

AN ETHICAL EVALUATION OF SAVULESCUS CONCEPT OF HUMAN ENHANCEMENT IN RELATION TO GENE EDITING

By

Chidiebere Obi, PhD
Department of Philosophy
Nnamdi Azikiwe University, Awka
ccy.obi@unizik.edu.ng
&
Iheanacho Wisdom Chinaemerem
Department of Philosophy
Nnamdi Azikiwe University, Awka

Abstract

Throughout history, humanity has sought to enhance its existence and improve the human condition. In recent years, gene editing has emerged as a powerful tool for human enhancement, sparking ethical debates about its implications. Julian Savulescu, a leading bioethicist, advocates for the moral permissibility of genetic enhancement through technologies like clustered/ regularly Interspaced Short Palindromic repeats (CRISPR)/ CRISPR-associated protein 9 (cas 9) particularly under his principle of procreative beneficence. While his position presents a compelling case for improving human capacities, it also raises significant ethical concerns, including issues of safety, social inequality, the limits of enhancement, and its implications for human identity and dignity. This study critically examines the ethical dimensions of Savulescu's advocacy for human enhancement through gene editing, assessing both its strengths and its moral and philosophical challenges. This research employs an analytic method to evaluates key issues such as the risks of genetic modification, potential disparities in access, and the broader impact on what it means to be human. The findings reveal that while Savulescu's argument offers a persuasive justification for gene editing in some cases, unresolved ethical challenges particularly concerning fairness, long-term consequences, and the redefinition of human nature necessitate a cautious approach. This research recommends that government should establish regulatory Frameworks for limiting the essences that comes with human enhancement using genetic technologies.

Keywords: Julian Savulescu, gene editing, human enhancement, ethical evaluation.

INTRODUCTION

The pursuit of human enhancement has been a long standing goal in human history, driven by the desire to improve health, intelligence and overall wellbeing. The growing attention that gene-editing technologies like clustered regularly Interspaced Short Palindromic repeats (CRISPR)/Clustered associated protein 9 (Cas9) are receiving particularly for purposes extending beyond therapy into the realm of enhancing human capabilities—has prompted significant ethical inquiry. These developments raise pressing questions about the future of humanity, particularly regarding fairness, access, identity, and the risk of reviving new forms of eugenics. The ethical complexities surrounding these innovations have made it increasingly important to critically examine concepts such as Julian Savulescu's view on human enhancement and the moral implications that follow.

Gene editing, as a prominent example of human enhancement research, constitutes the central focus of this research, as it entails the intentional alteration of the human genome to prevent inherited diseases, optimize biological functioning, and potentially enhance cognitive, physical, or emotional traits beyond the bounds of natural human variability. With advancements in genetic engineering, particularly gene-editing technologies like Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)/CRISPR-associated

protein 9 (Cas9), this vision is becoming increasingly feasible.

According to Giubilini and Sanyal in the edited book *The Ethics of Human Enhancement* (2018), human enhancement refers to any kind of genetic, biomedical, or pharmaceutical intervention aimed at improving human dispositions, capacities, and well-being, even when there is no pathology to be treated.¹ Human enhancement has become a central topic in contemporary bioethics, especially with the rapid development of genetic engineering and biotechnology. In their seminal work *Human Enhancement* (2009), Julian Savulescu and Nick Bostrom explore the ethical, philosophical, and practical implications of using biomedical interventions to modify human capabilities. They describe human enhancement as the application of medicine and technology to reshape, manipulate, and improve human biology, even in individuals without medical conditions.²

Advancements in gene editing, particularly CRISPR-Cas9, have revolutionized our ability to modify the human genome by removing, replacing, or adding parts of the DNA sequence in living cells. According to *CRISPR: Genome Editing and Engineering: And Related Issues*, CRISPR has been described as a “word processor for editing the genome” and a “molecular scalpel” because it enables researchers to quickly and easily modify DNA.³ CRISPR technology can be used to edit the genome in a patient’s cells to repair, resist, and combat viral infections like cancer, as well as to cure genetic diseases.⁴ It can also prevent hereditary diseases from being passed from parents to offspring by modifying genes in sperm and eggs, thereby preventing the transmission of genetic disorders.⁵

While CRISPR was initially developed for therapeutic purposes in treating genetic v, its ability to modify human genes has raised ethical concerns about genetic selection and enhancement. This has reignited debates about eugenics, a concept historically associated with selective breeding to improve human traits. According to C. Obi, “Eugenics started as a preconceived scientific agenda to propagate selected humans that possessed the desired traits as against others who are deemed fit to extinct.”⁶ However, contemporary bioethicists, such as Julian Savulescu, argue for a refined form of eugenics, one based on individual choice rather than coercion. According to Savulescu and Harris, cited by Robert Sparrow, “the horrors associated with the old eugenics should not prevent us from embracing the opportunities offered by recent advances in the biological sciences.”⁷ Unlike past eugenic movements, modern liberal eugenics emphasizes individual choice and the principle of procreative beneficence.

