

Enhancing Who? Enhancing What? Ethics, Bioethics, and Transhumanism

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Transhumanists advance a “posthuman” condition in which technological and genetic enhancements will transform humankind. They are joined in this goal by bioethicists arguing for genetic selection as a means of “enhancing evolution,” improving if not also the species then at least the potential lives of future individuals. The argument of both, this paper argues, is a new riff on the old eugenics tune. As ever, it is done in the name of science and its presumed knowledge base. As ever, the result is destructive rather than instructive, bad faith promoted as high ideal. The paper concludes with the argument that species advancement is possible but in a manner thoroughly distinct from that advanced by either of these groups.

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I. INTRODUCTION

It is hard not to applaud the optimism of transhumanists like [Bostrom \(2005, 2007\)](#) and [Hughes \(2004, 2007\)](#). Who, after all, would argue against their stated goal, the betterment of humankind? “Human nature is improvable through the use of applied science and other rational methods” ([Bostrom 2005](#), 202–3). The credo is one futurists have promised for a 100 years, but this time, they insist, it is for real. With science as their tool, they will create a “posthuman” species with all our current virtues but without our contemporary deficits. The result will be longer life spans, greater physical and mental capabilities, and perhaps, better self-control. The promise is beguiling: Utopia without hard work, a New World under our control.

While transhumanists emphasize mechanical and chemical enhancements, genetic engineering is an important if muted element of their stated program “presumably because of related dystopian visions and the history of ‘eugenics’” (Coenen, 2007, 4). Nor do the transhumanists really need to beat the eugenic drum. For this they have their fellow travelers, those I call here “enhancement bioethicists” like Glover (2006) and Harris (2007). They proclaim loudly what transhumanists imply at a whisper: the ethical right if not the moral necessity of genetic manipulation and selection as a means of personal aggrandizement as species advancement.

II. COMMON GROUND

Transhumanists and enhancement bioethics share a set of core beliefs (Coenen, 2007, 5–7) that propel their respective but allied agendas. First, that human biology can be improved through a range of technologies that will eliminate natural deficits in individuals and thus, eventually, the species in general. Second, that science can fix our failings. Third, that the scientifically enlightened know which human characteristics are desirable and which are not, what should be promoted and what should be eliminated from the individual life and from humanity-at-large. Fourth, the process of what Harris calls “enhancing evolution” will occur within an ethos that is deeply individualistic in its construction and largely market-driven in its foundations.

If only we listen to them—they *know!*—individual limits will diminish, lives will be enhanced. Humankind will advance rapidly not haphazardly but at their benign direction. They dismiss those who question their agendas as “bioconservatives” (Hughes, 2007) and who do not understand the potentials they promise, the science they offer, and the judgments they would undertake in our name. The paucity of their science and the dark underbelly of their eugenic agenda is something neither group wishes to admit.

The Argument

The argument of both transhumanists and enhancement bioethicists is admirably concise. As a point of faith, they assert that technologies evolving from genetics, nanoscience, and neuroscience soon will be sufficient to permit their agendas to be pursued in an ethical and value-free manner. In proposing a “posthuman” condition defined by technical enhancements, the transhumanists assert the potential of a potentially self-reflective, evolutionary advance resulting in the cyborg citizen of Hughes’s imagining. Enhancement bioethicists similarly assert an ethical right if not also a moral obligation, to make “better people” through technologies of genetic selection whose goal, similarly, is “enhancing evolution” (Harris, 2007). The result will be, of only we listen, a new age, a new society, and a new humanity replete with the old human virtues, whatever they may be, but without its flaws.

