Humility Pills: Building an Ethics of Cognitive Enhancement

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Abstract of Thesis

“Humility Pills: Building an Ethics of Cognitive Enhancement”

Should we be concerned that students, workers, and others are turning in seemingly increasing numbers to cognition-enhancing drugs (CEDs) in order to improve their performance? In the institutions in which CED use is most common, cognitive enhancement exists in an ethical gray zone of largely unenforced prohibition: a culture of tacit use. While these institutions have yet to engage seriously with the ethics of cognitive enhancement, a number of important arguments have been raised against CED use. The challenge most in need of a strong response is the Accomplishment Argument, which holds that enhanced work is less dignified, valuable, or authentic, and that cognitive enhancement damages our characters.

The Accomplishment Argument often relies on a view of authorship founded on individual credit-taking. But this is not the only possible view: it is just as possible to take impersonal or collaborative view of authorship, which emphasizes credit-sharing, as well as the value of work over the qualities of creators. This view, which has a number of important benefits, is the one that CED users ought to take of their own work; in fact, they may be led to do so by reflecting honestly on the experience of cognitive enhancement. Some proponents of the Accomplishment Argument also claim that enhancement damages the virtue of humility. On the contrary, CED use can and should strengthen our experience of humility.

This thesis discusses the benefits of a cultural shift toward open CED use, explains some of the ways in which this shift might work in practice, and details the policy changes that can bring about such a shift.
Introduction

In this thesis, I attempt to make a novel case for an ethics of cognitive enhancement based on toleration, transparency, and humility. Should we be concerned that students, workers, and others are turning in seemingly increasing numbers to cognition-enhancing drugs (CEDs) in order to improve their performance? The institutions in which CED use is most common, universities and businesses, have yet to seriously engage with the ethical challenges of CED use: in these institutions, cognitive enhancement exists in an ethical gray zone of largely unenforced prohibition, which leads to what I call the culture of tacit use. At the same time, a number of ethical thinkers have raised important challenges against cognitive enhancement. I argue that the challenge most in need of a strong response is the Accomplishment Argument, which holds that enhanced work is less dignified, valuable, or authentic, and that cognitive enhancement damages our characters.

In response, I show that the Accomplishment Argument often relies on a view of authorship that emphasizes our ability to claim individual credit for our work. But this is not the only possible view of authorship. I argue that it is just as possible to take impersonal or collaborative view of authorship, which emphasizes credit-sharing, as well as the value of work over the qualities of creators. I stress a number of important benefits of such a view and argue that CED users ought to take such a view of their own work; in fact, they may be led to do so by reflecting honestly on the experience of cognitive enhancement. In response to proponents of the Accomplishment Argument who claim that enhancement harms the virtue of humility, I show how CED use can and should strengthen the experience of humility. Finally, I discuss the benefits of a shift from
the culture of tacit CED use to a culture of open use, as well as the policy changes that can move us in that direction.

Enhancement or Treatment?

Before proceeding with my argument, it is important to point out that the distinction between enhancement and treatment remains a controversial one. There is wide disagreement over where and how to draw the line between the two, and some argue that no such line exists. Torbjörn Tännsjö notes that “it is common to distinguish between negative interventions, performed with the aim of curing a disease or eliminating a handicap or disability, positive interventions which aim at improving the functioning of a human organism within a natural variation, and enhancement, which aims at taking an individual beyond the normal functioning of a human organism.” On the other hand, “it is hard to draw any sharp line between what is healthy and what is not. And this means that, if we could improve intelligence, it would in some cases be difficult to settle whether we had performed a negative intervention (and provided a cure) or whether we had performed a positive intervention (and improved the functioning of an individual).”¹

Michael Sandel, by contrast, does not seem to distinguish so sharply between positive intervention and enhancement. He does distinguish treatment from enhancement on the grounds that treatment respects nature but enhancement attempts to override it: “Medical intervention to cure or prevent illness or restore the injured to health does not desecrate nature but honors it.

Healing sickness or injury does not override a child's natural capacities but permits them to flourish.”\(^2\)

But John Harris finds no meaningful distinction between the two categories: “The overwhelming moral imperative for both therapy and enhancement is to prevent harm and confer benefit. Bathed in that moral light, it is unimportant whether the protection or benefit conferred is classified as enhancement or improvement, protection, or therapy.”\(^3\)

I do not attempt to weigh into this ongoing argument here, except to argue below for some of the practical benefits of dealing with CEDs through a vocabulary of enhancement. I do use the term “cognitive enhancement” throughout. What I intend to capture by doing so is not that any available CEDs enable users to move beyond the current range of human intelligence, but that many if not most “off-label” CED users see themselves as healthy: they are not attempting to cure what they see as a deficiency, but to function at a higher level than their own personal “normal.”

**Effects and Prevalence of CEDs**

The most prevalent CEDs available by prescription (although rarely prescribed explicitly for enhancement) include modafinil, methylphenidate, and dextroamphetamine (known by the brand names Provigil, Ritalin, and Adderall, respectively). Though these drugs were originally developed for conditions ranging from attention deficit disorder to narcolepsy, off-label users have turned to them in increasing numbers for their cognition-enhancing properties. Net sales of

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Provigil, for instance, more than quintupled between 2002 and 2008. Anecdotal accounts can give us some insight into the subjective experience of cognitive enhancement. For instance, journalist Johann Hari reported the dramatic effects of a modafinil regimen (200mg every day for five days):

I sat down and took one 200mg tablet with a glass of water….I picked up a book about quantum physics and super-string theory I have been meaning to read for ages….Five hours later, I realised I had hit the last page….I hadn’t noticed anything, except the words I was reading, and they came in cool, clear passages; I didn’t stop or stumble once. Perplexed, I got up, made a sandwich—and I was overcome with the urge to write an article that had been kicking around my subconscious for months. It rushed out of me in a few hours, and it was better than usual….I was just able to glide into a state of concentration—deep, cool, effortless concentration. It was like I had opened a window in my brain and all the stuffy air had seeped out, to be replaced by a calm breeze. Once that article was finished, I wanted to do more. I wrote another article, all of it springing out of my mind effortlessly.

Paul Phillips, a computer scientist and former professional poker player, was diagnosed with attention deficit-hyperactivity disorder in 2003. Prescribed Adderall by his doctor, he soon found that the drug enabled him to reach new levels of concentration during professional poker.

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tournaments (which had no rules governing drug use) and came to view his use of CEDs as enhancement, rather than treatment. He described the experience to a reporter:

Within six months, he had won $1.6 million at poker events—far more than he’d won in the previous four years. Adderall not only helped him concentrate; it also helped him resist the impulse to keep playing losing hands out of boredom. In 2004, Phillips asked his doctor to give him a prescription for Provigil, which he added to his Adderall regimen. He took between two hundred and three hundred milligrams of Provigil a day, which, he felt, helped him settle into an even more serene and objective state of mindfulness; as he put it, he felt “less like a participant than an observer—and a very effective one.”….He “could process all the information about what was going on at the table and do something about it.”

Nicholas Seltzer, a defense analyst, obtained a supply of a drug known as piracetam to compensate for what he felt was an aging-related cognitive decline, and to support his hobby of publishing academic papers on foreign policy. Though piracetam is not approved for any use by the Food and Drug Administration, Seltzer explains that it is widely considered a cognitive enhancer in what he calls the “mind hacking” community. Whether or not that claim would be borne out by research, Seltzer believes that the drug has helped make him a more productive and insightful writer:

I feel I’m better able to articulate my thoughts. I’m sure you’ve been in the zone—you’re having a really exciting debate with somebody, your brain feels

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6 Talbot, “Brain Gain.”
alive. I feel that more. But I don’t want to say that it’s this profound change….It’s
the gestalt factor, all these qualities coming together—not only your ability to
crunch some numbers, or remember some figures or a sequence of numbers, but
also your ability to maintain a certain emotional state that is conducive to
productive intellectual work.7

While the tone of such anecdotal accounts ranges from ecstatic to mildly impressed, improved
concentration and faster information processing seem to be common hallmarks of CED use.
More importantly, a wide range of research gives a more solid empirical grounding to these
claims. A number of controlled studies, for instance, have examined the cognition-enhancing
effects of modafinil: it has been found to facilitate “sustained attention, cognitive control, and
working memory” in sleep-deprived subjects8; to “reduce impulsive responding” on cognitive
tasks, while leading healthy volunteers to report “feeling more alert, attentive and energetic”9; to
improve “fatigue levels, motivation, reaction time and vigilance”10; to enhance subjects’
“executive functioning,” or problem-solving ability11; and to promote concentration over longer
periods.12

Similarly, stimulants originally developed for the treatment of ADHD have been shown to
improve “running memory, logical reasoning, mathematical processing, tracking and visual

