


Independent Articles

Moral Permissibility and Desert in the Therapy-Enhancement Distinction

Ozan Gurcan 

Caltech, Pasadena, United States and University of Ottawa Faculty of Medicine, Ottawa, Canada

Abstract

In his widely anthologized article on the therapy-enhancement distinction, Resnik argues that, from a moral point of view, the claim that something is not health related cannot be a dispositive argument against the permissibility of enhancements. He further states how the permissibility of an intervention will depend on considerations like the intention for its use and the likely consequences that will ensue, and whether these violate any moral standards. Within this framework, in this paper I first argue that enhancements may be morally permissible on autonomy grounds (its political conception); and secondly, that this permissibility does not dissolve a moral distinction between therapies and enhancements, with the reason being that there is still a difference between something being generally permissible (i.e., therapies) and something being conditionally permissible (i.e., enhancements). But that is not all that is important for a moral therapy-enhancement distinction. I also argue that the distinction — apart from being about “permissibility” (at the level of regulation of individual use) — is also about regarding justice more broadly (at the level of what is owed to individuals). What captures the moral distinction more fully is that therapies are, generally speaking, not only morally permissible but also owed to persons (due to being enablers of social cooperation and competition), whereas, at this stage, enhancements can *only* be morally permissible. I demonstrate the appeal of this view by considering its stability and usefulness across specialized bioethical contexts and across various kinds of enhancements and show that its practical value for policy lies in its legitimizing / anticipatory and prioritizing functions.

Keywords: therapy-enhancement distinction; moral permissibility; desert; pluralism; well-being; good life

A therapy-enhancement distinction based on “absolute (im) permissibility”

In bioethics and public policy, a profound debate associated with genetic technologies is the moral differentiation between therapies (biomedical health-related procedures) and enhancements (non- or beyond-biomedical health-related procedures).¹ The past President’s Council on Bioethics, who comprehensively examined human biotechnology from this angle, states in their famous report “Beyond Therapy” that “those who introduced the therapy-enhancement distinction, hoped by [these] means to distinguish between the acceptable and the dubious or unacceptable uses of biomedical technology...”² Many bioethics guidelines on genetic technologies today maintain this distinction wherein enhancements are deemed impermissible on the grounds that they extend beyond “health restoration,” whereas therapies are permissible because they are merely an extension of what is already (traditionally, inherently, naturally, etc.) deemed permissible: the restoration of health.

Let us observe a few of the notable policies and guidelines where this moral distinction is prominent. The Oviedo Convention, for example, only permits the carrying out of predictive genetic tests for medical purposes (article 12) and of genetic engineering for

preventive, diagnostic or therapeutic reasons (article 13).³ The International Bioethics Committee, who advises UNESCO, states that

Nature is often understood as a limit to human freedom. At least in this case, building exactly on Article 1 of the UDHR [Universal Declaration on the Human Genome and Human Rights], the argument is made that it should be rather considered as its premise, so that interventions on the human genome should be admitted only for preventive, diagnostic or therapeutic reasons...⁴

The Nuffield Council on Bioethics similarly deems impermissible the use of genetic technologies such as non-invasive prenatal testing and whole genome/exome sequencing for non-medical reasons.⁵ The American Medical Association’s Code of Medical Ethics states that

the goal of gene therapy and genetic engineering is to alleviate human suffering and disease. As with all therapies, this goal should be pursued only within the ethical traditions of the profession, which gives primacy to the welfare of the patient.

In general, genetic manipulation should be reserved for therapeutic purposes. Efforts to enhance “desirable” characteristics or to “improve” complex human traits are contrary to the ethical tradition of medicine.⁶

Finally, the ethical framework of the SIENNA project (Stakeholder-Informed Ethics for New technologies with high socio-economic and human rights impact), funded by the European Commission, holds that

Email: ogurcan@caltech.edu

Cite this article: O. Gurcan. “Moral Permissibility and Desert in the Therapy-Enhancement Distinction,” *Journal of Law, Medicine & Ethics*, 53, 2 (2025): 212–218. <https://doi.org/10.1017/jme.2025.64>

Somatic genetic enhancement should not be undertaken, nor should clinical research be undertaken with the aim of facilitating this kind of procedure. Precautions should be taken that somatic genomic editing techniques used for therapy and prevention are not used for enhancement.

