

## Research Article

# Destiny and Desire: How To Think About Radical Enhancement

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**Abstract:** The prospect of radical human enhancement challenges us with how we can even think about the choice to enhance or not enhance. Whether as individuals or as citizens of liberal democracies, we already recognize the prospect of a future that is defined by technology, without being able to predict or imagine what it will be like or how we should try to influence it. We can also be sure that radical enhancement of ourselves as individuals, or of a large proportion of our fellow citizens, will alter the very standards and values by which we, as individuals or polities, later evaluate decisions to enhance – this is one version of the more general problem of transformative choice. In response to these challenges, it is plausible that we have no alternative to choosing and acting on our current desires and values, rather than our expected future values or some set of values that is objectively authoritative for us. On the other hand, our current value-outlooks include a degree of openness to our desires and values themselves changing, and for this reason we can often finesse the problem of transformative choice when it arises in everyday situations. On the gripping hand, this does not entirely solve the problem when it comes to something as dramatic and unprecedented as radical enhancement. There is some reason for an incremental, rather than apocalyptic, approach, even if we are sympathetic to a human future shaped by radical enhancement initiatives.

**Keywords:** agency; cosmic purpose; future studies; human enhancement; human nature; metaethics; radical enhancement; senescence; species relativism; transformative choice

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## 1. Introduction

The past several decades of advances in genetics, pharmaceuticals, prosthetics, computer engineering, neural interface technology, gerontology, and numerous related fields have changed how we live and work. More than that, all of these fields – with their various synergies and convergences – promise to change *us*. We can now speak credibly of emerging forms of “human enhancement” in the sense of direct technological interventions aimed at raising the physical, cognitive, and other capacities of human beings.

It's notoriously difficult to draw a line between *enhancement* in this sense and “mere” *therapy*, which seeks to treat injury, disease, or disability. Much academic literature examines and debates exactly this demarcation line, and I've made my own contribution elsewhere (Blackford 2014, 195–212). On this occasion, however, I hope to avoid nuances and puzzles. Even if we conclude that many healthcare activities are neither therapy nor enhancement, but something else again (vaccinations, abortions, or the contraceptive pill might be examples), we can

distinguish enhancement, in the relevant sense, in at least an approximate way. That is, enhancement involves technological interventions to increase capacities that are not diseased, injured, or otherwise impaired (whether the increase is within the normal range for our species or somewhere beyond it) (Savulescu, Sandberg, and Kahane 2011, 8).

One line-drawing problem relates to the process of senescence – the decline of our capacities and bodily systems as we age. From a purely bioengineering viewpoint, we might construe senescence as a disease, and efforts to reverse, halt, or slow it as therapy. Indeed, this disease conception of senescence seems to be gaining in popularity within relevant fields of biomedical science (e.g., Sinclair and LaPlante 2019, 67). And yet, many participants in debates over enhancement and therapy view efforts to combat senescence, and dramatically increase maximum human life spans, as a paradigm example of enhancement (for discussion, see Blackford 2014, 207–210). Despite some reservations, I will follow this near-consensus. Life extension is often a central topic in the ongoing debates, provoking much emotion, so it will be a point of focus in what follows.

Still working with this approximate, somewhat untidy, understanding, we can contrast *moderate enhancement* and *radical enhancement*. The philosopher Nicholas Agar draws this distinction in a valuable body of work that critiques radical enhancement and its advocates. He spells out his position in the opening pages of his 2014 book *Truly Human Enhancement*:

I endorse moderate enhancement – the improvement of significant attributes and abilities to levels *within or close to* what is currently possible for human beings. I reject radical enhancement – the improvement of significant attributes and abilities to levels that *greatly exceed* what is currently possible for human beings. (Agar 2014, xi; Agar’s emphasis)

For Agar, enhancement of human capacities “is generally a good thing, but one that it’s possible to have too much of” (Agar 2014, 1). He argues that if we fully understood what is involved in radical enhancement we’d prefer to stay fairly much as we are. In his earlier book, *Humanity’s End* (2010), he introduces the distinction by referring to capacities that “dramatically exceed” the intellect of Albert Einstein, the athletic prowess of the champion sprinter Usain Bolt, or the longevity achieved by the French centenarian Jeanne Calment, who was documented as living from 1875 to 1997. Moderate enhancement, by contrast, might involve undergoing genetic modification to obtain prowess comparable to that of current elite athletes (Agar 2010, 17).

Agar’s critique in *Humanity’s End* and *Truly Human Enhancement* is aimed at clear-cut examples of radical enhancement, rather than at any grey area between “radical” and “moderate.” I will likewise focus on clear-cut examples. We could debate whether sprinting 100 meters in, say, 9.2 seconds – assisted by a

performance-enhancing drug – would count as moderate or radical enhancement. But there can be no dispute if internalized technology helps someone run with the speed and acceleration of a cheetah.

Radical enhancement, then, promises, or threatens, the emergence of beings with capacities far exceeding historical human levels, with a further suggestion that radically enhanced people might be, or become, something “posthuman.” However, our current ability to contemplate such developments far surpasses our ability to bring them about. The technologies are not yet ready, although they might be soon with sufficient investment of money, time, and talent. This confronts us with a choice of how much to try to discourage, hinder, or forbid the needed efforts, or how far to permit, prioritize, and/or invest in them. That, in turn, leads into some difficult questions about metaethics and problems of agency.

## 2. What sort of future do we want?

Our species, *Homo sapiens*, has existed for something like 200,000 to 300,000 years, but for most of our history the question, *What sort of future do we want?*, was almost unformulable. Prior to the Scientific Revolution, with its first great flowering in the early decades of the seventeenth century, there was little sense in any of the world’s civilizations that future human societies might be shaped by advances in science and technology. Earlier advocates of such ideas – among them, Roger Bacon in thirteenth-century England – were few and far between, and they mostly enjoyed little influence. Expectations of the future might involve the rise and fall of empires or the apocalyptic interventions of God, but not yet the idea of social transformation through technology.

That idea became more salient during the eighteenth century, which saw the first wave of the Industrial Revolution. By the 1790s, ambitious European thinkers, such as William Godwin in England and Antoine-Nicolas de Condorcet in France, foresaw a magnificent human destiny combining social progress with advances in science and technology.

Through the nineteenth century, expectations of human progress waxed and waned and waxed again, responding to large social events such as the Romantic movement, new political ideologies, further developments in technology and industrialization, and conflicting philosophical, theological, and political responses to Darwin’s evolutionary theory. By the early decades of the twentieth century, there was a vibrant movement in support of enhancing human powers through technology – and this later provided one source of the contemporary transhumanist movement.