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7 Ibid.
8 Michelle Gill et al., “Cognitive Performance Following Modafinil Versus Placebo in Sleep-Deprived Emergency
9 Danielle C. Turner et al., “Cognitive Enhancing Effects of Modafinil in Healthy Volunteers,” Psychopharmacology
12 Angela P. Makris et al., “Behavioral and Subjective Effects of D-Amphetamine and Modafinil in Healthy Adults,”
vigilance” in sleep-deprived subjects\textsuperscript{13}; restore alertness after sleep loss\textsuperscript{14,15}; to improve attention in healthy subjects, “with some evidence to suggest possible enhancement in psychomotor functioning…and perceptual speed”\textsuperscript{16}; and to increase arousal levels in healthy subjects, as measured by an electroencephalogram.\textsuperscript{17}

Despite these promising results, it is important to note that not all reports of CED use are unambiguously positive. Some users of CEDs report gradually diminishing returns. Phillips claims that the effects of Provigil “have attenuated over time….There’s no upside that I’ve been able to see to just taking more.”\textsuperscript{18} Other anecdotal accounts point out that the attention-strengthening effects of CEDs can sometimes be counterproductive. As one college student explains:

\begin{quote}
The number of times I’ve taken Adderall late at night and decided that, rather than starting my paper, hey, I’ll organize my entire music library! I’ve seen people obsessively cleaning their rooms on it. Often, I’ve looked back at papers I’ve written on Adderall, and they’re verbose. They’re belaboring a point, trying to create this airtight argument, when if you just got to your point in a more direct manner it would be stronger. But with Adderall I’d produce two pages on
\end{quote}

\textsuperscript{18} Talbot, “Brain Gain.”
Though the potential tradeoffs of cognitive enhancement have not been widely studied, they are beginning to receive experimental attention. Alcino Silva, of the University of California at Los Angeles, has used genetic engineering to develop strains of mice that demonstrate above-average memory. But while these advanced strains “excel at solving complex exercises, [they] struggle with simpler mazes. ‘It’s as if they remember too much,’ [Silva] says—possibly taking in irrelevant information such as the position of windows or lights but missing the big clues.”

Some scientists are concerned that results like these point toward more general tradeoffs of enhanced memory or focus. “The brain seems to have made a compromise in that having a more accurate memory interferes with the ability to generalize,” says neuroscientist and ethicist Martha Farah. “You need a little noise in order to be able to think abstractly, to get beyond the concrete and literal.” Science journalist Jonah Lehrer also speculates that weakened “lateral thinking” is a cost of enhanced attention: “Paying attention to a particular task…requires the brain to ignore all sorts of seemingly unrelated thoughts and stimuli bubbling up from below….However, the same thoughts that can be such annoying interruptions are also the engine of creativity, since they allow us to come up with new connections between previously unrelated ideas.”

Neuroscientists are beginning to test those concerns in the laboratory. So far, Farah has found that the “evidence is inconsistent with the hypothesis that Adderall has an overall negative effect

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19 Ibid.
21 Ibid.
on creativity” as measured on standard psychological tests; in fact, she found that Adderall may enhance performance on such tests for those subjects who begin with the lowest baseline creativity scores. On the other hand, a literature review of cognitive enhancement studies found that “increases of cognitive stability [brought on by CED use] might come at the cost of a decreased capacity to flexibly alter behavior.” It is widely agreed that findings on the unintended consequences of CED use are still preliminary. Nor have the effects of their long-term use in healthy individuals been widely studied.

Despite these reservations, a number of studies point to the high prevalence of CED use, especially in competitive academic settings. One comprehensive literature review found a past-year stimulant use rate of 35% among college students, with half of respondents citing academic enhancement as their motivation. Another survey of undergraduates found that 6% of respondents reported the off-label use of prescription stimulants in the past year, with rates as high as 25% at certain colleges. The U.S. Department of Health and Human Services found that full-time students reported a rate of past-year off-label Adderall use twice as high as peers who were not full-time students. Evidence shows that college students place a premium on cognitive enhancement even when pills are not part of the equation: one survey found that more than half

of undergraduate respondents reported consuming more than one energy drink in the average month, with enhanced academic performance ranking as one of the most frequent motivations.29

Of all of these surveys of CED use, one 2008 report garnered the most media attention by far: a poll of the readers of the journal Nature, most of whom are academics, showed that 20% admitted non-medical use of CEDs at some point.30 In all of these instances, the use of CEDs is largely tacit: pills are obtained either on the black market or through amenable physicians.

The Policy Status Quo

This culture of tacit enhancement seems to be encouraged by the policies of the settings in which CED use is most likely: academic and business institutions. At the very least, these policies appear to entirely ignore the possibility of cognitive enhancement and the ethical challenges that come with it. I surveyed the academic integrity, student conduct, and employee conduct policies of the ten highest-ranked colleges and universities in the 2011 U.S. News and World Report rankings31 and the ten largest Fortune 500 companies.32 These policies show little variation; they all include blanket prohibitions on the use of controlled substances but do not discuss CEDs as a special case.

Most CEDs are classified on the federal schedule of controlled substances: Provigil is classified as a Schedule IV controlled substance (the second least severe group), while Adderall is

classified with Schedule II (the second most severe). But while one might expect corporations to limit their employee conduct policies to the letter of the law, I was surprised to find no consideration of CEDs in a context of academic integrity: all of the colleges and universities surveyed strictly denounce cheating, and many examine in great detail the intricacies of plagiarism, fair citation, and proper and improper collaboration, but none take up the question of whether CED use constitutes cheating—and if so, when. In fact, the majority of these conduct codes speak of drugs, whether recreational or prescription, in a vocabulary of impairment, dependency, and compromised work performance. The paradigm for prescription drug abuse appears to be painkillers, not Provigil. And while a vocabulary of impairment may be appropriate for most illicit drug use, none of the codes raise the possibility of drugs capable of enhancing work performance. In that sense, it appears that none of these codes have caught up to the actual practices of the students, professors, and employees who deliberately pursue cognitive enhancement.

All of the surveyed colleges and universities have drug use policies similar in form to this one (from Princeton University’s code of conduct): “The University prohibits the unlawful manufacture, dispensation, possession, use, or distribution of a controlled substance of any kind in any amount on University property, or while in the conduct of University business away from the campus.”33 Aside from the California Institute of Technology, none of the surveyed colleges and universities explicitly mention the illicit use of prescription drugs (which would implicitly fall under the category of controlled substance abuse). Where substances are referred to by name,

they are usually marijuana, cocaine, or heroin, and these substance abuse policies always accompany discussions of alcohol abuse and underage drinking.

Even if these prohibitions of controlled substances could be thought to rule out much CED use, the use of legally prescribed CEDs still raises ethical questions that go unanswered. What if a student, like Paul Phillips, obtained a prescription for Provigil, without intending it as treatment for a medical condition? If he or she took advantage of the prescription to gain increased focus on a competitive exam, would it be a case of cheating or academic dishonesty? Again, the universities are silent on the question. Below are samples of the top-ranked schools’ treatments of cheating and fair credit-taking in their undergraduate honor codes or conduct policies; and while I will argue that discussions of plagiarism and cognitive enhancement have a good deal in common, these honor codes turn a blind eye to the possibility of cognitive enhancement:

- **Harvard University:** “Exchanges among students are invaluable, especially in this school where the diversity of backgrounds and experience is so rich and varied. Nevertheless, these guidelines emphasize the need for attributing credit and for doing independent work when required by the instructor. All work submitted to meet course requirements is expected to be a student’s own work….Students should always take great care to distinguish their own ideas and knowledge from information derived from sources….The term ‘sources’ includes not only published primary and secondary material, but also information and opinions gained directly from other people.”

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• **Princeton University:** “Your original work—whether an essay, a solution to a math problem, or a research paper—is also the basis for your professor’s evaluation of your performance in a course. For that reason, intellectual honesty is the cornerstone of our academic community. You must always distinguish your own words and ideas from the words and ideas of others.”\(^{35}\)

• **Yale University:** “Students who cheat forfeit the opportunity to make [intellectual] discoveries. Certainly there are other reasons not to cheat. If you borrow unacknowledged ideas or language from others, you are stealing their work, which denies them their due credit and also impedes the free exchange of ideas that the university depends on.”\(^{36}\)

• **Columbia University:** “This exchange of ideas relies upon a mutual trust that sources, opinions, facts, and insights will be properly noted and carefully credited. In practical terms, this means that, as students, you must be responsible for the full citations of others’ ideas in all of your research papers and projects; you must be scrupulously honest when taking your examinations; you must always submit your own work and not that of another student, scholar, or internet agent.”\(^{37}\)

• **Stanford University:** “[Students pledge] that they will not give or receive aid in examinations; that they will not give or receive unpermitted aid in class work, in the preparation of reports, or in any other work that is to be used by the instructor as the basis of grading.”\(^{38}\)


\(^{36}\) Yale University, “Cheating, Plagiarism, and Documentation,” available at http://yalecollege.yale.edu/content/cheating-plagiarism-and-documentation.