This standard view on the therapy-enhancement distinction is similarly shared by the general public. In their study, Cabrera, Fitz and Reiner found that “irrespective of the domain to be enhanced [cognitive, affective, social], participants [in Canada and the United States] felt significantly more comfortable with therapy (improve capacities up to the norm) than with enhancement (improve capacities above the norm).”⁸ In the UK, the Royal Society reports that 72% of people supported genomic editing to treat non-life threatening diseases, with even higher support for life-threatening ones, while 68% were against use for cosmetic reasons (e.g., changing eye/hair colour), and 60% against enhancing abilities.⁹ The Pew Research Center found that, when the purpose is for treating serious diseases or conditions, 72% of those surveyed said that gene editing is an appropriate use of medical technology (whereas 27% said it would be “taking the technology too far”); and that, when the purpose is for enhancing “intelligence,” 80% said it would be taking the technology too far (whereas 19% said it was appropriate).¹⁰ In a more recent survey, the Pew Research Center again reported that when “asked to consider the potential use of robotic exoskeletons, genetic modifications, and brain chip implants for a range of purposes, majorities of U.S. adults embrace these techniques when they would be aimed at helping people with physical, health or cognitive limitations.”¹¹ Even though survey participants made distinctions between these three interventions with “enhancing” capacities, in each case, the majority expressed caution or uncertainty regarding their views; and only a maximum of 33% expressed that any one of these would be a “good idea for society.”¹²

From “absolute (im)permissibility” to “conditional permissibility”

Even though the therapy-enhancement distinction has largely been based on “absolute-permissibility” terms, wherein therapies are seen as always permissible and enhancements as always impermissible, I argue that the distinction should not be understood in such a way. Moral reasoning quickly demonstrates that one cannot conclude that all enhancements are morally impermissible by claiming that restoring health is morally valuable.¹³ For this, the argument would have to be that *only* health restoration is morally valuable. But this is clearly false; non-health related values such as ambition, friendship, personal growth, doing the right thing, a desire to better the world, autonomy, and justice are among the few other considerations that clearly have important moral worth. So, even when we assume (uncontroversially so) that pursuing health is permissible, it does not give us a convincing reason to find the pursuit of enhancement impermissible. This view is one that bioconservatives (e.g., past President’s Council on Bioethics), notable health justice theorists like Norman Daniels, and transhumanists (e.g., Humanity Plus) are all in agreement with.¹⁴

As Resnik correctly points out, the permissibility of an intervention depends on considerations such as the intent for its development and potential use, the likely consequences that will ensue, and whether any of these violate moral standards.¹⁵ Observing the topic from another angle, Norman Daniels frames it like this:

certain enhancements may be impermissible for reasons that are unlikely to arise for treatments or for reasons that can be more easily

dealt with in the case of treatments. Knowing that something is an enhancement should thus raise a moral warning flag—this is the central implication for public policy.¹⁶

This perspective entails that enhancements can be permissible if the “moral warning flags” are addressable without violating other moral limits and are subsequently addressed. What are some of these moral warning flags? According to the American Medical Association, these include enhancements’ potential for abuse and eugenic aim.¹⁷ For many others including Schweikart, another warning flag is that “genome editing for enhancement can thwart social justice, as wealthy people will likely have greater ability to enhance their genome (and thus presumably certain physical and mental characteristics), furthering social and class divides.”¹⁸

From a consideration of Resnik’s argument, however, we see that establishing an absolute moral distinction, if there is one, cannot rely on the inherent quality of enhancements as being “beyond health restoration.” But do the “moral warning flags” above fair any better in establishing a moral distinction on absolute grounds? Certainly not. We can imagine a variety of enhancements, such as interventions involving the aforementioned ethical virtues, as well as different preemptive social measures that can appease the moral warning flags and justify their permissibility, as Daniels’ point alludes to. Still, we can hold that even if there is no distinction on absolute grounds, there is, nonetheless, a difference between something being generally permissible (i.e., therapies) and something being conditionally permissible (i.e., enhancements). I will say more on this distinction below, but first consider the views of the opposite camp.

Apart from those who claim an absolute moral distinction regarding permissibility, there are also those who say there is, in fact, no moral distinction between therapies and enhancements. This camp’s reasoning is that both therapy and enhancement actually have the same aim. The value of “well-being,” for example, is generally provided as the motivating reason — and, many times, the actual outcome — for an individual who is in pursuit of a therapy. This group argues that “well-being” is similarly the motivating reason (and actual outcome) for an individual in pursuit of an enhancement. John Harris, for example, finds the moral value of both therapies and enhancements in their aim of reducing and preventing harms, and conferring benefits; and for Julian Savulescu, the “moral continuum” is based on the value of “leading a good life,” which both therapy and enhancement can accomplish.¹⁹ For Savulescu, the value of “leading a good life” not only permits enhancements (and therapies) but also produces a moral obligation to enhance, when the enhancement is to advance an associated trait.²⁰

The primary criticism that can be voiced regarding these arguments is that even if Resnik’s “good intention” criterion is met by a desire to “be well” or to “lead a good life,” a full moral analysis must still consider the consequences of the said intervention. Even if the person themselves ends up well, the intervention may still have negative consequences on others, leading to the possible conclusion that the enhancement is impermissible. But would this conclusion prove the critic’s position that there *is* an absolute moral distinction between therapies and enhancements? Harris and Savulescu are likely to respond in the negative, arguing that the same point regarding consequences can be said about therapies: imagine it was an evil person that was seeking therapy, and that they would continue to harm others once they were healthy enough.

