# Transhumanism:

## A Beginner's Guide to the Quandries of Tomorrow

Wallace Mitchell in Philadelphia, Pennsylvania recently shattered all weight-lifting records by heaving a thousand pound boulder over his head. Elena Tsodokova, proprietor of a New Jersey cheese shop, has recently stunned top theoretical physicists by providing them with an astonishingly accurate explanation of all eleven dimensions of the universe. And while he's accused of being a coward, 115-year-old Bjorn Svensson just doesn't seem to age. All of these people have one thing in common: they're not people. They're animals.

Mr. Mitchell is a mouse. He was created in a lab at the University of Pennsylvania, and though he hasn't lifted any thousand pound boulders, he does climb places and lift objects that other mice can't. Ms. Tsodokova is also a mouse. She was engineered in a lab at Princeton University and can solve problems much faster than any normal mouse. Mr. Svensson is a worm. After two University of Colorado scientists meddled with him, he enjoyed a life three times the maximum age of a

regular worm. What makes these mad-science experiments so significant?

Many scientists are confident that, in the not too distant future, these technologies—and others even more unbelievable—will be available for human use. Human enhancement technologies have already provoked strong reactions from scholars, religious leaders, scientists, and terrorists, and as they get closer to reality, moral concerns surrounding them will only become more prevalent, polarizing and controversial. And for good reason: the technologies will pervade every aspect of life and redefine what it means to be human, potentially leading our species to a radically transformed "posthuman" existence.

The transhumanist movement has emerged as an enthusiastic advocate of human enhancement technologies, while at the same time taking very seriously the ethical problems involved. This paper analyzes the transhumanist approach (specifically, the one put forth by the leading transhumanist philosopher Nick Bostrom) to four major enhancement issues: global security, access, environmental sustainability, and human dignity. It concludes that, though not perfect, transhumanism is constructing a critical ethical schema through which the human race can confront the difficult choices ahead.

**Global Security**

While they have an enormous potential for good, the advances that fuel human enhancement technologies also pose massive threats to our survival. Many of the following scenarios might seem like science fiction now, but the people best prepared to assess these risks—the scientists and engineers creating the world of tomorrow—are among the most concerned. Hugo DeGaris, on the forefront of artificial intelligence research, believes that once machines become conscious, they might quickly achieve unfathomable levels of intelligence and swat humans off the earth like gnats ("Human V2.0"). Bill Joy, the co-founder of Sun-Microsystems, warns that self-replicating nano-particles designed to manufacture material at the molecular level could quickly reduce the biosphere to dust (para. 74). World-renowned inventor Ray Kurzweil explains: "A reasonable estimate of the number of carbon atoms in a single replicating nanobot is about $10^6$ ... The malevolent nanobot would need to create on the order of $10^{39}$ copies of itself to replace the biomass," which would be accomplished in weeks (Kurzweil 399). Kurzweil points out another risk: anyone skilled in the art of genetic engineering might "modify bacterial and viral pathogens to create new diseases" (Kurzweil 393). What makes genetic and nano threats much

more daunting than nuclear weapons is their wide accessibility. "They will not require large facilities or rare raw materials. Knowledge alone will enable the use of them" (Joy para. 27).

No matter how remote some of these disaster scenarios might seem, they are all conceivable, and they must be a factor in dictating how society pursues enhancement technology. Nick Bostrom, co-founder of the World Transhumanist Organization and director of the Future of Humanity Institute at Oxford University, recognizes this. "Global security is the most fundamental and non-negotiable requirement of the transhumanist project," he says (Bostrom, "Transhumanist Values" 10). Bostrom asserts that "transhumanism does not entail technological optimism," (4) and he seeks to improve global security by "promoting international peace and cooperation" (12). More specifically, Bostrom advocates heightening risk awareness, creating a framework for international action, and slowing the development of potentially dangerous technologies while advancing more benign ones ("Existential Risks" 9.4). The impulse toward destruction cannot be stopped, and given their overwhelming potential for good, a worldwide ban on these technologies is unfeasible. The best we can do, therefore, is to be aware of the dangers and do everything we can to protect ourselves against

them. Bostrom's willingness to sacrifice certain technological developments for the sake of safety and his call for open and active investigation into the threats goes a long way towards appeasing the most cautious critics. If we have the foresight to consider the risks and the political will to actively avert them, we are in a better position to enjoy the coming advances.