• **University of Pennsylvania:** “Cheating: using or attempting to use unauthorized assistance, material, or study aids in examinations or other academic work or preventing, or attempting to prevent, another from using authorized assistance, material, or study aids. Example: using a cheat sheet in a quiz or exam, altering a graded exam and resubmitting it for a better grade, etc….Unfair advantage: attempting to gain unauthorized advantage over fellow students in an academic exercise. Example: gaining or providing unauthorized access to examination materials, obstructing or interfering with another student’s efforts in an academic exercise, lying about a need for an extension for an exam or paper, continuing to write even when time is up during an exam, destroying or keeping library materials for one’s own use, etc.”  

• **California Institute of Technology:** “No member of the Caltech community shall take unfair advantage of any other member of the Caltech community.”  

• **Massachusetts Institute of Technology:** “Academic misconduct can take many forms, including fabrication or falsification of data, theft of ideas or direct plagiarism, and deliberate interference with the integrity of the work of others.”  

• **Dartmouth College:** “Plagiarism is defined as the submission or presentation of work in any form that is not the student’s own, without acknowledgment of the source.”  

• **Duke University:** “Cheating is the act of wrongfully using or attempting to use unauthorized materials, information, study aids, or the ideas or work of another in order

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to gain an unfair advantage. It includes, but is not limited to: cheating or plagiarism on any assignment; giving unauthorized aid to another student or receiving unauthorized aid from another person on tests, quizzes, assignments or examinations….“43

Some of these policies, if stretched, might be construed against cognitive enhancement: in particular, language referring to one “own work,” or ruling out “unpermitted aid” or “unfair advantages,” might be taken to apply to CEDs. In fact, as we will see, questions about exactly what constitutes one’s own work, and whether the advantages of enhancement are unfair, are central to the debate over CEDs. But it would take a great deal of “living constitutionalism” to see those questions raised here, especially when these honor codes refer explicitly to materials such as cheat sheets, library books, and falsified data, but nowhere to CEDs.

In the same way, the surveyed corporations’ employee conduct policies ignore the possibility of CED use. Their drug policies make no distinction between recreation and enhancement, while the use of CEDs with a prescription (however obtained) seems to pose them no ethical concerns. Below is a sample of drug policies from those top-ranked companies that make their employee conduct guidelines publicly available:

- **Walmart:** “The possession, solicitation, or use of illegal drugs, or being under the influence of such drugs on company time, while on company property, or at any Walmart-sponsored event, is prohibited and will not be tolerated.”44

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• **ExxonMobil:** “The misuse of legitimate drugs, or the use, possession, distribution or sale of illicit or unprescribed controlled drugs on company business or premises, is strictly prohibited and is grounds for termination.”

• **Chevron:** “The Company prohibits the use, possession, distribution, purchase or sale of controlled substances on its premises while conducting business for the Company or while operating Company equipment. Controlled substances include…prescription drugs obtained or used without a legal prescription….”

• **AT&T:** Notice to prospective employees: “Before you start, we’ll conduct an extensive background investigation including…a pre-employment drug screen.”

• **Ford Motor Company:** “Do not possess, use, sell, or transfer illegal drugs, medically unauthorized drugs, controlled substances, or unauthorized alcohol on Company premises.”

While AT&T warns its applicants of drug tests—and is hardly the only corporation to require them—I have found no indication that any corporation, college, or university screens for CED use. Even if such screening did occur, it would be difficult if not impossible to separate licit from illicit use without running afoul of employee or student privacy.

The result, then, is an ethical gray zone for CEDs: the institutions in which they are most prevalent implicitly prohibit most CED use without enforcing the prohibition; do not

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acknowledge the ethical questions raised by CED use, even when legal; and, indeed, remain officially silent on the issue of cognitive enhancement altogether. If universities are concerned by CED use among up to a quarter of their undergraduates, and an evidently considerable number of their professors, that concern has yet to translate itself into policy.

But is that necessarily a bad thing? Perhaps the gray zone is an acceptable compromise between the need to limit prescription drug abuse and the practical difficulty of enforcing any such limitation. On the contrary, I believe that Farah et al. are right when they argue that “in terms of policy, we will soon reach the point where not to decide is to decide. Continuing our current *laissez-faire* approach, with individuals relying on their physicians or illegal suppliers for neurocognitive enhancement, risks running afoul of public opinion, drug laws and physicians’ codes of ethics.”49

It is difficult to justify the *laissez-faire* approach, and the culture of tacit enhancement that it fosters, from either direction: from a position of opposition to enhancement or from a position favorable to it. A strong critic of enhancement, such as those I consider below, might well argue that our leading educational and economic institutions have a responsibility to take a stronger position against CED use. Such a position might be difficult to enforce—but so are rules against plagiarism, and universities still consider it part of their mission to create an academic culture in which plagiarism is unacceptable. A critic of enhancement might press for a similar treatment of CEDs. On the other hand, as I will argue, those who favor the toleration of CEDs should also support an ethics of personal and institutional transparency surrounding their use. For those who

tolerate CEDs, the culture of tacit use is simply not good enough: next to the possibility of open use, it has several disadvantages. For one, in a culture of tacit use, access to CEDs depends on the black market or the ability to take advantage of the system of prescription medicine, both of which promote less equal access to enhancement, which may in turn deepen inequalities that are already in place. But just as importantly, the benefits of CEDs may not come only in enhanced accomplishments, but in changed attitudes to our accomplishments—attitudes that are much more likely in a culture of open use.

Before considering these ethical arguments, however, I will briefly examine the federal government’s contribution to the CED status quo.

**Federal CED Policy**

To some extent, the federal government plays a similar role in the culture of cognitive enhancement as universities and corporations: participating in the growth of CED use while officially opposing it. Currently, the federal government spends hundreds of millions of dollars each year on cognitive research, especially on attempts to cure Alzheimer’s disease. The Alzheimer’s Association estimates total federal funding on the disease at $500 million.\(^{50}\) In addition, the National Institutes of Health received a temporary Alzheimer’s funding boost of $58 million as part of the American Recovery and Reinvestment Act of 2009.\(^ {51}\) Though these efforts have yet to result in reliable treatments for Alzheimer’s disease, some believe that they will produce a “spillover” effect of more advanced CEDs for healthy individuals: “It is entirely

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possible that far more powerful and highly selective cognitive enhancement interventions will
become available in the near future.”

At the same time, the federal government has worked to restrict off-label CED use by penalizing
pharmaceutical companies that explicitly promote their products as enhancement. In 2002,
Cephalon, the maker of Provigil, “was reprimanded by the F.D.A. for distributing marketing
materials that presented the drug as a remedy for tiredness, ‘decreased activity,’ and other
supposed ailments. And in 2008 Cephalon paid four hundred and twenty-five million dollars and
pleaded guilty to a federal criminal charge relating to its promotion of off-label uses for Provigil
and two other drugs.” Nor has the FDA approved any drug explicitly intended for cognitive
enhancement or studied the long-term effects of CED use by healthy individuals.

One lobbying group, the Neurotechnology Industry Organization, advocates for more federal
funding of cognition research and a faster approval process for any drugs that may result. But an
interesting inconsistency in the group’s self-presentation speaks to the still-uncertain place of
cognitive enhancement in public policy and the broader culture. The organization’s founders,
Zack and Casey Lynch (who also own a consulting company specializing in neurotechnology)
spoke to a reporter about pursuing “the lifestyle-improvement market.” By contrast, the
lobbying group itself explains its work as promoting better treatment, not enhancement: its
legislative agenda focuses on brain-related illnesses, brain tissue donation, and stroke. In only
one case does its stated agenda focus on “breakthroughs in learning, decision making, and
performance under stress, as well as new areas, such as cognitive fitness, brain-computer

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52 Mehlman, “Cognition-Enhancing Drugs.”
53 Talbot, “Brain Gain.”
54 Ibid.
interfaces, and biological markers of neural states”: an initiative to enhance the performance of American troops by creating a neurotechnology center in the Department of Defense.\textsuperscript{55} Though the boundaries between treatment and enhancement are fluid, it is telling that a neurotechnology lobbying group only feels able to openly promote cognitive enhancement for the purpose of strengthening the military.

A Survey of Ethical Arguments Against Cognitive Enhancement

While academic and business institutions have yet to engage directly with the ethics of cognitive enhancement, a number of bioethicists, scientists, and physicians have raised ethical challenges of their own. Some of these challenges are directed at human enhancement in general; some are specific to cognitive enhancement. Here, I survey some of the most important of these arguments.

