

Genetic Engineering: A Look into Perfection and a Definitive Line

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In the wake of CRISPR's birth in 1987, widespread fear and excitement filled the air. Humans now had the tools to edit, revise, and create new sequences within the palm of their hand. Such power was almost God-like. Iterations of the potential ethical problems arose through movies such as *Gattaca*, prose within the research department, and hesitation in the scientific community (Sternberg). Only recently, in 2016, was the tool used to successfully activate human cells to fight against a growing tumor (Gostimskaya). However, ethical issues have only arisen since then when CRISPR was used to edit the genes within a set of twins so that they were resistant and immune to the horrid HIV virus (Mullin). With more and more access to the genome that makes us, the more and more we have begun to question whether such a code should be touched or altered within the reproduction germline.

In this paper, I will defend Vojin Rakić's thesis by arguing that genetic enhancement, though normally impermissible, should be considered permissible in the instance that it improves the moral tendencies of the individual. Call this position 'genetic moral enhancement.' Moreover, I will argue, in light of other arguments in favor of genetic enhancement,

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we can modestly extend Rakić's thesis by showing that genetic moral enhancement is not merely permissible, but a moral obligation.

The paper will go as follows. In Part I, I will summarize the argument for genetic moral enhancement as articulated by Rakić. In Part II, I will introduce Julian Savulescu's argument for obligatory genetic enhancement and Alexander Massmann's notion of relational autonomy. While I will raise objections to these views, I will rely on portions of their arguments to advance my own. In Part III, I will address slippery slope arguments from Nick Bostrom, such as the attenuation of human emotions. In Part IV, I will present and then refute a possible objection from Michael Sandel.

I will argue that moral¹ enhancement that follows cognitive enhancement is permitted, and even obligatory because a) it benefits society and b) a parent's duty is to provide a better scenario for their children with limitations provided by relational autonomy.²

I. Rakić on Moral Enhancement

Rakić distinguishes two views on moral enhancement. The first view, View 1, says that moral enhancement must precede cognitive enhancement. View 2, on the other hand, says that cognitive enhancement must lead to moral enhancement (Rakić 118, 120). His issue with View 1 is that it treats moral and cognitive enhancements as separate and isolated from one another. If we do treat moral and cognitive enhancements as distinct, we run into what Rakić calls "the bootstrap effect": how can we perfect something when we ourselves are not perfect? For example, suppose I have determined humility to be a moral attribute that leads to cognitive enhancement. I decide to maximize humility within my society

¹ Additionally, I give a placeholder definition for moral enhancement that can be argued at a later date: something that is morally enhancing makes it easier for individuals to not intentionally cause harm to themselves or to others. This definition of moral enhancing does not include submissiveness or anything similar to it because it would restrict the child's future ability to choose, which is necessary to be a moral agent.

² I do not wish to exclude all enhancements or possible genetic cures from moral permissibility. If I do not state that an enhancement is impermissible, assume that I am not taking any position on the subject. Not only that, but to prevent genetic inequalities that may occur due to unequal economic access to this care, one could simply subsidize this for those who have little to no funds so everyone has access to the care. My hopes are to argue under the assumption that it is permissible to genetically enhance one's children in some instances and as such create a definitional line as to where that should be. This also means that in this case, germ line genetic enhancement is assumed to be safe. However, that does not preclude me from at least addressing some arguments over the permissibility of genetic enhancements that will be addressed later in the paper.

only to find that without other virtues, humility can turn into a terrible vice: submissiveness. This will do the opposite of what I intend because the society simply becomes a group of yes-men, submissive and not innovative. As such, without any sort of cognitive enhancement, we are left with moral advancements done in a very dark room with very little understanding as to where we are going.

Rakić attributes most moral wrongs to cognitive limitations. Racism, for example, is done out of ignorance or rationalization. For example, since the passing of the current conflict between Hamas and Israel, people have attacked both Palestinian Americans and Jewish Americans not due to an issue with those ethnic individuals' characters, but because of their mere racial association with the conflict. It is clear that those that attack these racial minorities do so because of some naivety or ignorance towards the conflict and these racial minorities' involvement. The key issue with morality is our ability to choose, and some if not most of our immoral actions occur due to a weakness in our will or an ignorance as to the outcomes (Rakić 121–122). However, one cannot improve morally if one is forced to choose the right action in every case, so as such, the freedom to choose must be maintained.