Still, I do not agree with Savulescu’s position that there is a “moral obligation” to enhance because it is also a perfectly reasonable conception of “leading a good life” to place greater importance

on remaining the way one is born. Sean Aas argues that persons living in a pluralistic society can have different reasonable interpretations of what “well-being” and a “good life” consists of, meaning that any one view of well-being or a good life cannot be said to necessarily outweigh another.²¹ In the context of genetic technologies, then, I argue that it is precisely because the pursuit of an enhancement *can be* a component of a reasonable understanding of well-being/good life that certain enhancements can be permissible. In other words, wanting to enhance is a position and a way of living that the state ought to *prima facie* allow a person to have and pursue. But importantly, I reach this conclusion on the basis of autonomy (its political conception), which gives weight to different interpretations of well-being/good life, without giving any special weight to any one of them. Hence, my argument is not dependent on a position that says there is a particular conception of how to live that is better than others; consequently, I argue that Savulescu’s conclusion should simply be that enhancements can be morally permissible. Remarkably, then, Savulescu can still maintain that there is a moral continuum by reminding us that therapies are similarly not absolutely morally permissible and that the most correct description of each is that they can both be morally permissible. So, by adding a condition (to enable a “good life”), Savulescu already makes his moral continuum argument conditional from the start since he would not deny that some enhancements can be used for evil.

There were some thought-provoking empirical findings in 2023 that, when substantiated further, could be coupled with the normative position that “enhancements can be morally permissible” to then influence policy direction on human technologies.²² These findings hint that the reason for the public’s generally perceived moral distinction between therapies and enhancements may not actually be the result of thinking that enhancements are *inherently* (absolutely) unethical. Martin and colleagues conducted two experiments in which they found that the “accessibility of technologies” can play a determinative role in the perceived moral distinction, by affecting the technology’s perceived “normality.”²³ In particular, they suggest that when accessibility to the said intervention is guaranteed and/or when it becomes otherwise “normalized,” the perceived moral distinction between treatment and enhancement can weaken.²⁴ Another factor that can influence the normalization of enhancements is the perspectives of those who engage in gene editing. Though it is by no means a dominant view, Waltz and colleagues identified from their interviews of genome editing scientists and governance group members that one of the key positions (among three others) emerging from their qualitative study was the view that enhancements are not as morally problematic as suggested, with some highlighting the popularity and acceptance of cosmetic and plastic surgeries as comparison.²⁵ The 2022 study by the Pew Research Center described earlier also identified several factors that can influence the perception of the standard moral distinction. For example, they report that 59% of Americans say that brain chip implants would be more acceptable to them if they could turn their effects on and off; and 53% say that they would be more acceptable if implanting the device was non-surgical.²⁶ These are suggestions that the moral judgements commonly made today — which closely track the standard moral therapy-enhancement distinction — are not immutable and may change with greater normalization, accessibility, ease of use, and user control, among other factors.

Yet, just like before, we can say that even if there is no distinction on absolute grounds and that enhancements can be morally permissible (and therapies impermissible), there is, nonetheless, a distinction between something being generally permissible (i.e., therapies)

and something being conditionally permissible (i.e., enhancements). Therapies are generally permissible because the world is currently set up in a way where their potentially problematic uses are rendered mute by existing frameworks; and enhancements are conditionally permissible because the way society’s institutions are set up today are not generally sufficient to address potential moral warning flags. Although this is a descriptive, rather than normative statement, it carries moral significance for policy.

From “permissibility” to “desert”

Thus far I have argued that it is a political conception of autonomy, not a particular conception of “well-being,” “good life,” or “biomedical health” that generates the fundamental moral relationship between therapy and enhancement. The correct theoretical conclusions that can be drawn so far are that (1) policymakers should *not* categorically prohibit enhancements (on the supposed basis that enhancements are morally impermissible), not that an enhancement may not be prohibited (even if it is conducive to well-being); and that (2) generally, there is no moral obligation to enhance (even if it is conducive to well-being). The implication of this argument for a therapy-enhancement distinction is that therapy is *generally* morally permissible, and enhancement *can be* morally permissible.