\textit{The Conservative Argument.} Aside from claims about the safety of any particular form of human enhancement, some bioethicists claim that the project of any further human enhancement is too risky as a whole. Allen Buchanan calls this the Conservative Argument and summarizes it like this: “Biomedical enhancements, especially those that involve genetic changes, carry extraordinary risks, and given how well off people already are—thanks in part to past enhancements—those risks are not worth taking.”\textsuperscript{56}


The Argument from Human Nature. Even if human enhancement proves safer than advocates of the Conservative Argument fear, it may still do damage to human nature as we know it. That is the claim of bioethicists who argue that enhancement threatens to radically change human nature—a prospect alarming enough, in their view, to outweigh pragmatic arguments in favor of enhancement. Francis Fukuyama, for instance, worries that “biotechnology will lead us to lose our humanity—that is, some essential quality that has always underpinned our sense of who we are and where we are going.”\textsuperscript{57} Leon Kass raises similar concerns in his discussion of cloning, which leads him to ask “whether human procreation is going to remain human.”\textsuperscript{58} While cognitive enhancement technologies—at least as they currently stand—do not threaten such radical changes to human nature, proponents of the argument from human nature might oppose CED use on the grounds that it raises public tolerance for more radical enhancements to come.

Inequality. Unequal access to cognitive enhancement might widen gaps of social and economic inequality. As Eric Parens speculates, “it is predictable...that an even larger chasm will open between the rich who can afford enhancement treatment and the poor who cannot. This prediction rests on the assumption that enhancement treatment will be distributed unevenly, according to peoples’ ability to pay.”\textsuperscript{59} It is also conceivable that enhancement technologies, even if distributed with some semblance of equality, will widen existing gaps in cognitive ability.

Coercion. While some advocates of CED toleration defend enhancement on libertarian grounds—enhancement ought to be an individual choice—critics claim that such choice may

ultimately prove illusory. In their view, the use of CEDs threatens to create a situation in which cognitive enhancement will ultimately not be optional in any real sense: it will be informally coerced through social and competitive pressure. Vince Cakic imagines how that informal coercion might play out in academic settings: “If the majority of students were to use modafinil and their doing so vastly improved their academic performance, then the remaining non-users would feel a certain amount of pressure to follow suit in order to remain competitive.” Such pressures might be even greater when livelihoods are at stake. In 2008, one frustrated office worker complained to an advice column that “one of my coworkers, a rising star at the firm, is using unprescribed modafinil to work crazy hours. Our boss has started getting on my case for not being as productive…. [S]hould I start taking modafinil, too?”

Quality of Life. Even if cognitive enhancement were a free choice, it might still be a foolish choice. Tännsjö argues that there is little if any empirical correlation between intelligence and happiness; that added intelligence does not seem to enhance quality of life from either a perspective of hedonism or the “refined” hedonism of J.S. Mill; and that forgetfulness is an important contributor to human well-being, so that we would not be wise to desire significantly enhanced memories. We might seek enhanced intelligence as a positional good that gives us a leg up to success, but “if everyone seeks such an advantage, then no one will obtain it.” Finally, Tännsjö argues that enhanced intelligence could only be considered an unadulterated good from

a perspective that considers intellectual achievement the single greatest requirement for the good life, a view Tännö jö calls “morally repugnant [and] truly snobbish.”

The Accomplishment Argument

Another set of claims have to do with the qualities of work produced under the influence of CEDs and with the character of those who turn to cognitive enhancement. I will call these claims the Accomplishment Argument. While this argument takes several forms, it revolves around claims that enhanced accomplishments are inauthentic and that the use of enhancement degrades one’s character.

Some proponents of the Accomplishment Argument call the use of CEDs a form of cheating. This is one of the claims advanced in 2003 by the President’s Council on Bioethics (PCB), which argued that “the attainment of [excellence] by means of drugs…looks to many people (including some Members of this Council) to be ‘cheating’ or ‘cheap.’” In one sense, prohibitions against cheating only apply to directly competitive activities: the PCB might, if it had stopped there, have drawn a distinction between taking CEDs to excel on a standardized test and taking CEDs to write a novel. Only in the first instance would one person’s CED use have directly disadvantaged another.

63 Ibid., 430.
65 I have previously worked to draw a distinction between the argument that CED use constitutes cheating during zero-sum competitions, and the argument that CED use is cheating in some larger sense. If the only concern were the integrity of competitions, it would seem equally fair to, say, distribute CEDs before standardized tests and to ban CEDs during standardized tests. Those who call CED use cheating, but who still object to a level playing field of open enhancement, are usually appealing to a broader notion of cheating. In their view, even if the rules of a competition sanctioned enhancement, enhancement would still count as cheating in a larger sense—perhaps in the sense of cheating oneself or cheating against the true nature of the activity. See Rob Goodman, “Cognitive Enhancement, Cheating, and Accomplishment,” Kennedy Institute of Ethics Journal 20(2) (2010): 145-160.
But the PCB goes further, arguing that CED use, whether in a competitive setting or not, is in some ways analogous to plagiarism. Both CED users and plagiarists take credit for accomplishments that are not fully theirs. For that reason, the PCB makes the distinction between “true” and “false” acts, where true acts are those dignified and distinctively human achievements that arise from our own gifts, and false acts are those we owe to unnatural, external help. The PCB urges us to ask of any accomplishment: “What would make the deed truly one’s own?” And it is this emphasis on ownership of our deeds that is at the heart of the PCB’s skepticism of cognitive enhancement under almost any circumstance. A deed done under the influence of CEDs “seems less real, less one’s own, less worthy of our admiration.”

In the same way, Nick Bostrom and Anders Sandberg raise (but ultimately reject) the possibility that enhanced accomplishment is essentially inauthentic: “If cognitive abilities are for sale, in the form of a pill or some external aid, would that reduce their value and make them less admirable? Would it in some sense make the abilities seem less genuine?” Anjan Chatterjee also worries that what he calls “cosmetic neurology” might undermine certain valuable character traits: “The erosion of character concern is wrapped around a ‘no pain, no gain’ belief. Struggling with pain builds character, and eliminating that pain undermines good character. Similarly, getting a boost without doing the work is cheating, and such cheating cheapens us.”

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66 President’s Council on Bioethics, Beyond Therapy, 145.
67 Ibid., 140.
In fact, it is possible that a too-quick resort to enhancement is a way of cheating ourselves. That is the slightly different approach to the Accomplishment Argument taken by Eric Parens and Sandel, both of whom stress an embrace of humility, limits, and “giftedness” in opposition to what they see as a relentless drive to improve human capacities. Without denying the benefits of that drive, both insist that it comes with heavy costs: “As valuable as the human capacity for self-transformation and control of the world is,” writes Parens, “the human capacity to relinquish control and to resist the desire for transformation is equally valuable.”\(^{70}\) It is valuable because our admiration for what is beautiful and excellent is tied up with our understanding that those very things are fragile, subject to change and chance. To the extent that human enhancement minimizes such fragility, it makes enhanced accomplishments less admirable: “To reduce the role of chance—to alter with steroids the hand that nature dealt the runner—is to diminish, if not ruin, our experience of this form of excellence.”\(^{71}\)

We are awed by human excellence not only because it is the product of human effort, but because it points to what Sandel calls “the gifted quality of life”: a recognition “that our talents and powers are not wholly our own doing…[and] that not everything in the world is open to whatever use we may desire or devise.”\(^{72}\) The pursuit of enhancement threatens to destroy our intuitive and healthy understanding of giftedness, which is central to our admiration of human accomplishments: excellence helps us consider, in an attitude of humility, the extent to which our talents come from a source beyond any individual’s control, whether that source is conceived of in religious or secular terms. In a world of widespread use of enhancement technologies, “it would be difficult to view our talents as gifts for which we are indebted, rather than as

\(^{70}\) Parens, “The Goodness of Fragility,” 149.

\(^{71}\) Ibid., 146.

\(^{72}\) Sandel, “The Case Against Perfection,” 54.
achievements for which we are responsible.” That change in attitude would not just diminish our admiration of human excellence: it would encourage us to take a hubristic, rather than humble, view of our own accomplishments. To some extent, that hubris would be false (in that it would lead us to overlook the extent to which our talents would be beyond our control even in a world of widespread enhancement), but to some extent, human enhancement may actually reduce the scope of chance and fragility in the way Parens and Sandel both describe. And the less we take a humble attitude toward human giftedness, the more likely we are to be harshly judgmental of our own failures and those of others.

Between the arguments pursued by the PCB on one hand, and Parens and Sandel on the other, one important difference stands out. The PCB focuses on owning our accomplishments: dignity comes from those accomplishments we can authentically claim credit for. Parens and Sandel focus on the givenness of our accomplishments: dignity comes from excelling within the limits of our talents, while at the same time giving up what Sandel calls “the drive for mastery” that would deny the existence of limits. But proponents of the Accomplishment Argument share a number of important claims in common. They hold that cognitive enhancement damages our characters by fostering dishonesty, “cheapness,” or hubris; that cognitive enhancement makes our work less dignified, valuable, or authentic; and that a culture in which any given accomplishment might be the result of enhancement would impose a cost even on “bystanders,” by sapping their ability to admire human excellence.

**Why Focus on the Accomplishment Argument?**

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73 Ibid., 60.
In this thesis, I focus on calling the Accomplishment Argument into question. While other lines of attack against cognitive enhancement are important, the thinking behind the Accomplishment Argument seems likely to have the greatest impact on social and institutional attitudes toward cognitive enhancement in the coming years, for at least four reasons.

