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Whereto Transhumanism? *The Literature Reaches a Critical Mass*

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Transhumanism is, according to its proselytizers, the “intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities.”¹ Transhumanists look forward to descendents who are posthumans, “future beings whose basic capacities so radically exceed those of present humans as to be no longer unambiguously human by our current standards.”² These posthumans may be “resistant to disease and impervious to aging,” have “unlimited youth and vigor,” and “reach intellectual heights as far above any current human genius as humans are above other primates.” They may have “increased capacity for pleasure, love, artistic appreciation, and serenity” and “experience novel states of consciousness that current human brains cannot access.”³ Posthumans may go so far as to escape the limitations of physicality by uploading themselves onto computers.

When last I checked the Web site of the World Transhumanist Association, an organization formed to agitate for transhumanism, I learned that it had a global membership of 3,744. But transhumanists are not the philosophically marginalized, technology-obsessed Trekkies that this number might suggest. Transhumanist thinkers present their view about where we should be headed with a keen awareness of how we might get there. Their opponents, not they, tend to be the ones guilty of arguing from caricatures of the technologies in question.

With the publication in the last few years of several books on transhumanism, a decent transhumanist literature has now been amassed. Those setting out this literature include the Swedish philosopher Nick Bostrom, who directs the Future of Humanity Institute at Oxford University and maintains the influential “Transhumanist FAQ”; James Hughes, executive director of the World Transhumanist Association, whose syndicated talk show *Changesurfer Radio* puts the case for transhumanism on a weekly basis; Gregory Stock, author of the book *Re-designing Humans*, which saw him pitted in public fora against Francis Fukuyama (whose book, *Our Posthuman Future*, also published in 2002, warned of the threat to humans and human nature from the new genetic technologies); the science journalist Ronald Bailey, who argues for a libertarian take on posthumanizing technologies; and Simon Young, who combines advocacy of transhumanism with composing and playing the piano.⁴

Intellectual movements are often given unity by a shared sense of who the enemy is. Transhumanists declare their most implacable foes to be a group of thinkers they call “bioconservatives” or, more insultingly, “bio-Luddites.” Prominent among the bioconservatives are Leon Kass, Francis Fukuyama, Bill McKibben, and Jeremy Rifkin. Although there are differences between them, these thinkers share a desire to keep us and our near descendents human, even if this means keeping us and them dumb, diseased, and short-lived. They identify the technologies that enthuse transhumanists as distinctively threatening to our humanity.

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Human and Posthuman

The Transhumanist FAQ tells us that posthumans are “no longer unambiguously human by our current standards.”⁵ This leads to the questions of what our current standards for humanity are and whether they should be trusted. One of history’s lessons is that seeming different does not suffice to make someone nonhuman. Europe’s age of exploration led to many encounters between humans who struck each other as so strange as to belong to different species. If we are to avoid mistakes like these, we need definitions of humanity and posthumanity that look deeper than appearances.

Francis Fukuyama thinks that we should acknowledge genes as marking the boundaries of humanity. He says “every member of the human species possesses a genetic endowment that allows him or her to become a whole human being, an endowment that distinguishes a human in essence from other types of creatures.”⁶ The idea that one is human by virtue of possessing a genome that gives rise to traits typical of humans may correctly classify posthumanizing technologies that work by modifying genes. But it seems to misclassify posthumanizing technologies that work without modifying genes. A descendant of ours modified with multiple cybernetic implants, after the fashion of the Borg from *Star Trek: The Next Generation*, may be posthuman at the same time as being genetically indistinguishable from humans.

Lee Silver imagines a future in which genetically enhanced GenRich people become so different from unenhanced Naturals that interbreeding is no longer possible.⁷ I suspect that the idea of reproductive isolation may be a more promising definitional starting point than the possession of a human genome. According to the biological species concept, a species is a collection of individuals that interbreed or are capable of doing so and do not breed with individuals belonging to different biological groups. Posthumanity will have arrived when we have beings whose enhancements isolate them reproductively from humans. Breeding between posthumans and humans may be physiologically impossible because of genetic or cybernetic alterations. Or it might simply be the case that we find each other so profoundly repellent that interbreeding is mutually unthinkable. We can imagine that this repulsion could be much more profound than that resulting from the racist thinking to which humans seem susceptible, creating re-

productive barriers that are more enduring than those racism occasionally creates.