Most notably, perhaps, J. D. Bernal’s 1929 manifesto, *The World, the Flesh, and the Devil*, distinguished between past uses of tools to act on the world and a decisive step that was still to come: a time when, so he predicted, we would extend our tools “into the actual structure of living matter” (Bernal [1929] 1970, 33). Bernal

imagined more capable human bodies, profoundly altered by technology, and that these would constitute a range of specialized forms. Humanity might then split into two or more species. For Bernal, a conflict between “humanizers” and “mechanizers” would be solved “by the splitting of the human – the one section developing a fully balanced humanity, the other groping unsteadily beyond it” (Bernal [1929] 1970, 56).

Much has happened since the days when Bernal and his great contemporaries – among them H. G. Wells and J. B. S. Haldane – first promulgated such ideas. Twentieth-century developments included the arrival of unprecedented superweapons such as jet aircraft, rocket-propelled projectiles, and nuclear bombs. After World War II, the military rivalry of Cold War superpowers became a wider-ranging technological competition that included the first satellites and the subsequent space race. As the astrophysicist and literary scholar Andrew May has elaborated, the idea of a future “defined by its technology” became commonplace and familiar – accepted beyond science enthusiasts and science fiction readers – only as recently as the 1960s and 1970s (May 2018, 195). By then, the scientific marvels of the era were making daily headlines. Space flight, increasingly advanced weapons, and dreams of ever more impressive “modern conveniences” – robot maids, anybody? – formed the popular imagination of the future.

It seems, however, that Bernal’s prediction of a “splitting of the human” needed another decade or so to become equally familiar. Such ideas became ubiquitous in the iconography of 1980s cyberpunk fiction and then in multiple forms of post-cyberpunk geek culture. By now, variants of cyberpunk and post-cyberpunk iconography – often involving uploaded minds, cyborgs, or radically enhanced humans – have entered the popular imagination along with superweapons and space travel. Notably, however, this iconography is often perceived as dystopian or at least troubling. We’ve become *uneasy* about the human future.

Since the Scientific and Industrial Revolutions, then, many authors, thinkers, and schools of thought have developed their conceptions of a wonderful human destiny defined by emerging technologies. This has been a significant current within Western thought at least since Condorcet’s time, but there has also been an alternative tradition of skepticism and sometimes even repugnance. We can trace this countertradition from Thomas Malthus in the 1790s, and more recently it includes such prominent figures as C. S. Lewis – the great twentieth-century literary scholar, novelist, and theologian – and today’s “bioconservative” luminaries such as Francis Fukuyama, Michael J. Sandel, and Leon R. Kass.

There is now widespread speculation about the human future and the contribution of technology, and with this goes an impulse to shape the future consciously. Yet, while we can recognize the prospect of a future that is defined by its technology, we cannot predict, or even imagine, the detail of what it will be

like. Increasingly, it seems unacceptable to let technology rip. But how should we think about – and make decisions on – technologies that might be used for radical enhancement purposes, perhaps even for creating one or more new, posthuman species?

### 3. Distrust, desire, dissatisfaction

*To enhance or not enhance?* is a strangely difficult choice, since it features such unknowns. Perhaps radical enhancement would bring great benefits, but it would surely bring disruption to human institutions and societies, and perhaps to much more that we currently find valuable. Greatly extended longevity, for example, might immeasurably alter our everyday thinking about age and death, and arguably the human condition itself. Radically enhanced people might have strikingly different ideas and values from those of ordinary *Homo sapiens*. Entire societies of radically enhanced people might develop strange new institutions and practices. Moreover, radically enhanced individuals and their societies might judge the outcomes quite differently from *us* since their values would be shaped by different experiences.

The prospect of radical enhancement prompts difficult questions about how we can even think about the choice to enhance or not. Prior to the 1980s, twentieth-century Anglo-American philosophers, educated in the methods of linguistic and conceptual analysis, showed little interest in the topic of technological enhancement of human bodies. One forerunner of things to come was Jonathan Glover's 1984 book *What Sort of People Should There Be?* Among other provocative notions, Glover suggested we might eventually come up against a limit to our intellectual capacity for understanding the universe we live in. Our descendants might therefore be thankful if we decided in advance to boost human cognition to transcend this limit (Glover 1984, 179–181).

Technological developments in the 1990s and thereafter have led to increasing interest in such issues from philosophers, and from academics in closely related fields, and have evoked some fundamentally contrasting attitudes. One theme that appears in much of the literature is distrust of any agenda for altering human nature, the human body, or the human condition. This is apparent even in some writings that don't discuss technological interventions, but merely efforts to get beyond certain kinds of motivation. Often, it seems, philosophers, political scientists, and legal scholars assume that any dissatisfaction with the "given" human condition is a manifestation of powerful negative emotions such as hatred, contempt, or shame. For example, Peter Berkowitz has accused Friedrich Nietzsche of hatred for our current condition.

Perhaps he has a point. Nietzsche employed colorful and hyperbolic prose, and we can assume this indicated passionate convictions. Yet, Berkowitz makes his accusation on the basis of flimsy evidence. He expresses his disfavor for

Nietzsche's presentation of his most renowned literary creation, his version of the ancient Iranian prophet Zarathustra, as a man who seeks to go beyond revenge as a motive for action. For Berkowitz, paradoxically, this aspiration displays "enslavement to the spirit of revenge." Why? Because, "[W]hat is the ambition to surpass the human, if not a confession of hatred for the human condition?" (Berkowitz 1996, 178).

For Berkowitz, Zarathustra – and by implication Nietzsche – is trying to go beyond an aspect of the human condition as we experience it: that is, the revenge motive. This supposedly reveals *hatred* of the human condition itself, and not just of lust for revenge. But among other problems, Berkowitz thus trivializes the nature of hatred, whose central meaning is an especially intense and destructive emotion of antipathy toward another individual or a group.

As another example of such distrust, Michael Hauskeller displays consistent hostility and sarcasm when discussing transhumanist speculations about the future of sex. He identifies, and repeatedly draws attention to, what he calls "contempt for the body" in much transhumanist thought (Hauskeller 2014, 4), and in fairness to him some of what he cites from transhumanist thinkers does, indeed, sound contemptuous of our current flesh-and-blood embodiment. But much of what provokes Hauskeller's wrath seems to be rather mild dissatisfaction with the human condition and the limitations of human bodies.