First, many of the other arguments against cognitive enhancement have already received strong responses. I summarize some of those responses here:

*The Conservative Argument.* Buchanan points out that *prima facie* opposition to biomedical enhancement is shortsighted: a number of our technologies pose serious risks, but rather than using the risks to rule out use of those technologies entirely, we regularly work to balance costs and benefits in each case. Biomedical enhancements should be no different—they are not so distinct from other technologies that they uniquely deserve blanket opposition.⁷⁴ I would add that even for a proponent of the Conservative Argument, CEDs would seem to carry far less risk than the prospect of, say, human genetic engineering.

*The Argument from Human Nature.* Buchanan further argues that “appeals to human nature tend to obscure rather than illuminate the debate over the ethics of enhancement.” If we agree that human nature contains both good and bad qualities, “there is no reason to believe that in every case efforts to eliminate some of the bad characteristics would pose an unacceptable risk to the good ones.”⁷⁵ We also have to concede that we have “a conception of the good by which we can

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⁷⁴ Buchanan, “Enhancement and the Ethics of Development.”
and do evaluate human nature…that is to some extent independent of our nature,” and which helps us judge its good and bad qualities and the prospect of changing them.\textsuperscript{76}

\textit{Inequality}. Those who criticize cognitive enhancement on egalitarian grounds may be too quick to assume that cognitive enhancement will contribute to inequality. The effect seems just as likely, if not more, to work in the other direction. As Farah et al. argue, “in comparison with other forms of enhancement that contribute to gaps in socioeconomic achievement, from good nutrition to high-quality schools, neurocognitive enhancement could prove easier to distribute equitably.”\textsuperscript{77} In fact, for better or worse, a world of widespread cognitive enhancement might be a world of greater cognitive equality. Bostrom and Sandberg note that “the talent gap [might decrease] because it turns out to be generally easier to enhance individuals at the low end of the performance spectrum than those at the high end whose brains are already functioning close to their biological optimum. There is some tentative support for this in drug studies.”\textsuperscript{78} But even if cognitive enhancement were a force for inequality, its egalitarian critics, like proponents of the Conservative Argument, might be guilty of selective outrage. Is it fair to object to cognitive enhancement on egalitarian grounds while tolerating, for instance, private educations for families who can afford them?\textsuperscript{79}

\textit{Coercion}. It is easy to sympathize with a student or professional who feels forced into CED use by competitive pressure. But from another perspective, is such pressure already an everyday event? Buchanan, and Bostrom and Sandberg, consider literacy a far more transformative

\textsuperscript{76} Buchanan, \textit{Beyond Humanity: The Ethics of Biomedical Enhancement} (New York: Oxford University Press, 2008), 115.
\textsuperscript{77} Farah et al., “Neurocognitive Enhancement,” 423.
\textsuperscript{78} Bostrom and Sandberg, “Cognitive Enhancement,” 329.
\textsuperscript{79} A point made by Cakic and Farah et al.
cognitive enhancement than anything currently available in a pill. And, as Bostrom and Sandberg point out, few of us object to the severe penalties forced on those who fail to become literate, whether those penalties come through the enforcement of compulsory schooling or through limited job opportunities: “Despite these enormous and partially coercive pressures, and despite the fact that literacy profoundly changes the way the brain processes language, literacy is not deemed to be problematic.”\textsuperscript{80} The most common response to those pressures is not to object to literacy, but to argue for steps to make it more widespread. Further, an advocate of CED toleration might make the case that it is equally coercive to stop some from enhancing simply because of the pressure it places on others. As Cakic argues, “placing constraints on people’s actions so as to protect others from feelings of coercion is arguably no less an attack on personal freedom.”\textsuperscript{81}

\textit{Quality of Life}. Tännsjö’s position seems to be that cognitive enhancement is happiness-neutral. While this is a weak grounds to actively prohibit cognitive enhancement, is it a reason for an individual to consider his or her choice to enhance unwise? Tännsjö writes that those who enhance are less likely to be interested in stronger cognitive abilities \textit{per se} than in the outcomes they hope to achieve with those abilities. The \textit{reasons} for enhancing—not enhancing in itself—would seem to have the greatest bearing on our quality of life. It is certainly possible to imagine a CED user putting him- or herself on a money-and-status treadmill, constantly and miserably seeking new means of enhancement to stay a step ahead of the competition. But is that the only use to which we can put enhancement? It seems just as possible to use enhancement as a means to pursue projects that do make us meaningfully happy; in the same way, one might not enjoy

\textsuperscript{80} Bostrom and Sandberg, “Cognitive Enhancement,” 329.
\textsuperscript{81} Cakic, “Smart Drugs for Cognitive Enhancement,” 613.
running but could still enjoy the better health that results. While this may be an overly optimistic view (perhaps most of us, enhanced or not, wrongly pursue projects that make us unhappy), I fail to see anything in the nature of cognitive enhancement itself that leads us toward foolish or unhappy goals.

I raise these counterarguments not because they conclusively settle the issue—but in order to point out that many of the most important claims against cognitive enhancement have already received strong criticism. By contrast, there has not been, to my knowledge, as thorough a look at the assumptions behind the Accomplishment Argument. For this reason, it arguably remains the most effective case against CED use.

A second reason for focusing on the Accomplishment Argument has to do with the way in which it is effective. It is extremely difficult to imagine a set of policies that could effectively prohibit the use of CEDs, especially in the classroom and the workplace. Enforcing such a prohibition (urine tests after exams? clearance of prescriptions with employers?) would be enormously invasive—a significant intrusion on privacy, as well as a costly inconvenience. At the same time, the incentives to evade such a prohibition regime would be sizeable, and they would only grow with the regime’s strictness. The result might be a society-wide reenactment of professional sports’ decades-long struggle with doping—a struggle that would affect not just athletes, but conceivably any student and any professional.

The difficulty of actively enforcing a CED prohibition is precisely the source of the Accomplishment Argument’s importance. It is a cultural argument: it does not appeal to abstract
notions of justice or human nature, but to our own characters and the pride we take in our work. It is not necessarily an appeal to governments, universities, and businesses to step in and stop CED use; it is a claim that individual CED users ought to feel sordid, that their work ought to be looked down on, and that the rest of us ought to feel cheated by CED use in our midst. It seems that the strongest possibility of actually marginalizing and minimizing CED use lies with just such cultural arguments, which aim to keep cognitive enhancement largely taboo. On the other side of the coin, universities, businesses, and even neurotechnology lobbyists seem unwilling to acknowledge the culture of CED use, even as that culture continues to grow. If (as I will argue) it is important to bring cognitive enhancement “out of the closet,” strong cultural arguments for its legitimacy will be required.

Third, CED use often takes place in competitive settings, and the Accomplishment Argument has to do with the ethics of competition. It asks us to dismiss cognitive enhancement as an unfair advantage. For this reasons, it has a direct bearing on the practical decisions of the institutions in which CED use is likely to occur. Could professors, in the name of a fair playing field, one day make CED use an expectation for exams, just as calculators are an expectation for some exams today? If two employees produce work of close to equal value, but only one uses CEDs, does he or she deserve a smaller bonus? Could a company promote or even require cognitive enhancement, or would that be a requirement of degrading behavior that employees have a right to resist? Is there an obligation to disclose CED use? These are all questions of competitive ethics to which the Accomplishment Argument provides one set of answers. In responding to it, I

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hope to show how cognitive enhancement can be put to better, and possibly even more uplifting, purposes than competitive advantage.

Fourth and finally, the Accomplishment Argument dominates the public debate over enhancement. While the ethical questions of CED use have yet to receive a wide public airing, the ethics of performance-enhancing drugs in sports have been debated *ad nauseam*—and these debates frequently revolve around questions of cheating and character. To take just one example: Barry Bonds, Major League Baseball’s all-time home run leader, admitted to steroid use in 2003. Despite Bonds’s claim that he used steroids unknowingly, he found himself greeted at opponents’ stadiums by signs reading “BARRY IS A CHEATER,” “ASTERISK,” and “CHEATERS NEVER PROSPER,”83 and by sports columnists fulminating that “Bonds’ record is ignoble and unfair to baseball history for the simplest of reasons: He cheated.”84 These criticisms even found their way into the legal arena. In 2011, when Bonds was tried in Federal court for perjury related to his steroid use, the lead prosecutor delivered a summation that almost seemed to borrow from the President’s Council on Bioethics: “These substances that the defendant took to make himself strong—he wasn’t strong. He was weak.”85

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The analogy between performance-enhancing drugs on the baseball diamond, and CEDs in the classroom or the workplace, is not a perfect one.86 But the accusations leveled against Bonds, among many others, are important because they show that the terms of the Accomplishment Argument—cheating, dignity, character, and so on—are the most intuitive vocabulary for the public discourse of enhancement. To win any kind of cultural acceptance, cognitive enhancement will have to confront those terms directly.

