

NEWS ARTICLES

News Reporters from HSI's Editorial Team investigated various issues in Gene Editing and Personalized Medicine

The ethics of genetic engineering

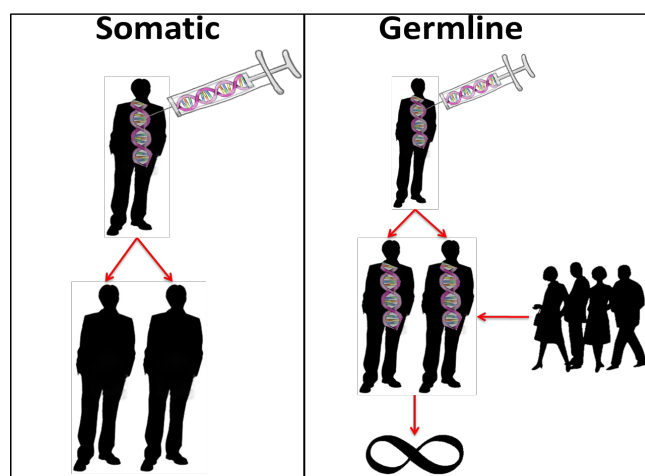
By Logan Townsend

Although still controversial, genetically modified foods have been grown and made commercially available for decades. More recently, and probably more controversially, various forms of human genetic modifications now exist. Basically, scientists alter the genetic makeup of a person, usually by injecting a virus that carries a particular gene. Once implanted, the virus will insert genes into the recipient's genome, thereby altering the recipient's DNA. This method could conceivably be used to 'fix' hereditary defects and genetic mutations, or for more superficial reasons.

It is important to appreciate that there are different types of human genetic engineering, including somatic and germline (1). Somatic engineering affects only the individual receiving treatment whereas germline engineering will affect the individual, their progeny, and all subsequent offspring. Simply put, genetic-engineering could alter a single person or their entire lineage.

Because others have the freedom to do what they want to their own bodies (hence cosmetic surgery, tattoos, and doctor assisted death), I suspect there are fewer objections to somatic engineering. The controversial crux of genetic-engineering probably comes from the manipulation of DNA in a way that will influence all subsequent offspring. Humans don't want strangers infringing upon their own rights...or genes; to paraphrase a classic line, your rights end at the beginning of my telomere.

There are many objections to human genetic-engineering, and one is that it is unnatural. Philosopher David Hume (2) said there is no word more ambiguous and equivocal than the definition of 'nature,' and if we cannot define 'natural' we cannot define 'unnatural.' John Stuart Mill (3) thought nature "...means the sum of all phenomena...including not only all that happens, but all that is capable of happening. Nature, then ... is a collec-



tive name for all facts, actual and possible." Similarly, Mark Sagoff (4) gives a more modern description of nature, "Everything in the universe. Everything technology produces has to be completely natural because it conforms to all of nature's laws and principles." By these definitions, genetic-engineering would certainly be natural.

But Anthony van der Schaaf (5) realizes that when people say 'unnatural' they could actually mean 'supernatural' and object that we are 'playing God'. However, even most theologians agree that God expresses himself in all forms of creation (6), which I would argue must include genetic-engineering. We could also take genetic-engineering to be an expression of human free-will. Thus, genetic-engineering is either an expression of God's will or it is the result of God giving us free will (6), but either way bio-engineering wouldn't be violating God's will.

But maybe the best response to the God objection, coming from Van Der Schaaf (5), is that "humans do not possess the powers of God, so we are really only playing God." In other words, people aren't worried that we have

the abilities of God, because we obviously don't, but rather we are cognitively unable to understand the powers we do have. With this in mind, to paraphrase Van Der Schaaf, if someone says that we should not 'play God' by fiddling with DNA, their real concern is that humans are too ignorant or deluded to understand the implications and ramifications of heritable human genetic-engineering... and unfortunately this would be much harder to refute. ■

References

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