The Habits of Highly Successful Cyborgs: Artificial Enhancement and Equality

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Abstract

Artificial human enhancement, which may involve both genetic modification and cyborg-like enhancements to our physical capabilities, has become a distinct possibility. In addition to the great improvements enhancement might bring to our wellbeing, it can also exacerbate serious social problems, such as economic and political inequality. In this paper, I explore some of these problems. In addition, by building on theories of social justice by established philosophers such as John Rawls, Elizabeth Anderson and Debra Satz, I propose a list of principles which can regulate the inequality caused by artificial enhancement in a society of free and equal citizens.

I. Introduction

Walk into any library or bookstore and you will probably find a section on self-improvement. Rows of books on improving your memory, intelligence, social skills, motivation, physical wellbeing, romantic capabilities and other assorted desirables. The methods subscribed are just as abundant as the goods they claim to supply: list-making, meditation, cognitive puzzles, and many more. But imagine if you picked up a book that told you to simply visit your nearest 'enhancement kiosk' and order a neural interface device to improve your intelligence. This scenario, while futuristic, is not implausible. Some have estimated that 'By the end of this century, and quite possibly much sooner, every input device that has ever been sold will be obsolete'.[1] Brain implants have the potential to transmit information directly to our minds, increasing our cognitive capacities, while other technologies, such as artificial organs, promise to extend our lives far past their natural expiry dates. In addition, genetic enhancement could improve all aspects of human nature, from physical capabilities to one's moral aptitudes, such as the ability to express sympathy. The near future comes with wild possibilities for improving the human condition.

But human enhancement technologies (HETsare also morally controversial. Many recoil at the notion of modifying ourselves in such 'unnatural' ways. Some accuse

[1] Gary Marcus and Christof Koch, 'The Future of Brain Implants' (14 March 2014, *The Wall Street Journal*) <http://www.wsj.com/articles/SB10001424052702304914904579435592981780528>.

scientists and engineers of 'playing God'. Others object to it on the grounds that it changes human nature. Many of these are interesting and challenging issues in moral philosophy. Particularly concerning are the possible social costs related to HETs, in particular, the problem of social inequality that these technologies may exacerbate. I believe that while there is nothing intrinsic about HETs that makes social inequality unavoidable, the sheer scale and potential of them to modify human abilities create a correspondingly large potential for inequality and other socially undesirable consequences. I like to think that we can overcome these challenges, and in this essay we will look at some ways in which we can and should constrain artificial human enhancement.

In the second part of this essay following this introduction, we look at some objections against transhumanism grounded in the social consequences of HETs. The argument from positional goods implies that if everyone pursues certain kinds of enhancements, the benefits that we get from enhancing will cancel each other out, and only the rich, who can afford to be enhanced to a greater degree, will benefit from them. Another argument claims that the democratic ideal of equality is grounded in certain similarities, and human enhancement will remove these similarities. Further arguments suggest that human enhancement will erode our feelings of solidarity for one another, reducing what we are willing to do for the least fortunate in society. By considering these concerns in detail, we will not only be able to assess how sound they are, but whether they can be addressed without shutting down the possibility of any kind of human enhancement.

The third part of this paper seeks to address the concerns of social inequality. Assuming that at least some forms of HETs do threaten equality, what kind of institutions and arrangements should we implement to regulate them? In a Rawlsian spirit, we aim to develop some principles that could guide the basic institutions, such as the law, in implementing a fair approach to using HETs in society. Of particular concern is the enhancement of cognitive skills, such as memory and intelligence, because they play a large role in determining our opportunities in modern society. Based on existing theories about relational egalitarianism by Elizabeth Anderson and theories on education by Debra Satz, I propose a set of principles that limit the unequal use of enhancement so that the least enhanced members of society will enjoy a decent life as citizens. These principles prescribe a minimum standard of enhancement that society must guarantee for all individuals, which depends on how enhanced the most enhanced individuals are. This is called a relational adequacy approach to fair enhancement.

The fourth and final part addresses the implications of my theory so far on paternalism and enhancing children. Does a minimum level of enhancement mean that paternalistic laws are required to ensure that everyone meets the standard? Should the enhancement of children be compulsory? Drawing on my analysis in the previous parts, I conclude that while enhancement need not be mandatory

for adults, we might have to make some enhancements compulsory for children, depending on the degree to which other members of society enhance themselves. I also consider the alternate possibility of levelling down, where we prevent people from enhancing too much, rather than make some enhancements compulsory. The choice between these two alternatives, I think, is something that may have to be settled in the future, depending on the benefits that HETs actually confer.