Mamlqvist’s analysis of the problem is useful here in a way that furthers the debate. Mamlqvist offers a criticism of the “moral continuum” argument, wherein he asserts that if therapies and enhancements were morally continuous, “health professionals and policy makers seem to have strong reason to attribute similar importance to them — that is, to inform people about them, encourage their use, allocate considerable resources to enhancement research and development, and so on.”²⁷ Then, without intending to generalize or provide a comprehensive justification of a therapy-enhancement distinction, Mamlqvist offers a partial defense of it on the basis that “curing and preventing illness seems more likely than enhancements to benefit people in such ways [i.e., enable well-being/a good life].”²⁸ This seems right, at least for the time being. But the important point is that this difference has directly to do with “justice,” at the level of what is owed to persons by the state, not directly or only with “permissibility” (absolute or conditional) at the level of individual use. Spelled out, the moral difference-maker arising from the “likelihood to benefit” point is that enhancements we deem permissible need not be provided by the state (at least for the time being). So what we should mean when we say there is a moral therapy-enhancement distinction ought to incorporate the idea that therapy is, generally speaking, not only morally permissible but also owed to individuals (due to its descriptively large benefits arising from enabling participation in social cooperation and competition, for example) whereas, at this stage, enhancements may only be morally permissible (based on the satisfaction of certain moral conditions), but not provided/funded.

The stability of this moral distinction

Recognize that the distinction I propose stems from starting with an independent premise of “public reason autonomy,” which is then *applied* to traditional therapies and enhancements (in a societal context in which problems that may arise from therapies, but not enhancements, are easily controllable) to say: therapies are generally permissible and owed, and enhancements only conditionally permissible, acknowledging that we need additional contextual information before deciding whether a given intervention is indeed

permissible. On the other hand, the traditional understanding of the moral distinction is quite decisive, equating therapy with moral permissibility and enhancement with moral impermissibility. Although it is not morally defensible, sometimes decisiveness could be a policy advantage. Yet, when it comes to using the traditional distinction, we see that it struggles when real life cases do not fit so neatly; it scrambles to redefine an intervention as “therapy” if it appears morally defensible, or as enhancement if it seems morally problematic.²⁹ My conceptualization sidesteps that forced labeling, viewing “therapy” and “enhancement” as gaining a definitive status with more information. In this way, cases, including borderline cases are handled more coherently, though with less independent decisiveness — a problem we will revisit later. Let us now observe some of its advantages further, starting with how my conceptualization of the moral distinction deals with enhancement in specialized contexts.

Enhancements in military and space exploration

There are various areas of specialized human activity such as military operations and space exploration where enhancements appear to be unproblematic. Szocik and Reiss explore bioethical challenges in such contexts — involving wearables, biomaterials, genetic procedures for self-healing or preventing injuries — and, without needing to call for a novel ethical framework, admit that enhancements in these contexts generally attain a different status: they seem permissible due to their critical role in sustaining such efforts.³⁰ Notably, these considerations are not merely hypotheticals but active questions that real-world institutions are currently dealing with.³¹ Recently, NATO released its biotechnology and human enhancement technologies strategy (public version), and the Translational Research Institute for Space Health (TRISH) published its strategic plan for 2025–2028.³² In its plan, TRISH underlines the importance of advancing scientific and technological research to prepare and “thrive” in deep space.³³ Both NATO and TRISH state in their respective strategic plans that their desired outcomes include developing “robust pathways to operationalise Principles of Responsible Use for BHE [Biotechnology and Human Enhancement Technologies] in defence and security,” and seeking “operational insights and guiding principles that preserve human health and performance in space,” respectively.³⁴

The relevant question for us now is whether the apparent general permissibility of enhancements in contexts like national defense and space exploration challenges my moral categorization of enhancements as merely conditionally permissible. At first glance, there does appear to be a conflict, suggesting that it might not be applicable or that it is not useful in these contexts. However, it need not pose a problem if we take up the question from the correct angle and recognize that a specialized setting can supply precisely those moral conditions — such as an important collective purpose and a well-regulated protocol — that satisfy the requirement for permissibility in that setting. Far from weakening my conceptualization of the therapy-enhancement distinction, this flexibility is a feature and advantage of it.³⁵

Different kinds of enhancements

Now I ask whether my categorization of enhancements as “conditionally permissible” will seamlessly apply for different kinds of enhancements. We know from earlier discussions that if the effects of an enhancement cannot be contained to the consenting

individual, it may impose burdens that undermine others’ autonomy, which is a strong basis for deeming the enhancement impermissible. Consider a neural implant that significantly enhances cognitive capacity but meets one or more of the following conditions: (1) it is not universally desired, (2) it is prohibitively expensive for many who might want it, and/or (3) those who decline or cannot access it cannot be reasonably protected or accommodated. The resulting inequalities from such scenarios provide compelling reasons to judge the enhancement as impermissible. What is important about these judgements, however, is that they could apply to all kinds of enhancements, not just genetic or neural ones. After all, we know that all else being the same and morally (un)problematic, the process alone cannot make a moral difference. But sometimes all else is not the same.

