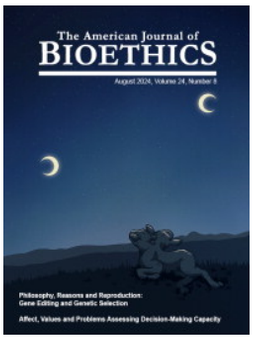


Taylor & Francis
Taylor & Francis Group

The American Journal of Bioethics

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/uajb20

Gene Editing vs. Genetic Selection

Ralf Bader

To cite this article: Ralf Bader (2024) Gene Editing vs. Genetic Selection, The American Journal of Bioethics, 24:8, 31-34, DOI: 10.1080/15265161.2024.2361883

To link to this article: https://doi.org/10.1080/15265161.2024.2361883

chapters 3 and 4). Rather, we should do what McMahan and Savulescu have done in their discussion: carefully identify and unpack competing views along with the considerations that favor or disfavor them, and evaluate those views with eyes wide open. Work of this kind is what first-rate scholarship in philosophy has to offer the discipline of bioethics, ethics more generally, and ultimately public policy.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author(s).

FUNDING

The author(s) reported there is no funding associated with the work featured in this article.

REFERENCES

DeGrazia, D., and J. Millum. 2021. *A theory of bioethics*. Cambridge, UK: Cambridge University Press.

DeGrazia, D. 2005. *Human identity and bioethics*. Cambridge, UK: Cambridge University Press.

DeGrazia, D. 2012. *Creation ethics: Reproduction, genetics, and quality of life*. New York: Oxford University Press.

McMahan, J., and J. Savulescu. 2024. Reasons and reproduction: Gene editing and genetic selection. *The American Journal of Bioethics* 24 (8):9–19. doi: 10.1080/15265161.2023.2250288.

McMahan, J. 1998. Wrongful life: Paradoxes in the morality of causing people to exist. In *Rational commitment and social justice*, ed. J. Coleman and C. Morris, 208–247. Cambridge, UK: Cambridge University Press.

Parfit, D. 1984. *Reasons and persons*. Oxford: Clarendon Press.

THE AMERICAN JOURNAL OF BIOETHICS
2024, VOL. 24, NO. 8, 31–34
https://doi.org/10.1080/15265161.2024.2361883

Taylor & Francis
Taylor & Francis Group

OPEN PEER COMMENTARIES

OPEN ACCESS Check for updates

Gene Editing vs. Genetic Selection

Ralf Bader

Université de Fribourg

THE TWO-TIER VIEW

Genetic selection is generally considered to be a better way of avoiding genetic disorders than gene editing. Since gene editing involves risks, due to the possibility of unforeseen mutations, genetic selection seems to be a safer method of avoiding genetic disorders.

McMahan and Savulescu (2024) have recently criticized this position, on the grounds that it ignores person-affecting considerations that speak in favor of gene editing. Gene editing makes someone better off than they would otherwise have been, whereas this is not the case in genetic selection, due to nonidentity effects. They put forward a two-tier view that combines person-affecting and impersonal considerations. This view promises to underwrite a number of intuitively plausible verdicts, most notably that saving an existing person is preferred over creating a new person, and favors gene editing over genetic selection.

Impersonal reasons speak in favor of genetic selection. Genetic selection ensures that the life that will be lived will not suffer from genetic disorders and will be a better life than the life that would otherwise have been lived.

	x	y
A	5	–
B	–	10

Impersonal reasons likewise speak in favor of gene editing. By suitably editing the genes of an embryo, one can ensure that the person will not suffer from genetic disorders and will live a better life than they would otherwise have lived.

	z
C	5
D	10

The impersonal reason to use genetic selection (= choose B over A) is as strong as the impersonal reason to use gene editing (= choose D over C), as long as the risk of unforeseen mutations is set aside. McMahan and Savulescu point

CONTACT Ralf Bader ralf.bader@gmail.com Département de Philosophie, Université de Fribourg, Av. de l'Europe 20, CH-1700, Fribourg, Switzerland.

out that these two methods differ as regards person-affecting reasons. Gene editing is identity-preserving, such that the person is better off than they would otherwise have been. The person z that lives a good life if gene editing is used is the very same person who would otherwise have lived a not so good life. Genetic selection, by contrast, is not identity-preserving. A different person, namely x, would have existed and would have lived a not so good life, had genetic selection not been used to select y who is not afflicted by the disorder and lives a good life.

The two-tier view takes these person-affecting reasons into consideration and hence favors gene editing. This can be illustrated by the choice between the combined options of either enabling one couple to make use of genetic selection (A∘D) or another couple to make use of gene editing (B∘C).

	x	y	z
A ∘ D	5	–	10
B ∘ C	–	10	5

Though both outcomes are equally good when considered from an impersonal perspective, the second option is favored since it involves an identity-preserving intervention that ensures that someone is better off.