This account of posthumanity may be vulnerable to counterexamples, but it should at least serve as a working definition. Scientists often begin investigations of unfamiliar phenomena equipped with definitions that they expect to modify as they find out more. Although a more complete understanding of the posthuman condition may lead to an improved definition, the idea of beings reproductively isolated from humans by their enhancements should serve to get debate under way.

Evolutionary Humanism

Simon Young claims to find support for transhumanism from evolutionary theory,⁸ and he goes on to suggest that another term for transhumanism is “evolutionary humanism.” Young’s intuition appears to be that since evolution is taking humans toward posthumanity anyway, it can’t hurt to give it a push. For him, evolution is essentially a process of “complexification.” He says that as conscious products of the evolutionary process, we humans are imbued with a “Will to Evolve.”⁹ It is the Will to Evolve that gives rise to a moral imperative to become posthuman. Young chides bioconservatives for wanting to leave humanity

“a static species going nowhere fast—forever.”¹⁰

Attempts to extract moral claims from the evolutionary process are risky, and these risks grow when dealing with somewhat poetical interpretations of the evolutionary process such as Young’s. According to a more prosaic definition, evolution is simply change in gene frequencies. While they do hope to ban certain ways of controlling the human gene pool, bioconservatives certainly do not seek keep the human gene pool entirely static. A global ban on posthumanizing technologies would leave our species subject to the same evolutionary pressures for change as always.

Evidence of the danger of drawing moral conclusions from evolutionary premises comes from the fact that, while Young’s poetical interpretation of evolution presents posthumanity as its goal, one could just as easily look at the evolutionary process and extract a bioconservative moral. Although change is essential to the evolutionary process, it is, paradoxically, antithetical to evolutionary success. A species fails in evolutionary terms by going extinct. One way to go extinct is to have no descendants. But another way to go extinct is to have descendants that are so different as to count as different species.

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For example, the dinosaur species *Archaeopteryx* is undeniably extinct even though birds, which might be descended directly from *Archaeopteryx*, are found on every continent. Young worries that humanity may be headed nowhere. But by protecting us from the technologies of genetic modification, bioconservatives may be interpreted as striving to protect humanity against evolutionary failure. I imagine that most bioconservatives will find this evolutionary parsing of their position unfamiliar—indeed, those whose bioconservatism is based on religious premises are likely to reject it outright—but it does suggest that facts about evolution support no view about the moral advisability of posthumanity.

Procreative Liberty and Transhumanism

The much debated notion of procreative liberty may offer a less philosophically fanciful route to posthumanity. Transhumanists are foremost among those arguing that parents should be free to use genetic technologies to enhance their children's characteristics. Gregory Stock proposes that we view the technologies that will enable the selection of modification of our genetic constitutions as germinal *choice* technologies.¹¹ Ronald Bailey indicates his liberal leanings in his selection of the title *Liberation Biology* for his defense of transhumanism.¹² His form of liberalism is of the libertarian variety. He combines defenses of individual choice regarding posthumanizing technologies with skepticism about a role for the state. James Hughes's fusion of transhumanism with social democracy differs; he emphasizes individual freedom but wants to allow the state to correct inequalities in access and to discourage individuals from making bad choices.¹³ Despite their differences, these writers are unified by a confidence that the choices licensed by procreative liberty will eventually make us posthuman. They predict that parents free to enhance their children's intellects, physical constitutions, and life expectancies will choose to do so.