**The Accomplishment Argument and Normative Essentialism**

The Accomplishment Argument—at least the version put forward by the PCB—rests on an assumption about authorship. It claims that the dignity and authenticity of our accomplishments lie, in large part, in our ability to claim individual credit for our work. It emphasizes our ownership of our original accomplishments and focuses the locus of value on individuals as creators, not on their products. That is why the PCB can consider enhanced accomplishment “less one’s own” and therefore “less worthy of admiration.”

While this seems at first glance to be a natural account of authorship, I believe that the PCB’s assumptions suffer from the error identified by Buchanan as “normative essentialism.” Such an error is essentialist because it is founded on a questionable belief about what is natural for humans, and normative because it gives that belief moral force. Normative essentialism is the claim “that it is possible to derive substantive moral rules from reflection on human nature,” and

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86 I have previously argued that we can take different ethical views of CEDs and performance-enhancing drugs in sports. See Goodman, “Cognitive Enhancement, Cheating, and Accomplishment.”
that practices that run afoul of these rules are “less than human, incompatible with human
dignity.”  

Buchanan explores the way in which the PCB proceeds from a shaky premise about human
reproduction—that “children are the issue of our love, not the product of our wills”—to a shaky
conclusion against human cloning and enhancement. The problem is that the premise treats a
certain kind of reproduction as distinctively human: children are quite often “the product of our
wills,” as in a child conceived to be an heir or a caretaker for old age. Having begun from a
limited and inaccurate view of what is human, the PCB then turns “human” into a normative
term. It concludes that activities that fall outside the limited essentialist sphere are inhuman. But
it has not justified its descriptive account of “human,” and it has leapt without explanation to the
conclusion that behaviors outside of that descriptive category deserve moral censure.

The Accomplishment Argument makes a similar kind of error, treating a certain idea of
authorship as distinctively human, with little justification. It locates human dignity in what we,
as individuals, can claim credit for. Its understanding of credit, originality, and cheating may
seem intuitive. But if this is only one possible view of authorship—a view that, far from being
inherent in human activity, can be shown to be contingent—then the Accomplishment Argument
would be significantly weakened.

**The Collaborative View of Authorship**

There is, in fact, another view of authorship that is just as strong, if not stronger, than the
individual view. That is the collaborative view of authorship. It is an impersonal way of thinking

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about accomplishment: it shifts the locus of value from creators to products and diminishes emphasis on ownership and originality. It is founded on the understanding that all work, even the most seemingly original, is subject to influences and takes place in a social context.

The collaborative view has proven remarkably resilient. It has been embraced by some of the most accomplished creators in a number of fields (and should be just as valid, if not more so, for the rest of us in the workaday world). In an essay on the development of modern notions of plagiarism, author Jonathan Lethem points to the “thefts” of content that led from the tales of Ovid to Shakespeare’s plays to West Side Story, or passages from Plutarch that find their way, again via Shakespeare, to T.S. Eliot’s poetry. When even historical greats borrow so freely, the challenge of assigning credit becomes almost hopelessly muddled. When we read Eliot’s lines “The Chair she sat in, like a burnished throne, / Glowed on the marble,” do we believe that they most reflect credit on Plutarch (for writing the original), on Shakespeare (for versifying them), on Eliot (for putting them in a new context), or on some combination of the three? And if a combination, in what proportion? The collaborative or impersonal view simply puts that question aside: it holds that the quality of the lines takes precedence over the quality of the authors. While such direct “theft” might be an especially clear-cut case, Lethem argues that it is emblematic of the borrowing, both blatant and subtle, behind all seemingly original work: “Finding one’s voice isn’t just an emptying and purifying oneself of the words of others but an adopting and embracing of filiations, communities, and discourses.” As if to prove his point that we ought to focus on content rather than creators, Lethem concludes his essay by confessing that the entire piece has been cobbled together from the quotes of other authors.

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While one might expect the most accomplished artists to be the most fiercely protective of their own originality, many of them have instead minimized questions of credit. For instance, Lethem quotes the blues musician Muddy Waters giving five different explanations for the origin of one of his songs in answer to a single question—explanations that turn the musician into almost a passive presence. They range from “the song fell into my mind,” to “I learned it from Son House,” to “this song comes from the cotton field.”\(^{90}\) In the same way, Eliot himself emphasized the interaction of traditions, allusions, and influences, almost of their own accord: “The poet has, not a ‘personality’ to express, but a particular medium…in which impressions and experiences combine in peculiar and unexpected ways.” In fact, an artist is successful to the degree he or she is self-effacing: “Poetry…is not the expression of personality, but an escape from personality.”\(^{91}\) In these accounts of accomplishment, the creator is hardly there at all—or if there, then only in the background.

Such accounts have not always represented a minority view. C.S. Lewis points out the existence of an entire literary tradition with ideas about originality radically different from those most common today. For medieval writers—who frequently handed down, re-wrote, and embellished their sources, so that their texts have come down to us as the amalgamation of multiple writers often separated by centuries—“the artist’s ideal of originality [was] absent.” Lewis calls such “shared authorship” “the normal, medieval procedure.” And when we read books composed by that procedure today, the process of singling out individual writers for evaluation is uniquely difficult: “They are so unoriginal that they hardly ever attempt to write anything unless someone

\(^{90}\) Ibid.
has written it before…. [But] they can no more leave their originals intact than we can leave our own earlier drafts intact when we fair-copy them. We always tinker and (as we hope) improve. But in the Middle Ages you did that as cheerfully to other people’s work as to your own.”

In fact, Lewis argues, this unfamiliar, shared mode of writing demands from us a different approach to criticism. The “Author-Book unit,” which we often take for granted, breaks down. We must treat medieval books, he concludes, in the same way we treat cathedrals built in varying styles over generations, often by anonymous architects: by setting aside the merits of the authors to concentrate on the effect of the whole. “While this often makes criticism of authors impossible it leaves criticism of books untouched. The text before us, however it came into existence, must be allowed to work on us in its own way and must be judged on its own merits.”

We could also add to the collaborative tradition those artists who considered themselves to be collaborating with an impersonal source of inspiration. In this group we might place J.S. Bach, who consistently signed his works “S.D.G.” (for Soli Deo Gloria, “the glory to God alone”), or those writers who used the traditional invocation of the Muse, a practice that lasted from the classical era through at least the time of John Milton: “Shine inward, and the mind through all her powers / Irradiate, there plant eyes, all mist from thence / Purge and disperse, that I may see and tell / Of things invisible to mortal sight.” To be fair, invocations like Milton’s might be considered entirely pro forma, a kind of self-deprecating decoration not meant to be taken literally. In fact, however, there is a serious worldview behind such an invocation. We are only able to take it figuratively because of a change in what we might call popular psychology: as

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93 John Milton, Paradise Lost, 1674, 3.51-55.
naturally as we often assume that creative inspiration is an internal process, other eras assumed that it was an external process. As Owen Barfield writes:

The meaning which *inspiration* possessed up to the seventeenth or eighteenth centuries carries us right back to the old mythical outlook in Greece and elsewhere, when poets and prophets were understood to be the direct mouthpieces of superior beings....Through Plato and Aristotle this conception came to England at the Renaissance and lasted as an element of aesthetic theory well on into the eighteenth century, if it can be said to have died out altogether now. But, like so many other words, this one began in the seventeenth century to suffer that process which we have called “internalization”....[I]t was now felt, whatever its real nature, to be something arising from within the human being rather than something instilled from without.”

Barfield also finds evidence of this change in worldviews in the evolution of words such as *genius* (from the classical idea of a guardian spirit, to a special ability, to a talented person him- or herself), *invent* (from a literal meaning of “to find,” to a secondary meaning of “to create”), and *talent* (from a valuable coin, to an internal gift, via the New Testament parable).

But doesn’t the evolution of words like *inspiration* and *genius* represent a throwing-off of superstition, a move toward more accuracy? Again, not necessarily. I agree with Lewis that making sense of our actions in terms of personified impulses, or allegory, is no more or less accurate than making sense of our actions in terms of a unitary self:

No man is a “character” to himself….Character is what he has to produce; within he finds only the raw material, the passions and emotions which contend for mastery. That unitary “soul” or “personality” which interests the novelist is for him merely the arena in which the combatants meet….For such a man allegory will be no frigid form. It is idle to tell him that something with which he has been at death-grips for the last twenty-four hours is an “abstraction”; and if we could be free, for a little, of our own Zeitgeist, we might confess that it is not very much more abstract than that “self” or “personality” on whose rock-bottom unity we rest so secure.\(^{95}\)

One does not have to believe in, say, literal spirits of Anger or Patience to find them a useful way of understanding or describing an internal conflict. In the same way, one does not have to literally believe in a Muse to find it a useful way of understanding or describing creative accomplishment. Though many have held such a literal belief, their account of creativity does not require a supernatural being in order to retain its power: their account speaks to an acknowledgement of outside influence and the tendency of outstanding achievement to inspire (sometimes, though certainly not always) feelings of profound humility rather than hubris. Like the instances of the collaborative view above, this account of creativity is a way of directing attention away from the creator toward the quality of the work—a longstanding alternative to the individual view embraced by the PCB.