The question, then, is whether certain kinds of enhancements — such as germline, pharmaceutical, surgical, neural, or robotic — introduce unique challenges that, by their very nature or consequences, make them clearly “permissible,” “impermissible,” or “owed.”³⁶ In her work on neuroethics, Goering provides three characteristics that appear more or less in different kinds of enhancement in a way that could allow us to track their normative standing.³⁷ These are the *level of precision* (effectiveness, short term effects); *invasiveness*; and *long-term effects* (irreversibility, unpredictability, etc.). I find the third — an intervention’s long-term effects — useful for my purposes here because it is already apparent (and unproblematic) that any intervention must demonstrate safety and effectiveness and have the full informed consent of the person. But the unpredictability and risks associated with long-term outcomes do say something significant about the normative status of a kind of enhancement that has this feature. At the present, germline editing exemplifies this concern; its potential for unforeseen and problematic long-term consequences provides a compelling reason for its impermissibility.³⁸ But let us recognize that, here too, the conclusion coheres with my conceptualization of enhancements because those features that make germline editing problematic now are not *intrinsic* features of it. It is a reasonable expectation that, with time, the long-term predictability and riskiness of germline editing could be appeased through a combination of advancements such as greater information, societal understanding, acceptance, desire, and preparation. And so, once again, we will be left with the kinds of considerations that this discussion began with: what are the intents, effects on others, broad consequences, possible responses, etc. — all considerations that fit my moral categorization of enhancements as being conditionally permissible.³⁹

The practical value of this moral distinction

From the consideration of specialized contexts and various kinds of enhancements, it becomes clear that the categorization of enhancements — as potentially permissible but not presently owed — demonstrates both flexibility and coherence. This adaptability is a theoretical strength. At this point, a critic might acknowledge that the framework aligns well with our considered moral judgments about enhancements, sidestepping the “forced labelling” problem of the traditional distinction.⁴⁰ Nevertheless, they could argue that it still falls short as a policy tool, offering little practical guidance for actually determining which enhancements are permissible, impermissible, or possibly owed. To the extent that any decisive ruling on enhancements still requires an assessment of intentions, consequences, and context-specific factors, the critic could claim it is merely academic to try to formulate such discussions in terms of

any kind of therapy-enhancement distinction. Thus, we are back at the potential “independent decisiveness” problem.

A response to this challenge comes from thinkers like Daniels and McGee, who assert that we should not demand too much from a therapy-enhancement distinction.⁴¹ In line with this thought, in the remainder of the paper I will argue that if understood and used properly, the moral distinction I favor does have valuable policy functions, even if it is not “independently decisive.” Primarily, what should be noted is that by trading “independent decisiveness” with “appropriateness,” my moral categorizations demonstrate a strength, not a flaw, particularly because we are addressing a policy topic that is full of moral ambiguity and ambivalence. Even principles explicitly designed to classify actions as right or wrong cannot do so very easily or in isolation, whether it is at the theoretical level (why accept deontology over utilitarianism, for example) or the applied level (a policy might be good in some sense but still wrong to implement). It is a feature of moral reasoning and public policy itself that we will need contextual information to make decisive choices.⁴² For example, any question regarding permissibility will have to address questions such as the following:

- How will the availability of the intervention be perceived by persons?
- How will it impact familial, commercial and other societal relations?
- Are there likely to be problematic expectations or pressures to use them?
- Will it negatively impact equality of opportunity provisions?
- Will non-users be perceived as “second-class”?
- Will it create permanent gaps between initial users and those who only have access at a later time? Can it be subsidized to increase access without creating pressure for others to use it?

Incorporating and accounting for all the factors relevant to making the *correct* decisive choices are too numerous and too complex to be accurately captured by a therapy-enhancement distinction. Notwithstanding, the point is that it is not really a significant concern if a policy tool is not independently decisive on questions of permissibility. If a policy tool has other useful functions for dealing with issues emerging from therapies, enhancements and their real or perceived moral differences, these features could be sufficient for retaining a therapy-enhancement distinction. I argue that my therapy-enhancement distinction does have such useful features.