Eugenic selection of embryos is now possible through in vitro fertilization (IVF) and preimplantation genetic diagnosis (PGD). In Obi’s work “Issues in Ethics,” Dayal B. States that “Preimplantation genetic testing is a technique used to identify genetic defects in embryos created through in vitro fertilization (IVF) before pregnancy.”⁸ PGD is currently used to detect chromosomal abnormalities or inherited genetic conditions, but it could, in principle, be used to select for any genetic traits, such as hair or eye colour. Savulescu, in his paper “The Principle of Procreative Beneficence,” addresses the ethics of PGD. He argues that “couples (or single reproducers) should select the child, of the possible children they could have, who is expected to have the best life, or at least as good a life as the others, based on the relevant, available information.”⁹ This implies that parents have a moral obligation to select embryos most likely to have the best possible life in terms of health, intelligence, and other advantageous characteristics. This principle has been widely debated, particularly regarding its implications for inequality, social justice, and long-term societal effects.

Savulescu defends enhancement technologies like CRISPR-Cas9, arguing that they are not only inevitable but also morally permissible. He is a leading advocate of the Principle of Procreative Beneficence (PPB), contending that parents have a duty to select the best possible genetic traits for their offspring to ensure they have the greatest opportunity for a flourishing life. His arguments are grounded in utilitarian principles, which prioritize the maximization of well-being. However, while Savulescu’s ideas present a compelling case for enhancement, critics such as Michael Sandel, in his book “The Case Against Perfection,” argue that genetic modification undermines the giftedness of human life. Sandel states:

“The ethic of giftedness, under siege in sports, persists in the practice of parenting. But here, too, bioengineering and genetic enhancement threaten to dislodge it. To appreciate children as gifts is to accept them as they come, not as objects of our design, or products of our will, or instruments of our

ambition. Parental love is not contingent on the talents and attributes the child happens to have. We choose our friends and spouses at least partly on the basis of qualities we find attractive. But we do not choose our children. Their qualities are unpredictable, and even the most conscientious parents cannot be held wholly responsible for the kind of child they have. That is why parenthood, more than other human relationships, teaches what the theologian William F. May calls an ‘openness to the unbidden.’”¹⁰

This statement emphasizes that children should be accepted as they are rather than as designed products. Unlike friendships or romantic relationships, where we choose people based on qualities we admire, children are not chosen, they are gifts.

Savulescu and Bostrom, in their edited book *Human Enhancement* (2009), describe the divide between transhumanists and bioconservatives in the debate on human enhancement. They state:

“Already one can detect a biopolitical fault line developing between pro-enhancement and anti-enhancement groupings: transhumanists on one side, who believe that a wide range of enhancements should be developed and that people should be free to use them to transform themselves in quite radical ways; and bioconservatives on the other, who believe that we should not substantially alter human biology or the human condition.”¹¹

This highlights the growing ethical and political polarization in discussions on gene editing. While transhumanists view enhancement as a moral imperative, bioconservatives caution against potential threats to human dignity and natural evolution.

This project aims to analyze the ethical implications of Julian Savulescu’s concept of human enhancement through gene editing, looking at both its potential benefits and moral risks. It will focus on key ethical concerns such as equity, human identity, human dignity, and normalcy, helping to understand the broader issues surrounding genetic enhancement.

The enhancing of human mental and physical capacities above normal upper limits through gene editing technologies particularly CRISPR-CAS9 has been enthusiastically embraced by several leading bioethicists and philosophers. Julian Savulescu, a leading advocate of genetic enhancement, argues that it is not only permissible but morally obligatory for parents to select the best possible parts for their offspring through genetic modification. His principle of procreative beneficence holds that if we can enhance human capability we should do so to maximize wellbeing.

