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Chapter 16

The Biopolitics of Cognitive Enhancement

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Abstract

The ongoing discussion regarding the propriety of cognitive enhancement is, at its core, biopolitical. In an attempt to understand the underlying issues, it is instructive to view the subject through the perspectives of those at the extremes – the Transhumanists who enthusiastically support the development of cognitive enhancement and the Bioconservatives who view the enterprise with disapprobation. I argue that many of the positions undertaken by proponents of either view are influenced to a considerable degree by a variety of pre-existing political positions as much as, if not more so than, by deeper philosophical reflection, a phenomenon very much in keeping with Jonathan Haidt's social intuitionist model of moral reasoning (Haidt, 2001). Despite the vocal nature of the extremes, there also exists a broad middle ground which I term The view from reasonableness which is much less of a polemic and more of a conversation. Given that the ultimate outcome rests more on how the populace responds than the views of experts, I suggest that supplementing normative claims driven by biopolitical intuitions with empirical data on public attitudes towards cognitive enhancement might allow us to move beyond polemics to deepen our appreciation of how to move forward.

16. 1 Historical Roots of the Enhancement Debate

The debate over the propriety of cognitive enhancement has a long and storied history. Worries about the impact of enhancement upon the quality of life go back at least as far as Socrates, who nearly 2400 years ago warned that the use of writing would degrade memory. In a famous quote from Phaedrus, he intoned:

> At the Egyptian city of Naucratis, there was a famous old god, whose name was Theuth; the bird which is called the Ibis is sacred to him, and he was the inventor of many arts, such as arithmetic and calculation and geometry and astronomy and draughts and dice, but his great discovery

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> was the use of letters…. It would take a long time to repeat all that Thamus said to Theuth in praise or blame of the various arts. But when they came to letters, This, said Theuth, will make the Egyptians wiser and give them better memories; it is a specific both for the memory and for the wit. Thamus replied: O most ingenious Theuth, the parent or inventor of an art is not always the best judge of the utility or inutility of his own inventions to the users of them. And in this instance, you who are the father of letters, from a paternal love of your own children have been led to attribute to them a quality which they cannot have; for this discovery of yours will create forgetfulness in the learners' souls, because they will not use their memories; they will trust to the external written characters and not remember of themselves. The specific which you have discovered is an aid not to memory, but to reminiscence, and you give your disciples not truth, but only the semblance of truth; they will be hearers of many things and will have learned nothing; they will appear to be omniscient and will generally know nothing; they will be tiresome company, having the show of wisdom without the reality. (Jowett 1892)

Many of the key elements of the modern debate are evident in this passage; ironically, it is precisely because Plato memorialized the Dialogues that the apocryphal story is with us today. Indeed, enthusiasts who favor the adoption of cognitive enhancement often point out that despite apparent tradeoffs, cognitive enhancement is likely to improve the world around us in myriad ways. Moreover, Socrates notwithstanding, today there is little in the way of dissent about whether writing contributes to the quality of life in the modern world. The irony comes around full circle when we notice that much of the debate over cognitive enhancement today involves the use of drugs to improve the very same memory that Socrates warned might degrade with the introduction of the *aide de memoire* of writing (Chatterjee 2004; Farah et al. 2004; Glannon 2006; Greely et al. 2008; Erler 2011).

The issue has taken on added urgency with reports of the widespread off-label use of prescription drugs for pharmacological cognitive enhancement (McCabe et al. 2005; White et al. 2006; Franke et al. 2011) and the prospects of inexpensive and seemingly effective technologies such as transcranial direct current stimulation looming on the near term horizon (Hamilton et al. 2011; Kadosh et al. 2012). The debate is loudest at the extremes (President's Council on Bioethics 2003; Savulescu 2005; Bostrom and Sandberg 2009; Harris 2010), but there is a healthy middle ground position that neither restricts nor encourages the use of cognitive enhancement (Parens 1998; Greely 2010).

The previous decade witnessed a great deal of public interest in the issue of cognitive enhancement, with a seemingly never-ending glut of magazine and newspaper articles discussing the issue, sometimes with appropriate subtlety and other times with hyperbolic enthusiasm (Hall 2003; Garreau 2006; Schulz 2006; Baker 2009; Cascio 2009; Stix 2009). It is always hard to identify the source of a

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cultural meme, but one candidate catalyst was the release of the publication *Beyond Therapy* (President's Council on Bioethics 2003), a commentary on the topic of enhancement (genetic and otherwise) from an advisory body to then US president George W. Bush, which, like the president, advanced an unabashedly anti-science agenda (Mooney 2006). It is not so much that enhancement was not a topic of interest previously, but after the publication of *Beyond Therapy*, the enhancement debate became mired in biopolitics.

