



## **Cognitive Enhancement and Theories of Justice: Contemplating the Malleability of Nature and Self**

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### **Abstract**

As techniques for cognitive enhancement are being developed (including pharmacology, surgical modifications, transcranial magnetic stimulation, brain implants and other technologies), new questions are emerging about the availability, distribution and permissible uses of such techniques. This paper will provide an overview of possible approaches to these questions from within three different frameworks offered by political theory – libertarian (e.g. Robert Nozick), social contractarian (e.g. John Rawls) and communitarian (e.g. Michael Sandel). Each of these theories rests on particular assumptions about the relationship between individuals and society and on particular conceptions of human flourishing. This paper will examine whether the potential for cognitive enhancement requires re-examination of these fundamental premises about human nature and personal identity in connection with these theories of justice.

Ongoing advances in genetics, neuroscience and bioengineering, are opening the door to what many believe is a new chapter in human experience, a chapter in which humans will develop unprecedented techniques for manipulating biology to alter and “enhance” our bodies, our minds and ultimately our societies. For some, the prospect of these opportunities is exhilarating; the drive to perfect ourselves is powerful and appealing. For others, the possibility that humans will manipulate nature for human ends “beyond therapy” is a deeply unsettling manifestation of hubris, doomed to failure.

In the face of sweeping predictions about the promises and the perils of enhancement technologies – technologies that remain for the most part speculative, the purpose of this paper is to take a preliminary look at these theoretical possibilities from a different vantage point. Specifically, I would like to examine how the opportunity for human enhancement, particularly

cognitive enhancement, could affect the way we think about justice. Put another way, if the emergence of cognitive enhancement has the potential to change our understanding of human nature, how will these new possibilities also require us to rethink our understanding of our relationships to each other and our conceptions of justice in human society?

Some tools for cognitive enhancement are already in widespread use – Ritalin for improving focus and attention (even among those who are not diagnosed with attention deficit disorders), tranquilizers for calming down, and other psycho-pharmaceuticals used to regulate mood, sleep, and so on (Harmon 2005). Other technologies for cognitive self-improvement are still in development – “smart pills” that will fight Alzheimer’s disease and also be able to improve memory in healthy people (Curtis 2006) or neural prostheses to be implanted in the brain to repair and alter neural circuitry (Graham-Rowe 2003).<sup>1</sup> As these new tools and technologies develop, we can begin to imagine that individuals will experience an increasing sense of freedom to choose to change what nature has handed them. For the person on Prozac, it is already possible to say “I never really felt like myself until now” (Elliott 1998). The constraints of nature no longer apply, and “feeling like myself” by taking a pill becomes a matter of choice.

Yet this newfound freedom has its unsettling side. As Ronald Dworkin explains, “Our physical being – the brain and body that furnishes each person’s material substrate – has long been the absolute paradigm of what is devastatingly important to us and, in its initial condition, beyond our power to alter and therefore beyond the scope of our responsibility, either individual or collective” (Dworkin 2000, 444-445). When we find ourselves able to use enhancement technologies to change more and more of what was formerly understood as “given,” we experience, in Dworkin’s words, the disruption of “the boundary between chance and choice” (*Id.*). If our traits are to become a matter of choice (our own or perhaps our parents’ in the case of genetic engineering), then what is left of our notion of shared responsibility for others whose choices – as opposed to chances (or luck) – differ from our own or differ from the norm? A glimmer of this possibility can be seen today in the concerns of parents of children with Down syndrome; because prenatal testing for this condition, followed by abortion, has become a widely available choice, these parents find themselves confronting the harsh judgments of others who no longer see such children as products of chance but instead as “tragic mistakes” and a “drain on society” (Bauer 2005).

In the rest of my discussion, I intend to examine how the emerging choices offered by the development of cognitive enhancement technologies can be analyzed from the standpoint of three different frameworks for thinking about justice – social contractarian (represented by John Rawls), libertarian (represented by Robert Nozick), and communitarian (represented by Michael Sandel). Each of these frameworks rests on particular assumptions about the relationship between individuals and society and on particular conceptions of human flourishing. For each of these traditions, human enhancement, particularly cognitive enhancement, poses a new set of questions and requires re-examination of longstanding assumptions about personal identity, human responsibility and the shrinking role of nature in our self-understanding.