According to Rakić, one way to improve cognitive capacity is to introduce medication. SSRI's, usually prescribed for anxiety, depression, and OCD, clear the clutter that may exist within one's mind, allowing the individual to be more "cooperative" and overall have more control over their actions and reactions to certain situations (Rakić 121). Now, recall Rakić's View 2 which says that cognitive enhancement should lead to moral improvement. If students took a drug simply to get a better grade on their exams, this would be morally impermissible since the cognitive enhancement does not lead to moral improvement (Rakić 122).³ In this sense, the individual's ability to choose is preserved and society is improved, overall, a win for humanity (Rakić 124).

II. Savulescu's Obligation and Massmann's Relational Autonomy

Savulescu doesn't think Rakić's View 2 goes far enough. Savulescu pushes for a soft obligation towards enhancing all children's attributes,

³ Rakić does not go into why this is, other than saying we do have to have to be careful in what we cognitively enhance. He draws a loose line by saying we use our moral judgments; however, this does lead to some circular reasoning in this case. I will attempt a more definitive line as it will become an apparent problem that certain cognitive enhancements (enhancing children to be the smartest children in the world) could spell certain moral dilemmas.

whether that be physical, mental, intellectual, or moral. He defends his argument with what he calls “the Wheel of Fortune analogy.” In the Wheel of Fortune analogy, contestants are given the option of two doors, door A and door B, behind both of which is a cash prize that is determined by a spin on a wheel that goes up in increments of 100 dollars from \$0–\$1,000,000. If the contestant chooses door B, however, they will roll a 6-sided die. If it lands on a 6, the contestant is deducted 100 dollars from whatever cash amount is behind door B. Rationally speaking, according to Savulescu, everyone will choose door A to not have a chance of losing a part of one’s prize money (414).

This is analogous to the fetus. Savulescu argues that in the case of a predisposition to a certain disease or disability, it is only rational to choose that child which has no predispositions. This is because we do not know how severely the child’s disability will affect his and his parents’ lives. His argument then extends to genetic enhancement of all children to give them the best life possible. Of course, Savelescu’s theory does not aim at any specific form of flourishing, but all theories about flourishing. Under any *eudaimonia* theory, from hedonists to objective theorists, any positive enhancement or positive selection is good for the world and for the child and should be pursued in all situations (Savulescu 421). Parents, therefore, have the obligation to give their children the best lives possible. This obligation is called “procreative beneficence.” While procreative beneficence is a moral obligation for all parents, Savulescu maintains that parents decide whether or not to adhere to procreative beneficence (Savulescu 425). It is clear that genetic enhancement is not only permissible but should be considered obligatory if permitted due to a parent’s already current obligation to their children.

Massmann,⁴ on the other hand, argues that genetic enhancement is always wrong. He focuses on the relation between the child and the parent. According to Massmann, the ideal relationship is the Christian God’s relationship to His children on earth. Of course, the free reign of autonomy is a problem and leads to chaos, but complete restriction of autonomy leads only to paternalism. God desires for us to live our best lives, but that desire never overpowers our autonomy. God has His hand constantly stretched out, and it is in the best interest of the child to reach out, but that freedom to choose is up to the child. As such, autonomy is not the acceptance of free reign but the rejection of paternalism, something that God exemplifies in allowing us to learn from the consequences of our own actions. Thus,

⁴ Does not have page numbers.

we are to reject any parental action that will lead to paternalistic behaviors by the parents. For example, a common consequence of planning for one's child's future and investing time and energy to accomplishing that goal is the complete discounting of the child's own goals, violating the child's own ability to make decisions for themselves. Similar to the God case, parents should preserve autonomy, regardless of paternalism's positive outcomes. Genetic enhancement, aimed at creating a singular life for a child, is in clear violation of the child's autonomy.

