

Moral dilemmas in genetic engineering

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Eugenics: The Ethnic Dilemma – Genetic Engineering

During the nineteenth century, Francis Galton began his journey to essentially “better” mankind and coined the term “Eugenics”. Eugenics is the scientific belief and method in which we can create and improve humankind through scientific technology such as embryo selection; where people are able to choose to gestate their embryo based on a disability screening. There is a great debate on whether or not we, as a society should continue genetically engineering our genome to better our characteristics, avoid birth defects or diseases and create procreative freedom which allows parents to prevent financial hospital issues in the future. There are both positive and negative views towards Eugenics and its possible outcomes socially and medically.

Eugenics has a harsh and negative past that has caused so many heads to turn away from such a practice, calling it immoral. It made its first appearance in America when in 1896, Connecticut deemed people with epilepsy unfit to marry in order to refrain from increasing such a disease from spreading within society. The movement for eugenics continued during the twentieth century when California began to sterilize women in state mental institutions to also, “protect society from the offspring of people with mental illness”. Moving forward, in the 1930’s, Puerto Rico began to implement sterilization programs for their woman with claims stating that they needed to take measures against the battle of poverty and economic conflicts happening in their state. This did not just happen in the United States, but it carried on during World War II in Germany. During this era, Adolf Hitler believed that Jews and Gypsies were inferior to the human race.

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He pushed to create a gene pool that did not have any defects from diseased offspring, which resulted in thousands of people being sterilized.

Modern Eugenics, also now called genetic engineering, refers to the changes or removal of genes to avoid diseases from continuing down a generation line, potentially cure a disease or improve body characteristics. There is negative genetic engineering, which is referred to the detection of disease before or during a woman's pregnancy. With the procedure, Prenatal Genetic Selection, parents are able to screen their unborn child for disorders with the option to terminate the pregnancy if there is some type of disorder or disease. The problem with this is that, regardless if the unborn child has tested positive during the screening for some type of disorder, they are not aware that the child could just be a carrier for the gene, they might not show the genotype for the gene. For instance, there are people who are carriers for genes associated with a specific disease but do not show the actual phenotype for the gene. This just means that they hold the gene and can pass it to their offspring, who could potentially be a carrier and express the phenotype or not. There is also controversy socially, where people believe that with the access to this technology there will be stigmatization for both parents and people with disabilities.

In Christopher Gyngell and Thomas Douglas' journal, "*Selecting Against Disability: The Liberal Eugenic Challenge and the Argument from Cognitive Diversity*", they state that "The expressivist argument claims that when parents choose not to implant an embryo because it is predisposed to develop a disability, they express an immoral or otherwise objectionable

attitude toward existing disabled individuals. Specifically, they express the judgement that the disabled person is worse or in some way less worthy of existence than other persons.” (Gyngell & Douglas, pg. 32) With this being said, allowing parents to have the choice to terminate their pre-born child is immoral due to the fact that they are showing a judgement/opinion towards the worth of a child. This is viewed negatively in society because according to Anne Barbeau Gardiner’s journal article from the “ *Briefly Reviewed*” , “ Opponents of the new eugenics counter that our universal human dignity equalizes the worth and rights of everyone in the human family. Moreover, even though science can reduce us to biochemistry, a person is, philosophically speaking, never just a genetic disorder, and suffering has no implications for anyone’s inherent worth”. (Gardiner, pg. 46) The worth of a disabled child is believed to change in the future if we continue to allow parents to control the quality of their children. It is one thing to want to screen their child to be prepared for the future complications, but as far as having the option to terminate the pregnancy due to the those specific complications (disease/disorder genes), it is immoral to continue such an act. According to Gardiner, “ Tolerance for imperfect children might diminish, and, as cultural standards change, reproductive choice might become limited as parents are coerced by societal pressure into using eugenic procedures to produce only healthy children”. (Gardiner, pg. 46)

In addition to the negative affect towards the quality of life of a disabled child, with more parents being compelled to want to screen their unborn child and terminations that could occur moving forward, the population that is actually affected by a disease will plummet, leaving little or no resources

for the disabled. With this being said, it would also decrease the amount of people that volunteer and invest towards people that are disabled due to their diseases. In Ricarda Steinbrecher and Helene Paul's article, "*New Genetic Engineering Techniques: Precaution, Risk, and the Need to Develop Prior Societal Technology Assessments*", they state that the government is pressured to consider new genetic engineering techniques, "We are also told that we need to develop yet another layer of technologies to deal with these crises, rather than addressing the actual causes". (Steinbrecher, Paul, pg. 44) With this being said, there could possibly be the decline in studies for causes of these diseases and disorders that could potentially work towards a cure in the long-run. With a continuation of society wanting to have help in having a "perfect" healthy child with genetic engineering, the disabled will begin to be frowned upon, as well as the parents who did not take action to prevent the birth of a child with a disability. Society will take a turn and instead of accepting that the disabled are apart of the world, they will begin to weed them out with such a technology.

On the more medical side of genetic engineering, there poses a risk when attempting to change the human genome. There is a call to politically regulate this type of technology due to the unknown potential harm that could develop if we are not careful. With this new type of technology arising, there are questions raised such as how we can be proactive and manage such a powerful tool as scientists dive into researching more to understand and make future alterations. Kevin Finneran, writer of the editor's journal *Issues*, "*Governance and the Human Genome*" states that "Regulating human genetic engineering, along with other world-altering technologies

such as climate engineering and artificial intelligence, is an inherently global challenge for which we have no existing governance structure.” (Finneran, pg. 25) Finneran writes about how this type of technology should be approached in regards to the opinions of those in the field of this technology and biology, as well as how we do not have a general structure of how to handle the subject at hand when deciding how to regulate those engaging with this sort of technology. It is a grey area of how to deal with those using the technology as well as how we can prevent those from. He also references proposals made to potentially regulate genetic engineering in general. By calling attention to such a powerful technology and how to regulate it, it allows us as a society to learn more and stop future crisis from occurring due to the fact that we are unaware of the repercussions that could come with tampering with our DNA.

The need for regulation is important because there are scientists such as Jiankui He, who led a gene-editing project before the birth of two girls to prevent HIV transmission from the father to the girls. He edited the CCR5 gene in an attempt to prevent HIV infection without knowing the future consequences that could arise. In Haoyi Wang and Hui Yang’s academic journal, “ *Gene-edited babies: What went wrong and what could go wrong* ” they state that, “ if the tested cells are correctly edited, there is still a non-negligible risk that other cells in the embryo remain unedited or carry unwanted mutations that may have unpredictable consequences”. (PLOS Biology, pg. 3)

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