

GENETIC ENGINEERING: WHERE DOES IT STOP?

Nada Mlinarevich

[Assignment: After researching library sources, choose one side of a controversial topic and write a persuasive essay in which you try to convince your reader of the validity of the position you hold.]

(1) "Honey, I want our next child to be tall, slender, blue-eyed with blonde hair--oh, and of course, a girl." The idea that parents can choose the features of their child may sound ludicrous, but with the rate at which biotechnology is progressing, parents will soon be able to create the child of their dreams. According to a special issue of *Newsweek*, prospective parents are already taking advantage of these technological breakthroughs by selecting the gender of their child (Cowley 100). Within a few years, geneticists are expecting to be able to pinpoint exactly where and which gene is linked to each particular trait of an individual, thus furthering the ability to create a "perfect" child. However, this genetic project is only the beginning of a swift-moving and powerful technique commonly referred to as genetic engineering or gene intervention.

(2) Genetic engineering is a very extensive biotechnological method commonly used to detect abnormalities in genes and to change or correct the genes to fit a given purpose. Our society is particularly concerned with prenatal tampering with genes--the process by which doctors will soon be able to create the "perfect" individual. We must now face the question: is this choice morally correct? The technological breakthrough is already altering the way in which people approach having children. Soon babies will no longer be wonderful creations of God's choice, but instead products chosen specifically by parents. Having a child will be similar to going car shopping, where parents compare choices until they find the one they want. True, genetic engineering is quite helpful when used to promote the survival of the unborn child or when assisting parents to conceive a child. However, in order to avoid abuse of these tremendous innovations in biotechnology, we need a maturer understanding of our positions or options. To achieve this, we must fully examine prenatal gene intervention techniques already widely used throughout the world.

(3) One strong argument for the use of genetic engineering is that through technological advancements, doctors are able to treat serious defects and diseases. The detections are made possible with various prenatal tests used by many mothers-to-be, the majority being older women with increased risk of abnormalities. According to Elmer-Dewitt's article from *Time Magazine*, retardation, physical deformities, and fatal genetic disorders (not to mention gender) can already be detected through the use of prenatal testing (70). Physicians can now identify approximately 250 genetic defects in the tissue of the developing fetus (Cowley 94). With these detection abilities and the use of the new techniques, doctors are already treating fetuses to correct abnormalities, often saving lives. One example worth praising is how, through the use of an ultrasound detector, a boy was saved from suffocation at birth. The ultrasound detected a hole in his diaphragm; seven weeks before he was born, surgery was done to correct it (Lewis). As a result of today's

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biotechnology, doctors have the capacity to treat several abnormalities before it is too late.

(4) However, though the use of prenatal testing to detect defects and diseases may seem to be a very credible use of genetic engineering, it too has significant drawbacks. For one, the new surgical techniques used to repair fetal defects carry with them numerous side effects. For example, the mother has a greater chance of premature labor which may cause the child to die due to underdeveloped organs (Fackelmann 102). Also, since doctors have the capacity to detect abnormalities, parents have a greater tendency to blame the physician when something goes wrong. Doctors have already been sued by angry parents who have given birth to a child with an abnormality (Cowley 100). In addition, with the knowledge gained through prenatal testing, parents may have second thoughts on whether to continue with the pregnancy, ultimately leading to the difficult choice of abortion. Consequently, despite the good achieved through genetic engineering to screen and cure defects, there is also potential for considerable harm.

(5) With the ability to map and manipulate genes, many people feel that the geneticists are doing society a favor; however, that is quite untrue. In fact, not all disease-related genes guarantee that a child will be afflicted; parents may abort a fetus that might not have been plagued by a disease (Cowley 98). In some cases, it is even beneficial to carry a "detrimental" gene. This is quite true in the case of sickle-cell anemia, a disease prominent in the African community. A person with one copy of the gene will not be stricken by the disease but instead will have hidden benefits. One such benefit is the unusual resistance to the malaria virus. Because of these findings, the gene for anemia has not been eradicated from the African population (Elmer-Dewitt 71). This is just one example of the benefits of not eliminating a supposedly deadly gene. It also serves to show that while doctors and others may believe they are helping promote the health of an individual, they may actually be jeopardizing the well-being of the fetus.

(6) According to Elmer-Dewitt, scientists are careful to emphasize that experiments in gene therapy will only be aimed at curing hereditary diseases and relieving human suffering (71). But for now, there is no evidence that the experimentation will stop here. In fact, genetic therapy has already gone beyond the treatment of disease. Currently, there is a way for parents to select the sex of the child without having to abort fetus after fetus (Cowley 100). Though not widely available, this technique, once it becomes readily available, will surely draw parents obsessed by gender. The option of sex selection will only serve as a precedent for selecting other favorable traits in our society obsessed with the idea of perfection.

(7) With the rate at which innovations in genetic engineering are progressing, the future possibilities are very frightening. Not only will parents have the ability to choose the gender of their child, they will also be able to select such characteristics as eye-color and height. As Dr. Paul Berg, director of the Beckman Center of Molecular and Genetic Medicine at Stanford states, "Indeed, we should be able to locate which [gene] combinations affect kinky hair, olive skin, and pointy teeth" (qtd. in

Crowley 94). It is scary to think about future generations when trivial imperfections such as those in appearance and personality can be easily screened. Society will undoubtedly take advantage of such vast discoveries. That is why we will have to limit the kinds of manipulations possible or teach society not to take advantage of biotechnology (which may be virtually impossible).

(8) Allowing parents to select the traits they desire would affect society's most important institution, the family. Children would no longer be individuals created by God's choice but rather "items" chosen by the parents' preference. It would be like going to the doctor's office and choosing from a variety of "brands" which product, or in this case, which child best suits the purpose. The children may end up complete opposites of their parents in terms of appearance and personality. Parents may no longer hear such comments as "My, Margaret, she looks exactly like you," or be authorized to say, "he's a chip off the old block." The selecting of special features may well draw the family apart. The family may end up not having anything in common, not even appearance which often adds a bit of specialness and closeness to a family. Also, as George Annas, Professor of Health Law, points out, the whole definition of normal parent-child relationships could be drastically altered. The issue becomes the ability of a parent to be satisfied with the child rather than the ability of the child to be happy (cited in Crowley 94). In addition, if abnormalities do by some chance occur, parents would be much less tolerant of defects. The quest for the perfect child will probably lead to a weakening of family bonds.

(9) Moral and ethical problems also accompany taking advantage of the ability to manipulate secrets found in the genetic makeup of humans. With the ability to manipulate genes, society can take on the job of God in attempting to influence human destiny. Thus it is that many theologians and activists are trying to persuade Congress to ban experiments on human cells (Elmer-Dewitt 71). As the director of the Center for Biomedical Ethics at Case Western Reserve University states, many people fear that a complete map of the genome might "diminish our moral dignity . . . reduce us somehow to nothing more than the chemical constituents of our bodies" (qtd. in Elmer-Dewitt 71). Elmer-Dewitt sums up the issue of genetic tampering: "To unlock the secrets hidden in the chromosomes of human cells is to open up a host of thorny legal, ethical, philosophical and religious issues, from invasion of privacy and discrimination to the question of who should play God with man's genes" (70). We need to reflect carefully before rushing headlong into genetic engineering. Besides, a society chasing total perfection might lead to everyone looking, acting, thinking, and feeling the same. In order to keep our world interesting and to preserve the human race, we must allow genetic variety to exist. Let us not abuse the powers made possible through research, but instead use them to "fix" and not to "create."

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