This preference is preserved even when there are risks involved, where the risks involved in gene editing mean that the outcome is impersonally worse at the level of expectations.

	x	y	z
A ∘ D^-	5	–	9
B ∘ C	–	10	5

Though genetic selection (B∘C) is preferable from an impersonal point of view, person-affecting reasons favor gene editing (A∘D^-), since this method ensures that one does something that is better for a person. This person-affecting reason is taken to be stronger than the corresponding impersonal reason and hence can outweigh the risk of unforeseen mutations.

CONTRASTIVE OR NON-CONTRASTIVE REASONS

Difficulties arise when faced with the four options at the same time.

	x	y	z
A	5	–	–
B	–	10	–
C	–	–	5
D	–	–	10

It is unclear how person-affecting considerations are supposed to work in such cases. They can be understood either as contrastive reasons or as non-contrastive reasons.

If they are contrastive, then the reason deriving from the fact that D is better for z only privileges D over C, since this reason depends on the existence of z. This fact, however, does not speak in favor of bringing about D rather than B. Since z does not exist in both of these options, person-affecting reasons relating to z cannot favor D over B. In comparing these two scenarios only considerations of impersonal good apply. Accordingly, one does not have stronger reasons to bring z into existence rather than y. The fact that z could in some other scenario have been worse off, whereas this is not the case for y, is not something that speaks in favor of creating the former rather than the latter.

This, however, means that B is to be preferred over D^- when the risk of unforeseen mutations is taken into consideration.

	x	y	z
A	5	–	–
B	–	10	–
C	–	–	5
D^-	–	–	9

Impersonal good in this way has a veto on allowing considerations of personal good to come in. As a result, the contrastive version of the two-tier view ends up privileging genetic selection in a wide variety of cases.

By contrast, if person-affecting considerations are non-contrastive, then the fact that z is better off in D^- than in C speaks in favor of this option, even when D^- is compared with B in which z does not exist. The evaluation of options is then dependent on the set of alternatives, insofar as the presence or absence of further options can have an effect on how a given option is to be evaluated and compared. This approach does favor gene editing over genetic selection, since the person-affecting reason favoring D^- is not restricted to the comparison with C but carries over to the comparison with B.

However, the non-contrastive construal can no longer privilege saving over creating, whenever creating a person involves an alternative where the same person is also created but lives a worse life. In such cases the person being created would be benefited relative to the other option in which they are also created, which would then favor this alternative over another in which they do not exist at all and in which an already existing person is saved.

	x	y	z
S	20	–	60
T	0	80	–
U	0	60	–

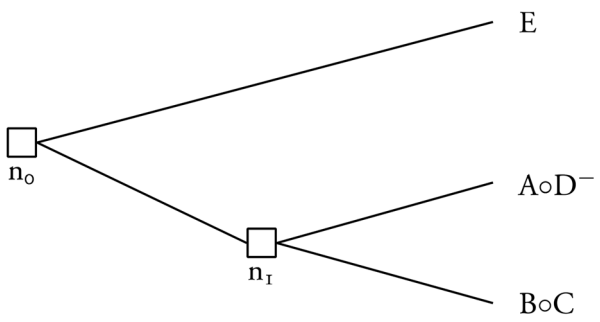
Someone who is only confronted with options S and T should choose the former over the latter, that is save x, enabling him to live another 20 years, rather than cause y, who will live to 80, instead of z, who will only live to 60, to exist, since x is thereby made better off. However, when option U is also available, then choosing T makes y better off, where the resulting non-contrastive reason speaks in favor of T even when compared with S, such that saving an existing person is no longer favored over creating a new person.

DYNAMIC INCONSISTENCY AND SUB-OPTIMALITY

In dynamic settings, both approaches lead to dynamic inconsistencies and to sub-optimal outcomes being chosen.

The problem for the contrastive approach can be illustrated by the choice between either creating two lives, one of which suffers from the genetic disorder and the other of which is slightly worse than the good life that can be brought about by means of genetic selection, or alternatively facing the choice between A∘D⁻ and B∘C.

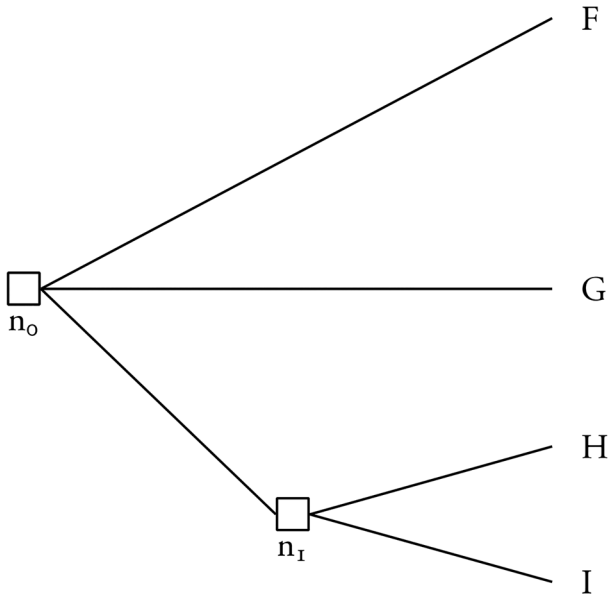
	x	y	z	v	w
A∘D⁻	5	–	9	–	–
B∘C	–	10	5	–	–
E	–	–	–	5	9.5