We can also observe the contingency of the individual view by considering its historical development. Barfield points out that both the word *originality*, and the tradition of critics explicitly valuing it, are surprisingly recent coinages: “Early in the eighteenth century the substantive *originality* was formed from *original*, and an increasing importance began to be attached to the element of novelty in experiences of all kinds, Addison placing it on a level with greatness and beauty.”96

Along with this new valuation of novelty came a devaluation of artists who reworked or imitated venerable sources, as well as stronger censure for imitative work that passed itself off as original. A number of modern critics, including Jack Lynch and Richard L.W. Clarke, point to an influential 1759 essay as emblematic of this changing attitude. Edward Young’s “Conjectures on Original Composition” celebrated original writers as “great Favourites, for they are great Benefactors; they extend the Republic of Letters…Imitators only give us a sort of Duplicates of what we had, possibly much better, before.”97 With this essay, writes Clarke, “a shift in emphasis can be detected away from the reader’s response to the work and towards the Author of the work.”98

It is this same shift in influence that has been inherited by the Accomplishment Argument. It would be simplistic to claim that its notions of originality and individual achievement were invented in 1759—but it would be entirely fair to say that those notions have a history. And if they have a history—if they make up one of several competing views that have struggled or

96 Barfield, *History in English Words*, 190.
prospered with the times, rather than the only view available to us—then the Accomplishment Argument has a severe flaw. There is nothing distinctively human or natural about its understanding of authorship. Its case against cognitive enhancement, which rests on that understanding, is unpersuasive.

**Benefits of the Collaborative View**

Demonstrating the validity of the collaborative view is enough to cast doubt on the Accomplishment Argument. But we can begin to build a positive case for the toleration of CEDs, and an ethics to guide their use, by showing (a) the benefits that could result if the collaborative view were more widespread, and (b) the reasons why responsible CED users can and should take this view.

To this point, I have shown that there are at least two valid ways of looking at authorship. It would be wrong to call one correct to the exclusion of the other: our accomplishments come both through individual effort and in the social context of our influences. The difference between the two views of authorship is one of emphasis, and singling one out as inherently more accurate would be as improbable as settling the “nature/nurture” debate. However—assuming that the individual view taken as natural by the PCB is in the ascendant—there is a strong case to be made for a shift in the direction of the collaborative view as an important corrective.

I can see at least three strong benefits of a shift toward the collaborative view. First, it may promote creativity by relieving us of the anxiety that the work we produce is a commentary on our personal worth. The author Elizabeth Gilbert points to the destructive effects of the “notion
that creativity and suffering are somehow inherently linked.” She attributes this view to the
cultural turn away from the notion of inspired authorship (as embodied by the changing meaning
of the word genius) and explains how she reduced her anxiety about failure by taking a different
view of her work. Gilbert values the idea of the Muse or genius not as a literal entity but as a
“protective psychological construct” that has historically enabled artists to cope with the
capriciousness of the creative process. The artist who took this view “was protected from certain
things, like…too much narcissism….If your work was brilliant you couldn’t take all the credit
for it….If your work bombed—not entirely your fault.” In effect, Gilbert is arguing for an effort
to reverse the process of “internalization” described by Barfield. By taking a less possessive
view of our talents, we can reduce the “unmanageable expectations” that impede new work, as
well as reconcile ourselves to the inevitable decline of our talents.99

Second, the collaborative view can promote creativity in a broader sense by encouraging the
borrowing and appropriation that writers like Lawrence Lessig consider vital to a thriving
cultural marketplace. A marketplace less protective of cultural property rights would promote
more active production of culture and less passive consumption. It could enable more of us
to move from the life of a “consumer”…to a life where one can individually and
collectively participate in making something new….Music in particular, but not
just music, has always been about using what went before in a way that empowers
creators to do something new. But now we have the potential to expand the reach
of this creativity to an extraordinary range of culture and commerce. Technology

could enable a whole generation to create—remixed films, new forms of music, digital art, a new kind of storytelling, writing, a new technology for poetry, criticism, political activism—and then, through the infrastructure of the Internet, share that creativity with others….

The future that I am describing is as important to commerce as to any other field of creativity.\(^{100}\)

Lessig argues that overly-restrictive intellectual property laws, far more than any cultural attitudes about authorship, stand in the way of the “remix culture” that he values. But, without digressing into a discussion of those laws, it would be fair to argue that they embody a specific view of authorship—a view that tends strongly toward the individual rather than the collaborative.\(^{101}\) Intellectual property scholar Kembrew McLeod explains how this view informs the law: the “notion of the individual genius is embedded in European and American copyright law—the lone individual genius toiling away until a burst of creativity creates a truly original work unlike anything else that previously exists….\(T\)he law itself assumes a Romantic notion of authorship.”\(^{102}\) Explicitly challenging that notion may be a necessary (though certainly not sufficient) step toward winning stronger protections for sampling, “fair use,” and other forms of creative borrowing.


Third, the collaborative view may act as a counterweight to the “callous, meritocratic society” described by John Rawls. Meritocracy tends to conflate talent (or “the accidents of natural endowment”) with moral worth. In this way, it excuses “a marked disparity between the upper and lower classes in both means of life and the rights and privileges of organizational authority.” While such disparities exist in all societies, meritocratic disparity carries some unique harms: because it presents itself as a deserved disparity, it lends itself to a sense of entitlement in the well-off and despondency in the worst-off. To guard against this prospect, Rawls argues for the liberal value of fraternity, the condition under which members of a democratic society “agree to share one another’s fate.” And it seems to me that under conditions of fraternity, we would emphasize not individual and exclusive credit for our accomplishments, but the influences that contribute to our accomplishments. Both fraternity and the collaborative view are reminders to the successful of the social context that helps enable their success; both give the successful a stronger stake in the public sphere.

**Cognitive Enhancement and the Collaborative View**

This discussion has taken us somewhat far afield from the issue of cognitive enhancement—but I believe that there are important links between a culture of open cognitive enhancement and the collaborative view of authorship. While one does not, of course, need to use CEDs to take the collaborative view, there are strong reasons why a thoughtful and honest CED user ought to take that view.

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104 Ibid., 102.
Consider the case of a writer like Johann Hari, who used CEDs to draft an article and afterwards observed that “it rushed out of me in a few hours, and it was better than usual.” How would the experience differ from writing an article without CEDs? In some respects, the experiences seem similar: enhanced or not, Hari still had to do the work of developing and wording an idea himself—an idea that had already been “kicking around [his] subconscious.” At the same time, how might a writer like Hari account for the fact that the final product (assuming that he made a fair judgment) was better than his unenhanced work? Is the boost in performance attributable to his inherent skill or effort as a writer, or to the temporary influence of a drug? If someone singled out his enhanced work for praise, would he be right in taking all the credit for himself and leaving none for the enhancement?

I believe that he would not be. There is a dishonesty in failing to acknowledge the enhancement, because that failure willingly creates a false assumption: it allows us to believe that the boost in performance reflects positively on the writer’s efforts, growing skill, or some other personal quality, when it in fact reflects only on his decision to take a pill. Notice, however, that this position is significantly different from the one taken by advocates of the Accomplishment Argument. I argue that failing to acknowledge enhancement is dishonest; they argue that enhancement is dishonest in itself. It is that latter view on which I believe I have already cast significant doubt. There is nothing dishonest about collaborative work, forthrightly acknowledged. When we take that view of our work, we share credit and openly recognize our influences. And we ought to take exactly that attitude to work done under the influence of CEDs: it is, in effect, a kind of collaborative work. When we speak of creative influences and working “under the influence” of CEDs, I believe that we are exposing a similarity that runs deeper than a
pun. Whether we acknowledge influences that shape our work, or acknowledge the influence of a
drug that helped us accomplish that work, we are sharing credit. We are also directing observers
toward the quality of the work, rather than toward what the work may say about our personal
qualities. We are, in other words, making less of a “property claim” on the work.

The PCB is right, then, that work accomplished under the influence of CEDs is “less one’s own.”
But, as I showed above, there is a long history of some of the most accomplished creators
treating their work as “less one’s own.” I simply do not see the prospect of taking less ownership
of our accomplishments as pessimistically as the PCB. For one, I am reassured by the strong
precedent for the collaborative view. More importantly, I believe that a shift in the direction of
that view should be welcomed for the reasons I discussed above.

But even if CED users ought to acknowledge enhancement and take a collaborative view of their
accomplishments, is it realistic to think that open CED use would inspire any broader cultural
change? If we do not already tend to minimize the individual creator and routinely share credit,
why would the introduction of open CED use change the equation? It might not—but CEDs have
at least one “advantage” as a means of encouraging us to take the collaborative view.