**Access**

Transhumanists are hopeful that enhancement technology will bring unthinkable benefits to humanity. But who is the "humanity" that will actually receive these benefits? There will inevitably be giant global divides between the haves and the have-nots of the enhancement world, and this will open up a Pandora's box of human rights, economic class, and social status issues. An unenhanced person would face discrimination from the health care system and in the workforce, and he or she would most likely be confined to a social strata based on a level of enhancement. Imagine your daughter, who had a genetic IQ Boost in the womb and an advanced Cosmetic Upgrade as a child, marrying some "nature boy." A caste system would quickly solidify, but because many

differences would be at fundamental biological levels, the castes could only grow more stratified with time.

The transhumanist ethic tries to patch this up with comforting thoughts, but ultimately their answers to the problem provide no real solutions. Bostrom does hold that "human enhancement technologies should be made widely available" ("Posthuman Dignity" 203), but when an approximate sixth of the world does not have access to clean drinking water (Lee and Leigh), "widely available" is nearly impossible. When cornered with the issues of inequity, discrimination, and stigmatization that uneven access could trigger, Bostrom admits the possibility but maintains that our enlightened society could maintain "equal dignity for all" ("Posthuman Dignity" 209). "Even today," he argues, "the segment containing the tallest ninety percent of the population could, in principle, get together and kill or enslave the shorter decile," and that we remain peaceful proves that societies with inherent inequities can get along (208). What would Bostrom say about the ninety percent of the wealthy in this world today who have effectively enslaved the poorer decile? Bostrom concludes by arguing for a "climate of tolerance and acceptance" for the unenhanced (208)—a nice consolation for those left behind.

Francis Fukuyama offers a more credible window into what might happen with the "enhancement divide." On the up side, Fukuyama believes that the introduction of enhancement technology might provide an "impetus toward a much more genetically egalitarian society" (Fukuyama 158). However, the means to that end is not as pleasant:

> This is one of the few things in a politics of the future that people are likely to rouse themselves to fight over. By this I mean not just fighting metaphorically, in the sense of shouting matches among talking heads on TV and debates in Congress, but actually picking up guns and bombs and using them on other people. (158)

The only solutions he sees (158-159) are banning enhancement technologies altogether (untenable) or bolstering the bottom half of society through subsidies (incredible). There may be no tidy answers to this problem, and that might be why Bostrom treads lightly over the issue. What must we must strive for, at the very least, is to establish firm policies to preserve the rights and dignity of those who are unenhanced. And the stratification must not become so solid that regular humans no longer have opportunities to rise above their caste.

**Environmental Sustainability**

The frenetic consumption of our technologically driven industrialized society is wearing out the planet. The United States' economy is beginning to reflect this, yet we cling rigidly to our material abundance and will even go to war to defend it. As the BRIC countries (Brazil, Russia, India, and China) become more industrialized, the demands on our natural resources are becoming much more substantial. In light of this situation, can the relentless pursuit of enhancement technologies be justified?

Bostrom thinks so. He recognizes society's responsibility to use enhancement technology in "ways that are sustainable" and points out that associated technologies may be "the only viable option for the long term" ("Transhumanist FAQ"). Ray Kurzweil seconds this and claims that nano-engineered solar cells will meet the entire planet's energy needs 10,000 times over in 20 years (Lloyd). Researching and developing alternative means of energy are essential, but we must be careful not to rely on future technologies alone to solve our resource and energy problems. What if they don't materialize, or don't materialize soon enough? Scaling back on our gluttonous consumption and finding more efficient ways of using the resources we currently have are critical.

Heightened international dialogue and less nationalism are also imperative to mitigating conflict.