II. The Case against Enhancement

The first argument we address is the argument from positional goods, which attacks the enhancement of attributes like height, intellect and athletic ability – 'goods that confer an advantage only if others have less of them'.[2] Height, for example, is a paradigm of a positional good because a tall person is considered tall only because everyone else is relatively short. They can see over the heads of their peers, and are considered attractive, but if everyone invested the same amount of resources into becoming taller, nobody would benefit from their investment, as originally tall people are still tall, and originally short people are still short. Resources would be wasted, and the whole endeavour is self-defeating. But it is hard, without coercive measures, to prevent people from seeking enhancements, because each agent is stuck in a collective action problem. While it would make most sense for nobody to pursue positional goods, every individual stands to gain from doing so. If I increase my height and everyone does not, I am taller than everyone else. If I do not, and everyone else does, I will be left behind. HETs could trap us in a 'socially harmful arms race' that the rich are likely to win, as they can simply outspend the rest of society to attain that desired edge. It is better that we ban enhancements, saving ourselves the trouble before it happens, so the argument goes.

However, it is not clear that this argument is a decisive blow to transhumanism because many enhancements provide goods that are not only positional. Health and longevity clearly fall into this category. Intelligence too, does not only help us compete against others, but also helps us solve problems in daily life with greater ease. So some enhancements provide absolute goods that are useful regardless of whether others have them. Bognar is dismissive of this, claiming that '[i]t must be shown that its benefits must outweigh its harms'.[3] But I think that certain enhancements to cognitive and physical capabilities do have quite clear absolute benefits. Memory and intelligence are candidates of this. There are other examples. Imagine a society where the rich need on average 4 hours of sleep, while the poor need 6 (of course people would be able to sleep for 10 hours if they chose to). The rich would be able to get more work done in a day, providing them access to higher paying jobs. But at the same time, everyone else has more hours in the day which they can use to work, socialise and relax. So I think there are at least some reasons

2 Greg Bognar, 'Enhancement and Equality' (2012) 19 *Ethical Perspectives* 17.
3 Ibid 21.

to think that people in this society are better off than the one we live in today, where everyone needs about 8 hours of sleep.

Enhancement may also benefit society through positive external effects. For instance, a large number of intelligent people in society may benefit all people in society through scientific progress, better policy making, and a well-informed electorate. Even if those who enhance do not do so with the intention of improving society, everybody benefits through what is called external effects or network effects. Bognar is again sceptical, writing that 'it is also possible that the positional aspect of a good "crowds out" its network effects, so that pursuing it remains collectively self-defeating'.[4] In other words, the resources that we collectively waste on enhancing positional goods may simply exceed what we gain through external effects. He thinks that the net benefit or harm HETs have is an empirical question which cannot be settled in advance. Contrary to him, I think that there is already some evidence in support of enhancing at least our cognitive and social skills in education. Like the enhancement of intelligence, education aims to improve our cognitive skills, knowledge, and knowledge acquisition. The schooling system also improves our social skills by forcing children from different backgrounds to interact with one another in a common space. It has both positional and non-positional benefits. An individual benefits from being more educated than her peers, but society benefits from an educated population. Modern society has come to a consensus that the benefits of education vastly outweigh the problems posed by its positional aspects, to the extent that most countries subsidise it in some way or another. There are of course limits to the social usefulness of education. Some societies, particularly in East Asia, pour vast amounts of resources into education, where children are forced to spend many hours a day studying. The marginal benefits, at such a level, may not justify the resources spent. Bognar may therefore be right that at some point, the resources that we spend in attaining positional goods outweigh their benefits. Nevertheless, it is not obvious that all artificial enhancements cross this threshold of social usefulness. Goods such as beauty and height may have benefits disproportionately small to the costs described by the positional goods argument, but the same cannot be immediately said of health and brainpower.

A second argument, articulated by Francis Fukuyama, is the powerful notion that 'we need to be the same in some one critical aspect in order to have *equal* [sic] rights'.[5] Indeed, equality seems to imply similarity in one morally relevant way or another, and enhancement, taken to extremes, could remove such similarity. But this similarity could be treated as a broad, threshold value rather than sameness in the strictest sense. For example, we could say that all creatures with rational autonomy and a certain level of awareness are entitled to equal rights. Unless we

[4] Ibid 22.