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<sup>1</sup> As with the development of any new medical intervention, the implementation of these technologies requires careful balancing of risks and benefits for human users and a full opportunity for informed consent in the face of inevitable uncertainty about long term health effects. For the purposes of this discussion, these very significant issues of safety and full disclosure of risks (arguably more significant where the purported benefit is to enhance rather than cure) will be set aside. Instead, I will assume that individuals who might use cognitive enhancements of various kinds will be able to make an informed choice to do so.

It is my hunch that these theories are incomplete when it comes to these new challenges, because they each make certain foundational assumptions about the role of the “natural lottery” in shaping humans and the bonds of society. If the day should come when we know our own brains well enough to shake off the constraints of the natural lottery and assume explicit responsibility for shaping ourselves, none of these theories seems to provide an adequate framework for managing these unprecedented kinds of choices. Instead, we may well have to be open to imagining new kinds of self-governance and new understandings of our obligations to each other.

### **Cognitive Enhancement and the Social Contract**

Justice, according to Rawls’ social contract theory, is the product of a contract in which all members of society agree to pool the assets that they have each drawn in the “natural lottery” of wealth, class and talent. That contract, Rawls asserts, would be agreed upon by a hypothetical group of equal rational persons behind what he calls a “veil of ignorance” that keeps each of them from knowing “his place in society, his class position or social status...his fortune in the distribution of natural assets and abilities, his intelligence, strength and the like” (Rawls 1971, 12). Because no person deserves his or her winnings or losses in the natural lottery, it is rational for all to agree to “share one another’s fate” (Rawls 1971, 102). In the resulting cooperative social system, social and economic inequalities can be tolerated only if they work to the benefit of the least advantaged members of society (Rawls 1971, 101). Put simply, the mutual obligations of citizens arise from a collective recognition of “there, but for the grace of God, go I.”

Now imagine a hypothetical world in which “there, but for the grace of God, go I,” is replaced with “there, but for the effectiveness of my cognitive enhancements, go I.” In such a world, if options for the losers of the natural lottery to improve their lot were readily available, would the sense of shared fate that supports a social contract be diminished? Would social responsibility for the less fortunate be undermined by greater and greater emphasis on individual responsibility to pull oneself up by one’s bootstraps – or one’s choice of enhancements? At the same time, would social pressures increase for individuals to choose standard kinds of enhancements (for example, adequate happiness quotients, minimum memory implants, and so on) in order to fulfill expectations for being a “reasonable person” and avoid being blamed for making poor choices?<sup>2</sup>

Indeed, if the parties behind the Rawls’ hypothetical “veil of ignorance” were to realize that aspects of the natural lottery could be overcome through technology, would they not simply agree to protect everyone’s interests by specifying that the initial distribution of natural talents be adjusted – through genetic engineering, cognitive enhancement, and other available means – until everyone had an equal portion of these shared assets? In a brief aside on eugenic policies, Rawls suggests just such a result: those in the original position would shape the distribution of natural abilities such that “if there is an upward bound on ability, we would eventually reach a society with the greatest equal liberty the members of which enjoy *the greatest equal talent*” (Rawls 1971, 108, emphasis supplied).

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<sup>2</sup> This line of questions makes the hypothetical (and currently unlikely) assumption that enhancements would in time be affordable and available to all. Absent this assumption, a Rawlsian framework could be used to govern the distribution of scarce enhancement resources by, for example, requiring that they be available to those who would use them to benefit the least well off – for example school teachers in the inner city who would use their enhanced capabilities to improve the prospects of underprivileged children. Alternatively, a voucher system might be designed to distribute fairly the opportunities to enhance, although this would present familiar policy challenges of defining covered enhancements and deciding on appropriate levels of subsidy to provide each person with a normal, species-typical range of opportunity for cognitive functioning. (See Daniels 1981)

What would it mean for a social contract to produce the “greatest equal talent” of its members? Kurt Vonnegut’s story “Harrison Bergeron” comes to mind – a science fiction story set in 2081, at which time equality has become a government mandate and those who are above average are required to wear various kinds of cruel handicapping devices to erase differences among the citizens (Vonnegut 1968).<sup>3</sup> This unappealing possibility underscores the extent to which Rawls’s theory depends on the assumption that human abilities and life prospects are *not* freely chosen but are largely shaped by nature. Once we imagine that individuals will have the option to improve upon their draw in the natural lottery, we confront a very difficult set of questions if we aspire to be governed by principles of equal distribution and respect for individual rights. What should be the metric for measuring and comparing degrees and kinds of natural assets? How should we compare the values of pleasant dispositions, imagination, creativity, mathematical ability, photographic memory, and so on? What would count as an asset and what as a deficit to be eliminated – deafness? dreaminess?

