

Introduction

A political turn to the genetic enhancement debate

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Genetic enhancement – the use of emerging technologies to improve non-pathological traits with a genetic contribution (Rueda, 2022) – has been a prolific topic in bioethics literature in recent decades (Parfit, 1984; Kass, 1985; Buchanan et al., 2000; Habermas, 2003; Sandel, 2007; Anomaly, 2020; Anomaly & Johnson, 2023). Recently, innovations in genetic and genomic technologies have revived this controversial debate. Novel genome editing techniques such as CRISPR-Cas allow us to alter an organism's DNA, bringing us closer than ever to the possibility of improving traits that are not related to disease prevention (Baylis, 2019). Personal genome sequencing and predictive genetic tests have the potential to enable the prevention of numerous medical risks. Genome sequencing can play a crucial role in minimizing risks relating to reproduction, particularly through Preimplantation Genetic Diagnosis (PGD) and the selection of embryos. These and related technologies, however, could have many uses beyond therapeutic applications.

These emerging technologies may shape the societies of tomorrow. While they are open to legal, ethical and scientific challenges, rapidly evolving genetic technologies have the capacity to bring about a significant transformation to various aspects of our lives. Particularly in healthcare, where gene editing is likely to encounter its most significant initial applications – particularly around gene therapies – these genetic technologies not only offer the potential to drastically improve our ability to predict, prevent and treat disease, but in the future may also enable the enhancement of normal capabilities of healthy people.

The aspiration to improve hereditary traits in humans, now modulated by the constant evolution of genomic science and genetic technologies, has been a central topic of conversation since the first developments in our understanding of genes (Sparrow, 2022). Despite the reluctance of gene editing advocates to use the term, the association with the eugenics movement is too obvious to dodge (Buchanan et al., 2000: 345; de Melo-Martín & Goering, 2022). The

fundamental distinction between the eugenics movement of the late 19th and early 20th centuries and the present genetic enhancement movement lies in the emphasis of the latter on reproductive freedom. Instead of imposing specific reproductive policies, proponents of contemporary non-therapeutic gene technologies champion the freedom of choice within a liberal framework (Agar, 1998, 2004; Anomaly, 2018; Glover, 2006; Savulescu, 2001). This liberal framework may have inadvertently shifted the political discussion on enhancement to the individual ethical sphere. It can be argued that, in recent decades, there has been a prevalence of ethical approaches in the genetic enhancement debate. For example, one of the predominant lines of discussion has been whether parents have moral obligations to enhance their children (Brennan, 2023; Harris, 2009; Savulescu, 2001, 2005). While such discussions are extremely important, they miss an important point. Genetic enhancement has political implications that precede the ethical dilemmas that prospective parents may encounter in their reproductive decisions. One of the greatest fears regarding genetic technologies is that they could exacerbate current economic and social problems. Genetic technologies would allow the rich and privileged to reinforce their economic and social advantages with genetic ones (Habermas, 2003; Mehlman, 2003), paving the way for genetic-based inequalities in society. Others have argued that genetic enhancement could benefit the least well-off if it were made affordable to everyone through subsidies (Allhoff, 2005; Dunlop & Savulescu, 2014). All these topics are highly political, and the enhancement debate should not forget about this level of discussion.

Many authors, and to some extent the public, assume that a genetic enhancement revolution will happen soon, or is already under way (Alonso, 2024; Juengst, 2017; Silver, 1997). However, if this is true, we must prepare not only ethically but also socially and politically. Before individuals come to confront vividly the moral quandaries of genetic enhancement, our institutions (as political agents) will have to address them. In fact, genetic enhancement depends on the development of emerging technologies that may still be subject to different types of governance and regulation, depending on very diverse democratic, political and socio-economic interests. In this regard, it will be crucial to have enough time to align gene editing developments with the broader concerns and interests of the public. This task will be a matter of knowledge dissemination, social discussion and institutional design, among many others.

Given the above, this special issue seeks to make a significant contribution to the political dimension of the genetic enhancement debate, highlighting some of the latest topics of discussion, such as the global governance of these genetic technologies. Traditional debates, such as the impact of genetic technologies on freedom, will also be addressed through new lenses. Moreover, other underexplored perspectives in the human enhancement debate, such as political cosmopolitanism, will also provide a fruitful new approach. All in all, the articles collected here aim to deepen the philosophical analysis of the socio-political aspects of genetic enhancement technologies.