[5] Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Profile Books, 2002) 153.

modified human beings to be less aware and autonomous than they already are, all humans, enhanced or not, would not lose their rights. I think that this comes closer to our intuitive understanding of some of these properties. We often speak of autonomy as a binary value. A creature is either autonomous or not, and not even the most intelligent human is more autonomous than the dimmest one. There could, however, be an upper limit of some property that exists in addition to the lower one. Extremely enhanced beings might not need the rights we enjoy, either because they are powerful enough to guarantee it themselves, or because they are not interested in liberty and subsistence, or any of the other things we cherish. In such a scenario, the similarity underlying equality may be treated as a range property, in which all beings that fall within the upper and lower thresholds have equal rights. Rawls, in *A Theory of Justice*, describes equality as a function of both threshold and range properties. He writes that 'the capacity for moral personality is a sufficient condition for being entitled to equal justice' and that 'Nothing beyond the essential minimum is required'.[6] He also claims that we can derive equality from natural capabilities by selecting 'a range property ... and to give equal justice to those meeting its conditions'.[7] If everybody, as Rawls thinks, meets the basic minimum of having a sense of the good and a sense of justice, they fall into the right range and are therefore entitled to equal concern. So I do not think that modifying our characteristics, within certain limits, poses any necessary threat to equality.

A final argument, by Michael Sandel, asserts that enhancement will cause us to view and treat each other differently. He argues that HETs pose a threat to equality because we will tend to take responsibility for what we have. The more we enhance ourselves, the more we are likely to think that our position in society is something we earn, rather than something that we chance upon. According to Sandel, social solidarity requires understanding the giftedness of our lives – 'a consciousness that none of us is wholly responsible for his or her success' which 'saves a meritocratic society from sliding into the smug assumption that the rich are rich because they are more deserving than the poor'.[8] We may speculate that the pervasion of this 'smug assumption' will result in a loss of liberal values. No longer will we think that all humans are equally deserving of concern. Welfare systems and charities will lose their support and the poor will live much harder lives than they do today. This does not come close to the slaughter and subjugation that Annas warns us against, but because of its conservative predictions, it is more realistic. Dov Fox notes that, in some empirical studies on medical disabilities, people's sympathy and/or indifference to a person's condition depended on whether 'the condition is

6 John Rawls, *A Theory of Justice* (The Belknap Press of Harvard University Press, 1971) 505–6.

7 Ibid 508.

8 Michael Sandel, 'The Case Against Perfection: What's Wrong with Designer Children, Bionic Athletes, and Genetic Engineering' (2009) *Human Enhancement* 87.

perceived to be caused by factors that are under her control'.[9] For example, women who declined offers for prenatal testing of Down's syndrome were blamed if they gave birth to a child with the disease.[10]

But while there are many ways in which the ability to control our circumstances and the corresponding notions of moral desert do explain some of the ways in which we view each other, it does not explain all our institutions and intuitions. Most of us recognise, at some level, that many rich people do not deserve their riches, but rather inherit them from their parents. However, a sizeable portion of people do not think this fact reduces their entitlement to them. We also readily reward people who benefit from their natural talents. The naturally-talented pianist gets just as much applause as the person who put in 10,000 hours of hard practice. It seems that while we are a lot less sympathetic to those who are responsible for putting themselves in bad situations, we do not think of people any less for achievements they make from the natural lottery. Sandel's argument does give us some reason to be concerned about enhancement, but there is far more at play in the way we treat each other than our perceptions of how much people deserve what they have.

That said, I think that Sandel's concern with enhancement is not anything specific to it, but the scale at which it can modify our ability to control our circumstances. Education, for instance, gives parents some control over their child's abilities, just not as much as HETs. The sheer power of technology is both terrifying and intoxicating. For example, some have predicted that with the aid of nanobots, 'human brains will be able to connect to the cloud' as soon as the 2030s. This will give us the ability to multiply our intelligence and processing power 'just like I can multiply intelligence with my smartphone thousands fold today'.[11] Human enhancement is like sending our children to special classes, if those classes gave us comic-book superhero abilities. If such classes existed, Sandel would oppose them too. As he writes 'Bioengineering gives us reason to question the low-tech, high pressure child-rearing practices we commonly accept ... [which] represents an anxious excess of mastery and domination that misses the sense of life as a gift'.[12] Parenting today, if taken to extremes, is almost as bad as enhancement. It is only because enhancement gives us the capability to control our natural capabilities to a far greater extent, thereby giving us almost complete control over our fates, that Sandel opposes it more vehemently than extreme parenting, which offers only limited control. So underlying Sandel's concerns with HETs is simply the

[9] Dov Fox, 'Silver Spoons and Golden Genes: Genetic Engineering and the Egalitarian Ethos' (2007) 33 *American Journal of Law and Medicine* 606.

[10] Ibid 607.