Hauskeller's approach is well represented in the following passage, one of many in which he argues against philosophical opponents by way of uncharitable, and weirdly vulgar, paraphrasing of their work:

But if we strip [a certain paragraph written by Stefan Sorgner and Jaime de Val] of its verbal clutter, what remains is a very simple message: be progressive, belong to the intellectual and political avant-garde, by fucking everything that is fuckable, male or female, human or animal or machine. Be strictly egalitarian and non-sectarian in your fucking habits. And fuck kinship, family, and the community, those anti-progressive (and fundamentally pleasure-destroying?) institutions. (Hauskeller 2014, 10)

This abusive approach to participation in public discussion is entertaining, but it does little to advance human knowledge or mutual understanding. It reaches something of a crescendo when Hauskeller speculates that transhumanism is founded on hatred of humanity. After a discussion of the sexual philosophy (if it can be called that) of the Marquis de Sade, Hauskeller observes as follows:

Sade was certainly a misogynist, which I don't believe most transhumanists to be (although the movement is very much dominated by males), but I suspect that underlying Sade's whole philosophy is a deep-seated hatred not only of the female sex, but in fact of the whole human race, and I'm not

entirely sure that this is not also true for transhumanism as a philosophy. (Hauskeller 2014, 72)

This insinuates, even while superficially denying, that there actually *is* much misogyny within the transhumanist movement. Hauskeller then conveys, without committing himself, that transhumanism is likely to be based on something even more outrageous: on hatred “of the whole human race.”

To be clear, we do see participants in public discussion who broadly favor changing aspects of human nature and human capacities. What is not true is that they are obviously motivated by contempt, hate, or shame. For example, LeRoy Walters and Julie Gage Palmer, in their 1997 book *The Ethics of Human Gene Therapy*, discuss some possible objections to “moral enhancement” in the sense of gene-mediated stimulation of pro-sociality or friendliness to others. One objection is that this implies dissatisfaction with, or disrespect for, our evolved human nature. But what’s wrong with that? Why should our evolved nature be granted *respect*, exactly, or be viewed entirely with satisfaction? The authors state – reasonably, I submit – that they just *are* dissatisfied with violent aggressive characteristics, while adding that their goal would merely be to moderate these characteristics, not achieve moral perfection (Walters and Palmer 1997, 127).

Later in their book, Walters and Palmer make two closely related points. First, they are motivated by a particular perspective on human nature and the human condition, which involves dissatisfaction with such aspects of our human condition as disease, disability, and certain kinds of intellectual and moral failing. Second, their positive attitude to genetic enhancement is underpinned by a dynamic view of human nature, according to which we are not fated to accept the historical situation and are free to enter upon a task of providing a better world for ourselves and future generations, including by planned changes in the characteristics of human beings (Walters and Palmer 1997, 133). The substance of their case is the big-picture claim that we are not required to take human nature as we find it. Rather, our evolved nature is a legitimate object for suitably cautious attempts at improvement.

More recently, Allen Buchanan has argued for this position at length. He claims – again, I think reasonably – that we seem capable of judging human nature itself as containing a mix of good and bad, in which case, “it appears that we have a standard of goodness that is somewhat independent of our concept of human nature” (Buchanan 2011, 137).

Buchanan does not identify where this standard of goodness comes from or whether it is objectively authoritative in some way – which prompts a metaethical theme that I’ll return to. But at any rate, perhaps it is part of our nature to develop standards by which we judge various aspects of ourselves to be imperfect – unsatisfactory in one respect or another – and open to improvement. We might, therefore, be able to decide which parts of our nature to modify when we’re able

to. Thus, according to Buchanan, “there seems to be nothing wrong with the idea of changing those parts of our nature that are bad, if this can be done without imperiling the good parts” (Buchanan 2011, 137).

A lesson from this is that it’s one thing for us to have standards of goodness and badness that are themselves part of our nature, but it’s another for those standards to include *the value of leaving our nature as it is*. In the case of *Homo sapiens*, evolution may have produced a species whose nature is to seek to change itself.

For comparison, during an interesting exchange between the philosophers Samuel Scheffler and Niko Kolodny over the significance of death as a feature of human lives, Scheffler insists that our mortality is something that we should embrace. But how are we to make such a judgment? By what standards or values can we assess mortality as a good or bad thing? Kolodny identifies a problem with Scheffler’s approach, even if it is interpreted – more moderately than Scheffler might intend – as a claim that an immortal life is not a human one: that is, “no life that went on forever would be a *human* life or a *human* value-laden life” (Kolodny in Scheffler et al. 2013, 168; Kolodny’s emphasis).

Kolodny suggests that we might prefer a life that is eternal to one that is human or laden with human values. Thus, he asks why we shouldn’t “chafe at being confined to the merely human” (Scheffler et al. 2013, 169). Scheffler and Kolodny both have much more to say (see generally Scheffler et al., 2013; compare Blackford 2021, 55–61), and even Kolodny appears to concede that we could not choose an eternal life from within our current value systems. But this concedes too much. It might already be in our nature that we do, indeed, chafe at our limitations and desire greatly extended spans of health and life, if not true immortality.

As for our current “design,” Buchanan provides a litany of what seem like design flaws, when viewed from a bioengineering viewpoint, in present-day animals including humans. He sums up: “Given the way evolution works, it is utterly predictable that design flaws, departures from what a Master Engineer would produce, will be ubiquitous. In brief, evolution *inevitably* produces suboptimal designs” (Buchanan 2011, 157; Buchanan’s emphasis).

Natural selection is a blind process, and it builds new designs on old ones, co-opting the results of earlier evolutionary stages, rather than engineering new forms from scratch. This can produce organisms of great complexity and beauty, but less than optimal for satisfying their own desires. In particular, older specimens, beyond a certain point, “contribute little to the gene pool of the next generation” (Buchanan 2011, 185), and so evolutionary pressures tend not to act on the post-reproductive phase of organisms’ lives. They do not select against genes that are harmful from the viewpoint of the individual as it ages. In the case of *Homo sapiens*, the result is our very obvious bodily and cognitive deterioration with age, which is emphatically not an evolutionary adaptation or a manifestation of nature’s wisdom. Rather, on most scientific accounts, the phenomenon of senescence is a hugely consequential, and arguably unfortunate, side effect of our



harsh evolutionary history (see Blackford 2021, 105–106 and the references there cited).

