

Our Founders wrote that all men were created equal. The word “equal” seems to be redefined by every generation. With the advent of CRISPR Cas9 technology, genetic modification has become more accessible and efficient than ever before. The random nature of independent assortment and crossing over, the processes by which genetic variation is ensured by a population, is no longer the only source of variation. The wealthy start to resemble each other and their athleticism, mental capabilities, and resistance to disease have increased significantly in the past years. Each generation of the elite are given a number, similar to that of technology models.

This fate hasn't been brought upon the United States, yet there is very little standing in the way. As of the time of this writing, germline editing, one of the methods that can give rise to this future, cannot be legally funded by the National Institute of Health, and is currently illegal in human embryos unless given permission by the FDA. This does not restrict the capacity of this research to resume, however. There are many cell lines that scientists can edit, and human somatic cells are one of them. Somatic (body) cells can be edited in a very similar way to germ cells, laying the groundwork for germ cell modification. As our knowledge of genetics and biotechnology increase, it isn't a matter of whether we could create genetically enhanced humans, but if we should.

For the first time, the philosophy of elitism has a solid, biological capacity to manifest itself in forms that would forever enshrine the economically disadvantaged into genetic sequences littered with disease and normal human function, while the rich could afford genetic enhancements and repair to mutated DNA. This technology already has living examples. Twins Lulu and Nana, subjects of an experiment that sought to remove the CCR5 gene, a gene that allows HIV infection, were born healthy in China. These children are now resistant to a virus that plagues many throughout the world. Supposedly unintended consequences are expected by scientists such as Alcino J. Silva, a neurobiologist at the University of California, Los Angeles. This is because the absence of the CCR5 gene has also been linked to higher intelligence and greater recovery after stroke in mice according to a peer-reviewed study released in 2016.

It is highly likely that the Chinese team that modified these embryos were aware of this study, as it had related directly towards the gene that was removed. It is highly troubling that designer gene babies made to have higher intelligence are being made in foreign countries. It is even more troubling that this news had been well-received in Silicon Valley, where many of this nation's upper class resides and shows interest in genetic technologies to improve intelligence. In

this globalized and techno-focused world, intelligence and hard work can help many supercede class barriers with the educational systems we have in place.

If gene editing for enhancement of intelligence was passed by the FDA, the implication on public policy could serve to be devastating for this nation. The elite members of this country would be able to solidify their position in the social hierarchy, and not just give a genetic advantage to their children, but to every generation that comes after. When a person is born unequal, with genes that disadvantage them in comparison to others whose genes were methodically changed to give them an advantage, how can we have a fair public policy to serve all? If correct preventative measures are not put in place, or accessibility of these technologies are unequal, the benevolent nature of gene modification for treating disease could become a wall that divides the genetically enhanced from the average person.

In this imminent future, policies need to be enacted to ensure equal rights to social services such as education, including higher educational opportunities, and discrimination through preference to the enhanced needs to be strictly monitored to ensure that our rights are preserved. It also must be noted that children that are genetically enhanced need equal access to social services as well, as they had not consented to modification. The new generation of enhanced children could quite easily face discrimination throughout their lives if their status was known. They could become the targets of hate crimes and home-grown terrorism if a politically charged atmosphere arises. Moving forward, civil rights protections need to be extended towards genetically modified humans and upheld for the average human to avoid disastrous consequences.

Public policy must be preemptively managed to avoid consequences that conflict with public interests. Is the government up to the challenge? Do we trust the government to make these types of policy decisions? Would many of our representatives even understand the science behind genetic modification? The public sector has a lot of catching up to the private sector.

This may be done by either restricting genetic editing technologies when it comes to enhancing them, or releasing them in a way that is available to all regardless of economic class. Though the former would be easier to implement, there is an argument that the latter could advance our nation if equally accessible. The American public needs to enter this new age with tolerance and acceptance, and perhaps even redefine what it is that makes us equal.