Ultimately, talents and natural assets are so closely bound up with individual personalities and identities that it is far from obvious that our hypothetical representatives in the original position would readily agree that these aspects of their very identities were subject to redistribution or to manipulation for the sake of equalizing cognitive abilities throughout society. Such a project of engineering equality of talents conflicts with the fundamental value of respect for persons that underlies the egalitarian conception of justice. Even if the veil of ignorance were to prevent the inhabitants of the original position from seeing their future selves, they would, as rational persons, appreciate the importance of human individuality and uniqueness. Because that uniqueness is necessarily tied to a particular configuration of talents, including mental abilities, significantly changing that configuration – even for the sake of justice – might change each person from who he or she is into someone else.

### **Cognitive Enhancement and Liberty**

Human freedom to express individuality, choose our own ends and realize our particular conceptions of ourselves without interference from others, is at the heart of the libertarian conception of justice (Nozick 1974). In the context of cognitive enhancement, does this translate to an unfettered right to what advocates have called “cognitive liberty”– the freedom to cultivate and control one’s own mind using available neurotechnologies “to foster the unlimited potential of the human mind and to protect freedom of thought” (Center for Cognitive Liberty and Ethics 2006)? Or might cognitive enhancement alter the identity of the freely choosing subject in fundamental ways that undermine that individual’s self-ownership and self-expression? If we begin to think of our brains as things to be shaped and manipulated using a menu of pharmaceuticals to shape moods, enhance intellectual performance, erase difficult memories and so on, what will be left of our notion of the self?

Consider the following invented example. Imagine that you are tone deaf and you buy a musical talent implant from an inventor. After acquiring this implant and having it surgically implanted, you are effortlessly transformed into a brilliant singer. Are *you* now musically talented? If you appear on American Idol, will you be entitled to take credit for your performance? If you make a

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<sup>3</sup> Of course, cognitive enhancement scenarios presume that the lowest common denominator will be raised not lowered. Likewise, Rawls notes that “it is not in general to the advantage of the less fortunate to propose policies which reduce the talents of others. Instead ... they view the greater abilities as a social asset to be used for the common advantage” (Rawls 1971, 107).

best-selling album, will the inventor of the implant be entitled to a share of the profits? Notice that none of these questions would come up if the inventor were instead your music teacher.

According to core libertarian notions of self-ownership, individuals own themselves and have a right to control the fruits of their own labor for their own purposes. If you take singing lessons and practice hard, you invest your own labor in the results. But by taking a shortcut through the use of an implant, you avoid expending any effort at all, and although you may have legitimately acquired the right to use the implant to give yourself marketable skills, you may have cheated yourself of truly owning the fruits of your labor.

Further, if the new musical implant technology makes it possible for you to acquire musical ability effortlessly, do you nevertheless deserve the rewards associated with this implanted musical ability or are you guilty of a kind of fraud?<sup>4</sup> Is there an important difference between investing your own labor and using technology to take a shortcut to achievement? Would the government have a legitimate role to play in requiring you to disclose your use of an enhancement?

Still more difficult questions arise in connection with concerns about enhancement and coercion. Assuming musical implants were to become increasingly common, other musicians might feel increasing pressure to adopt this enhancement to remain competitive, particularly if large numbers of people decide to acquire musical ability through implants. This kind of pressure to conform for competitive reasons is similar to the pressure to practice harder or buy better musical equipment, but it is different as well. Practicing or getting a better violin extends but does not alter the self. By contrast, does the implant cross the boundary into becoming “other” and ultimately coerce its users into changing the very selves that the libertarian purports to protect? If that self can be changed in fundamental ways, then it is no longer clear what it means for that self to be free to express its essential nature.

In a thought experiment, Nozick posits the existence of a transformation machine “so that we could accomplish anything by pushing a button to transform ourselves into someone who could do it easily, [and] there would remain no limits we *need* to strain against or try to transcend. Would there be anything left *to do*? Do some theological views place God outside of time because he couldn’t fill up his days?” (Nozick 1974, 44).