The functioning of our various organs and organ systems – the neurological system, the pulmonary system, the cardiovascular system, and so on – may seem impressive when biomedical science reveals the details. But despite the functional intricacy of our bodies, we were not designed for any purpose that we are required to endorse. We have not been optimized for efficiency in achieving whatever we consciously desire, or to retain our capacities at their peak for a large proportion of a full life. We’ve inherited a human form and manner of functioning that we can, by all means, take the time to understand and appreciate, but there is no prohibition, arising from the evolutionary process or from any other source, against altering ourselves to improve whatever seems unsatisfactory.

#### **4. The mystery of cosmic purpose (and moral authority)**

It is one thing for aspects of our bodies and capacities, and the human condition to leave us dissatisfied. This might give us rather modest desires for enhancements that lie within the horizon of what seems imaginable (or almost so). By contrast, if we’re objectively required to value such qualities as complexity, agency (in the sense of capability or power), intelligence, and the persistence of intelligent beings over time, and if we’re further required to maximize them in response to their objective value, this might lead to a quite different approach. We might sign up to a radical agenda of shaping the ultimate destiny of the universe.

Such an agenda appears in many writings by self-declared transhumanists or transhumanism-adjacent thinkers. Ted Chu’s full-length manifesto *Human Purpose and Transhuman Potential* (2014) provides one good example. To be sure, Chu seems to equivocate between humanity *having* a cosmic purpose – one that somehow exists in the nature of things and is authoritative for us – and humanity *setting itself* (or choosing) such a purpose in the light of our modern knowledge of biological evolution. As far as I can see, he never clarifies which it is. When Chu introduces the concept in his book’s preface, it sounds like humanity’s cosmic purpose has an external source:

Looking at the big picture of cosmic evolution since the Big Bang – at least that which we can infer – I am convinced that our purpose is to transcend our limiting biology and the resulting limitations in our consciousness, thus enabling the rise of new kinds of sentient beings, freed from our genetic limitations in the pursuit of the highest transcendental aspirations and the promotion of cosmic evolution. (Chu 2014, xix–xx)

Note, however, that this passage immediately follows a discussion of Nietzsche’s well-known complaint that humanity lacks a goal and must therefore

set itself one. Chu states that his own book is “an attempt to plant that seed, to articulate a goal and a purpose for humanity in an age of unprecedented technological breakthroughs and previously unimaginable potentials for evolutionary progress” (Chu 2014, xix). While Nietzsche proposes the creation of a higher type of human individual, the *Übermensch*, Chu asks us to aim for more:

We must step back and ask: What is the best way to serve evolution (or cosmic purpose) in the larger sense? Does evolution stop with the advent of the human on the stage of cosmic history? Can there be a higher, nobler goal than the individual’s welfare and happiness? Should there be such a goal? (Chu 2014, 6)

This theme recurs throughout *Human Purpose and Transhuman Potential*. A few pages later, for example, Chu deprecates the goal of human happiness:

This feel-good goal [of maximizing human happiness] is at best egocentric complacency, with the implicit assertion that humankind is an end in itself. It plays safely and pleasantly to the lowest common denominator of human desires. At worst, however, it represents a decadent self-indulgence that flatly flies in the face of what we now know about how the universe evolved, where we came from, our place in evolution, and what our potential is [...]. I therefore argue that peace, prosperity, harmony, and human happiness are not ultimate ends in themselves; they become great goals only in the context of how they can serve a larger cosmic purpose – which I will refer to as the one true Creation. (Chu 2014, 9)

For Chu, human-centered values such as liberty, morality, prosperity, peace, and happiness are worth pursuing, but they are not ends in themselves. Rather, he states, “I have shown that we must ask ourselves what a prosperous and happy humanity is *for*” (Chu 2014, 387). He does not reject happiness, prosperity, and the rest, as *proximate* goals, but he wants them to find their place within something vastly greater. This will mean overcoming our genetically fixed limits and eventually spawning “a wide-open universe that is alive (for lack of a better word), is self transforming, and harbors further possibilities too distant for us to discern” (Chu 2014, 126).

While that sounds vague, Chu explains that it will include creating omniscient, ever-adaptive, non-biological cosmic beings. These will provide the cutting edge of evolution on the universal scale. Thus, “the last great invention that *humans* will ever need to make is in sight: the autonomous intelligent cosmic being (CoBe) that is spontaneously adaptive and has a will to continuously evolve and push forward the evolutionary frontier in the universe” (Chu 2014, 227; Chu’s emphasis).

It's also worth noting that Chu distinguishes between purposefulness and fatalism, so that human destiny is something that we make by our actions rather than something whose detail is foreordained. He warns: "We must be constantly on guard against the powerful feeling of preordained destiny. Destiny is written concurrently with the event, not prior to it. Our fate is not written in the stars" (Chu 2014, 230; endnote omitted). On this account, our species' ultimate destiny is achieved through our actions, and our welcoming awareness of this destiny can be action-guiding. Good outcomes are not guaranteed; they always require choices and work.

Some of Chu's readers will find all this inspiring, but others will be appalled at what they perceive as a cold and dehumanizing vision of the future. We might well imagine Michael Hauskeller interpreting Chu's manifesto as an expression of hatred or contempt for humanity, or of shame at being merely human.

This evidently raises questions about how attractive we find, or ought to find, Chu's cosmic outlook. However, I wish to raise a different and deeper issue. Even if we're excited and inspired by the message of *Human Purpose and Transhuman Potential*, we might wonder whether we really "must," as Chu states, ask ourselves what humanity is *for*, or how we can serve evolution (in his understanding of it) or cosmic purpose. If we're under an obligation to ask ourselves any such thing, what is the source of this obligation? It can't be found in human laws or moral systems, or even in widespread human desires. As Chu himself makes clear, the outcome of our cosmic mission would not include *us*, and it would be something far beyond our understanding, let alone desire. Nor, if it comes to that, is it obvious that anything like "cosmic purpose" actually exists or that evolution (even "in the larger sense") is something that we could meaningfully *serve*.

Chu himself raises the question of why we should be impressed by the perspective and the action-guidance that he offers. But as far as I can see, he never provides a convincing answer. Why should I adopt such cosmic goals, and why would my fellow citizens want me to? Unless these goals contribute in some way, even indirectly, to serving values that we already possess, why should we embrace them as our own?