For example, if certain parents loved soccer to the point that they only wished to have a child that played in the MLS, given the option, they would invest funds into genetically enhancing their child so that he would have all the tools he needs, such as coordination, muscle growth, and endurance. Fifteen years later, after many years of harsh drills and shin splints, the child decides he would rather be a violinist. His parents, fearful that they would lose their investment, coerce their child to stay with soccer, ignoring the child's own desires and failing to be vulnerable to them. In Massmann's conclusion, any action that could lead to any level of paternalism should be disregarded as either unnecessary or immoral because it ignores the ability to choose and rationalize that comes with growing up.

However, our choices as parents should be aimed at maximizing the future choices available to the child. It is clear that any attempt to wantonly enhance a child will reduce the available future options for that child. If, for example, we were to limit the child above to just one future path as a soccer player, we have prevented the child from maximizing his level of true happiness. Clearly, the child found joy in violin, and were his skill to match, he would have been potentially happier as a first chair in any orchestra than a goalie on the top team for MLS. If we are to maximize a child's happiness, it has to be with the child's future desires and choices in mind. As such, if we plan on creating any level of permissibility/obligation for genetic enhancement, it cannot be at the level of Savulescu's Procreative Beneficence, for such an ideology without some form of limitations would lead parents to prospectively decide the future of their own children, which Massmann's relational autonomy clearly limits.

Massmann's relational autonomy leads us to even question Rakić's argument on cognitive enhancement for moral enhancement (CME). If we were to regard cognitive enhancement alone, there is a problem. For example, creating the smartest chess player or the best physicist runs into the same problem as creating the best soccer player. However, the only reason why relational autonomy applies is because we treat the child merely as a means to a certain goal, i.e., soccer player, physicist, or chess player. In our process of trying to give the best life to the child, we try to establish

their future in the enhancements that we give the child. However, under CME, the child is not used as a means to an end. The end goal is not to create the best anything, or even to create the most moral person; the goal is to simply clear out life's path. For example, anxiety has been shown to be positively correlated to addictions and dependencies with drugs and alcohol (Smith and Book). Addictions usually restrict our freedom rather than expand it. The main purpose of such CME is to increase the freedom of the child. If we were to find and eliminate a gene that led to the predisposition to anxiety or to cognitively enhance the individual so that he has the mental resources to deal with his own anxiety, we could also at the same time allow the child to live with a higher probability of freedom from addiction.

So, in the case of Massmann's relational autonomy, cognitive enhancement alone may lead to some levels of future paternalism. CME, however, is still permissible, for its main goal is to free the child of future burdens. Rather than planning as to what a child should be and enhancing the child to meet that plan, CME simply wishes to clear the path in which the child chooses, not choose the path for the child. This also means that we are not obligated to implement Savulescu's Procreative Beneficence because we also wish to respect the child's future choices.

However, there is merit to Savulescu's arguments and as such, I propose a revision to his thesis. Parents are then obligated to give the child the best life with their future choices in mind or Autonomous Procreative Beneficence (APB). Under this rule, I do not reject the relational autonomy of the child as parents must remain vulnerable to the child and their choices that are not harmful to themselves. However, very much how parents vaccinate⁵ their children, we give them a cognitive vaccination that in turn morally enhances them as individuals. Parents have a special responsibility to their children and are obligated to give their children the best starting point possible. As Savulescu has argued, parents are obligated to give the highest chance for their child to maximally flourish and succeed in society. However, what Savulescu failed to take into consideration were

⁵ Vaccination is a very controversial topic. The sense of strong obligation parents have towards their kids in preventing deadly and debilitating diseases is widely debated. This is why laws are drafted to enforce such an action; however, such laws are never passed due to restrictions on what governments can do in interfering with parents and their rights to determine how to parent. In this sense, there is a soft obligation for parents to vaccinate their kids, not enforced by law, but definitely pushed for through societal pressures such as school mandates to have children vaccinated if they are to attend school (unvaccinated children are more prone to cause preventable diseases). So when it is argued for a soft obligation, following vaccination guidelines may be permissible when implementing CME.

the conflicting goals between the potential autonomous child and the parents as outlined by Massmann. Parents are still obligated to give their child the best possible chance in life; however, they are obligated to APB and not to Savulescu's beneficence and outlined above. Therefore, CME is not restricted by Massmann's relational autonomy, as dictated by APB, created by limiting Savulescu's scope, we are therefore obligated to enact CME-type enhancements within the germline.