16.2 The Biopolitical Poles

When considering the biopolitics of cognitive enhancement, it is instructive to view the subject through the perspectives of those at the extremes – those who enthusiastically support the development of cognitive enhancement and those who view the enterprise with disapprobation. I shall argue that many of the positions undertaken by proponents of either view are influenced to a considerable degree by a variety of pre-existing political positions as much as, if not more so than, by deeper philosophical reflection.

16.3 The Transhumanists

A group of individuals who collectively call themselves transhumanists are amongst the most fervent of the enthusiasts. It was Julian Huxley, the well-respected evolutionary biologist, humanist, and internationalist, who first elaborated the concept of transhumanism. A prominent member of the British Eugenics Society (as well as brother of *Brave New World* author Aldous Huxley and half-brother of physiologist and Nobel laureate Andrew Huxley), Julian Huxley was among the first to recognize that advances in technology increasingly provide humans with the opportunity to hasten evolutionary change.

> The human species can, if it wishes, transcend itself – not just sporadically, an individual here in one way, an individual there in another way, but in its entirety, as humanity. We need a name for this new belief. Perhaps transhumanism will serve: man remaining man, but transcending himself, by realizing new possibilities of and for his human nature. (Huxley 1957)

Modern day transhumanists espouse a position that calls not just for the adoption of enhancement technologies, but for radical enhancement such that we enter a new era in which at least some members of the population become *posthuman*. The transhumanists have been both activist and scholarly in their endeavours, having established the World Transhumanist Organization (which subsequently was rebranded as Humanity+); the overall objectives of the movement are described in the Transhumanist Declaration (Baily et al. 1998). It seems fair to say that transhumanism has at least achieved a modicum of maturity: by 2007, some deemed

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the literature on transhumanism as having reached critical mass (Agar 2007). No longer an inchoate philosophical position, transhumanist thought is well established in academic circles, most notably at Oxford University, although many contributors to the debate work from outside of academe. While proponents disagree on many details (and, to be fair, even some proponents of radical enhancement would bristle at being characterized as transhumanists), the desire to advance a program that promotes cognitive enhancement has been a prominent theme of transhumanist literature (Schneider 2009).

Most salient to the present discussion are the political underpinnings of the desire for radical human enhancement. The dominant sentiment that runs through the transhumanist literature is *libertarian*. Thus, we have the final of eight points of the Transhumanist Declaration stating:

> We favour allowing individuals wide personal choice over how they enable their lives. This includes use of techniques that may be developed to assist memory, concentration, and mental energy; life extension therapies; reproductive choice technologies; cryonics procedures; and many other possible human modification and enhancement technologies. (Baily et al. 1998)

The libertarian stance is succinctly summarized by Julian Savulescu (2006) who tells us:

> According to free-market or libertarian theories, the rich may buy enhancements which the poor cannot afford provided that their assets have been justly and legally acquired. Those with the highest levels of well-being and privilege will be able to buy even greater happiness and opportunity. This, according to some, is unfair. It is worth stressing that on libertarian accounts of justice, like that of Nozick (1974), this is not unfair.

A common way in which this argument is presented is to refer to concerns that are widespread in the enhancement debate and then reformulate them in terms of individual choice:

> Given that all medical interventions carry some risk, and that the benefits of enhancements may often be more subjective and value-dependent than the benefits of being cured of a disease, it is important to allow individuals to determine their own preferences for tradeoffs between risks and benefits. (Bostrom and Sandberg 2009)

The libertarian perspective on enhancement presented by Savulescu, Bostrom, Sandberg and their colleagues appeals to one of the most cherished of Enlightenment values: autonomy. At the same time, these proponents often (but not always, see below) minimize other values that we have inherited from enlightenment thinkers. Chief among those is communitarianism, and here James Hughes, former executive director of the World Transhumanist Association, offers an alternative: originally termed democratic transhumanism and more recently techno-progressive thought, Hughes argues for a more inclusive perspective on radical

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enhancement, one that balances responsibilities to society at large with individual rights (Hughes 2009).