Chu insists that "preservation and even perfection of the self can never be an end in itself"; rather, "The absolute end is the entire Cosmic Creation" (Chu 2014, 324). He enjoins us not "to shirk our God-given responsibility to contemplate and to advance the Cosmic Creation and what will come after humanity" (Chu 2014, 326). However, throughout *Human Purpose and Transhuman Potential*, Chu denies the existence of an anthropomorphic and personal God capable of giving us literal commands. Instead, he believes in God as nothing more or less than an infinitely creative "ongoing, impersonal, but coherent cosmic process" (Chu 2014, 23). But once again, it is not clear that anything meeting this description actually exists. Even if it does, how can we be rationally obligated to accept any such

“responsibility” if it does not accord with deep and persistent desires or values of our own?

Might cosmic goals such as Chu describes nonetheless be objectively authoritative for us? Might adopting these goals be objectively *required* – something that we must do in the nature of things, irrespective of our own desires, values, ends and goals, and so on, and the institutions that we create? Alas, I doubt that this idea is even coherent. At best, any such objective authority seems deeply mysterious (Foot 1972; Blackford 2016, 3–7).

A deflated alternative is that goals such as Chu describes can capture our imaginations, and on one interpretation that might be all he is trying to accomplish. But such vast goals might *not* capture most human imaginations. *What then?* We can form some idea of a bright human future in which we’ve ended poverty and invidious forms of discrimination, perhaps halted the process of senescence and spread beyond our planet into the reaches of space. But Chu would reject such a future Golden Age as a worthwhile goal. While the details of this more humanistic future defy exact prediction, or even depiction, the idea is at least comprehensible. That’s not so with talk of creating cosmic beings radically unlike ourselves, and forwarding the ultimate evolutionary potential of the universe.

## 5. Agar’s anthropocentric ideal

In *Humanity’s End* and *Truly Human Enhancement*, Nicholas Agar introduces the related (perhaps essentially identical) concepts of species relativism and the anthropocentric ideal. Agar does not accept a metaethical position of *cultural* relativism, defined as the philosophical claim that “the truth or falsehood of moral judgments is relative to a culture” (Agar 2010, 13). However, he embraces *species* relativism, according to which “certain experiences and ways of existing properly valued by members of one species may lack value for the members of another species” (Agar 2010, 12).

Similarly, he defines the anthropocentric ideal as a policy of employing human standards of evaluation (Agar 2014, 17). He contrasts this with using an objective ideal, understood as evaluating methods of enhancement by measuring the extent to which they actually increase our physical and other capacities. However, this is slightly confusing. If he is offering a form of evaluative relativism, the contrast should be between human values – those that are universally shared by human beings, at least after due reflection – and values that are objectively authoritative for us.

While I agree with Agar that there are no objectively authoritative values – as per my discussion of Chu’s *Human Purpose and Transhuman Potential* – I also have doubts about universal human values. Allow me to explain.

For Agar, certain things (ways of life and approaches to living, experiences, social institutions, and so on) have human-relative value, though they might not

be valued by extraterrestrial aliens or posthuman intelligences. Agar insists that human beings should evaluate these things in accordance with our species-relative values. Throughout *Humanity's End* and *Truly Human Enhancement*, he argues that some enhancements of our capacities would leave us with less of what human beings actually (and Agar would say “properly”) value.

In response, I happily grant that the values, standards, and behavioral norms established by human societies, and taught to their children, cannot take just any form. They are defined and bounded by typical human capacities, both physical and cognitive, and by what appear to be evolved, cross-cultural emotional tendencies (see generally Churchland 2011). We can generalize that human beings throughout history have valued the survival and security of their respective societies, along with certain aspects of their own flourishing as individuals. They have shown love for their kin (especially their own children) and a certain capacity for empathic responsiveness to other humans outside of their kin group and their local tribe. Such characteristics both facilitate and constrain the norms that human societies invariably develop to provide a degree of personal and collective security and to solve coordination problems. This, however, does not establish anything like a “one true moral system.” It leaves much room for variation.

Perhaps we could add some additional values that are universally shared across human cultures and societies, but this must take account of social and individual differences. For example, many people find value in deepening understanding of the world, participation in exhilarating activities, and displaying physical skills. But these values may vary greatly between different cultural traditions and among the people within a given culture. Beyond a certain minimum that has never been well defined, there is much human diversity. Indeed, everyday experience of politics in modern pluralistic societies suggests that some clashes of values, internal to these sorts of societies, are fundamental and permanent.

Accordingly, discussion of moral issues and public policy can often go no further than appealing to values that we hope are held in common between ourselves, as individuals, and our various interlocutors. That being so, Agar might be on firmer ground if he rested his case against radical enhancement on whatever values and standards he shares sufficiently with his readers that he can refer to them as “ours.” He could (try to) appeal to whatever values are, in his best judgment, actually held by the participants in the discussion. In practice, his critique could be understood in that way, since I doubt that the appeal to species-relative values is doing much of the work in *Humanity's End* or *Truly Human Enhancement*.

Furthermore, even if a richer set of universal human values could be identified, perhaps it would include such items as valuing our complexity of experience and our ability to act on the world. These values could push us toward enhancements that, for example, increase physical and cognitive capacities and

resistance to age-related decline. Concomitantly, universal human values might include a *negative* value placed on current human limitations. As I discussed in respect of the Scheffler–Kolodny debate about immortality, it might be natural for human beings across a wide range of societies to chafe at the limitations that are characteristic of our species. Notice, once more, that *human values* do not necessarily include *the value of remaining human* (or of retaining certain human characteristics).

In *Humanity's End*, Agar acknowledges that such things as lengthened lives and augmented physical and cognitive capacities may fall within human values. These are, he writes, “certainly the objects of human desires” and not mere ideological constructs (Agar 2010, 14). However, he expresses a concern that enhancement for these abilities “might promote certain human values at the expense of others. He adds, “I will argue that radical enhancement is indeed likely to take our humanity away from us. The question we must then ask is what is lost along with our humanity” (Agar 2010, 15).

But even if this sounds plausible, how should we understand what is meant by staying human or, conversely, losing our humanity? That depends on what it means to be human, and here Agar relies on the most common understanding of species among contemporary biologists. For Agar, being human is simply belonging to the mammalian species *Homo sapiens*, defined in accordance with what is known as the biological species concept. On this approach, species are understood as populations (or groups of populations) “comprising individuals capable of breeding with each other while lacking the capacity to breed with members of other biological groups” (Agar 2010, 19). The point of the biological species concept is to explain the clustering of sexually reproducing organisms, coexisting in the wild, into (mainly) discontinuous groups.