III. TRANSHUMANIST

Without a strongly eugenic agenda, the transhumanists can be easily dismissed as one more generation of harmless huskers, with a half-baked knowledge of science, its complexities, and its limits. Historically, the argument they make is the one advanced by late nineteenth century and early twentieth century utopians that similarly insisted science would transform humanity and human society. [Rabinbach \(1990\)](#) reviews this sorry history from nineteenth century futurists to the concentration camps in Germany in the 1930s. Then and now, futurists have grounded their work on two simplistic and fallacious assumptions. First, they assume a mechanistic view of the individual as a machine whose elements can be easily manipulated. Second, they apply a similarly mechanistic view to human society whose individual elements are fungible individuals to be simply modified or discarded in favor of the whole ([Rabinbach, 1990](#)). Science was the medium that would remove uneconomic unsuitable cogs from the socioeconomic machine. It would create fatigueless and compliant workers in a world without disease or social unrest.

Science was not up to the task. The mechanistic perspective of individual biology and social realities did not answer to the simple fix. The optimistic future was quickly transformed into a brutal eugenic threat.

Transhumanists and enhancement bioethicists promote the same old mechanistic perspective. Technology has advanced, but the science of transformation remains as much a pipe dream as the airborne cities of the early twentieth century utopians, fantasies in which people (white, young, healthy) zipped around in pollution-free air cars.

There are, today, a number of pedestrian “enhancements” that have made huge differences in individual lives but no difference to the future of the species-at-large. Eyeglasses, for example, improve the vision of those who are near-sighted, far-sighted, or astigmatic. In recent decades, new techniques employing laser surgery have been developed to correct the corneal irregularities that cause these problems. These correctives are not passed on to future generations, of course. Nor do they make better citizens. They are simply technologies serving a limited corrective function.

Similarly, surgically implanted pacemakers and defibrillators quell the eccentricities of irregular cardiac function in people who, without them, would likely be dead. When an individual’s insulin production is inadequate, it can be boosted through the manual injection of synthetic insulin, or where available, implanted insulin pumps. We can implant ceramic prosthetic joints in those affected by osteoarthritis. Undoubtedly, future technologies will offer more sophisticated augmentations for persons with specific complaints. None of these will make better people, however, or a better species.

Think the *Star Wars* movie trilogy and the amputation of young Luke Skywalker’s arm in a light saber battle with his technologically augmented

father, Darth Vader. After being rescued by his friends, young Skywalker receives a prosthetic arm at least equal in dexterity, sensitivity, and strength to the one lost in the fight. Father and son meet to fight again in the trilogy's third film. It is the transhumanist's dream: technology-enhanced fighters with robotic limbs using advanced weapons. Here too is the failure of the enhancement enthusiast's promise: *nothing* significant had changed. The technology is irrelevant.

Prosthetics do not fundamentally change either the virtuous young Skywalker or his father's capacities or their nature. The message of the story is not that prosthetics create better people but that "good" is derived from an acceptance of diverse communities (people and species in all their complexity) and that "bad" is grounded in the overweening search for individual control and power. The whole is a cautionary tale warning against reliance on technology as anything but a limited technical fix. Luke's triumph results not from the dexterity of his prosthetic but from his acceptance of the community-of-good, the "force" that Jedi tapped into and the one the self-seeking power-hungry "Dark Lord" could not access.

Nootropic Drugs

Like the old-style eugenicists and the Jedi's opponents, enhancement enthusiasts similarly promote a simplistic mechanistic ideal of individual performance and social communal complexity. Hughes, for example, promotes nootropic drugs enhancing concentration and short-term memory as examples of the way new science will improve us all if only we have the wit to accept them (Hughes, 2007). It is a new pharmacology advancing an idea as old as the seventeenth century English enthusiasm, celebrated in song, for that mood-enhancing, weight-reducing, libido-strengthening drug, tobacco (Hume, 1603). A later generation made almost equally enthusiastic claims for another restorative drug, coffee. Nor were they wrong. Tests in 2003 at Walter Reed Hospital of the nootropic drug *Modafinil* found that at high dosages (400 mg) the drug cut through fatigue . . . just like caffeine (Hall, 2003).