On the contrary, this view raises significant ethical concerns regarding autonomy, equity, human identity, human dignity and the potential futuristic consequences of such enhancement. The rapid advancements in gene editing technologies, have sparked ethical and societal concerns. Which its debate poses the question: where should the line between preventing genetic diseases and enhancing human beyond natural variation be drawn? To what extent can genetic enhancement be accessible to the less privileged? Does genetic enhancement contribute to the commodification of human life? Does it impact the natural variability that defines human identity, dignity and diversity? Could genetic selection through enhancement technologies lead to a revival of eugenics?

The above questions define the philosophical standpoints of the ethical philosophers like the pro-enhancement and anti-enhancement.

However, by critically evaluating Savulescu’s concept of Human Enhancement through gene editing, assessing its ethical justifications and potential risks, this work through a comparative analysis aims to provide a balanced ethical appraisal of genetic enhancement in contemporary bioethics.

This research aims to critically analyse Julian Savulescu’s concept of Human Enhancement through gene editing; evaluating its implication, benefit and risks. It seeks to ethically checkmate the moral boundaries between therapeutic and non-therapeutic genetic modification, addressing concerns such autonomy, human identity, human dignity and the potential consequences of genetic selection.

This study provides an ethical evaluation of Julian Savulescu’s arguments on human enhancement through gene editing. It examines the role of CRISPR-CAS9 in genetic modification, the distinction between therapeutic and enhancement application (non therapeutic) and the broader implications for society. This

study will rationally assimilate ethical branches in philosophy in other to provide a nuanced understanding of the moral dimensions surrounding human enhancement through genetic modification.

THE REVOLUTION OF GENE EDITING

Genome editing as a technique has made a way for a new concept that allows us to manipulate the genome sequence for different purposes.²¹ The field of biotechnology has witnessed a revolution with the development of engineered and programmable enzymes for the modification of DNA sequences despite the extensive research and interest in gene therapy and genome editing over the years.²²

The advent of gene editing portrays a profound revolution in the biomedical sciences, ushering in new possibilities for altering the human genome with unprecedented precision. CRISPR technology, that was gotten from the defense system of some bacteria against viruses and plasmids, has sparked a renaissance in gene editing since it's emergence in 2012.²³ At the forefront of this transformation, CRISPR-Cas9 technology, a genome editing tool that allows scientists to target specific sections of DNA and either remove, insert or modify genetic material, empowering scientists to correct genetic defects, prevent hereditary diseases, and potentially enhance human traits.

Gene editing differs fundamentally from earlier genetic interventions in both scope and precision contrary to traditional genetic modification techniques that were. Largely limited to somatic cells and afflicted by off- target effects, CRISPR makes it possible for targeted edits at the embryonic level specifically within the germ line, which cause such changes inheritable by the future generation. It's relative efficiency, low cost, ease of use and it's potential to make edits several sites in the genome in a single procedure has made it widely known.²⁴

In 1974, Jaenisch was the first to create a transgenic mouse containing foreign genetic material, and fifteen years later, he made headlines again by being one of the first to adopt the Noble prize- winning technique, but his success with CRISPR spotlighted a new technology that did not only supplanted the old approach but suggested a way to seamlessly edit the genome of other animals too.²⁵ However, though adult Homo sapiens are among the last animals to be treated with CRISPR, human cells is potentially subjected to more CRISPR gene editing than those of any other organism.²⁶

PRINCIPLE OF PROCREATIVE BENEFICENCE

Savulescu ethical framework on human enhancement is the principle which he calls “ Procreative Beneficence” which implies the moral obligation to have the best children, it was articulated most clearly in his 2001 article” Procreative Beneficence: why we should select the best children. Savulescu’s argues that “couples (or single reproducers) should select the child, of the possible children they could have, who is expected to have the best life, or at least as good a life as others based on the relevant, available information”²⁷ This implies that couples should use genetic testing for non-disease traits in selecting which child to bring into existence and they should consider selection for non- disease genes in some cases even if it exacerbates social inequality.²⁸ Hence, the goal of this principle is quite different from the traditional notions of reproductive liberty which introduces a duty- oriented ethic rooted in consequentialist reasoning , which is to prevent harm, but to actively promote wellbeing.

RISKS AND BENEFITS OF GENE EDITING

Gene editing technology in its nature has the power to heal and harm which it's capacity to harm lies at the heart of the ethical evaluation of human enhancement. While the potential benefits are significant and even transformative, the risks, both biological and moral, are equally weighty. Gene editing and its rapid advancement calls for careful balancing of its promises against its perils, especially when applied beyond therapeutic aims to the enhancement of future generations.