Using this approach, *Homo sapiens* is one sexually reproducing, reproductively isolated mammalian population among many. As with other such animals, the biological species concept does not require that each individual member of *Homo sapiens* actually be capable of reproducing. For any sexually reproducing animal species, there will be individual specimens that are, for one reason or another, biologically or socially infertile. However, they will be connected to other members of their population by familial relationships, a near-identical genome, and a myriad of phenotypical characteristics, many of them subtle and difficult to define, that make members of the same species identifiable by each other (see Agar 2010, 20–21).

Agar argues that “there’s a good chance that radical enhancement will create reproductive barriers, and therefore will result in beings who are not human” (Agar 2010, 21). But this seems eminently questionable. The barriers he describes – between unenhanced and radically enhanced people – would be more psychological than anything else, and it’s not clear that they’d be greater than existing reproductive barriers between humans from distinct cultural or

socioeconomic backgrounds. *Some* forms of radical enhancement might produce such changes in bodily morphology, non-verbal affective communication, and other characteristics, that enhanced people would no longer seem intuitively human. But other forms might not have this effect at all.

Accordingly, radical enhancement might not produce sufficient changes to make the individuals concerned physically unattractive to ordinary *Homo sapiens*. Nor need it alter sexual desires sufficiently to make young and healthy – but otherwise ordinary – *Homo sapiens* unattractive to individuals who've been radically enhanced. In both cases, this depends on the detail of the enhancement and how it is done. We can for example, speculate that ageless people would tend to party and marry among themselves – much like wealthy denizens of Hollywood – but we cannot assume that whatever social, cultural, and psychological barriers might arise would entirely disconnect them from the *Homo sapiens* mating and breeding population.

If radical enhancement goes far enough, perhaps it will lead to individuals who, by any definition, are no longer human, and in that case, it might make sense to classify them as posthuman. But the consequences of radical enhancement are not obvious, and (again) it will all depend on the detail. As one note of caution, however, it would be a serious problem if future populations of humans and posthumans did not reciprocate the kind of spontaneous empathy that is currently widespread within the human species. Such a development could lead to a breakdown in cooperation, and perhaps to forms of social hostility and civil strife. This is not the concern expressed by Agar – or at least, it is not his main emphasis – but it seems an important consideration. It suggests that we ought to act cautiously with the kinds of radical enhancement that are introduced, how suddenly they are introduced, and *how* radical they are.

Agar focuses mostly on what might happen to us as individuals if we chose to undergo some form of radical enhancement such as dramatically inhibiting the process of senescence or dramatically raising powers of cognition. Here, his arguments do not depend on a claim that we'd no longer be human. They relate more directly to whether or not we'd change for the worse, as assessed against our current values. More generally, the idea that some radical enhancements might render individuals no longer members of the species *Homo sapiens* does little of Agar's heavy lifting.

For example, his main criticism of radical life extension is not that it might create a reproductive barrier between those who have made use of it and more baseline *Homo sapiens*. Rather, he is worried about whether a potential for extreme longevity would make us more fearful of death, undermine our attachments to our current loved ones and our favored causes, or threaten our ongoing personal identities. In principle, all of these outcomes could happen even if radically long-lived people continued to have sex – and babies – with unenhanced human beings, and thus remained within the population of *Homo sapiens* as identified by the

biological species concept. I conclude that neither the idea of species-relative values nor the prospect of our ceasing to be intuitively fitting sexual partners for other humans bears much philosophical weight within Agar's critique.

## 6. Transformations, aspirations, and adventures

This brings us to the problem of transformative choice and transformative change, which I see as doing more of Agar's work. Agar emphasizes this problem throughout *Humanity's End* and *Truly Human Enhancement*, especially in the latter, where he offers the following definition:

Transformative changes alter the state of an individual's mental or physical characteristics in a way that warrants a significant change in how that individual evaluates his or her experiences, beliefs, or achievements. A human being who undergoes a transformative change may find that experiences properly viewed as very valuable prior to the change are significantly less valuable after the change. And vice versa. (Agar 2014, xi)

In her deservedly influential contribution to the philosophy of agency, *Transformative Experience*, L. A. Paul defines transformative experiences as those which both (1) grant us knowledge that is available only by undergoing the experience *and* (2) alter the standards and values by which we evaluate the experience. Hence, she comments as follows on the problem in making transformative *choices*:

Transformative choices, then, ask you to make a decision where you must manage different selves at different times, with different sets of preferences. Which set of preferences should you be most concerned with? Your preferences now, or your preferences after the experience? (Paul 2014, 48)

Agar frequently emphasizes that someone who chooses to undergo radical enhancement will emerge from the experience with altered values. Thus, even if this individual made an ill-informed or poorly reasoned decision, and indeed the "wrong" decision when evaluated by their values prior to the transformation, they might later be glad that they chose as they did. When evaluated using their new values, the decision to enhance might seem like the best or "right" one after all. We should add that this has a social analogue: a political unit such as a modern nation state might make a policy choice that produces what would have been considered unwanted consequences if they'd been known in advance. Yet, its citizens might later welcome those consequences because they acquire new standards of evaluation as a result of the policy choice itself.



Take the example of technologies that dramatically inhibit senescence. One reason why we might not want to embrace these technologies – as individuals or as citizens of democratic societies is that we fear outcomes that almost anybody would evaluate as bad, perhaps even after undergoing the transformation. In particular, it has often been argued – most notoriously by Bernard Williams (1973) – that an immortal life would become a curse, leading, sooner or later, to unbearable *ennui*.

However, this is speculative, and as Martha Nussbaum has recently suggested, Williams' fear of boredom might be more a reflection of his particular temperament than a genuine argument against immortality (Nussbaum 2013, 41). Among many others who've reacted to Williams, Richard Momeyer has provided an impressive threefold response: first, the world is so vast and variegated that we need never run out of new experiences; second, mere repetition does not necessarily lead to boredom in any event, for some of our basic biological desires, such as those for "food and sexual union," are self-renewing and never need be entirely satisfied, and so abandoned; and third, we should not smuggle in an assumption of deterioration in our biological drives, which we can always enjoy satisfying if they remain strong (Momeyer 1988, 18–19). On Momeyer's account, if we retain strong biological drives, plus such qualities as curiosity and wonder, the world will always provide endless opportunities for novelty and satisfaction.