Javier Rodríguez-Alcázar and Lilian Bermejo-Luque (2024) open this special issue with “Human enhancement technologies and the arguments for cosmopolitanism”. This paper is outstanding in its justification of the need for a political perspective in the debate on genetic enhancement, as it follows the line of ‘political minimalism’ argued in previous contributions. Political minimalism advocates the adoption of a genuinely political perspective in social debates, including human enhancement, to overcome some limitations in ethical analyses (Rodríguez-Alcázar, 2016, 2017a, 2017b). Undoubtedly, beyond ethical normativity, genetic enhancement technologies should be analyzed from the perspective of political normativity. In their thought-provoking and original article, Rodríguez-Alcázar and Bermejo-Luque argue that cosmopolitanism is a fruitful theoretical perspective to analyze the normative political problems generated by human enhancement. Interestingly, the authors argue that global humanity should be taken as the political community of reference, not only on issues such as poverty or climate change but also on the concrete impacts of enhancement technologies.

The second article in the issue, by Marcos Alonso (2024), is “Post genetic revolution dynamics. How will modified and unmodified humans coexist?”. Alonso’s contribution starts by arguing that the genetic revolution, the advent of a series of highly transformative and disruptive genetic technologies, will happen in the coming decades. There are, however, many uncertainties regarding how this revolution will unfold, particularly at a societal level. The article first explores the likely routes that will pave the way for this genetic revolution, and how the different scenarios might inform their respective social responses. Subsequently, the article briefly examines the main ethical and social challenges associated with the implementation of genetic technologies, with a particular emphasis on issues relating to inequalities and collective action problems. Finally, using Ecuador as an example of a multi-ethnic society, the article outlines potential social dynamics that may emerge in a post genetic revolution scenario, such as: modified-unmodified hierarchical relationships, struggles for identification, dynamics of inclusion-exclusion, identity movements, and problems relating to inequality in job opportunities, healthcare and access to education. Overall, Alonso underscores the importance of addressing these socio-political challenges in advance, to avoid social crises and to mitigate the most severe consequences of the genetic revolution.

The third paper is an overview by Jon Rueda Etxebarria (2024) entitled “The global governance of genetic enhancement technologies: Justification, proposals, and challenges”. It offers a critical introduction to the initiatives that seek to govern genetic enhancement technologies at the global level. Certainly, human genetic enhancement generates challenges that transcend national borders. In his philosophical analysis of the global approach, Rueda discusses some of the important reasons for adopting an international framework for genetic enhancement technologies beyond nation-states. He then gives a summary of the major proposals that have emerged in recent years to facilitate the global governance of genetic enhancement. Finally, he looks at a

number of constraints that reduce, but do not eliminate, enthusiasm for the global governance of innovations that could improve the genetic make-up of humans.

The next contribution is “Liberal eugenics, coercion and social pressure”, by Blanca Rodríguez López (2024). In this article, Rodríguez tackles the accusation directed at genetic technologies, and particularly at genetic prenatal enhancement, of being a new form of eugenics. The article first distinguishes between the new liberal eugenics and the old eugenics, analyzing their respective characteristics and the traditional criticism directed towards eugenics. After that, the main subject of the paper is presented: the objection regarding pressure, an objection that questions the liberal nature of these new genetic technologies. Liberal eugenics could end up being not really liberal if choices are not really free; a position some authors think will arise from the new genetic reproductive technologies. The third and fourth sections are dedicated to delivering a thorough and convincing response to this objection. First, clarifying what pressure this objection refers to, and what agents could actually exert this pressure. Then, it analyzes how the concepts of freedom, coercion, autonomy and voluntary choice are related. Finally, Rodríguez López reformulates the objection, arguing that genetic enhancement does not limit reproductive freedom in any major sense.

In her article, “La libertad de elegir o la tiranía de la mejora”, [*Freedom to choose or the tyranny of enhancement*], Lydia Feito (2024) explores some of the new ethical issues that arise with genetic and cognitive enhancement, which might affect cognitive freedom and identity. Through a lengthy discussion of many of the literature’s main topics, the article provides a comprehensive picture of the enhancement debate. The article also raises questions about the alteration of individual identity, the consequences of such transformations, and the implications of modifying human traits at will. Feito concludes by urging a thoughtful approach to human enhancement, emphasizing the importance of promoting moral autonomy, responsible decision-making, freedom and justice, and of avoiding introducing greater inequalities. She questions whether the pursuit of enhancement might inadvertently lead to societal dehumanization and tyranny, advocating for caution, and prioritizing the well-being of the most vulnerable over perfectionistic endeavors. Ultimately, she poses the open question of whether technological means are the best way to enhance humanity and fulfil moral obligations.