Enhancement enthusiasts would not draw crowds if they promoted coffee or tobacco as attention and mood-enhancing drugs. Instead, they must promote new drugs as revolutionary rather than pedestrian advances if they are to earn their lecture fees. In 2008 and 2009, attention was focused on *Medaphenil's* potential to promote short-term memory retention and an increased ability to focus in the short term on a problem-at-hand (Hughes, 2007). Even were it hugely more efficient than other drugs, the result is not transformative. Nootropics do not promote complex intelligence, the ability to integrate both data and experience in a meaningful way, or insight, the ability to organize and reorganize data in a novel manner. At best, they permit the short-term retention of facts to be regurgitated on a test form or in a meeting report. That is the best science can do because it does not yet understand

the complexities of cognition. We cannot say what permits the intuitive leap or the sustained analysis.

Enhancement enthusiasts once promoted Amphetamine and Benzedrine compounds as fatigue-reducing, memory-enabling, energy-promoting compounds for soldiers, students, and the hardworking adult. They left it to those who listened to their siren song to discover on their own the deleterious side effects (addiction, psychosis, etc.) of those drugs. Similarly, we have no idea what the long-term effect will be of this new class of short-term memory-enhancing chemistries. There is the possibility, ignored by the enhancement enthusiasts, that promotion of short-term memory may adversely affect long-term memory and thus the ability to apply data in a meaningful way (Ramos et al., 2003).

And really: Is a nation of test-takers who can regurgitate facts for a matter of weeks but cannot integrate those facts over the long-term something we wish to celebrate?

Eugenics

The transhumanists' promise disappears amid the reality of at best incremental advances to existing technologies that make no greater difference than Medaphanil makes over coffee. That is the best enhancement enthusiasts can offer because, as Harvard neurobiologist Hyman (2003) told the *US Council on Bioethics*, we remain broadly ignorant of neurochemical complexities that permit experience and learned knowledge to be integrated in a meaningful way. At best, today's transhumanists and their bioethical fellow travelers can predict better prosthetics, but until they can somehow prove they will help create more Luke Skywalkers (virtuous humans), and not promote a world of Darth Vaders (fascist humans), they have nothing really to sell.

IV. EUGENICS

The promise of transhumanism and enhancement bioethics, "enhancing evolution," is exactly that of the Second International Eugenics conference in New York City in 1921 (the first was in 1912): "The self-direction of human evolution" (fig. 1). Hughes (2004) advances this as a "basic idea," in which it is the "duty and right to provide children with the healthiest and most able bodies we can" (131). From Sir Frederick Galton, who coined the word eugenics in the 1880s, to the current crop of enhancement enthusiasts the assumption has been they knew, first, what traits are undesirable and second, how to remove them. The targets of these eugenic programs were "defectives," inferior examples of an otherwise progressive evolving species (Reilly, 1991; Koch, 1998). In the United States, these included those with inherited criminal personalities (phrenology identified them) as well as persons with "moronic" intelligence (Brosco, 2008) or unsightly deformities. Some, like



Fig. 1. A poster from the 1921 Second International Eugenics Conference promising self-directed human evolution with a “harmonious” result.

Chicago’s Dr. Harry J. Haiselden, championed active euthanasia in service of this ideal (Pernick, 1996), while others opted for a “better-not-born” program requiring forced sterilization of “defectives.” The result was the famous case of *Buck v. Bell* (1927) legalizing the forced sterilization of women with undesirable social attributes, presumably inheritable, so they would not breed others of their kind.

Inspired in large part by the American eugenic program, eugenics as a medical, political, and social movement advanced internationally in a number of countries, including Canada and Germany’s Weimar Republic (Pernick, 1996, 165). The movement expanded from its US base to its logical endpoint, an expanded program of elimination whose result, in Germany, was the extermination of “undesirables,” including at least 70,000 abnormal infants and adults with limiting or degenerative diseases (Goldhagen, 1996).

Eugenics Today

University of Pennsylvania bioethicist Caplan (2005) insists that the historical underpinnings of contemporary eugenic arguments “have little to do with contemporary ethical debates about science, medicine, and technology” (535). This is a disingenuous defense because eugenics was born in Germany nor was it a uniquely German perspective. Without reference to Nazi excesses what I characterize here as a new eugenics is structurally related to the older American variant that preceded and contributed to German thinking (Pernick, 1996, 165). In not recognizing the commonalities between eugenics—then and now—or even discussing them, current eugenic proponents

are implicated by their silence on those points that should give a thoughtful citizenry, and certainly informed ethicists, reason for concern.