Overpopulation is another concern. Transhumanists ultimately view aging as a disease to vigorously combat (Bostrom, "Transhumanist Values" 13), so this would mean even more people on the planet consuming even more resources. If something is not done to contain growth, Christian de Duve warns that "natural selection will take care of the matter for us, through famine, disease, genocide, and war" (Wallace 14). Two solutions Bostrom offers are birthrate control and an immediate focus of extending healthspans (quality of years lived) over lifespans ("Transhumanist FAQ"), and these make sense. A healthier senior population would save the world billions in health care costs and add to overall productivity ("Transhumanist FAQ"). A disturbing clause in Bostrom's argument for longer life states, "transhumanism stresses the moral urgency of saving lives ... among people whose lives are worth living" ("Transhumanist Values" 13). This is another access issue that would obviously set off another human rights firestorm.

**Human Dignity**

Nick Bostrom is adamant about "individual freedom and individual choice in the area of enhancement technologies" ("Transhumanist Values" 11). This sounds good, but such unqualified freedom might facilitate the brave new world that Bostrom would like to avoid. At Tulane University, experiments with Parkinson's patients have found that electrical stimulation of different parts of the brain induces different feelings (Naam 193). This technology, along with rapid advancements in psychopharmacology, should soon give us the ability to take absolute control over our moods. With the unregulated use of this technology, many people would choose to go through their days languishing in a pleasant stupor. Bostrom calls this criticism "unsupported" and "exceedingly pessimistic" ("Posthuman Dignity" 206). But all one has to do is to consider all the distractions and indulgences people engage in now. A magic soma pill would seal their ignorant bliss. The Dalai Lama has said "If it was possible to become free of negative emotions by a riskless implementation of an electrode—without impairing intelligence and the critical mind—I would be the first patient" (qtd. in Keiper). This is troubling. Which negative emotions would he rid himself of? Doubt? Fear? Depression? Doubt is essential to critical thinking. Fear is an invaluable tool in decision-making. Even

depression adds depth and meaning to the human experience. Erasing these emotions might make us feel good, but they would reduce us to dull, happy idiots. Psychologist Ad Bergsma sees happiness as more complex than an isolated feeling: "The affective system in our brain needs strong ties with the ongoing interaction of the individual with its environment. Making people happier without enhancing the grip on their life will be contra-productive" (401). "The best option," he concludes, "is not to redesign our brains, but to change the world we live in" (414).

Ted Kaczynski, the Unabomber, chose an insane way to argue his positions, but his indictment of a techno-industrial society which increasingly provides for every human need deserves consideration.

> Having a goal, making an autonomous effort and attaining the goal—that [is how] self-esteem, self-confidence and a sense of power are acquired. When one does not have adequate opportunity to go throughout the power process the consequences are ... boredom, demoralization, low self-esteem, inferiority feelings, defeatism, depression, anxiety, guilt, frustration, hostility, spouse or child abuse, insatiable

> hedonism, abnormal sexual behavior, sleep disorders, eating disorders, etc. (Kaczynski para. 44)

Again, the plausibility of this assessment should not be difficult to see as the phenomenon is already manifesting itself widely among industrialized nations. As we gain more control over ourselves and our environment, we must not get lazy and confuse instant gratification and hedonism with meaningful productive activity. This is not only mind-numbing but creates a real threat to our existence. The more junk we fill our heads with, the less reason we have to live.

If the individual doesn't implode with an overabundance of autonomy, the government might not be able to resist the temptation to use enhancement technologies to control the population. Bostrom himself, the libertarian of enhancement technology, calls our intrinsic tendencies toward murder, rape, genocide, cheating, torture, and racism "unrespectable and unacceptable" ("Posthuman Dignity" 205), and cites this as a reason to modify our natures (205). There's good reason, then, to believe that he would advocate political action to biologically eradicate them. This might sound good, but in effect it is a genetic lobotomy. If we're biologically incapable of killing, raping, cheating, torturing, or discriminating, might we also lose our capacity to survive? We evolved

aggression for a reason. Taking it away, we might turn into the Eloi of H.G. Wells' Time Machine, a race of super-intelligent weaklings who were slowly being eaten away by the wild, bestial Morlocks.