Hughes has further reviewed this relationship, pointing out that transhumanism is, in many ways, a step-child of the enlightenment with its heavy reliance upon the primacy of rationality (Hughes 2010). He also points out several unresolved challenges: the question of universal application of rights in a hypothetical world where posthumans coexist with (mere) humans and that the very technologies that transhumanists seek may challenge the notion of the discrete self on which Enlightenment political theory is based.

Despite the strong vein of libertarian thought that runs through the transhumanist literature, it often seems as if transhumanists are more wedded to the objective – radical enhancement – than to any given political philosophy. Thus we see the normally libertarian-minded Julian Savulescu (2006) comfortably adopting an argument from fairness when it serves the interests of promoting radical enhancement: "Justice/Fairness requires we get as many people as possible up to the minimum IQ necessary for a decent chance of a decent life. Fairness thus requires enhancement."

Note the shift from adulation of individual choice, the hallmark of libertarianism, to a kind of Rawlsian argument of justice; individual autonomy is sacrificed when a political position is found that compels us to accept enhancement. A different stance, utilizing hyperbole that brooks no opposition, is seen in the following comment from John Harris:"Enhancements *per se* are not ethically problematic: they are unequivocally good, clearly ethical. Unless the downside can be demonstrated and is significant, enhancement has the moral high ground" (Harris 2010) .

These examples reflect the fervor that regularly accompanies transhumanist rhetoric. Indeed, it is not unreasonable to suggest that the transhumanists approach their topic with something akin to religious zeal. This is precisely what is seen when the debate begins with the conclusion that enhancement is good, and then proceeds to develop arguments in support of the position. Moreover, to suggest otherwise is to risk being branded as a Luddite or worse. Notably, this phenomenon (which I shall discuss in further detail below) is remarkably similar to what is seen at the other pole of the debate.

16.4 The Bioconservatives

Perhaps no stance on cognitive enhancement has been as public, as political, and as rigidly bioconservative as that of George Bush's President's Council on Bioethics (PCB). Led by Leon Kass, the PCB was in many ways a lightning rod for the debate over cognitive enhancement. With the publication in 2003 of their broadside, *Beyond Therapy: Biotechnology and the Pursuit of Happiness* (President's Council on Bioethics 2003), the PCB set the stage for a decade of debate on

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the topic. The position adopted by the PCB was couched in an appeal to naturalness but a sophisticated one: the argument that was presented was one that declared enhancement an affront to human dignity.

Both the resistance to and the impetus for the PCB's perspective was its inherent founding on religious precepts: the argument from naturalism derives from the notion that if God wanted us to be enhanced, we would already be so and that any attempt to develop enhancements is an affront to the wisdom of the Creator. This view returns the place of man to a pre-Enlightenment stage of development, characterizing rational thinking about man's place in the modern world as hubristic and as an affront to God.

This bioconservative view, drenched in Christian religious fundamentalism, found itself in alliance with another group of bioconservatives who similarly rebelled against enhancement, but for somewhat different reasons. These are the environmentally sensitive cultural critics best characterized by the writer Bill McKibben, famous for being among the first to bring the notion of global warming to the public's attention. For McKibben and his ilk, the modern world is increasingly estranged from Nature, and enhancing ourselves beyond what is normal is just the latest symptom of how disconnected we have become from our 'humanity' (McKibben 2003).

Notice the difference. For Kass it is reverence for, and even supplication to a deity that warrants capitalizing God's name. For McKibben, the deification is implicit rather than formalized, but it is there nonetheless: the wisdom of Nature again warrants capitalization, thereby seamlessly and yet subtly transforming the natural world into divinity. The appeal to naturalness via God on the one hand and Nature on the other resulted in an alliance that Jeremy Rifkin characterized as strange bedfellows (Rifkin 2002).

Critiques of the bioconservative view have been most eloquently provided by James Hughes (Hughes 2009) who, to his credit, also lambasts some ideas of the radical transhumanists. Even more forceful critiques of Kass and his ilk are provided by Jonathan Moreno, a philosopher and historian who has carefully documented the ebb and flow of American thinking on this issue (Moreno 2011).

Of course, even before his tenure as Chair of the PCB, Kass was famous for another argument from naturalness, his 1997 article *The Wisdom of Repugnance* (Kass 1997). Published in the widely-read popular magazine *The New Republic*, Kass suggested that there is something unsettling about enhancement (he was specifically referring to genetic enhancement, but his arguments extend to other forms of enhancement rather easily), and that this something is repugnance, or more colloquially, the yuck factor. While many people might agree that there *is* something disquieting about enhancement (an observation about which we shall have more to say below), his critics latched on to the intellectual error in his argument: the suggestion that this sentiment, whatever its cause, represents a form of wisdom. For Kass, paying close attention to what we find repugnant is a way to arrive at moral-

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ly acceptable outcomes because revulsion is "*prima facie* evidence of foulness and violation."