Let me make clear those areas in which the science currently promoted, and the eugenics it is presumed to support, are limited in ways that make us, in retrospect, disparage the earlier North American eugenic programs. First, there is the goal of “enhancing mankind” through the medical control of future generations, eliminating the “bad” and promoting a “good” person. Bioethics, a branch of applied ethics, has been similarly focused on that eugenic promise since its naming in the 1970s. The noun was coined by Wisconsin oncologist Van Rensselaer Potter to, in his words, “help mankind toward a rational but cautious participation in the process of biological and cultural evolution” (Reich, 1993, S6–7). This is eugenic by definition, promoting a “good” biology through cultural programs overseeing technologies. So bioethics as a noun refers to a “rational” and perhaps “cautious” eugenics whose result is—with the transhumanists—the self-conscious redesign of evolution or as the 1920s eugenicists had it, the “self-direction of human evolution.”

Second, then and now, the whole has been based on the mechanistic assumption that undesirable characteristics can be identified definitively and easily eliminated. The result assumes eugenic technocrats know which traits should be eliminated and which should be promoted through the application of a science they trust. Third, those “enhancing evolution” assume, as did their counterparts in the twentieth century, that excising individuals with “bad characteristics” will benefit future societies and thus humanity-at-large.

The evolution thus promoted is not Darwinian, however, but Lamarckian. Like the work of nineteenth century, Jean-Baptiste Lamarck, it assumes one can change a species by changing the characteristics of an individual. Savulescu and Sandberg (2008) make this simple mistake in their writings: “Evolutionary theory predicts that genes promoting psychological and physiological traits that lead to a greater number of successful offspring will become more common over time” (33). Were evolutionary advance this simple then every generation or two humans would be able to run a bit faster, be a little stronger, and think a little better than members of previous generation. Alas, it does not work that way.

The whole enhancement enterprise rests on the invalid assumption that a simple correlation necessarily exists between specific characteristics and general presumably desirable outcomes (Gould, 1991). Consider, for example, the assumption that a positive correlation exists between intelligence as measured by standard intelligent quotient tests and lives that will be happier, more productive, and by implication, more socially advantageous. We therefore would be wise to select genetically for “smart people” and encourage those with average intelligence to bolster their abilities with memory-enhancing drugs. Why *not* increase the intelligence of society, and then of the species itself?

Good Characteristics

The argument assumes, first, that intelligence is a single characteristic, easy to define and easy to promote either genetically or through simple biochemical enhancements. Second, that the thing being measured is a real good with positive social benefits. Third, that this thing, intelligence, should be promoted to the exclusion of other types of mental activity. None of these propositions is easily supportable.

Consider, for example, the Mensa society whose goal is “to identify and foster human intelligence for the benefit of humanity” ([Mensa Canada, 2009](#)). That beneficence is based on the belief that those who, like Mensa members, score high on a specific set of “intelligence” tests are natural resources to be nurtured and esteemed. There is, however, no proof that the kind of testable intelligence manifested by Mensa members has served either humankind or the Mensa members themselves. Mensa meetings are filled with high-scoring individuals whose social contributions have been at best minimal and whose personal achievements at best pedestrian.

They may believe themselves worthy but that self-aggrandizing claim has no formal substantiation. Like the Medaphenil user with a boosted short-term memory, Mensa members may be good test-takers, but the correlation between that skill and any real personal or socially desirable ability may be wholly incidental. Nor can we assume society-at-large much wants its future generations to be Mensa-like. Indeed, there are data to suggest that in any socially inclusive selection process would disparage the advancement of these high-test achievers ([Koch, 1998](#), chap. 5).