Starting with the obvious, my distinction is “guiding” because it identifies sensible moral categories (that are not strictly black or white), and as such, the framework inherently invites (through the claim of “may be permissible”) further refinement of the conditions under which enhancements might be deemed permissible in society. It has a backward-looking role as well. If it is determined, after a full ethical assessment, that we have good reasons for why a particular enhancement is unproblematic in our society, then the fact that there is a general category to which the enhancement belongs to, and that the general category it belongs to *is* able to high-level explain (or *was* able to predict) that this *was* a possibility, then this state of affairs would be demonstrative of a high-level legitimizing or anticipatory role. Knowing that society is already structured to handle any potential societal harms arising from therapies suggests to us that fewer resources are likely to be needed to police those interventions; it will tell us the focus regarding therapies, rather, is in ensuring their availability and accessibility. At the same time, the distinction informs us that an enhancement is more likely to result in problematic (yet solvable) outcomes, signaling that more vigilance is warranted for enhancements.

But that is not all, remember. Another way in which the distinction has a valuable function for policy, I argued, is through the distinction from justice more broadly, which is that therapies are owed to individuals, whereas, at this stage, enhancements may only be morally permissible and not owed to individuals. This signals that the priority for the state at the present moment is clearly on the provision of therapies to its citizens. Of course, this distinction from justice is not indicative of the idea that no resources can or should be allocated for enhancement-related activities (e.g., research and/or societal modifications that would render certain enhancements permissible) but I leave details of this discussion for another paper.

Conclusion

In this paper, we saw that even if the moral warning flags regarding enhancements are generally applicable to enhancements, they are certainly not true for every enhancement. And even if both therapies and enhancements generally aim towards well-being/a good life, it is certainly not true for every case of enhancement (or therapy). Savulescu and Harris can, thus, maintain that there is no moral distinction but rather a “moral continuum” in that both therapies and enhancements are not absolutely permissible, and both therapies and enhancements can be permissible. This is precisely why Resnik emphasizes that we should not focus so strongly on categorizations when inquiring about the permissibility of an intervention but more so focus on that particular intervention’s possible uses, the intent of persons who would be making use of the intervention, and the overall consequences that might emerge. Notwithstanding, I held that there is still a moral distinction between something being generally permissible in the here and now (i.e., therapies) and something being conditionally permissible in the here and now (i.e. enhancements) and argued that there are valuable policy functions this understanding can provide for us. Despite not being absolutely decisive, it is the case that by not foreclosing certain possibilities, the distinction itself invites further questions or lines of inquiry to pursue evidence or develop frameworks to handle, more directly what was already/initially an open possibility: conditional permissibility. At the same time, I said, knowing that therapies are “owed” provides us with a clear big-picture outlook on where the priority of the state ought to be in the present. Juxtaposing the justice-relevant implications of therapy directly in relation to enhancements (which do not presently have this justice-relevant characteristic) — via a therapy-enhancement distinction — may be just the argument we need to emphasize the importance of therapies: basic healthcare should be accessible by all, the motto may go, *because* they are not enhancements.

Ozan Gurcan, PhD is a postdoctoral scholar in bioethics at the Linde Center for Science, Society and Policy at Caltech and adjunct professor at the Faculty of Medicine, University of Ottawa.

References

1. D.B. Resnik, “The Moral Significance of the Therapy-Enhancement Distinction in Human Genetics,” *Cambridge Quarterly of Healthcare Ethics* 9 (2000): 365–377; A. Buchanan et al., *From Chance to Choice: Genetics and Justice* (Cambridge University Press, 2000); C.A. Riddle, “Disability and Disadvantage in the Capabilities Approach,” in *The Oxford Handbook of Philosophy and Disability*, ed. A. Cureton and D. Wasserman (Oxford University Press, 2020): at 229–244; The medical model of health which uses “typical functioning” to distinguish enhancement from therapy is subject to criticism and defense — see E. Kingma, “What Is It to Be