III. Bostrom's Cycle

In my attempts at strengthening a working model (CME with APB), I will now address a version of the bootstrap effect as presented by Bostrom. In Bostrom's "Human Genetic Enhancements: The Transhumanist Perspective,"⁶ he lays out the Transhumanist ideology. Bostrom argues that as a project is yet to be completed: we are not fully developed, fully evolved, nor have we reached the end stage. He continues that life, as such, is to continue in our progression and growth. Christian theology argues that when we go to live with God, we are to be transformed from our imperfect state to that which is perfect and different. However, Bostrom sees total freedom in genetic enhancement as something that can lead to paternalistic and authoritarian parenting. As I have argued, if we are to focus on more intrinsic valuations, such as health or cognitive disabilities, we have turned our selfish desires into something that can be for the benefit of the child.

However, we once again return to the dilemma faced in the bootstrap problem mentioned by Rakić and later articulated by Bostrom: how do we determine what can make us better as humans when we ourselves are imperfect? We are not omniscient as to the effects of our own decisions. With something so influential as genetic enhancement, we must be rule-bound if we are to at any point make it permissible to the public. Bostrom lays out the example of genetically erasing violent dispositions. If generation A determined that violence was a terrible disposition to have and genetically engineered that out of generation B, and if this were to continue generation after generation, the result may be a generation with no drive, no ambition, and an illusory perception of aggression (Bostrom). This is a problem that could exist if we pursue CME, so we must address Bostrom's Cycle (BC).

We are imperfect. If humanity were to make the claim that we were able to be perfect now, we would be in a state of delusory self-aggrandizement. So,

⁶ Does not have page numbers.

how is it possible for us to make judgments on enhancing humanity when we are so imperfect? Is it not possible that certain enhancements create people who are intellectually capable but at the same time psychopathically inclined? As stated before, over generational changes as described by BC leads to each generation redefining “aggression” and other negative emotions as different from the last until we are left with a generation with no drive, no emotion, and it could eventually be said, no sense of self. Once again, I think this argument is important to understand, possibly as another boundary like Massman’s relational autonomy was to this genetic enhancement conversation.

If we return to the analogy that we have reintroduced several times throughout this paper already, we can see, contextually speaking, that we should not choose the path that a child elects, but merely clean it up. We already clean up the path by providing education, food, water, shelter, and other necessities that children can’t provide for themselves—things that apply mostly to the physical health which the mental health is dependent on. We already think of this as a parental obligation to provide for the physical and emotional necessities the child may have, whether that be through vaccines or therapy. However, what if we can completely ignore therapy, brain-altering drugs, and the panic attacks that come with certain predispositions?

We are not trying to get rid of human emotions such as violent tendencies *per se* but only giving more cognitive tools that allow the children to have better control of their emotions. So, in the case of aggression, it would still technically exist genetically; however, the predisposition to act out in anger due to the lack of self-control will be better maintained. That is not to say that aggression, violence, and other things such as this would cease to exist, for such emotions are necessary evils and evolutionary traits that have protected man from external dangers throughout history. To do away with such vital survival instincts would be as Bostrom postulated in BC. However, it is to say that over time, as more and more people use these genetic enhancers to better life little by little, such emotional tendencies may eventually be controlled more commonly by pure, rational thought. Less fits of anger leading to the death of a cheating spouse, less acts done out of ignorance leading to the death or illness of several individuals, or less moments of a weakness of the will leading to addictions and regrettable mistakes. When we speak of CME, we speak of giving tools to those children who need them so they can experience those human emotions but control them better. BC therefore does not apply to CME.

IV. Sandel's Gift

Sandel moves us to the final counterargument that I wish to address. In his article "The Case Against Perfection,"⁷ Sandel argues for the need for natural birth or specifically, the gifts that come in the process of random selection. Any talent that we argue for, from athletics to memory, would not be considered gifts in a world wrought with genetic enhancement. Our will would be what dictates what can and cannot exist, leading to a lack of gifts and only the sense of our will permeating every aspect of our child's life.