[11] Kathleen Miles, 'Ray Kurzweil: In The 2030s, Nanobots In Our Brains Will Make Us "Godlike"' (1 October 2015, *The Huffington Post*) <http://www.huffingtonpost.com.au/entry/ray-kurzweil-nanobots-brain-godlike_us_560555a0e4b0af3706dbe1e2?section=australia>.

[12] Sandel, above n 8, 82.

knowledge that they bring about far more power to change the way we are. This power is not different in kind from the power that education and child-rearing afford us, but different in degree. Just as there are many people who are concerned about inequality in parenting and education, which has the power to greatly affect our prospects in life, it would be wise for a social theory on human enhancement to take Sandel's argument into account. In response to all these worries we have looked at, the answer to some might be that human enhancement ought to be banned. But I think that it is worth considering how we might control inequalities in a way that addresses these concerns.

III. Human Enhancement and Equality

Assuming that human enhancement does become a part of society, what would a just society with enhancement look like? As shown in previous sections, there are numerous concerns with the use of HETs, from the creation of 'arms races' of positional goods, to the idea that the rich will treat the poor badly due to a sense of entitlement and lack of sympathy. In this section, we will explore some principles on enhancement based on existing works in social theory. We start with works that describe minimal conditions for society to function as a setting in which people cooperate and obey laws, and move on to theories that argue for a basic set of goods or capabilities that a person should be able to enjoy. By analysing these theories and their underlying concerns, we may derive a list of conditions to place on a society that wishes to embrace human enhancement. I propose the following:

The least advantaged members of society should have means to enhancements (both cognitive and physical) that will guarantee:

(a) the ability to seek protection against harm and coercion from others, particularly the most enhanced individuals, either through their own strengths, cooperating with others, or appealing to institutional arrangements with power over the most enhanced

(b) that they have some skill to contribute to society, thus allowing them to cooperate with even the most enhanced members of society

(c) the cognitive skills required to prevent manipulation or deception by the most enhanced members of society

(d) the self-confidence required to make autonomous decisions

(e) access to a decent variety of occupations

(f) respect from all other members of society, even the most enhanced

(g) the ability to participate on equal footing in public decision-making with others, such as jury duty and voting

(h) that no entrenched social classes will arise, with mixing of the most enhanced and least enhanced in social settings, and with demonstrable social mobility.

This list may not be comprehensive, and at certain points vague. But with some elaboration, I hope to sketch out a non-trivial set of moral rules that could guide future societies.

I would like to note that the conditions adopt a relational adequacy approach to addressing the inevitable inequality in human enhancement. It sets a minimum threshold describing what every person in a society is entitled to. This threshold depends largely on what others, particularly the most fortunate, have. If the least well-off in society are in a position in which they have relatively adequate access to goods and opportunities, we may assume that every other person is as well. This is why we are concerned with what the least well-off have in relation to what the best-off have.

While the principles directly address what the least well-off are entitled to, they also contain implications for social institutions and attitudes. For example, suppose that 100 years in the future, 10% of humans are smart enough to manipulate and deceive the bottom 10% quite easily. One solution involves bringing the bottom 10% up to a level where this deception is hard. Another involves bringing the top 10% down. But yet another might be to impose strict penalties on deception, with competent legal authorities to detect criminals and enforce the law. Or we could do a bit of all three. So the conditions I have proposed do not simply mean that we should talk only about what the least well-off have, but that we should talk about the way the whole society is structured, and the way this structure affects the least well-off.

My proposal here is owed largely to Debra Satz, who applies a similar approach to education. She argues convincingly that because educational adequacy has to be understood in reference to citizenship, 'we will endorse only conceptions that contain comparative and relational elements'.[13] This is because the ability of a person to function as a citizen largely depends on one's access to economic and social goods relative to others. As Satz writes, 'large inequalities regarding who has a real opportunity for important goods above citizenship's threshold relegate some members of society to second-class citizenship, where they are denied effective access to positions of power and privilege in the society'.[14] This observation is intuitive because we see this kind of inequality in real life. Even in democracies where citizens have formal equality, we do see large groups of entrenched poor, where children, because of the education and upbringing they will have, never have a real chance at attaining positions of power. Because large inequalities have implications on one's ability to function as an equal citizen, the standard for what is adequate depends on standard of education the most privileged have. Similarly, it seems that a fair society would not deprive anyone of the means to enhance if some enhancement was necessary to function and compete as an equal citizen. Either that, or it would prevent the richest, or those who aspire to

[13] Debra Satz, 'Equality, Adequacy, and Education for Citizenship' (2007) 117 *Ethics* 635.
[14] Ibid 637.

cyborgism the most, from enhancing so much that it causes the unenhanced to fall below the standard of relational adequacy. We shall consider that alternative (of levelling down) in section 4. Another reason to prefer a relative adequacy approach is because a person's capabilities, competencies and wellbeing depend partly on social arrangements. As Daniel Wikler points out, things like the height of stairs and the size of grocery store bags depend on our height and strength.[15] As the majority of humans increase their faculties, we might expect that these social arrangements will change. This has implications on those who are left behind. This is why many of the conditions I propose have relational aspects to them.