But the connection between posthumanity and procreative liberty is less obvious than transhumanists tend to assume. For example, transhumanists present IVF as a forerunner of posthumanizing technologies.¹⁴ But there is a difference between a technology that gives children to people suffering from infertility and technologies of genetic enhancement. Being free to have children does not straightforwardly imply a freedom to change them in ways that happen to please you. Although John Robertson, the most prominent advocate of procreative liberty, does defend genetic enhancement, he thinks that it should be recognized as an *extension* of procreative liberty rather than among the core interests protected by it.¹⁵

Advocates of enhancement as a procreative liberty and transhumanists have a common foe. Bioconservatives display the same hostility toward the suggestion that prospective parents should be free to enhance their children that they do toward transhumanism. One reason for this opposition is that they, like transhumanists, think that a freedom to enhance necessarily takes us toward posthumanity.¹⁶ But there is actu-

ally a significant gap between the two views. Classical liberals do not present themselves as marketing any particular view of human excellence. Rather they defend institutions that allow individuals to make their own choices about how to live. Liberal pluralism about the good life carries over to decisions about what to view as an enhancement. The many different views about which is the best life lead to equally many views about what modifications to children's DNA actually enhance them. Liberals ask only that our choices be consistent with our children's well-being.¹⁷

Transhumanists differ from liberals in having definite views about the kinds of procreative choices that prospective parents should be making—they should be taking the first steps toward posthumanity, choosing, if possible, to have children who are much smarter, healthier, and longer-lived than ordinary humans. While liberals would protect the choices of prospective parents with posthuman values, they also want to protect the choices of parents who lack such values. It is not hard to think of choices that would excite transhumanists at the same time as being widely rejected by parents allowed to alter their children's genomes. There seems a big difference, for example, between genetically altering Johnny so that he is ten IQ points smarter than he would otherwise be, and making him smarter than his parents to the same extent that they are smarter than primates. The prospect of being viewed by one's child as permanently in the "da-da" stage of development would be a pretty terrifying prospect to many mums and dads.

Transhumanists may accept that some people may appeal to procreative liberty to justify rejecting posthuman options. Transhumanists merely want to defend their own right to make posthuman procreative choices. Furthermore, they do not envisage the arrival of posthumanity within one generation. Rather, they see its arrival as more gradual. Successive generations will enhance their offspring in ways that are compatible with a healthy relationship between parent and child, taking us to posthumanity perhaps over the course of a few centuries. But it is unclear whether liberals would countenance even this more gradual approach. Those who defend enhancement as procreative liberty think that it establishes a presumption in favor of permitting enhancement that may, on occasion, be overturned by conflicting moral considerations. The idea that procreative liberty can be overridden does not set it apart from other liberties. For example, the freedom of speech permits one to advocate one's political views. But the harms that result from racial vilification suffice to cancel the presumption in favor of this freedom even if the only way you can present your political views is by engaging in racial vilification.

One much-discussed possible harm is an exacerbation of social inequalities. Opponents of enhancement predict war, slavery, and genocide as humans face off against their genetic superiors.¹⁸ If the harms resulting from racial vilification suffice to cancel a presumption in favor of the freedom of speech, it is easy to imagine that a significant risk of war, slavery, and genocide might override—or at least significantly restrict—the presumption in favor of a freedom to enhance. Hughes'

democratic transhumanism provides a partial response to this concern. He would subsidize access to posthumanizing technologies for people who could not otherwise afford them. But liberals should not be concerned only with problems of unequal access. Many people will reject the technologies of enhancement even if they have access to them. Religious fundamentalists have a vision of the good life that excludes genetic enhancement. If they act on that vision, they will exercise their procreative liberty by rejecting every opportunity to genetically enhance their offspring. Defenders of procreative liberty will defend the right of each successive generation of religious fundamentalists to make this choice.

Suppose that the freedom to enhance will create large inequalities. Nick Bostrom and Ronald Bailey find strife and genocide unlikely results. Bostrom expresses confidence in the power of the laws and institutions of modern societies to prevent slavery and slaughter.¹⁹ Presumably, this confidence carries over to the laws and institutions of post-modern societies. Bailey finds reassurance in the global spread of liberal institutions that he thinks will prevent posthumans from victimizing genetically inferior humans, just as they prevent technologically superior humans from exploiting technologically inferior ones.²⁰ One could question Bailey's faith in the power of liberal institutions to protect technologically inferior people.