It is in our admiration for those that have been at the bottom and have worked their way to the top that we see what we truly value: hard work. It doesn't matter to us whether the talent and the drive of the individual exists if it amounts to nothing at the end of the day. Sandel argues that genetic enhancements take away the necessary obstacles and hardships that make us who we are. It is through the "trial by fire" that we become more perfect; however, by removing the trial that comes with human imperfections, we become complacent and lack the fortitude towards perfection that comes through struggling against a greater power. He continues that in the case of an athlete that is genetically enhanced, we would not hold that person equal to many of the greats who worked their way from nothing to their current mass media fame. It is through the hard work of those individuals that they became as famous as they did. It is for that reason that we should not enhance our way past our trials and limitations. He concludes that in every case, genetic enhancement is impermissible and should not even be considered if we aren't also willing to lose those gifts that come through hard work and effort (Sandel).

There is a problem with this argument's application to CME. Enhancements that aim at choosing a set life for a child would clearly devalue the skills that are gained through the process of hard, incremental work. However, are we to think that in the case of moral enhancement that those who have it easier making moral decisions are, in fact, less moral than those who struggle to make those same decisions? Or better yet, is morality defined by our struggles in the process of choosing that which is right, or is it determined by us making the right choice? As such, to outline this argument more clearly, I will present some cases to help us understand whether it is our effort or our decision that makes our actions moral.

⁷ Does not have page numbers.

Case 1: I am a man with a predisposition towards anger to the point that I assault those that I disagree with. My violent tendencies have landed me in prison, and I have had my periods of rock bottom because of my inability to control myself, such as divorce. However, through therapy, some medication, and personal reflection, I was able to overcome this terrible aspect of my life and gain a level of patience that even my coworkers feel the need to mention and compliment.

Case 2: I have no predisposition towards anger, though on occasion I do yell when the situation calls for it. I did feel that even then I shouldn't have done that, so I have done my best to work on my patience and have succeeded to the level that *Case 1* has.

Case 3: I was genetically enhanced to have better control over my anger, giving me more cognitive tools to deal with my irrational anger and violent tendencies. This was done out of fear due to my father's tendencies to attack out of anger, abusing my mother. He is now in prison due to killing his neighbor over a borrowed shovel. In hopes of giving me the best life that was not ridden with the debilitating levels of anger that my father showed, my mother paid quite a bit of money to enhance me so that I didn't end up like my father. I did not have to struggle as much as *Case 1*, though it could be argued that I struggled as much or a little bit more than *Case 2*; however, the result was nonetheless the same as the two above.

Out of these three cases, which of them are to be considered more moral than the others? None of them. They are all equally moral because the outcome is the same and they all still struggle against basic human instincts. None of them kill in anger and they all become better moral agents that are respected by their colleagues. They completed their duty to society by being a moral agent. Sandel's argument does not apply to that which is moral for this reason. In the case of an athlete, the expectation to exceed to a professional level is not to be anticipated of every individual, for if that were the case, professional sports would cease to exist. However, in the case of morality, everyone is expected to the same level of moral action, e.g., to not kill or steal. We have the same expectation of every individual and every background to keep the laws of the land, and to do so does not make anyone special *per se*. So, in the case of moral enhancement, we can ignore Sandel's arguments and use his own arguments in support

of CME. If a child cannot reach the bare minimum moral bar, then it should be our obligation to help that child reach that level in hopes of limiting those predispositions that can prevent individuals from being a productive member of society.

That is also not to say that in our process of cleaning some of the branches and rocks in the pathway that we have cleaned every aspect of the path. The world is still a dark place, filled with disease and crime, and just because we have cleaned the child of cognitive problems that would have led to a certain immoral predisposition does not mean we have given the child a padded life . In fact, it just gives the child more mental resources to deal with the trials and tribulations that comes with living life in an imperfect world.

V. Conclusion

In conclusion, under all the discrimination from several sides of the genetic enhancement community, the CME proposed by Rakić is the cleanest line we can draw for genetic enhancement. Not only that, but under APB, we are even obligated to enact CME in our own children's lives when the benefits outweigh the costs. Sandel's gift argument, though important when considering the use of instrumental enhancements, can be ignored under CME; the same can be said about BC and Massmann's relational autonomy arguments. Overall, genetic enhancement, when focused on opening the paths available to the child's future as expressed with CME, is permissible and even obligatory.

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