nerve regeneration in animals as well (Pippin 3). As expected, this can impede existing studies and may lead to false results or failed experiments. As for the drug related trials, there is an entirely different story. A large majority of the time, many of the drug trials that are successful in the animal stage, move on to the human stage just to fail. This can be attributed to the use of mice in drug trials and how different their physiology is. This inefficiency throughout the entire industry continues to this day. Due to the current nature of existing lab trials, there will be continued failure for the time being.

For the future of animal testing to continue, it is important to implement a standardized lab safety and protocol rule set. Protecting the welfare of animals is something that is imperative, in addition to protecting the validity of the experiments that are being undertaken throughout the world. Through fully understanding how to better take care of our animals, we will be able to improve our understanding of how our trials are failing and how we can make them successful in the future. Additionally, a standardized set of rules will aid scientists' ability to have more successful experiments as a whole and move on to the human trial with greater success. This will contribute to the overall benefit of human society as more drugs will be able to hopefully hit the open market with more success than some of their predecessors.

The existing nature of animal trials has also led to a loss of time. Through time lost due to failed trials or other mishaps, individuals who may be waiting on the medication to save their lives will never receive it due to the existing state of the animal testing field. It is suspected that the animal testing industry is also harming many humans as well. On average, a single drug can take up to ten years of trial testing, and millions of dollars. This wastes the resources of not only time, but also money that could be developing other actual beneficial solutions to many diseases that plague humanity today. This redirection of resources harms the entire industry as a whole because it leads away research that could be beneficial in other fields. The other major issue is that some drugs may be ineffective in animals but are actually effective in humans. This causes an abandonment of useful medical techniques that could have been used to save hundreds of lives. An example of this is how toxicology tests on animals do not always reflect the true nature of the toxicology tests in humans. An experiment using aspirin conducted on mice proved that it would not be harmful to the mice, but when replicated in humans using the same dosages, it ended up being toxic and led to the harm of multiple humans (Hartung 46). Without further implementation of failsafes and rules put into place, this trend could continue for the next century, if not checked. For these reasons, it is imperative that animal testing receive the critical eye it has been needing all along.

The practice of animal testing has been around since the fifth century BCE. Although it has been necessary to make many of the advances in sciences that we have today, it is now an outdated form of science. As science has advanced throughout the ages, we now possess greater technologies in order to replace the archaic form of testing. Even today, we have made such great advances through computer technology, along with in-vitro and cellular experimentation, that the use of animals may be avoidable altogether. Although all methods of animal testing are not going to be eradicated (specifically behavioral), it is now much easier to test many drugs on the market using computer models instead. These computer models predict how drugs are going to connect to binding sites in the body and therefore can understand the reactions and effects of the drug in question (Sonali 3). This approach leads to substantial cost savings for scientists, as it reduces the need for frequent animal purchases and related expenses (food, cages, and labor), offset by a one-time investment in the software (Sonali 3). Alternatively, there also exists in vitro testing. This involves culturing cells to grow into larger masses in order to test drugs on them. Specific organ cells can be used, such as liver, brain, heart, etc. (Sonali 2). This cell culture allows for the testing of drugs without harming animals. As with computer models, once the initial phases of the tests are completed, it is then possible to move on to animal testing to see the effects on a mammalian organism. With the rapid advancement of technology providing alternatives, the archaic nature of animal testing is highlighted, suggesting it should be further regulated or phased out entirely. Even though animal testing may not be completely eliminated from our practices, it remains essential to regulate scientific methods.

Two important critics who oppose the idea of phasing out animal testing in its entirety are deserving of mention. Silvio Garattini and Giuliano Grignaschi are pharmacology researchers and physicians. They state that animal testing specifically in vivo (testing on living organisms) is far superior to in vitro testing (testing on cell cultures). Some of the specific barriers that are overcome through in vivo are the blood-brain barrier, and the intestinal barrier, which they believe will offer statistics about the drug being tested as a whole. Additionally, they mention that one of the final obstacles to overcome is how the drug is metabolized by the animal's body. The metabolism of a drug is essential to understanding the risks because we can see how it reacts with the surrounding organisms and organs of the animal. They include, "not always have the animal results been translated into effective drugs but the failures themselves have helped to reformulate the model or the experimental conditions or the type of chemical" (Garattini and Grignaschi 1). Both critics understand the flaws that come along with animal testing, but they continue to support it due to their belief that it is still the best testing model to date. While I will concede a few points to Garattini and Grignaschi, I still believe they are not looking at the entire picture of animal testing. Though obstacles exist, they could be tackled further down the testing protocol of a specific drug. It is believed that many of the scientific advances existing nowadays, which can circumvent the negatives of animal testing, were not mentioned.

Therefore, by avoiding the main issue and instead viewing the industry from their perspective, they continue their own research. Instead of challenging the norms, they are trying to reinforce the existing norm.

Conclusion

As scientific research continues to march on, hopefully animal testing will begin to be phased out. Even in modern days, animal testing is becoming less of a necessity and less of an ordinary form of practice. With advancements in scientific methods, it is now possible to bypass many of the harmful aspects traditionally associated with animal testing. While animal testing will most likely never leave the scientific community, it is still important that there are rules and regulations in place to help protect animals in an ethical manner. In line with this, The stance advocated for is the enhancement of regulations governing animal testing, ensuring ethical treatment and protection for animals involved in these scientific processes. While it is agreed that there will be a necessity for testing before moving on to human trials, there is still an important ethical regulation that needs to be upheld for the benefit of humans and animals alike.

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