But even if this is conceded, there are reasons to doubt that liberal institutions will prevent grim outcomes.

If bioconservatives are right, then liberal democracy itself may be under threat. Fukuyama makes the point that liberal social arrangements are founded on a rough empirical equality of citizens.²¹ People of varying gifts acknowledge each other as citizens because they understand that relations between them are mutually beneficial. On one view, our mutual recognition as citizens depends on our mutual recognition as potential contributors. We can imagine that supremely intelligent posthumans may see no value in liberal social arrangements that include those whose ancestors have rejected the path of genetic enhancement. Humans won't be acknowledged as citizens because they will be viewed as having little to offer. If we are fortunate, posthumans may accord us the same moral status that we should grant chimpanzees—a status that falls well short of citizenship.

Posthuman Values as Human Values

One way to avoid this possible fragmentation of society would be to find something to say to those who insist that their conception of the good life is not transhuman. Nick Bostrom thinks that the values of bioconservatives may turn out to be posthuman without their being aware of it. They may just be ignorant of their desire to genetically enhance their children.

Bostrom explains that “our everyday intuitions about values are constrained by the narrowness of our experience and the limitations of our powers of imagination,” continuing that “some of our ideals may well be located outside the space of modes of being that are accessible to us with our current biological constitution.”²² To show how our values might be covertly posthuman, he enlists a *dispositional* theory of value, according to which “something is a value for you if and only if you would want it if you were perfectly acquainted with it and you were thinking and deliberating as clearly as possible about it.”²³ The dispositional theory allows for adjustments of our values in response to blind spots in our knowledge. Consider a music lover who has never listened to Bach's B-minor Mass. The Mass may be among his musical values if it were the case that he would enjoy it were he

to be acquainted with it. The dispositional account enables Bostrom to say that posthuman values that seem beyond our comprehension may nevertheless fall within the ambit of our current dispositions. Not even Garry Kasparov could grasp the basic principles of eight-dimensional chess, but presumably he would enjoy it were he fully acquainted with it. The same may be true for moderately gifted chess players. If we were to be properly acquainted with the hideously complex symphonies produced by posthuman composers, we would find them beautiful rather than unintelligible rackets. Posthuman symphonies are, therefore, among our musical values. It seems only right that we should seek to modify ourselves and our descendants so as to better appreciate these things that we value.

But there is something a bit odd about Bostrom's expansion of our values. The dispositional theory helps us to accept some things with which we may be unfamiliar as values. But it also instructs us to reject some of the values that we currently credit ourselves with. For example, you may pronounce yourself a fan of Wagner's Ring Cycle after listening to the couple of minutes of “Ride of the Valkyries” featured in the movie *Apocalypse Now*. Yet if exposure to the full fifteen hours

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would cause you to withdraw your endorsement, then the Cycle does not belong among your musical values even if you think it does. The dispositional theory's propensity to subtract values as well as adding them leads to some awkwardness for Bostrom's proposed posthumanizing of our values. I find Bach's B-minor Mass to be a beautiful piece of music. But we can imagine that posthuman appreciators of music may find it trite and so not value it at all. Or perhaps they will value it, but only as an inoffensive wee ditty. Both posthuman views of the Mass are fine; requiring us to echo them seems wrong.

Bostrom's approach may also lead to some puzzling additions to our values. Our intellectual shortcomings are not the only reason we fail to be fully acquainted with things we might value. The olfactory capacities of dogs make them aware of things in slightly off meat that elude us. Perhaps our indifference to slightly off meat is just an artifact of our olfactory narrowness. Consider posthumans whose olfactory enhancement makes them aware of all the things that dogs detect in off meat. They might derive as much enjoyment from the smell of off meat as dogs do. If we are permitted to resist the argument that the olfactory superiority of dogs means we should accept some of their values as our own, then there seems no reason we should have to admit the kinds of values that the superior intellects or senses of posthumans permit them to entertain.