The last article of the special issue is by Pablo Neira Castro, and is titled “De la biomejora moral a la IA para la mejora moral: asistentes morales artificiales en la era de los riesgos globales” (*From moral bio-enhancement to AI for moral enhancement: Artificial moral assistants in the age of global risks*). Neira Castro focuses on a specific type of human enhancement: moral enhancement. The author argues that the use of biotechnologies (which commonly include, in addition to genetic innovations, neurotechnologies and pharmacological methods) are deficient means of moral enhancement. Given the difficulties of biotechnologies, Neira Castro argues that artificial intelligence (AI) offers an

ethically superior potential for moral enhancement. In particular, Neira Castro discusses in depth the concrete proposal of SocrAI, an AI-based assistant that would be designed to enhance deliberative skills through moral conversation (Lara & Deckers, 2020; Lara, 2021; see also, Rodríguez-López & Rueda, 2023; del Valle et al., 2024). Neira Castro concludes that, in evaluating moral enhancement projects through technologies, it is essential to address structural and institutional factors such as political and socioeconomic norms or incentives.

This issue closes with an interview with James Hughes by Murilo Vilaça, Murilo Karasinski and Jon Rueda Etxebarria, entitled “Technological progress, unemployment and universal basic income: An interview with democratic transhumanist James Hughes” (Vilaça et al., 2024). James Hughes is a renowned sociologist, researcher and executive director, and co-founder of the Institute for Ethics and Emerging Technologies. He is a pioneering thinker on the political problems of human enhancement technologies, and famously advocated a “social democratic transhumanism” at the turn of the century (Hughes, 2004). In this interview, Hughes reflects on some of the transformations linked to disruptive technologies, especially linked to the issues of social progress, technology-induced unemployment, and universal basic income.

We hope that this monograph will encourage future philosophical contributions regarding the need to deepen the political aspects of human enhancement technologies. As genetic enhancement is a future-oriented debate, these issues will likely gain further momentum in the coming decades. Modifying human genetic make-up beyond therapeutic purposes not only raises stimulating ethical questions, but also forces us to think about the political normativity of these emerging technologies. This special issue will help us to take seriously this political turn, advancing the discussion on the future of genetic enhancement.

Bibliographical references

- AGAR, Nicholas (1998). “Liberal eugenics”. *Public Affairs Quarterly*, 12 (2), 137-155.
- (2004). *Liberal Eugenics: In Defence of Human Enhancement*. Malden, MA: Blackwell Publishing.
- ALLHOFF, Fritzz (2005). “Germ-line genetic enhancement and Rawlsian primary goods”. *Kennedy Institute of Ethics Journal*, 15 (1), 39-56.
- ALONSO, Marcos (2024). “Post genetic revolution dynamics. How will modified and unmodified humans coexist?”. *Enrahonar*, 72, 35-54.
<<https://doi.org/10.5565/rev/enrahonar.1527>>
- ANOMALY, Jonathan (2018). “Defending eugenics: From cryptic choice to conscious selection”. *Monash Bioethics Review*, 35 (1-4), 24-35.
<<https://doi.org/10.1007/s40592-018-0081-2>>
- (2020). *Creating Future People: The Ethics of Genetic Enhancement*. London: Routledge.

- ANOMALY, Jonathan & JOHNSON, Tess (2023). "The ethics of genetic enhancement: Key concepts and future prospects". In: F. JOTTERAND & M. IENCA (eds.). *The Routledge Handbook of the Ethics of Human Enhancement*. London: Routledge, 145-153.
- BRENNAN, Jason (2023). "Genetic Enhancement: Just Say Yes". In: G. J. ROBSON & J. Y. TSOU (eds.). *Technology Ethics: A Philosophical Introduction and Readings* London: Routledge, 261-269.
- BAYLIS, Françoise (2019). *Altered inheritance: CRISPR and the ethics of human genome editing*. Cambridge, MA: Harvard University Press.
- BUCHANAN, Allen; BROCK, Dan; DANIELS, Norman & WILKER, Daniel (2000). *From Chance to Choice: Genetics and Justice*. Cambridge: Cambridge University Press.
- DEL VALLE, Ignacio; LLORCA, Joan & RUEDA, Jon (2024). "Ethics of Virtual Assistants". In: LARA, FRANCISCO & DECKERS, Jan (eds.). *Ethics of Artificial Intelligence*. Springer: Cham, 87-117
<https://doi.org/10.1007/978-3-031-48135-2_5>
- DE MELO-MARTÍN, Inmaculada & GOENING, Sara (2022). "Eugenics". In: *The Stanford Encyclopedia of Philosophy*. Retrieved from <<https://plato.stanford.edu/archives/sum2022/entries/eugenics/>> [accessed 29 January 2030].
- DUNLOP, Mikael & SAVULESCU, Julian (2014). "Distributive justice and cognitive enhancement in lower, normal intelligence". *Monash Bioethics Review*, 32 (3-4), 189-204.
- FEITO, Lydia (2024). "La libertad de elegir o la tiranía de la mejora". *Enrahonar*, 72, 91-111.
<<https://doi.org/10.5565/rev/enrahonar.1531>>
- GLOVER, Jonathan (2006). *Choosing Children: Genes, Disability, and Design*. Oxford: Oxford University Press.
- HABERMAS, Jürgen (2003). *The future of human nature*. Cambridge: Polity Press.
- HARRIS, John (2009). "Enhancements are a moral obligation". In: SAVULESCU, Julian & BOSTROM, Nick (eds.). *Human Enhancement*. Oxford: Oxford University Press, 131-154.
- HUGHES, James (2004). *Citizen cyborg: Why democratic societies must respond to the redesigned human of the future*. Boulder, CO: Basic Books.
- JUENGST, Eric T. (2017). "Crowdsourcing the Moral Limits of Human Gene Editing?". *Hastings Center Report*, 47 (3), 15-23.
<<https://doi.org/10.1002/hast.701>>
- KASS, Leon (1985). *Toward a More Natural Science: Biology and Human Affairs*. New York: Free Press.
- LARA, FRANCISCO (2021). "Why a virtual assistant for moral enhancement when we could have a Socrates?" *Science and engineering ethics*, 27 (4), 42.
- LARA, FRANCISCO & DECKERS, Jan (2020). "Artificial intelligence as a Socratic assistant for moral enhancement". *Neuroethics*, 13 (3), 275-287.
- MEHLMAN, Maxwell J. (2003). *Wondergenes: Genetic enhancement and the future of society*. Bloomington: Indiana University Press.