- Healthy?," *Analysis* 67, no. 294 (2007): 128–133 and C. Boorse, "A Second Rebuttal on Health," *Journal of Medicine and Philosophy* 39 (2014): 683–724. Despite the "typical functioning"-based distinction aligning with our considered judgements in a large number of cases, it turns out that the descriptive distinction is not a sharp one. Still, in this paper I merely assume this understanding of therapy and enhancement, so as to use the same language/conceptualization as the many policy-level documents to which I am speaking to. My main concern in this paper is on the moral distinction resulting from the descriptive delineation. For more on the descriptive distinction debate, see B. Hofmann, "The Concept of Disease — Vague, Complex, or Just Indefinable?," *Medicine, Health Care and Philosophy* 13, no. 1 (2010): 3–10 and J. Huggins and M. Simmerling, "Normal Functioning and the Treatment/Enhancement Distinction: An Opportunity Based Assessment," *Journal of Religion and Health* 53, no. 4 (2014): 1214–1222.
2. *Beyond Therapy: Biotechnology and the Pursuit of Happiness* (President's Council on Bioethics, 2003), at 13, <https://scholarworks.iupui.edu/items/648437cc-52cf-48c6-96f8-0c548a47fcb5>.
 3. *Convention for the Protection of Human Rights and Dignity of the Human Being with Regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine* (Council of Europe, 1999), <https://rm.coe.int/168007cf98>.
 4. *Report of the IBC on Updating Its Reflection on the Human Genome and Human Rights* (International Bioethics Committee, 2015), at 26, <https://unesdoc.unesco.org/ark:/48223/pf0000233258>; Article 1 of the UDHR states that "the human genome underlies the fundamental unity of all members of the human family, as well as the recognition of their inherent dignity and diversity ..." — see *Universal Declaration on the Human Genome and Human Rights* (UNESCO, 1997), at article 1, <https://www.unesco.org/en/ethics-science-technology/human-genome-and-human-rights>.
 5. *Non-Invasive Prenatal Testing: Ethical Issues* (Nuffield Council on Bioethics, 2017), <https://nuffieldbioethics.org/assets/pdfs/NIPT-ethical-issues-full-report.pdf>.
 6. *American Medical Association Code of Medical Ethics Opinion 7.3.6 Research in Gene Therapy and Genetic Engineering* (American Medical Association, 2016), at 1, <https://code-medical-ethics.ama-assn.org/sites/amacoedb/files/2022-08/7.3.6.pdf>.
 7. Y.J. Erden and P.A.E. Brey, "Ethics Guidelines for Human Enhancement R&D," *Science* 378, no. 6622 (2022): 835–838, at 838.
 8. L.Y. Cabrera, N.S. Fitz, and P.B. Reiner, "Empirical Support for the Moral Salience of the Therapy-Enhancement Distinction in the Debate over Cognitive, Affective and Social Enhancement," *Neuroethics* 8, no. 3 (2015): 243–256, at 243.
 9. *Potential Uses for Genetic Technologies: Dialogue and Engagement Research Conducted on Behalf of the Royal Society* (Hopkins Van Mil: Creating Connections Ltd., 2017), at 63, 50, 70. <https://royalsociety.org/~media/policy/projects/gene-tech/genetic-technologies-public-dialogue-hvm-full-report.pdf>.
 10. *Public Views of Gene Editing for Babies Depend on How It Would Be Used* (Pew Research Center, 2018), at par 2, <https://www.pewresearch.org/science/2018/07/26/public-views-of-gene-editing-for-babies-depend-on-how-it-would-be-used/>.
 11. *AI and Human Enhancement: Americans' Openness Is Tempered by a Range of Concerns* (Pew Research Center, 2022), at 81, <https://www.pewresearch.org/internet/2022/03/17/ai-and-human-enhancement-americans-openness-is-tempered-by-a-range-of-concerns/>.
 12. *Id.*, at 74.
 13. See D.B. Resnik, *supra* note 1.
 14. See President's Council on Bioethics, *supra* note 2; N. Daniels, "Normal Functioning and the Treatment-Enhancement Distinction," *Cambridge Quarterly of Healthcare Ethics* 9, no. 3 (2000): 309–322; N. Bostrom, "In Defense of Posthuman Dignity," *Bioethics* 19, no. 3 (2005): 202–214; S. Lilley, *Transhumanism and Society: The Social Debate over Human Enhancement* (Springer, 2013); "Home," Humanity Plus, <https://www.humanityplus.org/> (last visited Nov 10, 2024).
 15. See D.B. Resnik, *supra* note 1.
 16. See N. Daniels, *supra* note 14, at 320.
 17. See American Medical Association, *supra* note 6.
 18. S.J. Schweikart, "What Is Prudent Governance of Human Genome Editing?," *American Medical Association Journal of Ethics* 21, no. 12 (2019): 1042–1048, at 1043.
 19. J. Harris, *Enhancing Evolution: The Ethical Case for Making Better People* (Princeton University Press, 2007); J. Savulescu, "New Breeds of Humans: The Moral Obligation to Enhance," *Reproductive Biomedicine Online* 10 (2005): 36–39.
 20. J. Savulescu, "Procreative Beneficence: Why We Should Select the Best Children," *Bioethics* 15, (2001): 413–426; See J. Savulescu *supra* note 19.
 21. S. Aas, "Evaluative Diversity and the (Ir)relevance of Well-Being," in *The Oxford Handbook of Philosophy and Disability*, ed. A. Cureton and D. Wasserman (Oxford University Press, 2020): at 174–192.
 22. D. Martin et al, "Normality and the Treatment Enhancement Distinction," *Neuroethics* 16, no. 13 (2023): 1–14.
 23. *Id.*
 24. *Id.*, at 13.
 25. M. Waltz et al, "Challenging the Boundaries between Treatment, Prevention, and Enhancement in Human Genome Editing," *CRISPR Journal* 7, no. 4 (2024): 180–187, at 182.
 26. See Pew Research Center, *supra* note 11, at 93.
 27. E. Malmqvist, "Reproductive Choice, Enhancement, and the Moral Continuum Argument," *Journal of Medicine and Philosophy* 39, no. 1 (2014): 41–54, at 44.
 28. *Id.*, at 45.
 29. Consider how a cosmetic procedure might turn out to be crucial to a person's psychological well-being. In the traditional understanding, one would have to argue that it is really a form of therapy or that it is merely a harmless exception. Under my view, however, whether one sees it as therapy or enhancement does not itself decide the moral outcome — rather, we look to further factors to determine if it is ultimately permissible. That is what I mean by "less decisive" (it cannot do it alone).
 30. K. Szocik and M.J. Reiss, "The Final Frontier: What Is Distinctive about the Bioethics of Space Missions? The Cases of Human Enhancement and Human Reproduction," *Monash Bioethics Review* 41, no. 2 (2023): 87–102; K. Szocik, *The Bioethics of Space Exploration: Human Enhancement and Gene Editing in Future Space Missions* (Oxford University Press, 2023).
 31. See R.T. Scott et al, "Biomonitoring and Precision Health in Deep Space Supported by Artificial Intelligence," *Nature Machine Learning* 5, (2023): 196–207, at 196; the authors discuss the problems faced by astronauts and make recommendations toward "a maximally automated, autonomous and intelligent Precision Space Health system" to find solutions to space health challenges such as ionizing radiation, severe thermal and atmospheric conditions, and modified day–night cycles, and more.
 32. *Summary of NATO's Biotechnology and Human Enhancement Technologies Strategy* (NATO, 2024), https://www.nato.int/cps/po/natohq/official_texts_224669.htm; Translational Research Institute for Space Health (TRISH), NASA'S TRISH: *Strategic Plan 2024–2028* (Baylor College of Medicine — Center for Space Medicine, 2024), <https://www.bcm.edu/academic-centers/space-medicine/translational-research-institute/what-is-trish>.
 33. See TRISH, *supra* note 32, at 3.
 34. See NATO, *supra* note 32, at 1; TRISH, *supra* note 32, at 4.
 35. An overall consideration of the permissibility of this intervention in the specialized context would also need to account for the fact that these persons are also part of everyday society (or will be integrated back into everyday society afterwards). This is a problem that could be addressed through established societal mechanisms (and in codes of conduct of the specialized practice) to protect against abuses of power, misuse, or other irresponsible uses. If there is a high likelihood that these measures will achieve their desired outcomes, then the problem is solved. If not, then this is a significant concern, and it ought to be balanced against the gains in the specialized context — a process which will consider factors such as level of interaction with public, public confidence, and trust.
 36. Thus far, I have intended for my arguments to apply to somatic enhancements, but if my moral categorization applies to other kinds of enhancement too, this would be a positive feature.
 37. S. Goering, "Thinking Differently: Neurodiversity and Neural Engineering," in *Routledge Handbook of Neuroethics*, ed. L.S.M. Johnson and K.S. Rommelfanger (Routledge, 2018): at 37–50.