Arguably someone who invoked her “cognitive liberty” to use such an enhancement machine would never actually live life. Although she might exercise a certain kind of freedom of choice, she would no longer direct or own her own life; instead her life would be owned by the machine or perhaps by the one whose labor created the transformation machine. If the liberty to shape oneself and choose one’s own ends is central, ceding control of one’s cognitive capacities to something external – a machine, an implant or a drug, might at first appear to be an expression of a free choice but in the end might also undermine the very freedom one had hoped to express.

### **Cognitive Enhancement and Community**

This question of who we really are – how we get at what is fundamental about ourselves – is at the heart of the struggle to understand the ethics of cognitive enhancement. From the standpoint of the tradition of liberal individualism, each person is above all a choosing self, free to pursue a

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<sup>4</sup> This question shares the intuition behind concerns about athletes and steroids – does the superstar athlete deserve the credit for his or her accomplishments or does the credit belong to the trainer or doctor who designed the athlete’s steroid regimen?

good life according to her own values and ends. Given this emphasis on individual choice, we can each decide for ourselves whether we think enhancement is a good thing and each decide whether we want to be consumers of new enhancement possibilities.

But do we really make these choices and define our values alone? Largely left out of the liberal account, argue the communitarian critics, is any kind of strong notion of the individual's rootedness in a society or a community. For communitarians, a just society is a kind of organic self-regulating community composed of what Michael Walzer calls "spheres of justice." Shares and obligations in the various spheres of community life (e.g., politics, family life, money) are allocated according to rules and obligations shaped by tradition and culture (Walzer 1983).

Sandel's communitarian critique of liberalism draws a contrast between this kind of ideal community and the liberal ideal of the "unencumbered self"; he argues for an alternative conception of the individual as a "situated self," shaped in part by the particulars of the community in which a person finds himself or herself (Sandel 1982). By emphasizing the primacy of individual choice, he asserts, liberals give short shrift to the value of collective democratic conversation about whether some choices are better than others and about what kinds of substantive human goods our society should cherish. An alternative vision would emphasize the role played by shared community values, common history, and culture in addressing address the dilemmas posed by technologies that allow us to become masters of our own natures.

But what are those shared values when it comes to enhancement in today's culture? The prevailing ethos in contemporary culture is arguably one of unfettered free choice, with individuals aided by any self-improvement technology that can be designed and that an individual can afford. The continually growing popularity of cosmetic surgery illustrates our society's seemingly uncritical embrace of a menu of choices for enhancement. Ironically, these supposedly free choices are often dictated by peer pressure to keep up with the latest options to come on the market and set the bar ever higher in the drive for perfection. In such an environment, the very concept of community is called into question, as individuals look to others merely to validate their market and technology driven choices. Is it possible to shape a legitimate collective vision of the best way to incorporate these complex new possibilities into society as a whole? Or might widespread use of cognitive enhancement change our very assumptions about democracy and community? If enhancements become widespread, could it, for example, become acceptable to require enhancements to participate fully in civic life – to vote, to hold public office, or to hold other positions of responsibility in education, medicine, the military and so on?

Like Rawls, Sandel invokes the "natural lottery" as a source of social glue; the notion that members of communities share a common fate – that natural talents are a matter of good fortune rather than merit – is essential for fostering the social solidarity that binds communities together. (Sandel 2004) When individuals are able to remake themselves through technology, this solidarity is undermined. The enhanced individuals are likely to perceive the technology as the source of their success; their sense of a debt to society and a corresponding sense of responsibility to the less fortunate diminishes as well (Sandel 2004). Thus, the emergence of an increasingly individualistic ethos of choice and control through biotechnology may well undermine the very prerequisites for the kind of community which can reach meaningful consensus about justice.

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## Conclusion

The extent to which humans will succeed in learning how to enhance themselves is currently impossible to foresee, and much of what we imagine may well turn out to be science fiction. Nevertheless, as scientists develop new opportunities for self-improvement through technology, society is likely to be faced with choices about accepting, rejecting or regulating these new kinds of possibilities. This paper attempts to anticipate some of the theoretical problems that such opportunities might present when approached through the lenses of several important traditions in political theory. If enhancement technologies continue their rapid development, we will need to grapple explicitly with the significant challenges that enhancement possibilities present to our longstanding assumptions about human nature and human identity, assumptions that are deeply embedded in these traditions. By recognizing these challenges, we may be able to take the first steps toward developing a new vocabulary for debating the meaning of democracy and social responsibility in a society where the availability of self-improvement technology is likely to offer new kinds of freedom and at the same time tremendous pressure to conform to new expectations created by such technology.

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