- NEIRA CASTRO, Pablo (2024). “De la biomejora moral a la IA para la mejora moral: asistentes morales artificiales en la era de los riesgos globales”. *Enrahonar*, 72, 113-138.
<<https://doi.org/10.5565/rev/enrahonar.1522>>
- PARFIT, Derek (1984). *Reasons and Persons*. Oxford: Oxford University Press.
- SANDEL, Michael (2007). *The case against perfection: Ethics in the age of genetic engineering*. Cambridge, MA: Belknap Press.
- SAVULESCU, Julian (2001). “Procreative beneficence: Why we should select the best children”. *Bioethics*, 15 (5-6), 413-426.
<<https://doi.org/10.1111/1467-8519.00251>>
- (2005). “New breeds of humans: the moral obligation to enhance”. *Reproductive BioMedicine Online*, 10 (Suppl 1), 36-39.
- SILVER, Lee M. (1997). *Remaking Eden: How Genetic Engineering and Cloning Will Transform the American Family*. New York: HarperCollins Publishers.
- SPARROW, Robert (2022). “Human germline genome editing: On the nature of our reasons to genome edit”. *The American Journal of Bioethics*, 22 (9), 4-15.
- RODRÍGUEZ-ALCÁZAR, Javier (2016). “Tecnologías de mejora humana, ¿ética o política?”. *Gazeta de Antropología*, 32 (2), 5.
- (2017a). “Beyond realism and moralism: A defense of political minimalism”. *Metaphilosophy*, 48 (5), 727-744.
- (2017b). “Political Minimalism and Social Debates: The Case of Human-Enhancement Technologies”. *Journal of Bioethical Inquiry*, 14 (3), 347-357.
- RODRÍGUEZ-ALCÁZAR, Javier & BERMEJO-LUQUE, Lilian (2024). “Human enhancement technologies and the arguments for cosmopolitanism”. *Enrahonar*, 72, 15-33.
<<https://doi.org/10.5565/rev/enrahonar.1489>>
- RODRÍGUEZ LÓPEZ, Blanca (2024). “Liberal eugenics, coercion and social pressure”. *Enrahonar*, 72, 73-89.
<<https://doi.org/10.5565/rev/enrahonar.1520>>
- RODRÍGUEZ-LÓPEZ, Blanca & RUEDA, Jon (2023). “Artificial moral experts: Asking for ethical advice to artificial intelligent assistants”. *AI and Ethics*, 3, 1371-1379.
<<https://doi.org/10.1007/s43681-022-00246-5>>
- RUEDA, Jon (2022). “From Self-Determination to Offspring-Determination? Reproductive Autonomy, Procrustean Parenting, and Genetic Enhancement”. *Theoria* (Sweden), 88 (6), 1086-1110.
- (2024). “The global governance of genetic enhancement technologies: Justification, proposals, and challenges”. *Enrahonar*, 72, 55-71.
<<https://doi.org/10.5565/rev/enrahonar.1519>>
- VILAÇA, Murilo; KARASINSKI, Murilo & RUEDA, Jon (2024). “Technological progress, unemployment and universal basic income: An interview with democratic transhumanist James Hughes”. *Enrahonar*, 72, 139-154.
<<https://doi.org/10.5565/rev/enrahonar.1543>>