Bad Characteristics

Even if enhancement bioethicists and transhumanists cannot define what is “good” with any rigor, they assume that they know what traits are bad and therefore should be eliminated. “It is better for all the world,” wrote Holmes in *Buck v. Bell*, if the mentally incompetent Carrie Bells of the world were eliminated. Future generations would benefit from her removal—and that of others like her—from the common gene pool. The science of the day assumed her failures were not only socially deleterious but also genetically transmissible. In the 1940s, however, researchers discovered that the object of Holmes’s famous decision, Carrie Bell, was not “incompetent” or “defective” but instead merely poor and illiterate. The tests proving her incapacity identified not a natural deficiency but instead educational limits resulting from social impoverishment. More generally, [Trent \(1994\)](#) has shown that the “feebleness” historically decried by early eugenicists typically resulted not from genetic irregularities but rather economic and social disadvantages whose result was, like with Bell, an appearance of natural limit.

There is no reason to believe that contemporary enhancement enthusiasts are any better at choosing criteria for genetic promotion or suppression than

were their counterparts in the 1920s. Consider again the intelligence promoted by the Mensa Society for “humanity’s sake.” This is the easiest testable measure of a type of trait that contemporary enhancement enthusiasts seek to promote. What it measures is extremely limited, however, excluding creativity; intellectual curiosity, sociability and the ineffable drive that compels some to work like demons at tasks they take on. Real intelligence requires . . . work. One may have quickness of mind or body but without the desire and will to develop it those potentials remain inactive. Potential may be nurtured but that requires a range not of genetic or chemical attributes but a social context that is nurturing. Without that one is left with half the story: Mat Damon’s Will Hunting without a mentoring Robin William character in the 1997 Oscar-winning film *Good Will Hunting*.

A Tiger Woods may have a genetic endowment that advantaged his potential as an athlete. We do not know, however, what, other than superior eye-hand coordination, makes a great golfer. And even if we did, we do not know what would encourage an individual to the hard work required to translate it into championship golf. Maybe the endowed person would become an archer or a judo player. Maybe he or she would become a couch potato. What we do know is that there are many with athletic potential perhaps equal to Wood’s who have never have been on a golf course, never had the money for ground fees and instructors. They may have had all that but lacked the desire to spend endless hours practicing on the driving range and then on the putting green. And with all that there is the temperament that permits a champion to be cool in a tight situation. Where that comes . . . from nobody knows.

Manifest Differences

Even where there are manifest and apparently limiting differences, the reflexive assumption they, at least, can be simply excised is both dangerous and incorrect. Their effect on the resulting lived life, and its social importance, is not easily predictable. It was this that [McBryde Johnson \(2003\)](#) famously argued in her meeting with Princeton ethicist Peter Singer. Why think that because she rolled in a wheelchair rather than walked naturally that her life was diminished? To insist she, or others, might be better unborn because they do not share the physical normalcy of someone like Singer was, to McBryde Johnson, ludicrous and dangerous ([Koch, 2005, 2006](#)).

Those whose lives would not have been lived if the enhancement enthusiasts had their way—people with physical differences like McBryde Johnson and [Hahn \(2006\)](#)—insist that they are not injured by their differences. Indeed, many say that they have gained insights that at the least balance their physical realities ([Koch, 2000a, 2000b](#)). [Albrecht and Develiger \(1998\)](#) called this the “disability paradox,” the apparent life satisfaction expressed by persons with cognitive, physical, or sensory differences that most ethicists

and the transhumanists assume should be eliminated for the suffering and discontent eugenicists assume they must promote. To deny the argument from lived perspective, as do most enhancement bioethicists, is to embrace the arrogant and dictatorial assertion that “I” know what is best, *whatever* “those” people may say. The result gives the lie to the assertion that new and old eugenics are different animals and that the modern is democratic and open, unlike its predecessor.