Now for the justification of the above conditions. Condition (a) comes from Hobbes' theory of political philosophy. Hobbesian contractualism is premised on the notion that all humans are roughly equal in physical and mental capabilities. He notes that even 'the weakest man is strong enough to kill the strongest, either by a secret plot or by an alliance with others who are in the same danger that he is in'.[16] To Hobbes, this fact is a necessary condition for the formation of a society. It is only because nobody can guarantee their own security, that people form a society which regulates the use of violence and coercion. They sign a hypothetical 'social contract', which promises their safety in exchange for cooperation and obedience. No man is an island, but only because no man can afford to be. Violating (a) will undermine the very bedrock of Hobbesian society. While most of us today do not believe that Hobbes' account of human nature was complete, this condition is important because we want not only to be safe, but to be free from possible oppression. Imagine a world with a class of invulnerable beings. They cannot be coerced, and may therefore not be subject to rule of law, while they could impose their will on the rest of society. Even if they happened to be benevolent, we would still be threatened by their lack of accountability. Now, condition (a) would be redundant if we were all enhanced enough to guarantee our own safety and independence, but I think that it will be a long time before we get to that point, and we need to figure out how to handle the inequality that we see in the meantime.

Condition (b) is derived from Rawls. Rawls begins his seminal book, *A Theory of Justice*, by describing society as a 'cooperative venture for mutual advantage'.[17] He writes that in society, 'There is an identity of interests since social cooperation makes possible a better life for all than any would have if each were to live solely by his own efforts'.[18] I think this line captures the important point that in a functional society, people are generally incentivised to treat others as equals. Because even the richest and smartest usually have something to gain from the least fortunate, they

[15] Daniel Wikler, 'Paternalism in the Age of Cognitive Enhancement: Do Civil Liberties Presuppose Roughly Equal Mental Ability?' (2009) *Human Enhancement* 350.

[16] Thomas Hobbes, 'The Leviathan' *Early Modern Texts*, <http://www.earlymoderntexts.com/assets/pdfs/hobbes1651part1.pdf>. 56.

[17] Rawl, above n 6, 4.

[18] Ibid.

have reasons to cooperate. In the future, if there are people so enhanced that they stand to gain nothing from cooperating with the unenhanced, they might simply choose not to do so. We would see a rise in an entirely separate class of persons, where the upper class need not share its wealth, knowledge and resources with the lower ones. Moreover, the lower class might still be dependent on the upper class, leading to an asymmetry in power relations. In short, a failure to abide by condition (b) is a recipe for oppression and exploitation of the unenhanced. We have already seen some extreme asymmetry in history. The feudal system, for example, provided landowners and lords few incentives to treat peasants well. While the nobility benefitted from the labour of serfs, each individual serf was dispensable. A small number of extremely intelligent and rich persons might create a new kind of feudalism. So condition (b) is one that we should take care to heed.

The two conditions we have just discussed tell us the *least* we must do in order to guarantee a minimally cooperative society. Even though the most enhanced individuals might cooperate with the least advantaged in ways we might recognise, vast inequality is not ruled out by these principles. We want substantive principles that describe a democratic society which protects all people from exploitation and guarantees a decent standard of living. This is where egalitarianism, the basis for conditions (c) to (f), comes in.

There are many forms of egalitarianism, but I draw on what is called relational egalitarianism, as described by Elizabeth Anderson. According to her, egalitarianism has two goals. Firstly, to 'abolish oppression – that is, forms of social relationship by which people dominate, exploit, marginalize, demean, and inflict violence upon others'.[19] Secondly, to establish a 'social order in which people stand in relations of equality' where 'one is entitled to participate [in discussion] ... that no one need bow and scrape before others or represent themselves as inferior to others as a condition of having their claim heard'.[20] I use this description of egalitarianism not only because I think it is a good way to think about equality, but because it addresses many of the concerns voiced by opponents of transhumanism. Relational equality can tell us when the rich have taken the pursuit of positional goods too far, alienating their less advantaged competitors. We may also address some of Sandel's concerns, as a relational egalitarian society is not necessarily a meritocratic one. We are not concerned with whether a person is responsible for their fates, or what they deserve, but what a person is capable of doing in relation to others and whether they attain respect from their peers.