One of the most immediate benefits of gene editing is its capacity to prevent and treat inherited diseases. “The field of genome editing holds great promise in preventing viral infections and their replication.”²⁹ Diseases such as sickle cell anaemia and muscular dystrophy can be treated or cured by editing.³⁰ This therapeutic promise aligns well with traditional medical ethics, which emphasize the prevention of suffering and the restoration of health.

In the context of human enhancement, however, the benefits are more complex and speculative. Advocates like Julian Savulescu argue that enhancing cognitive function, physical ability, or moral disposition could lead to individual flourishing and societal progress.³¹ For instance, a society in which people are genetically predisposed to greater empathy or higher intelligence might exhibit lower crime rates, more equitable cooperation, and faster scientific and technological advancement. In Savulescu's view, to refrain from using safe and effective enhancement tools when available could constitute a moral failing similar to denying a child access to education or nutrition.

Moreover, if gene editing was made universally accessible it would have mitigated social inequalities. By lifting the biological limits that predispose individuals to disadvantage, it could become a means of achieving greater social justice. This egalitarian application, however, remains largely hypothetical, as the actual distribution of biotechnological advances often mirrors and deepens existing differences.

Notwithstanding these potential benefits, the risks of gene editing are considerable and cannot be ignored. At the biological level, concerns persist over off-target effects, mosaicism, and unintended consequences that could emerge only after years or generations. Editing the germline brings permanent changes not just to an individual, but to their descendants, raising the ethical stakes of error or unforeseen outcomes. As the Nuffield Council on Bioethics cautions, such interventions must be approached with humility and restraint, especially in the absence of long-term safety data.³²

HUMAN IDENTITY, DIGNITY, AND NORMALCY

The debate on human enhancement through gene editing inevitably raises profound questions about the essence of human identity; what it means to be human and the preservation of human dignity as a moral and social value. Proponents of enhancement, such as Nick Bostrom, argue that altering genetic traits does not necessarily undermine identity but can be seen as a continuation of humanity's age-old pursuit of self-improvement through education, medicine, and technology.³³ Critics, however, fear that genetic interventions could create a discontinuity between present and future generations, making individuals feel alienated from their "authentic" selves.³⁴

Human dignity is often invoked as a normative barrier to certain forms of enhancement. Philosophers like Leon Kass contend that dignity is rooted in accepting the natural limits of human life, and that manipulating the genome risks instrumentalizing persons, reducing them to products of design.³⁵ From this view, dignity demands respect for the given nature of human existence, and crossing certain biological thresholds might amount to treating human beings as mere objects of technical control. This concern overlaps with normalcy debates, where enhancement could redefine what counts as "normal," potentially stigmatizing those who do not undergo enhancement and pressuring individuals to conform to newly established biological standards.³⁶

Jürgen Habermas emphasizes that genetic interventions especially those carried out prenatally can affect an individual's perception of their autonomy, as they may see aspects of their identity as the intentional result of another's will.³⁷ If societal norms evolve to view certain enhanced traits as the new standard, unenhanced individuals could experience a loss of self-worth, intensifying social inequalities. Thus, the interplay between identity, dignity, and normalcy highlights the ethical imperative to critically evaluate not just the safety or feasibility of enhancement technologies, but also their deeper anthropological and social consequences.

CONCLUSION

In evaluating human enhancement in relation to gene editing, it becomes clear that the promise of eliminating diseases, expanding human potential, and improving quality of life is undeniably compelling. However, the transformative power of such technologies demands more than scientific capability it requires moral wisdom, humility, and an unwavering commitment to human dignity. True progress is not measured merely by how far we can push the boundaries of biology, but by how carefully we safeguard the values that define our shared humanity. If enhancement is to serve as a tool for flourishing rather than a driver of division, it must be pursued within a framework that respects autonomy, ensures fairness, and preserves the integrity of human identity. The challenge before us is not simply to decide whether we can reshape the human condition,

but to determine how to do so in ways that honour the moral fabric of our societies and the inherent worth of every person.