38. D. Baltimore et al, "A Prudent Path Forward for Genomic Engineering and Germline Gene Modification," *Science* **348**, no. 6230 (2015): 36–38; M. Almeida and R. Diogo, "Human Enhancement: Genetic Engineering and Evolution," *Evolution, Medicine, and Public Health* **1**, (2019): 183–189.
39. For example, if a proposed safe and effective germline enhancement is likely to yield only permanent benefits (such as lifelong immunity from a lifestyle disease), and there is societal acceptance that this is, in fact, a benefit, then this enhancement seems permissible, and owed. This suggests that the distinction between somatic and germline gene editing is similarly not sharp, and rather dependent on the contextual details of the time.
40. Just as Freedman thought the concept of "clinical equipoise" did not so much change things as explain why they are the way they are in clinical research ethics. See B. Freedman, "Equipoise and the Ethics of Clinical Research," *New England Journal of Medicine* **317**, no. 3 (1987): 141–145.
41. See N. Daniels, *supra* note 14; N. Daniels, "Justice, Health, and Health Care," *American Journal of Bioethics* **1**, no. 2 (2001): 2–16; A. McGee, "Using the Therapy and Enhancement Distinction in Law and Policy," *Bioethics* **34**, no. 1 (2020): 70–80.
42. T. Regan, "Introduction to Moral Reasoning," in *Information Ethics: Privacy, Property and Power*, ed. A. Moore (University of Washington Press, 2005): at 30–46; J. Rachels and S. Rachels, *The Elements of Moral Philosophy* (McGraw Hill, 2023).