What, in concrete terms, does Anderson's version of egalitarian mean for human enhancement? Anderson herself provides a detailed account of what it takes to be function as a human being, a 'participant in a system of cooperative production',

[19] Elizabeth Anderson, 'What is the Point of Equality' (1999) 109 *Ethics* 313.
[20] Ibid.

and as a 'citizen of a democratic state'.[21] I will highlight some of these, which include 'the self-confidence to think and judge for oneself', 'access to means of production', 'access to the education needed to develop one's talents', 'freedom of occupational choice', 'the right to receive fair value for one's labour', 'the social conditions of being accepted by others', 'and not being ascribed outcast status'.[22] HETs, I think, have the potential to deprive the least fortunate of all of these. If one is far less intelligent or physically capable than her peers, she may lose the self-confidence to think for herself. She may have a very limited choice of jobs, greatly restricting her access to means of production and freedom of occupational choice. She may be easily deceived by her super-intelligent but amoral employers, resulting in unfair value for her labour. Her lack of enhancement may result in her having an outcast status and a lack of acceptance from others. A good set of egalitarian principles, if followed, should prevent all of these from occurring, or at least restrict them to levels of inequality seen in advanced democratic societies today.

It is directly from Anderson's account that we derive conditions (c) to (f). Condition (c) states that even the least enhanced should have the cognitive skills to protect themselves from overt manipulation and deception. This prevents exploitation and ensures that people get fair value for their labour. Condition (d) guarantees some self-confidence and self-worth, which are important aspects of one's ability to make decisions for oneself, and therefore one's ability to function as an autonomous agent. I do not expect that there will be universal agreement on what a person needs to have self-confidence, or that there is a necessary link between intelligence or capability and self-confidence. Sometimes the most intelligent people have less confidence than the least intelligent (as is the case in many high schools). But it has been shown, for instance, that disabled women do report statistically significant lower levels of self-esteem and confidence than their abled counterparts.[23] If most people in society are enhanced, 'natural' humans might see themselves as intellectually and physically handicapped. While this perception alone might be enough to hurt one's self-confidence, the unenhanced might also not be able to enjoy the same activities, go to the same classes, and lack the opportunities as their peers. I think it highly likely that a person in this situation will see themselves as unable to contribute and participate actively in their communities.

Condition (e) simply guarantees some freedom in occupational choice, which gives the disadvantaged the 'wriggle room' not to accept unfair working conditions, as well as preserve some sense of autonomy. Condition (f) merely restates Anderson's emphasis on being accepted by others and not being ascribed outcast status, which

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[21] Ibid 317.

[22] Ibid 318.

[23] Margaret Nosek, Rosemary Hughes, Nancy Swedlund, Heather Taylor and Paul Swank, 'Self-Esteem and Women with Disabilities' (2003) 56 *Social Science & Medicine* 1743.

is instrumentally important as most people do value others' opinions of them and base their assessments of their own worth on those opinions. People should not be discriminated against because they are perceived as primitive, mentally incapable of living in a society, or simply because they look different. Institutions and societal attitudes that prize people with certain enhancements over 'natural' human beings for morally arbitrary reasons make demeaning statements about those without the enhancements. An example of this might be a job that only hires people with enhanced IQ, even when unenhanced people are perfectly capable of carrying out the job.

An interesting implication of (f) is that highly visible enhancements, such as modifications to one's skin colour, height, or physical compositions, must be regulated. As the way we look often affects our perceived value and social status, care must be taken to ensure that visible enhancements do not become the basis for social stratification and prejudice. A good analogy to this is fashion, if for instance the rich wore nothing but tailor-made suits, and the poor could only afford sweatpants and polo shirts. Such a scenario would presumably affect the ability of an individual to be accepted by others and her self-worth. In addition, the popularity of certain enhancements might be demeaning to people who possess certain natural characteristics. For example, if parents could change the skin colour of their children to whatever they desired, certain skin tones, such as a tanned, bronze colour, may become more popular. This could affect the self-esteem of those who do not have such skin tones. So condition (f) means that highly visible indicators of one's ability to enhance must be limited.