V. COMPLEX EVOLUTION

To assume the ability to distinguish what is desirable and what is not would first require a broad understanding of the complex interplay of social and biological processes that we do not have. “We are still a long way from a unified understanding of biological processes that can predict outcomes from first principles” (Wiley, 2008). Those “first principles” would require an organizing idea that permitted the precise description of the interaction between genetic, physical, psychological, and social characteristics that together led to predictable outcomes. Absent that we are left with not a “science” but rather an ideology of normalcy legitimating a perspective owing everything to prejudice and little to the descriptive power of contemporary science itself (Koch, 2005). Acknowledging biology as an ideology (Lewontin, 1993, 4) is to insist that science stands not as a thing apart from but as a thing embedded in a social reality that both defines it and applies it to specific ends (Williams, 2008).

It is here that the enhancement enthusiasts promoting science as their magic wand pervert it. They trumpet as known what is manifestly unclear; promote as certain what is not. To talk about biology as if specific traits were simply mechanistic trait, and obviously resident in the genetic code, is to be guilty of either bad science or bad faith. As Harvard neurobiologist Hyman (2003) told the US President’s Council on Bioethics, “biological basis means the integration of genetic experience and lived experience, and other environmental factors integrated by the functioning of the brain.”

We are nowhere near knowing what those elements are or how different brains may integrate them. We do know that environmental and social elements are critical to the development of individuals, however. Mired in a mechanistic individualistic ethos, enhancement biologists and transhumanists alike are as blind as was Oliver Wendell Holmes to the cultural and environmental complexities that result in a social person in our shared communal world.

It is for this reason that, were enhancement enthusiasts taken seriously, the result would be not evolutionary advance but evolutionary disaster. Evolution occurs within the context of a broad diversity of characteristics within a species that together permit the most flexible communal response by the

species-at-large to environmental changes. It is not about the brightest, fastest, or strongest. It is about the capabilities of peoples-at-large within an environment. Evolution is always communal and social. The traits required for species survival may not be those enhancement enthusiasts assure us are our future.

Most genetic differences confer some potential advantage, providing for the species-at-large a potentially desirable pool of traits for potential acquisition. The gene resulting in sickle cell anemia appears to present to the heterozygous carrier at least partial immunity to malaria (Jacquard, 1984); trisomy 21 appears to provide a cardioprotective mechanism, limiting the likelihood of cardiovascular disease in persons with Down syndrome. The elimination of these from the common genetic pool would not be an evolutionary advance but a genetic impoverishment. Evolution is not the simplicity enhancement enthusiasts promote as a certainty. It is instead, a complex and fuzzy process in which unforeseen resources may exist in previously ignored niches.

VI. HUMANISM AND HUMANISTS

Enhancement enthusiasts like to wrap their eugenics in the bold promise of species betterment, of the advance of humankind in general. But as Jotterand (2010) has recently argued, there is little “respect” for humankind in the enhancement enthusiasts’ agendas. The idea of respect for human persons in their diversity is not a subject transhumanists treat. Indeed, the transhumanists seek humankind’s replacement with a new “posthuman” species replete with characteristics they admire but without those they disdain. Nor, upon even passing consideration, are the enhancement bioethicists much enamored of the human species as an entity worthy of preservation. They are in thrall, with the transhumanists, to a future they perceive and not to the human realities, and the respect they in theory are due, that are, today.

Absent from both camps is even minimal lip service to the “intrinsic worth” posited in species membership by traditional Kantian ethics and more recently posited in international declarations and law. It is therefore not surprising that enhancement bioethicists and their transhumanists partners typically argue their causes not in the name of the general weal but instead on the grounds of individual right. They do not seek general betterment as a socially supported good, however, but instead the right to personal advantage for themselves or their offspring. If they believed in the “enhancements,” they promote that they would argue them as entitlements for everyone, goods so important that societies would be obliged to make them available to all.

If this is about the right to individual betterment, for a person and his or her offspring, without a general recognition of the broad right of all to the

services these ethicists advance personally, then they are at the least open to the charge of selfishness, and perhaps bad citizenship. Were they willing to acknowledge their causes as exclusory and selfish—"I want to choose what I think is best for my own and screw the rest"—that would be if not laudable at least honest.