Kass' invocation of repugnance as a source of wisdom was roundly criticized. Notably, Martha Nussbaum pointed out that repugnance was the basis of many prejudices over the millennia (Nussbaum 2004). Indeed, there is now a large body of scholarship that provides empirical evidence that strongly questions Kass' attribution of wisdom to repugnance, and this line of scholarship has much to say about biopolitics. The most well-developed theory is Jonathan Haidt's social intuitionist model of moral decision-making (Haidt 2001). According to this view, people arrive at moral conclusions not through reasoning, but rather through rapid responses that are primarily driven by emotional considerations. Once the moral conclusion is arrived upon, rational thinking is used to justify the moral principle; hence, Haidt's characterization of the phenomenon as an emotional dog wagging a rational tail. Although the hypothesis is not without its detractors, in the decade since Haidt introduced the social intuitionist model, the evidence in support of this mode of thinking has grown markedly (Sunstein 2005; Rozin et al. 2009; Mercier and Sperber 2011).

One example cogently illustrates the issue, and simultaneously sheds light upon one of the key sources of moral repugnance: disgust. The idea of eating chocolate that has been molded into the shape of feces evokes strong disgust responses. If people were responding rationally, of course, they would just gobble up the chocolate, smiling merrily as they do so. More commonly, people take tentative bites, grimacing as if the chocolate was a bitter pill to swallow: even when they fully understand the absence of potential harm (it is chocolate, after all), there lingers some vestige of disgust (Rozin et al. 1986). In this particular example, it is hard to argue that there is 'wisdom' in the response to feces-shaped chocolate.

Of course, that is not to say that there is *no* wisdom in disgust, at least when viewed through the lens of evolutionary psychology. Indeed, there is a perfectly reasonable (I might even say rational!!) explanation for why disgust and morality are often intermixed: stimuli that readily evoke disgust – be it rotten flesh, maggots, or feces (readers can add their own 'favorites' to the list) – all share the same feature: contamination. The hypothesis then is that disgust is an evolutionary adaptation to contamination and that the rapid, emotional response to such stimuli has served us well throughout evolutionary history by preventing us from consuming foods that might make us ill.

It is not just experiments such as the fashioning of chocolate into the shape of feces that demonstrate the illogical nature of repugnance as wisdom. Consider the case of moral dumbfounding: when individuals are challenged with compelling rational arguments that debunk their initial moral conclusions (based, at least in part, upon repugnance), they routinely construct additional arguments to support their obviously irrational views. Finally, when these have all been exhausted, they declare, “Well, it's just wrong. I can't tell you why, it just is” (Haidt 2001). We shall return to the issue of moral dumbfounding below; for now, it is sufficient to ob-

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serve that such responses hardly occasion crowning individuals as exhibiting wisdom.

These observations provide a solid basis for rejecting the thrust of Kass' argument that we should allow our moral compass to be set by the direction and intensity of our sentiments of repugnance. Indeed, in all but the most culturally conservative circles, the wisdom of repugnance has itself become a disgraced meme, with Kass himself conceding that repugnance is, "at most a pointer, and of course the objects of disgust are to a considerable extent and in many cases culturally malleable" (cited in Jones 2007).

Had Kass been but a bit more modest in his claims, he might be garnering plaudits rather than scorn. For the basis of his argument was sound: there does appear to be something about enhancement that is problematic to many. Indeed, unease with enhancement in general, and cognitive enhancement in particular, seems to be a persistent sentiment, irrespective of whether one is a cultural conservative like Leon Kass, an environmentally-sensitive cultural critic such as Bill McKibben, or, as we shall see below, one who holds a more balanced view of the issue.

16.5 The View from Reasonableness

Sometimes it seems as if the biopolitics of cognitive enhancement is dominated by the two poles: the transhumanists, who are often seen as clever but self-serving libertarians, and the cultural conservatives, who are commonly perceived as religious zealots finding yet another venue for their fundamentalist views on the world. With the waning of the influence of the Kass-led PCB, the cultural conservatives have in many ways lost their voice. The transhumanists too seem to have realized that their approach was neither making friends nor influencing people: first the World Transhumanist Organization was rebranded as Humanity+, and at least a few adherents (Douglas 2008; Faust 2008; Persson and Savulescu 2008) have moved their focus from memory enhancement to moral enhancement (the cynical view might be that they calculated this to be more acceptable to the populace than their dreams of radically enhancing memory). Loud as the noises that emanate from the poles may be, there exists a substantial group of thinkers who espouse what might be termed *the view from reasonableness*.