Conditions (g) and (h) are drawn from Satz's work. Public decision-making (condition g) is an essential aspect of citizenship in a democracy, and traces its roots to the right to group self-determination. If an individual is so disadvantaged compared to their enhanced peers that they can no longer be taken seriously in the public space, they are effectively disenfranchised and are deprived of the right to self-determination. Condition (h) ensures that social settings contain people from diverse backgrounds, facilitating the development of understanding and tolerance. Some skills, such a mutual understanding and tolerance can only come about 'through the presence of diverse individuals'.[24] An education that allows people from disadvantaged backgrounds to learn in the same environment as the advantaged benefits everyone. In a similar way, society has much to lose if the most enhanced do not interact constantly with the least enhanced. It will lose opportunities for individuals to cultivate mutual understanding, and it will see the development of different social classes who inhabit different spaces, take up different jobs, have different social circles and enjoy different recreational activities. Such a society is reminiscent of the feudalism of old, with an entrenched nobility and peasantry. In addition, the existence of diversity and some social mobility protects the Rawlsian emphasis on 'the social bases of self-respect', which I believe

[24] Satz, above n 13, 637.

include the possibility of improving one's wellbeing, expectations, or general position in life.

Admittedly, many of these conditions depend heavily on subjective, qualitative evaluation. How intelligent must someone be to be confident in her decision-making skills? How enhanced would a person have to be to be accepted by others? Unfortunately, we cannot even begin to answer this question, because we have only a vague idea of what enhancements will look like. Nevertheless, they are far from trivial. The conditions for self-confidence and social mobility in particular may be quite restrictive. Even in the world today we see societies in which the poor, women and minorities do not have access to adequate education or certain opportunities. Despite the many benefits that HETs may bring, they threaten to exacerbate these inequalities. The conditions I have proposed, if followed, may limit these inequalities to acceptable levels.

IV. Enhancement, Paternalism and Levelling Down

Does a minimum threshold imply that all citizens should be forced to undergo enhancement? I am inclined to think that people do have the right to act in ways which others consider irrational, and deprive themselves of what we consider basic rights. As Anderson puts it, democratic equality tells the person who refuses to purchase health insurance, 'You have a moral worth that no one can disregard. We recognize this worth in your inalienable right to our aid in an emergency. You are free to refuse this aid once we offer it'.[25] We can believe that every person is entitled to healthcare, without mandating it. Just because a society adopts universal healthcare, does not mean that every person with cancer is obliged to seek treatment. In a similar way, people do have the right to refuse enhancements. What matters is that society makes it available. This is perfectly compatible with our earlier analysis. Take for example a group of luddites who live in their own communities, occasionally venturing out into the cities to trade and stare at fancy cars. As long as they are not oppressed or exploited, they do not fail our test of relational equality because they chose not to engage society like the rest of us. A person's self-worth is often linked to their ability to choose for themselves, even if those choices result in their being less capable than their peers. But paternalism downplays a person's ability to decide for oneself, substituting it for the will of society. It is therefore an insult to a person's self-worth if we force them to enhance in the name of preserving it. Nevertheless, society should be ready to offer its constituents enhancements that allow them to transition into 'mainstream' society if they chose to. The right to self-determination means that the best way to treat a person as an equal is by allowing her to make her own choices.

A difficulty with this response is that the right to self-determination, which we grant to adults, depends on the capacity for rational thought. The average adult

[25] Anderson, above n 19, 330.

is more or less capable of making rational decisions for him or herself. We can interpret and predict the consequences of our actions, accept the risks and implications of them, and act accordingly. This is why we give adults the legal rights to take personal risks, but not to children or mentally ill, who may lack the capacity for rational decision-making. But to the extremely enhanced person, a 'natural' human might seem like a child. As Wikler puts it, 'Before the age of cognitive enhancement, we "normals" are used to thinking that we generally do fairly well for ourselves ... But perhaps this sense of confidence is wishful thinking'.[26] In other words, we could be wrong in assuming that we fall above the threshold of rational thought which entitles us to self-determination. The enhanced superhumans of the future may say to us 'you are no more intelligent than our children, and make similarly foolish decisions. You are therefore under our care and must do what we tell you to, for your own good'. But I think that these superhumans would be wrong because most of us value autonomous decision-making for itself. As Mill famously put it, 'a man's mode of laying out his own existence is best not because it is the best in itself, but because it is his own mode'.[27] Even when we make bad decisions, we value the fact that they were made according to our own free will. In order to prevent enhancement from undermining autonomy, we might legislate that an adult of a slightly-below-average IQ (e.g. 70) is the threshold over which we must respect the autonomy of the individual. Above this level, a person is capable of making some decent decisions, and more importantly, values their own decisions. This comes across as rather arbitrary, but rationality is a difficult concept, and such simplification allows us to unequivocally protect the autonomy of as many people as we can.