But as a general good, the argument becomes that of 1920s eugenicists who insisted a minimum standard of normalcy be enforced (*Buck v Bell*, 1927). This is, however, precisely the conclusion that persons in various communities of difference (I do not use the word "disability") insist is fallacious and dangerous (see, e.g., Koch, 2005; McBryde Johnson, 2005). Persons of difference see themselves as not inferior but merely different. Were it a matter of choice and were the right to diversity honored, it would be one thing. But contemporary bioethicists and eugenicists typically go further and in the main would refuse to others the right of choice the ethicists advance for themselves. Here is the final flaw, one in which the difference between eugenics then and now disappears.

The test case in this area has been whether persons who are deaf can genetically select for deafness. Glover and Harris, in texts already cited, for example, question the right of the deaf to choose a child who is also deaf. It is imposing a harm, they say, and therefore not to be permitted. Persons in the deaf community argue forcefully, however, the rich culture they possess and the beauty of the sign language they employ. They and their supporters insist that it is social prejudice and not auditory processing limits that harm them (see, e.g., Sacks, 1989).

As Brody (2009) recently argued, it is social prejudice and indifference that transforms a physical difference into a "harmful" practical handicap (161–3). Were enhancement enthusiasts serious about wishing to reduce harm and improve human potential enhancement, they might endorse as human rights those programs that improve the life of persons with cognitive, sensory, and physical differences. They do not promise readers for the blind or sign language translators for the deaf, however. They do not insist upon public access for those who travel in wheelchairs. The enhancement enthusiasts, like their eugenic predecessors, have one answer and one only for those who do need meet their standards: If you can't climb the steps you're not going on our train.

Were they seriously concerned with human lives and species betterment, they might make a real difference. This would require not the championing of mechanistic simplicities leading to ill-understood realities but instead the advocacy of a range of initiatives we know with fair probability would maximize the potential of all, irrespective of genetic profiles or life circumstance. They might, for example, in the name of humanity insist upon the distribution of life's necessities for that significant portion of the world's population that is at present ill-fed, ill-housed, uneducated, and without medical support (Farmer and Campos, 2006). There is no doubt that adequate nutrition,

proper housing, and universal medical care would do more to advance human potential than any microchip or program of genetic enhancement and selection. If they wish to broaden our pool of educated problem solvers, the answer is not in a simplistic drug, or the breeding of Mensa members, but the championing of educational opportunities for those whose lack of schooling has relegated millions to the slagheap of the world's evolving commercial societies.

Were enhancement enthusiasts truly serious about advancing the lives of society and its members, they might seek not the reflexive elimination, but the general nurturing of those whose differences they do not understand. We ignore the extraordinary potential of persons with autism, refusing to provide as a social good the specialized training needs many autists require (see, e.g., [Grandin 1995, 2008](#)). Similarly, they do not argue for the speech pathologists or other trainers who would advance the lives of persons with Down syndrome. Instead they note with approval the high rates of second-trimester abortions of fetuses that would, if allowed to develop, become persons with Down syndrome. That is, for me, a pity. The typical person with Down syndrome has, I have found, an emotional sensitivity and a sense of social place and purpose that enhancement enthusiasts would be well to adopt, if only they could.

Were humanity's betterment remotely their goal, the enhancement enthusiasts would see as disastrous an inequitable division of the world's (and individual nation's) resources to a small elite. But to be serious about human advancement demands, a perspective that is communal and social rather than focused upon the atomistic individual. That signal failure is why today's enhancement enthusiasts promise is just the old eugenics pitch, tarted up: bad science and bad policy promoted as deliverance for some.

The loss to us all, were the enhancement enthusiasts promotion to triumph, would be vast. What McBride Johnson learned from the perspective of her wheelchair was something Peter Singer has never seen from his pedestrian height. Should we wish to advance society, and the peoples in it, we would start here within the complex of social and environmental factors that encourage or inhibit individuals as not "*Citizen Cyborgs*" but simply as citizens like us. Were transhumanists and enhancement enthusiasts to do this, then our species might indeed advance. And while waiting for evolution's sometimes-radical alterations—typically responses to cataclysmic environmental changes—we all would be better off. Another round of simple-minded eugenics is something nobody needs.

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