Agar himself is skeptical about the idea of inevitable crushing boredom if we live long enough. However, he offers the prediction – which he shares with the prominent life extension advocate and researcher Aubrey de Grey – that people who are free of senescence will develop an extreme and restricting fear of death (Agar 2010, 112–129). But again, this is speculative, and it is easily doubted (Bhattacharya and Simpson 2014; Blackford 2021, 120–122). Perhaps de Grey's self-confessed fear of driving (Agar 2010, 115; Weiner 2011, 146) is best interpreted as another personal idiosyncrasy.

Against these speculations and responses, we can place in the balance what is unsatisfactory about our current situation and why we might want to change it. Consider the best-case alternative to using radical life extension technology. Currently, if we survive life's many dangers and grow old, our capacities diminish severely and our lives become restricted. Though we might make it to eighty or ninety years, or more, we function near the peak of our powers for only a couple of decades, early in adulthood – say, from our late teens to our late thirties. Not long after, we experience observable deterioration of our bodily systems and capacities. This eventually spirals down into increasing decrepitude, frailty, and dependence.

Once we've experienced our physical and cognitive powers at their peak, any unambiguous decline from that peak has some of the characteristics of death in the way it prevents us from doing and enjoying the things that we've previously done and enjoyed. Though we cannot imagine the detail of ageless lives, it seems

perverse to complain that we'd be *impoverished* if we managed to inhibit the process of senescence.

Nonetheless, as a general proposition, it's likely that inhibiting senescence would change us in unpredictable ways, and this would include changes to our desires, values, and standards of judgment. Even setting aside speculations about extreme boredom or heightened fear of death, we'd become very different people. Likewise, our society, and perhaps our global institutions and activities, would change greatly if a radical form of life extension became common. But must we view this as a bad thing? The answer would be straightforwardly affirmative if our current values included *valuing that our current values not change*. But as we've seen, that is not a plausible candidate to be a universal human value, and nor is it likely to be a consensus value among Agar's readers or mine.

At the level of our individual lives, transformative choices are an everyday phenomenon. People make decisions about having sex for the first time, having children, starting their first job, training to become doctors or lawyers, joining the army, trying to become experts on classical music, and a multitude of other transformational life experiences. In each case, going down the contemplated path will predictably bring a personality change, including a change in many values. In some cases, when confronted by transformational choices, you might wonder whether you really want to become such a different person. Whatever satisfactions you hope for might be alien to your current values and self-conception. Yet somehow we all make such choices.

One way that this can happen is when we deliberately aspire to a specific role or way of being, knowing it will transform us. Something like this is the experience of children, who generally want to become adults even if they can sense, inchoately, that it will mean taking on new priorities and values. But in different ways it also applies to becoming a lover, a parent, a doctor, a soldier, a person with a steady job, or whatever might be the situation. In all of these cases, we can aspire to develop a new and different "value-outlook" (Callard 2018, 4), though the full story of how this happens in various different scenarios is undoubtedly complicated.

In these familiar cases, the transformation may be smoothed by an imperfect, perhaps naïve, sense of what the experience could be like. Having observed various parents, doctors, classical music experts, and so on, we should know that the transformation will involve coming to discard some of our current values – we might even have an inkling of which ones. Admittedly, we might have misunderstood some of what we've observed in others, and/or some of its implications, and thus our speculations will be flawed. But even so, our current value-outlooks can include valuing some openness to change – even to change in our values themselves.

If radical enhancement were just like this, its transformative nature might not raise difficult issues. The problem, I think, is not so much the transformative aspect

of undergoing radical enhancement as the fact that it is, at this stage of history, a transformation that no one has yet experienced. There are no role models, mentors, self-help books, or other forms of guidance and reassurance, as there are with studying medicine, becoming a parent, or learning about classical music. With *those* transformative experiences, we might typically have some misconceptions, but we know much more about what we're in for, and what sorts of changes in ourselves we must be open to, than we do with radical enhancement.

To employ Agnes Callard's terminology – though in a context she does not contemplate – embarking on radical enhancement is more like *adventure* than *aspiration*. It is less like someone training to be a doctor than like a young adult from the US setting out on a trip to Europe in an open-ended, non-specific effort to “find herself” (Callard 2018, 7). In a society where we had role models – a society where many people have already undergone radical enhancement processes – this would be different. Meanwhile, until such a society is established, anyone choosing to be radically enhanced in some way is venturing into something doubly unknown (transformative, and in a so-far-unobserved way), and that is a reason to hesitate. For the moment, becoming radically enhanced cannot be an aspiration in the same sense as becoming a doctor, or a parent, or the other everyday examples. At best, it can be an open-ended adventure, but even such adventures are usually conducted (nowadays) within certain boundaries of predictability and safety. Think of it as an adventure with a high level of risk.

Similar, though certainly not identical, issues arise at the level of societies (or even at the global or species level). Once again, introducing radical enhancement in one form or another would be transformative. No one could know in advance just what the collective impact would be, but it would undoubtedly include changes to widely held values within existing human populations. Hence, it would alter the standards by which the changes themselves would later be evaluated.

Such experiences are commonplace within modern societies, and one difference between this and individual experiences of transformative choice is that entire populations and societies are less likely to have anything analogous to role models, mentors, or a *How-to* manual. Admittedly, some societies are able to observe the experience of others that are further on the curve of change. But other societies lead that curve.

At least in liberal democracies, there is a considerable history of openness to social change, to new ideas, and even to revolutions in values. This sort of openness to the future is itself widely, but not unanimously, valued, and we might be glad that the results of change are not foreseeable. Consider that many transvaluations which we now embrace might have been successfully resisted if they'd been foreseen in time. If our ancestors had possessed more ability to predict the future, they might have prevented changes that now seem beneficial, such as

the devaluation of many sexual taboos and of many reasons once advanced for going to war.

Here, the problem with radical enhancement is not so much that it would be socially transformative. So are many other things. The problem is not even that, like many transformations at a collective level, radical enhancement is two steps into the unknown. The greater concern may be the sheer scale of social transformation, with no obvious limit to what might happen in a relatively short time. The uncertainty of outcome is such that pessimistic speculations must be considered seriously. The risks are so difficult to specify, that there's little to be said beyond the general advice to minimize the awfulness – judged against our current values – of the worst that might happen.

In the upshot, then, there's some reason for an incremental, rather than apocalyptic, approach, even if we find the status quo unsatisfactory, and even if we're sympathetic to a human future shaped by radical enhancement initiatives.