Do parents have the right to refuse enhancements on behalf of their children? Children, unlike adults, are not considered fully formed moral agents. We usually allow parents to make decisions for them. But parents sometimes make decisions for their children which greatly hurt their opportunities in life. So if some enhancements were necessary to guarantee the capabilities discussed in section 3, should those enhancements be made compulsory for children? To a certain extent, our answer to this depends on the kind of enhancement in question. With some enhancements, a parents' decision will not have a permanent effect on their children and will therefore be easier to resolve. A futuristic eye implant that allows someone to read messages and take pictures, for example, may be installed as an adult without any lasting implications. A parents' decision is reversible and a child can easily choose to adopt the implant when they grow up. But the same cannot be said of other enhancements. Genetic enhancements can only be made before a child is born and are therefore non-reversible. Another example of a non-reversible decision is that of cochlear implants, which are most successful in aiding hearing impaired people when installed at a young age. If a parent chooses not to enhance

[26] Wikler, above n 15, 348.

[27] John Mill, *On Liberty* (Batoche Books, 2001), 63.

their child in non-reversible ways, the child might be unfairly disadvantaged, and fall below the minimum threshold for the rest of their life.

I think that just as compulsory schooling is an accepted part of life in most liberal democracies, including the US, the UK and Australia, compulsory enhancement could be implemented. While discretion, in many cases, is given to parents on the kind of education their child receives (e.g. home-schooling, religious schools, etc.), there is recognition that all children should receive a certain level of literacy, regardless of their parents' wishes. In part, this is because failing to provide a child education deprives them of certain important opportunities as an adult. We mandate a minimum level of education that makes it possible for the child to function as a citizen in the future, and pursue further studies if they choose to. Similarly, I think that if society advances to the point where being unenhanced results in one falling below the minimum threshold discussed in Section 3, genetic enhancements to that minimum threshold should be made mandatory for children. This conclusion may strike some as unintuitive, and there will no doubt be much social resistance should this scenario ever come about. But I am not recommending compulsory enhancement. My argument here is that if we think that compulsory schooling is necessary to ensure that all citizens have certain important skills, and if society ever reaches the stage where certain enhancements become important for similar reasons, then compulsory enhancement should be implemented.

Instead of forcing parents to enhance their children to a level of relational adequacy, why not prevent people from enhancing to the level that the unenhanced person meets that level? In other words, equality could be fixed not only by forcing everyone to level up, but by levelling everyone down. This is a plausible alternative solution, but before we endorse it, we must consider the potential benefits to society we lose by making such laws. While equality is certainly very important to many of us, the possibility of ending various kinds of human suffering and solving a number of problems is also extremely enticing. We are left with the empirical question of how much HETs can help individuals and humanity, and the question of whether it outweighs the freedom of parents to choose for their children. Once again, we may compare enhancement to education. One solution to inequality in enhancement is preventing the education of people over a certain grade. But we choose instead to make it mandatory because we recognise the great benefits an education population can bestow on society. Although we cannot know for certain, this may be the case with enhancement. Because I am cautiously optimistic about how technology can improve the lives of people, I am inclined to think that society should be at least open to humans enhancing themselves significantly, together with all the implications we have discussed.

V. Conclusion

Why not forget about it all? Having seen all the difficulties and grave threats to equality and freedom HETs bring, this may be the response of many anti-

transhumanists. Indeed, if there are no solutions to the many problems I have raised over the course of this essay, I am inclined to agree. But banning completely the use of HETs ignores the many things humanity might gain from them. With increases in intelligence, we might find new solutions to problems that cause suffering such as climate change and poverty, while physical modifications could free us from disease and hunger. These benefits might well make the risks of enhancement worth taking. Besides, there exists the practical difficulty of preventing all members of humanity from pursuing enhancement. In order for enhancement to pose no threat to equality, it must be banned in all nations, not just in a few. Because this is a tall order, I suspect that some people in some states will be able to enhance, leaving us with a small but substantial class of post-humans. In such an event, we had best know how to deal with them. With the principles I have described in this essay, we might have an idea of how to handle such situations.

Humans are an ingenuous species, and we have found ways to fix or mitigate a variety of social, environmental and physical ills that we face. With each leap in technology comes new problems, new questions, and waves of doubt. Socrates himself is said to have criticised the written word for its inability to convey beauty and knowledge.[28] Technology sometimes causes suffering, as society adjusts to meet those demands. But looking back, most of us think that we are better off today because of our many inventions and innovations than we were 500 years ago. It is of course a leap to say that technology in the next 500 years will continue benefitting us, rather than take us off a cliff of our own hubris. But history provides us with reasons to be optimistic.

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