The proponents of this view are many (Parens 1998; Chatterjee 2004; Farah et al. 2004; Riis et al. 2008; Schermer 2008; Racine and Forlini 2010; Singh and Kelleher 2010; Hyman 2011; Mehlman et al. 2011; Partridge et al. 2011; Sahakian and Morein-Zamir 2011; Outram 2012), but I shall focus my comments on the highly influential paper by Hank Greely and his colleagues (Greely et al. 2008), a benchmark in the field that provides practical guidelines for the responsible use of cognitive enhancers. I shall not reprise the arguments put forward, nor provide a critique, but rather I will note that the paper by Greely et al. espouses the essence

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of the view from reasonableness: recognizing that concerns exist, the paper offers pragmatic solutions to moving forward in measured fashion.

What is most relevant to the biopolitical landscape is not the paper itself but the response: as recounted by Hank Greely two years later (Greely 2010), the overwhelming majority of correspondents thought that he and his colleagues had either lost their minds or been co-opted by the pharmaceutical industry. In his deconstruction of what might have motivated those sentiments, Greely suggests that the current off-label use of methylphenidate and similar agents provides an association with drug culture writ large, as well as that the enhancement debate is often confused with cheating in sports. These are well-worn tropes, but I am more intrigued by the other issue that Greely raises: people feel threatened by cognitive enhancements. Whether because of status-quo bias (Bostrom and Ord 2006) or the rapidity with which modernity is changing the world around us (Taylor 1989), this concern has a ring of truth, and brings us back to Leon Kass and his introduction of repugnance to the discussion.

It seems to me that what Hank Greely was observing when people wrote to him was a kind of moral dumbfounding (Haidt 2001), one that is based upon the persistent *angst* that people have when considering the issue of cognitive enhancement. As much as the field of psychology has explored the origins of moral behavior in contamination and disgust, there has been less attention paid to the sources of angst in the cognitive enhancement debate. Greely's assessment of the threat experienced by many gets at part of the answer, but there is a fair bit more terrain to explore.

One argument that has at least a modicum of empirical support is that people are reluctant to modify traits that are fundamental to self-identity (Riis et al. 2008). Niemelä recently suggested that there exists a kind of psychological essentialism that the folk perceive as being violated by cognitive enhancement (Niemelä 2010). Rather than being a standard argument from naturalness, this argument for the origins of the angst over cognitive enhancement is predicated upon the notion that people are, by and large, at least soft neuroessentialists (Reiner 2010); that is to say, on some level they subscribe to the view that 'I am my brain'. In this view, anything that changes the brain in a manner that is not seen as 'normal' is a threat not just to naturalness but also to the constitution of the self (Bolt and Schermer 2009; Kraemer 2010; Levy 2011). One reason that I find this explanation intriguing is that even philosophers who have long considered the pluses and minuses of cognitive enhancement will admit, when pressed, that while they cannot provide rational reasons for resisting enhancement, neither can they wholeheartedly endorse the prospect, concluding with sentiments akin to those provided by Hank Greely at the end of his review (Greely 2010) of the response to their 2008 paper: it depends.

In many ways, this comment exemplifies the distinction between *The view from reasonableness* from that of the *Transhumanists* and the *Bioconservatives*: a reliance upon reason in the best sense of the word. It is worth recalling the social intu-

itionist model of moral reasoning (Haidt 2001) in which people come to the debate with well-established views and then filter the information through the lens of their extant moral reasoning. My claim is that such a phenomenon is very much at work at the poles of the debate, where enthusiasts proclaim the virtues of radical enhancement and bioconservatives thunder in return with concerns dripping with fundamentalist religious sentiment. In contrast, the view from reasonableness is much less of a polemic and more of a conversation. Given that the debate ultimately rests on how the populace will respond, I suggest that supplementing normative claims with empirical data might allow us to move beyond polemics to obtain an understanding of how the public perceives the issues: Is the view from reasonableness the majority view? Are concerns about violations of selfhood at the core of lingering angst regarding cognitive enhancement? Answers to these questions and more are sure to come as we begin to unravel public attitudes towards cognitive enhancement (Nadler and Reiner 2010; Nadler et al. submitted).

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