REFERENCES

1. Giubilini, Alberto & Sanyal, Swetaprovo. "The Ethics of Human Enhancement," in Savulescu, Julian & Steve et al (Eds.), *The Ethics of Human Enhancement: Understanding the Debate* (USA: Oxford University Press, 2016) .1.
2. Julian Savulescu et al (eds.) "*Human Enhancement*" (USA: Oxford University Press Inc, 2009) .1.
3. Julie Mellors (ed) "*CRISPR: Genome Editing and Engineering: and Related Issues*" (USA: Gale, Cengage Company) .14.
4. Mellors, "*CRISPR*", 14.
5. Mellors, 15
6. C. Obi, *Issues in Ethics: An Appraisal of Some Selected Ethical Issues And Their Nigerian Perspective*, (Nigeria: Dolivel Publishers, 15.
7. Robert Sparrow, "A Not-So-New Eugenics: Harris and Savulescu on Human Enhancement," *Hastings Center Report*, 41 (2011):32.
8. Obi, *Issues in Ethics*, 18.
9. Julian Savulescu, "Procreative Beneficence: Why We Should Select The Best Children," *Blackwell Publishers LTD*, 15 (2001): 415
10. M.J. Sandel, *The Case Against Perfection: Ethics in the Age of Genetic Engineering*, (USA: Library of Congress Cataloguing in Publication Data, 2007), 45
11. Giubilini and Sanyal, "*The Ethics of Human Enhancement*," 1
12. Giubilini and Sanyal, 1
13. Merriam-Webster, "Gene-editing" <https://www.merriam-webster.com>, (12/04/2025)
14. Cambridge University Press.(n.d) "Transhumanism" [https:// dictionary.cambridge.org](https://dictionary.cambridge.org) (12/04/2025)
15. <https://en.m.wiktionary.org/wiki/bioconservatism>
16. <https://www.lawinsider.com/dictionary/non-therapeutic>
17. Ingmar Persson and Julian Savulescu, *Unfit for the Future: The Need for Moral Enhancement* (Oxford: Oxford University Press, 2012), vii
18. Julian Savulescu, "The Uehiro Chair in Practical Ethics," *University of Oxford*, accessed May 29, 2025, <https://www.practicaethics.ox.ac.uk>.
19. University of Melbourne, "Professor Julian Savulescu," *Faculty of Medicine, Dentistry and Health Sciences*, accessed May 29, 2025, <https://mdhs.unimelb.edu.au>.
20. Julian Savulescu " National University of Singapore, Faculty of law (<https://law.nus.edu.sg/people/julian-savulescu/#>). Accessed June 15, 2025.
21. Nishant Ranjan, Pallavit Lata and Shristi, et al, "Gene editing: Revolution for genome modification and it's scope in health care research," *Pharma Innovation Journal* 12, no.7 (2023):280.
22. Nishant Ranjan, Pallavit Lata and Shristi, et al, 280.
23. Nishant Ranjan, Pallavit Lata and Shristi, 281.
24. Nuffield council on Bioethics "*Genome editing and human production: social and ethical issues*" (Nuffield council on Bioethics, London, 2018), 3.
25. Jennifer A. Doudna and Samuel H. Sternberg, "*A Crack in Creation: Gene editing and the unthinkable power to control evolution*," (New York: Houghton Mifflin Harcourt publishing company, 2017), 96.
26. Doudna, *A Crack in Creation*, 98.
27. Savulescu, "Procreative Beneficence," 415.
28. Savulescu, 415.
29. Nishant Ranjan, Pallavit Lata and Shristi, et al, "Gene editing," 282.
30. Nishant Ranjan, Pallavit Lata and Shristi, et al, 282.
31. Julian Savulescu, "Procreative Beneficence" 415.
32. Nuffield Council on Bioethics, *Genome Editing and Human Reproduction*, 112–113.

33. Nick Bostrom, *Human Enhancement* (Oxford: Oxford University Press, 2009), 11.
34. Erik Parens, "Authenticity and Ambivalence: Toward Understanding the Enhancement Debate," *Hastings Center Report* 35, no. 3 (2005): 36.
35. Leon R. Kass, "Ageless Bodies, Happy Souls: Biotechnology and the Pursuit of Perfection," *The New Atlantis* 1 (Spring 2003): 13.
36. Michael J. Sandel, *The Case Against Perfection: Ethics in the Age of Genetic Engineering* (Cambridge, MA: Harvard University Press, 2007), 54.
37. Jürgen Habermas, *The Future of Human Nature* (Cambridge: Polity Press, 2003), 63.