Humanity as a Local Value

Bostrom's advice to explore our values puts us on the right path, at any rate. But rather than leading us to discover that we are all covertly transhumanists, I suspect it may lead us to better understand our connection with our humanity.

Some of our values are *universal*. When we identify them as such we say that they are values for everyone. Good examples are core moral values. One's moral status should not depend on who is making the judgment. You are a morally considerable being irrespective of whether your spouse or a complete stranger is asking the question. Other values are *local*. They depend on who is judging. The values we place on family and friends are to a large extent local. A parent can expect that you recognize the moral considerability of her child, but she should not expect you to value him just as she does.

Local values are high on the list of those that contribute meaning to our lives. We have attachments to particular peo-

ple, places, and traditions. The places they occupy in our lives insulate them against certain kinds of optimizing reasoning: You wouldn't swap your child for another child, even if that child were manifestly smarter and better at sport. Your attachment to your life partner survives the recognition that Brad Pitt or Angelina Jolie might have objectively greater appeal. You continue to support your football team even though you know it is one of the weakest in the league. It seems to me that much of the value we place on our own humanity is local. I value humanity because I'm human. I wouldn't trade my humanity for posthumanity even though I recognize that posthumans are objectively superior. Its being a local value

means that I do not expect the value that I place on humanity to be accessible to posthumans, just as, *pace* Bostrom, posthuman values aren't available to me.

What is it about the local value of being human that is so compelling? There seems to me to be something right about the bioconservative suggestion that our lives are given meaning by the struggle against human limitations. For example, there is no objective property of the universe that instructs us to find it remarkable that someone can run one hundred meters in ten seconds flat. Running one hundred meters in ten seconds is remarkable only in a human-relative sense: we recognize it as close to the limit of what is possible for humans. Our admiration for the top sprinters sur-

vives the recognition that cheetahs and posthuman athletes could cover the distance much more quickly. The local value of humanity informs our relationships with others. We choose to have other humans as our life partners because, in part, we want our struggles to make sense to them. We also choose to have humans as children because, in part, we want our achievements to be meaningful to them.

Universal values are compulsory in a way that local values are not. One cannot justifiably ignore the moral worth of another human being. But one can lack a local value simply by failing to stand in the requisite relationship to the thing that is a candidate for valuing. Transhumanists may concede that humanity is a local value for some, but deny that it is for them. They would point out that someone who lacks any regard for their humanity is not making a mistake in the same kind of way as someone who is unconcerned about the effects of his actions on morally considerable beings. I suspect that many avowed transhumanists are actually motivated by the local value of humanity, their protestations to the contrary

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notwithstanding, Transhumanists take pride in achievements that are meaningless except by reference to humanity. I imagine that they take pleasure in writing fine books defending transhumanism rather than feeling annoyance they weren't able to ask a time-traveling posthuman to give the subject a far superior treatment.

Insisting that its value is local helps us to avoid some unpleasant implications of valuing humanity. For example, James Hughes warns that "human-racism" is a consequence of bioconservatives' focus on humanity. He says that "human-racists want to deny citizenship . . . to posthumans, intelligent animals and robots."²⁴ But we cannot forget that moral status is a universal, rather than a local, value. It cannot be denied to posthumans.

Mistaking universal for local values might explain the awkwardness of some bioconservative claims. Fukuyama's defense of human nature allows him to endorse the use of biotechnology to treat or prevent disease. However, having said, "No one can make a brief in favor of pain and suffering," he proceeds to do precisely that, saying that many of "the highest and most admirable human qualities . . . are often related to the way that we react to, confront, overcome, and frequently succumb to pain, suffering, and death."²⁵ When it comes to terrible diseases, there seems a big difference between confronting and overcoming, on the one hand, and confronting and succumbing, on the other. It would be callous to retain pain and suffering if we could eliminate them so that the fortunate among us can overcome and emerge with our characters deepened.