## 7. Conclusions and coda

In this paper, I've examined the emerging choice, *To enhance or not enhance?*, from a philosophical and historical perspective. Historically, the idea of a human future shaped by science and technology has emerged only in the past few centuries. Its general acceptance is an even newer development, and the thought of shaping our future with science and technology that change *us*, via enhancement of our capacities, has only recently emerged as a practical question. In past decades and centuries, numerous thinkers speculated about what we now call enhancement technologies, but these technologies are finally becoming a reality.

*To enhance or not?* As twenty-first-century philosophers, we must factor in the option of *radical* enhancement. As we approach the question, however, we soon encounter a jungle of familiar, yet perennially difficult, issues – issues about death, values, and human nature, and above all about what engines drive, or ought to drive, our choices. Are there some desires or values that we share as human beings? If so, do these include a desire to remain human? Alternatively, might they include a desire to escape our human limitations? Should we follow our current desires and values, whatever they might be, or our expected value-outlook after we change as a result of our choices themselves? Or is there a human and cosmic destiny that we're objectively required to pursue in any event?

Even if we grapple successfully with all these large, abstract issues in fields such as metaethics and philosophy of agency, it's unclear where that takes us in a practical sense as we contemplate possible futures so different from the past or the present as to defy imagination. How do we get a grip on what we're choosing? How should we *think* about radical enhancement?

This is perplexing. From the preceding discussion, however, we can gather a few conclusions, even if they don't straightforwardly answer the biggest questions:

- First, it's entirely reasonable to feel dissatisfied by aspects of our evolved bodies and species-typical capacities, and with aspects of the human condition. The status quo is neither flawless design nor nature's wisdom. Dissatisfaction with the status quo and its limitations need not result from unattractive emotions such as contempt, hatred, or shame. Rather, some desire for improvement is reasonable and justifiable against existing widespread values.
- Second, it is not clear exactly what steps should be taken to cater for this reasonable and justifiable dissatisfaction with human limitations. At any particular point in time, individuals and institutions (such as governments) might be able to justify only cautious first steps. What happens after that is more speculative.
- Third – and here we move back to metaethics – I maintain that there is no requirement of rationality or morality for individuals or institutions to embrace a more cosmic agenda whose full meaning lies beyond human understanding. A manifesto such as Ted Chu's might capture some people's imaginations, but the rest of us are under no obligation to adopt it as our own.
- Fourth, there is no requirement of rationality or morality that we must, in some sense, "remain human." Nonetheless, I confidently assume that we all value retention of our current social bonds, which are underpinned by widespread mutually empathic responses among members of our species. At the least, enhancement efforts should not undermine these empathic responses and social bonds. (We might, of course, hope that these responses and bonds could be *strengthened* by enhancement technologies!)

In his critique of radical enhancement, Nicholas Agar emphasizes the transformative nature of choices to enhance ourselves dramatically beyond human limits. As we've seen, however, transformative choices are an everyday phenomenon. *Many* choices lead to experiences that give us knowledge that is unavailable without them – most obviously, knowledge of what the experience is like – and at the same time change *us* so that we now assess the choice itself from the perspective of a new value-outlook.

Though transformative choices are puzzling, and can cause anxiety, we make them all the time in our everyday lives. In practice, the puzzle is largely solved by the fact that our current desires and values already have a forward-looking element. They include a certain openness to experience and change, including changes in our desires and values themselves. This openness also has approximate analogues at the social level and perhaps beyond to the level of our species. In

some cases, individual openness to change can take the form of wanting to have the values, *whatever they might turn out to be*, appropriate for a particular role that somebody aspires to. Though Agnes Callard has more complex and controversial things to say, this simple point is a central theme of her 2018 book *Aspiration: The Agency of Becoming*. In other cases – cases that are more adventure than aspiration – we might be less specific about the changes that we’d welcome. Nonetheless, we don’t want to stay the same.

Unlike Agar, I am not opposed to change over relatively few generations to remove much in the way of human limits, and I don’t view this openness as embracing “humanity’s end.” Such metamorphosis and transformation of our species is not the same as death. As a young species (when viewed in geological perspective), we can understand such changes as merely the end of our beginning, and as a beginning of greater things. In fairness to Agar, however, individual or collective decisions about radical enhancement are not merely transformative. They take us into territory that is doubly unknown, because there are no role models, mentors, *How-to* manuals, or safety nets.

This is a reason for additional caution, which reinforces my previously expressed view (Blackford 2021, 26, 192) that the path to radical enhancement must go via moderate enhancement, enabling successive stocktakes, decision points, and iterations. This is less gung-ho than embarking *right now* on an ultimate cosmic mission, but it allows for a bright human future in which we overcome many limitations. It could lead to a civilization of radically enhanced people at home in our larger solar system and on planets circling distant stars. But building such a future for humankind is not the work of any single generation.

If that is accepted, philosophers might have a more manageable task in addition to the sort of large-scale, relatively abstract analysis that dominates most of this paper. At any particular point in history, there is some prospect of offering guidance, as long as the choices imminently available can be given some definition. If so, philosophers can put forward – and of course, argue about – more specific proposals as to how we should next proceed.

We have already seen strategic analyses from some authors who are sympathetic to enhancement – as well as some who are not – and this will be an increasingly important field with inputs from scientists, philosophers, philosophically trained bioethicists and legal scholars, and others. It will include specific proposals for institutional design and regulatory policy in respect of scientific research on enhancement technologies, its concrete outcomes in the form of patentable inventions, and the prudent, and otherwise defensible, diffusion of new methods and products (for one policy proposal focused on strategies for diffusion, see Buchanan 2011, 252–274). Such proposals are appearing in the context of genetic technologies for therapy or enhancement (e.g., Blackford 2014, 185–193), but they can also relate to other areas of biomedical technology such as the development of neural interfaces and implants. Inevitably, some proposals

will incorporate relatively conservative approaches, rejecting ideas that move beyond, or far beyond, therapy (e.g., MacKellar 2019, 239–243), but that is at least a manageable area for ongoing debate.

At a higher level of abstraction, is there a moderate path to radical enhancement? Here, I'm sympathetic to Condorcet's idea of a human destiny that we can all work for and help to make real. But creating it takes time and demands patience, like medieval workers building a great cathedral. Meanwhile, as Condorcet assured us over two centuries ago, we can each work, in the respective eras when we're born, and in a myriad of ways and contexts, for "the progress of reason and the defence of liberty," thereby contributing to "the eternal chain of human destiny" (Condorcet [1795] 1979, 201). For me, and perhaps for you, that's sufficient.

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