

## The Moral of Genetic Engineering

Enemies of technologies and political radicals misguide and overstate that genetic engineering is not part of the natural order of things. The moral question of genetic engineering should be answered by studying human evolution and the concept of survival of the fittest. The subject of safety can be answered by looking at the precautions of the industry. The idea that society needs to understand is that with the right amount of time and money, genetic engineering will help reduce disease and save countless lives. Numerous people do not realize that genetic engineering plays an important role in many lives all over the world. Genetic engineering includes artificial insemination, in vitro fertilization, sperm banks, cloning, and gene manipulation (Goetz 178). For treating diabetes, synthetic insulin is now accessible. This engineered insulin has many positive aspects, which include its life span, producing costs, and the available amount of it. The synthetic insulin lasts two to three times longer than its natural form and costs substantially less to produce than to extract it from an animal, which are primarily pigs. One other benefit is the volume of producing. In pig's method, scientists need to wait for it to get mature to extract the insulin. The synthetic source is completely man made and any amount can be produced in vast amounts.

The replication of insulin is not the only application of biotechnology. Today many people receive synthetic hormones, which their body is unable to produce, such as growth hormones, thyroid, estrogen, and testosterone. Vaccines are also another form of genetic engineering that has been used for many years. Vaccines already protect people against disease to a specific degree, but for a virus like HIV, it is too risky to inject somebody with a vaccine, because a vaccine is a solution that contains a dead or weakened virus that has been artificially prepared. Further work on a HIV vaccine could save many lives and possibly eliminate the disease. Thanks to this biotechnology, people now are able to live the lives that would not have been available without genetic engineering.

Meanwhile plants are also being genetically engineered. This type of genetic engineering is more accepted, but why it is so? Fighting off with pests for a plant is no different than fighting off diseases for a human. This is an inconsistency, because society says that it is okay for a plant to be genetically engineered but not for a human.

The new technology of genetic engineering goes back to the 1950's. In 1951 three scientists, Francis Crick, Maurice Wilkins, and James Dewey Watson discovered DNA. Later they were presented the Nobel Prize in physiology and medicine in 1962. (Lewin 1) DNA is also called deoxyribonucleic acid and it carries a living organism's genetic code. The discovery of DNA was the starting point of genetic engineering. Today the science of biotechnology has advanced to a much higher level, but is still confront many challenges to completely revising damaged or diseased genes. The fault is partly on the ignorance of society, because it believes that genetic engineering is wrong.

The moral question of genetic engineering can be answered by looking at the advances in medicine. Nowadays the advancements in medicine are advancing at an amazingly high rate. If the science of genetic engineering is wrong, then so are the rest of the advances in medicine. The reason is because genetic engineering is just another form of medical progression.

Safety of genetic engineering is the most important thing that presents are worried about. Looking at the current precautions and previous precautions of the biotechnological industry can clear up the safety issue. The only legal forms of genetic engineering that are used today are in vitro fertilization, artificial insemination, and sperm banks. Another form of genetic engineering is the use of gene therapy. Gene therapy is illegal because people should not be able to create the perfect child, but they should be able to correct a gene in a child if it has a chance of being born with Down syndrome. The safety precautions are in effect in order to save the lives of unborn babies. Gene therapy cannot be used on humans until it is perfected and there is little or no chance of failure.

It is not safe to clone a human. It took 277 tries to successfully clone Dolly the sheep. In the state of Michigan, if convicted of attempting or cloning a human there is a number of penalties, including a ten-year prison sentence. With this amount of time, the scientists will have perfected the process of cloning and it will be accepted more than it is now.

The fear that people have toward genetic engineering is not new to science. Since the beginning of science, man has been afraid of the unknown. Space travel and flying were not widely accepted until the twentieth century and was completely accepted just one hundred years ago. Today they are widely accepted and are used every day. Genetic engineering is in the first stage of its discovery and will be as accepted like flying and space travel. The people of the world should ease up on holding back the evolution of science and realize its possibilities for future generations.

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