We can avoid making a brief in favor of pain and suffering by advocating the elimination of horrible diseases as a universal value. This means recognizing that the dominant effect of metastatic cancer is to thwart human flourishing rather than to deepen the characters of onlookers and occasional survivors. The universal value of preventing and curing disease does not seem to be inconsistent with the local value of humanity. There doesn't seem to be anything spookily posthuman about someone who makes it through to a ripe old age without having succumbed to cancer.

I cannot pretend to have covered all of the ways in which transhumanists can make their case, for transhumanism is a movement brimming with fresh ideas. Transhumanists succeed in making the intuitive appeal of posthumanity obvious even if they don't yet have the arguments to compel everybody else to accept their vision.

1. World Transhumanist Association, "Transhumanist FAQ," <http://www.transhumanism.org/index.php/WTA/faq21/46/>, accessed March 27, 2007.

2. Ibid., <http://www.transhumanism.org/index.php/WTA/faq21/56/>.

3. Ibid., <http://www.transhumanism.org/index.php/WTA/faq21/56/>.

4. Ibid. Follow <http://www.transhumanism.org/index.php/WTA> for the Web site of the WTA. Information about Hughes's radio show can be found at <http://ieet.org/index.php/IEET/csr>. Stock's and Fukuyama's dissonant takes on posthumanity can be found in G. Stock, *Redesigning Humans: Our Inevitable Genetic Future* (Boston, Mass.: Houghton Mifflin, 2002) and F. Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (New York: Farrar, Straus and Giroux, 2002).

For Bailey's defense, see R. Bailey, *Liberation Biology: The Scientific and Moral Case for the Biotech Revolution* (Amherst, Mass.: Prometheus Books, 2005), and for Young see S. Young, *Designer Evolution: A Transhumanist Manifesto* (Amherst, Mass.: Prometheus Books, 2006).

5. World Transhumanist Association, "Transhumanist FAQ," <http://www.transhumanism.org/index.php/WTA/faq21/56/>.

6. Fukuyama, *Our Posthuman Future*, 171.

7. L. Silver, *Remaking Eden: How Genetic Engineering and Cloning Will Transform the American Family* (New York: Harper Perennial, 1998), epilogue.

8. Young, *Designer Evolution*.

9. Ibid., 182-84.

10. Ibid., 41.

11. Stock, *Redesigning Humans*.

12. Bailey, *Liberation Biology*.

13. J. Hughes, *Citizen Cyborg: Why Democratic Societies Must Respond to the Redesigned Human of the Future* (Cambridge, Mass.: Westview, 2004).

14. For example, Hughes, *Citizen Cyborg*, Bailey, *Liberation Biology*, Stock, *Redesigning Humans*.

15. J. Robertson, *Children of Choice: Freedom and the New Reproductive Technologies* (Princeton, N.J.: Princeton University Press, 1994).

16. Fukuyama, *Our Posthuman Future*.

17. See N. Agar, *Liberal Eugenics: In Defense of Genetic Enhancement* (Oxford, U.K.: Blackwell, 2004).

18. See G. Annas, L. Andrews, and R. Isasi, "Protecting the Endangered Human: Toward an International Treaty Prohibiting Cloning and Inheritable Alternations," *American Journal of Law and Medicine* 28, nos. 2/3 (2002): 151-78.

19. N. Bostrom, "In Defense of Posthuman Dignity," *Bioethics* 19, no. 3 (2005), 202-214.

20. Bailey, *Liberation Biology*, 171.

21. Fukuyama, *Our Posthuman Future*.

22. N. Bostrom, "Human Genetic Enhancements: A Transhumanist Perspective," *Journal of Value Inquiry* 37 (2003): 493-506, at 495.

23. Ibid.

24. Hughes, *Citizen Cyborg*, xv.

25. Fukuyama, *Our Posthuman Future*, 171.