When evaluated from the outset, the strategy resulting in A∘D⁻ is impermissible. Yet, once one reaches node n_1, which one can permissibly do as long as reduction of sequential choice is accepted, one will be required to select this option. The person-affecting considerations kick in at this point, leading to an outcome that is deemed to be sub-optimal from the perspective of the original choice node. A sophisticated chooser making use of backward induction will avoid this dynamic inconsistency, but will do so by choosing E which is sub-optimal relative to the alternative B∘C that could have been reached instead. The possibility of identity-preserving gene editing thus comes with a price at the level of impersonal good that one will have to pay at n_1 and that one can avoid by selecting E at the outset. The theory in this way ensures that one has reasons to prevent future costly situations of gene editing from arising and that one should do so even when this involves bringing about sub-optimal outcomes.

The non-contrastive view faces similar difficulties, since it leads to violations of contraction and expansion consistency conditions α, β and γ.

	x	y	z
F	10	–	–
G	–	2	–
H	–	8	–
I	–	–	9



The non-contrastive view considers H to be the best option when evaluated from the outset. Though F is impersonally better, the fact that y is better off in H than in G constitutes a person-affecting reason that favors H. However, once the agent reaches node n_1 alternative G is no longer available. Choosing H over I, accordingly, does not lead to anyone being better off, which means that H is no longer favored on the basis of person-affecting reasons. From the perspective of n_1, option I is to be preferred over H. This amounts to a dynamic inconsistency: a strategy that is deemed to be impermissible can be implemented by means of a sequence of permissible choices. Moreover, it results in a sub-optimal outcome since I is inferior to the alternative F that could have been realized at the outset.

CONCLUSION

The two-tier view can either favor gene editing over genetic selection (when construed in terms of

non-contrastive reasons) or favor saving over creating (when construed in terms of contrastive reasons) but not both. Both construals give rise to dynamic inconsistencies and to sub-optimality.

ACKNOWLEDGEMENTS

Thanks to Jonas Hertel for very helpful comments.

DISCLOSURE STATEMENT

The authors report there are no competing interests to declare.

FUNDING

The author(s) reported there is no funding associated with the work featured in this article.

ORCID

Ralf Bader http://orcid.org/0000-0002-2619-1437

REFERENCES

McMahan, J., and J. Savulescu. 2024. Reasons and reproduction: Gene editing and genetic selection. *The American Journal of Bioethics* 24 (8):9–19. doi: 10.1080/15265161.2023.2250288.

THE AMERICAN JOURNAL OF BIOETHICS
2024, VOL. 24, NO. 8, 34–36
https://doi.org/10.1080/15265161.2024.2361893

OPEN PEER COMMENTARIES

Against Genetic Determinism of Welfare and Behavior

Cameron Green[a] and Naomi Scheinerman[b]

[a]Rice University; [b]The Ohio State University

In their article, "Reasons and Reproduction: Gene Editing and Genetic Selection," McMahan and Savulescu (2024) claim that for some conditions, like cystic fibrosis, editing out CF is morally preferable to selecting a non-CF embryo because it preserves the identity and welfare of the future person, whereas selecting simply creates a different person.

While we agree that there are certain easy cases where editing in diseases, like CF, would be moral wrongdoing and editing them out (if the technology were actually deemed safe and worth the risks, of which there are many more than McMahan and Savulescu acknowledge) would be morally permissible, we do not believe that that gene editing is morally preferable to gene selection due to the misapplied relationship between genetics, welfare, and social behavior, and the limitations of editing in conferring unique benefits.

To argue this, we offer the following: First, genetic causes of welfare are misapplied in numerous cases, particularly those of disability, which is better understood as a problem of social discrimination rather than biological determinism. Second, genetic determinism of social behavior, as the authors use in their pleiotropy cases, is empirically tenuous at best. And third, we show that even in cases like CF, gene editing still is not preferable because it does not confer unique benefits to the particular individual above that of selection.

REJECTING GENETIC DETERMINISM ABOUT WELFARE

First, it is difficult, and certainly more complicated than McMahan and Savulescu portray it to be, to determine which genetic traits are *biologically* "better" or "worse" for someone. Consider their assumption that deafness is, on-the-whole, worse for someone. This ignores the numerous points of evidence that the difficulties in being deaf arise from non-accommodation, of existing in a world created for hearing people, rather than due to any inherent features of deafness itself.[1] Having the gene(s) for deafness, then, is not necessarily worse for someone *genetically*. Instead, having the genes for deafness is only worse for someone when they experience social discrimination or marginalization on this basis.

In response to this concern, one might still maintain that the experience of social discrimination itself is a reason to edit-out deafness. Afterall, if one weren't

CONTACT Naomi Scheinerman naomi.scheinerman@osumc.edu Division of Bioethics, The Ohio State University, Columbus, OH, USA.

[1]For example, see Barnes (2014) "mere difference" view of disability.