Our inherent arrogance and ignorance are another threat to human dignity. Nassim Nicholas Taleb, a prominent international hedge fund manager, makes this admonition: "Don't disturb complicated systems that have been around for a long time. We don't understand their logic ... Leave it the way we found it, regardless of scientific 'evidence'" (qtd. in Appleyard). Transhumanists are quick to balk at this idea, claiming that "we can legitimately reform ourselves and our natures in accordance with humane values and personal aspirations" (Bostrom, "Posthuman Dignity" 205). Maybe so, but if we rush in and make permanent changes to the human genome, we could effect harmful changes on future generations. Bostrom's response? "Transhumanists emphasize that particular concerns about negative aspects of genetic enhancements, even when such concerns are legitimate, must be judged against the potentially enormous benefits that could come from genetic technology successfully employed" ("Genetic Enhancements" 497). This is reckless endangerment. Francis Fukuyama explains that: "Once we move beyond relatively simple single-gene disorders to behavior affected

by multiple genes, gene interaction becomes very complex and difficult to predict" (92). As evidence, he notes that a mouse who got an intelligence boost also seemed to experience greater pain as a result (92).

The greatest threat enhancement technologies pose to human dignity is the devaluation of human life itself. In his essay "Sorry, but Your Soul Just Died," Tom Wolfe claims that advancements in genetics and neuroscience will soon yield near-comprehensive insight into who we are as individuals: "temperament, role preferences, emotional responses, and levels of aggression ... [and] also many of our most revered moral choices are not choices at all in any free-will sense but tendencies imprinted in the hypothalamus and limbic regions of the brain" (para. 7). It's true that, if all of these factors are so determined, we might develop drugs that could empower people to achieve their goals. Ultimately, however, the mystery of life could be sucked dry. People would no longer be able to maintain any illusions about themselves or others, and they would be forced to confront the cold, demoralizing reality of their biological imperfections and limitations. The same problem comes with genetic engineering. An engineered human might only see him or herself as a product—replicable if desired—just like the next Ford that comes off the assembly line.

The blurring distinctions between humans and computers could make things even more mechanical. In 1988, Hans Moravec, director of the Mobile Robot Laboratory at Carnegie Mellon, predicted that robots with human intelligence will be common within fifty years (Moravec 64). All of a sudden, our precious consciousness—which has ennobled humans for millennia—might be reduced to a quantifiable bunch of ones and zeroes that could, like today's computers, be sold on eBay for a couple hundred dollars. "What is ultimately at stake," Fukuyama suggests, is "the very grounding of the human moral sense, which has been a constant ever since there were human beings" (102).

For the transhumanist reaction to this dizzy and unsettling future, we return to the core principles of Bostrom's vision. He advocates the well-being of all sentience ("Transhumanist Values" 12) and reminds us to take things one step at a time, "incrementally improving human capacities and health-span" ("Posthuman Dignity" 208). By evolving with technology, he imagines "radical-extension of human health-span, eradication of disease, elimination of unnecessary suffering, and augmentation of human, intellectual, physical and emotional capacities" ("Transhumanist Values"). Exploring and experiencing the wonders of

the universe to a far greater extent than we can now is a dream worth pursuing.

**A New World**

Enhancement technologies pose a myriad of threats and challenges to the human race. While it's helpful to identify the problems and criticize certain aspects of an ethical system, the essential question is: what is our attitude toward the future? Some groups are so fearful that they advocate totalitarian bans on new technology, while others are so optimistic that they only see a salvation of mankind on the forefront. The transhuman ethic, while occasionally indulging in this over-optimism, ultimately suggests a careful, rational approach to the wonders ahead. Education, individual empowerment, and a "certain epistemic tentativeness is appropriate," Bostrom concludes, "along with a readiness to continually reassess our assumptions as more information becomes available" ("Transhumanist Values" 12). If we proceed conscientiously, with our eyes wide open to the extraordinary change speeding at us, then we have a chance to shape our future and retain a sense of morality, love, and dignity as we become reborn through our own creations.

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