That advantage is the strong subjective experience of CED use. We might reflect on the ways the
advice or the example of others has shaped our work, or on the lines of influence that link our
work to others, or on our conscious or unconscious borrowings—but it is difficult to do anything
more than abstractly reflect on these themes. CED use is different: CED users perceive nearly
immediate, and temporary, gains in focus, processing speed, and articulateness. It seems more
difficult to feel and to take personal credit for these gains, because with the experience of enhancement comes the experience of leaving, and returning to, an “unenhanced” state.

Enhanced work, in other words, is a subjectively powerful experience of accomplishment for which it is difficult to take credit, an experience that takes place in “real time.”

I do not claim that CEDs will inspire the same reflections in all of their users, or that those reflections would carry over to their understanding of unenhanced work. It is certainly possible to be unreflective about the ramifications of CED use—I only argue that it is harder to be unreflective. And if the use of cognitive enhancement continues to grow—so that it is one day much closer to the norm than the exception—then our view of enhanced work may come to play a much larger role in the broader culture.

Cognitive Enhancement and Humility

So far, I have argued for the benefits of the collaborative view on largely consequentialist grounds, and I have shown how open CED use could plausibly promote that view. However, advocates of the Accomplishment Argument—especially those who favor the Parens/Sandel version of the argument—might respond that the strongest reasons for opposing cognitive enhancement are not consequentialist at all. The real danger of cognitive enhancement, they might argue, is to our characters. Specifically, to embrace enhancement is to reject the virtue of humility and to replace it with some version of limit-rejecting, constantly-striving hubris.

Much like the claim that enhancement is a form of cheating, the claim that enhancement stands opposed to humility seems intuitive at first glance. If humility is the acceptance of limits, and the
wise contentment with what we have, then any technology promising to expand human powers would seem to fly in the face of those values. I agree that Parens and Sandel provide a powerful account of “the gifted quality of life,” and I agree with them on the dangers of losing sight of humility. But when they claim the virtue of humility for anti-enhancement side of the debate, I believe that they have gotten it backwards: in fact, a culture of open CED use may actually be better at fostering humility. Enhancement and humility do not have to be enemies.

Sandel associates humility with the understanding that “our talents and powers are not wholly our own doing” and that “our talents are gifts for which we are indebted, rather than… achievements for which we are responsible.” He is concerned that enhancement causes us to feel more responsible for, or take more ownership of, our talents. This process worries him because he considers the less-humble attitude socially harmful (for instance, in its ability to undermine social solidarity between the more-fortunate and the less-fortunate). But he also considers the less-humble attitude essentially false, wrong on its face: enhanced or not, there is always an element of giftedness to our talents, an element that enhancement technologies seduce us into overlooking.

It is that last claim—that enhancement leads us to falsely overestimate our responsibility for our achievements and talents—with which I take issue. In fact, long before CEDs came on the scene, the broad cultural trend seems to have been one of less and less humility in the sense defined by Sandel. The movement toward “internalization” I describe above is a move away from this kind of humility—and toward the sense that our gifts, our inspirations, and our accomplishments come from within, not without. That cultural shift helps to account for our changing use of words
like *inspiration*, *genius*, and *talent*, as noted by Barfield; the changing understanding of artists’ roles and responsibilities, as described by Gilbert; the resistance to creative borrowing criticized by Lethem and Lessig; and the strange appearance of a culture of “shared authorship,” as described by Lewis. What unites these changes is a growing sense that our talents are “achievements for which we are responsible.” Of course, it would be impossible to quantify historical rises and falls in humility. But if we agree that an emphasis on our personal responsibility for developing our talents, and an emphasis on the giftedness of our talents, lie on a continuum—and if, like Sandel, we appreciate the value of the “giftedness” side of the continuum—there is a strong case to be made that we have long been moving in the “wrong” direction.

But would a culture of CED use only speed us further in that direction? In fact, I believe that CED use can actually promote the sense of humility valued by Sandel, in much the same way that it can lead thoughtful CED users to disclaim full credit for their work. Without enhancement, it seems all too easy to believe that we “own” our talents and qualities, especially when they remain consistent over long stretches of our lives. CEDs on the other hand, may allow us to actually experience “giftedness”—short-term growth in our abilities, to which we cannot permanently lay claim. In other words, it should be easier to take an attitude of humility toward work accomplished under the influence of CEDs, because the help they give us seems so readily apparent. Consider two roughly equivalent accomplishments, one done without enhancement of any kind, and the other done under the influence of CEDs. Would it really make sense to take a *less* humble attitude toward the latter, especially when the role of external help is so clear, and experienced so directly? Memory, focus, or motivation temporarily enhanced by a pill seem the
very definition of “powers not wholly of our own doing.” CED use may or may not cause us to take what Sandel considers a more truthful attitude toward unenhanced activities; one might use Provigil to write a more articulate article without stopping to consider the gifted qualities of an unrelated talent, such as athletic endurance. But it is still a strike against his argument to show, as I believe I have, that CEDs can push us in the direction of humility, rather than hubris, no matter how consistently that push carries over into the rest of our lives.

One might argue that the development of enhancement technologies, even if the use of enhancements causes individuals to feel greater humility, represents a kind of culture-wide or even species-wide hubris. But as Buchanan asks, “how could anyone deny that some may seek an enhancement in order to be better in some particular way without thereby desiring to achieve total mastery of the conditions of life?”105 In criticizing enhancement as a hypertrophied case of what Sandel calls “the drive for mastery” and Parens calls “the human capacity for self-transformation and control of the world,” it is extremely difficult to distinguish enhancement technologies from any number of other technologies that make human life easier. It is hard to give a clear reason why, say, wearing clothes, building shelters, or instilling literacy is acceptable, but cognitive enhancement crosses the line into hubris—and it is especially hard to make that claim without appealing to the Argument from Human Nature, which, as I showed above, is difficult to sustain.

Responding to Counterarguments

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105 Buchanan, Beyond Humanity, 9.
Having made the case for an ethics of cognitive enhancement based on toleration, transparency, and humility, I will respond to four possible counterarguments, and in the process expand on how this ethics of cognitive enhancement might apply in practice.

_Inauthenticity._ One could agree that CED use promoted humility but argue that it would be a drug-induced shortcut to humility—something less than the real thing. Even granting that chemically-induced attitudes are necessarily inauthentic,¹⁰⁶ I would respond that the _Inauthenticity_ criticism might be more plausible if we were in fact developing CEDs _in order_ to strengthen our experience of humility. But, on the contrary, CEDs offer the possibility of a number of economic and social benefits: as Buchanan writes, “some of the most widely-discussed enhancements, including the improvement of cognitive functions…are likely to bring increases in productivity and thereby create the potential for large-scale increases in well-being.”¹⁰⁷ CEDs are not drugs to induce feelings of humility, and I do not consider humility a drug-induced effect of CEDs. Rather, it would seem to be a benefit of honestly reflecting on cognitive enhancement, after the fact.

_The New Normal._ The New Normal criticism claims that the humility-promoting effects of CEDs would have diminishing returns: if enhancement became a regularly-occurring part of our lives, we might come to take it for granted and stop reflecting on the ways in which it pushes us to take a greater attitude of humility or a more collaborative view of our accomplishments, just as few of us reflect on the ethical implications of a cup of coffee. The cultural history of caffeine, in fact, seems to be a point in favor of the New Normal criticism. When coffee—“that Newfangled,

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Abominable, Heathenish Liquor——first came to the Western world, the ethics and personality-shaping effects of its use were widely debated; now, those effects are taken for granted.

I agree that the New Normal is an argument for limiting the use of CEDs: if a permanent form of cognitive enhancement were somehow developed, I imagine that any of its beneficial effects on humility would quickly dissipate. On the other hand, the New Normal is also an argument for bringing the use of CEDs into the open: it is difficult to imagine coming to any sort of cultural consensus about moderation in the use of CEDs if their use remains tacit. The New Normal also points us toward the benefits of keeping an explicit vocabulary of enhancement with reference to CEDs (in a way that we have not with reference to coffee). If we were to stop thinking of CEDs as enhancement—if we were to consider them a daily prerequisite, as many consider a cup of coffee—we might lose out on their humility-promoting benefits. For this reason, among others, we ought to resist the temptation to medicalize CEDs and think of them as treatment for the “problem” of average focus or attention span.

Unintended Consequences. The Unintended Consequences criticism builds on the skeptical studies of CEDs discussed above to argue that cognitive enhancement may not be an unadulterated good, even on its own terms. CEDs might promote “straight-ahead” thinking or cognitive “tunnel vision” at the expense of lateral, creative thinking. Some take this criticism further, arguing that the use of enhancement drugs tends to distort activities by leading us to

focus on a single, enhanced aspect of performance, at the expense of the larger whole. Just as steroid use in baseball has arguably coincided with a focus on the distance of home runs over other aspects of the game, a culture of cognitive enhancement might come to prize the kind of work that may be most characteristic of the CED user: a detailed focus on the trees rather than the forest.

But this is a speculative and poorly substantiated argument. First, the study of the cognitive tradeoffs of CEDs is still in its infancy; it is possible that those tradeoffs exist, but it is not yet proven. Second, it is even more speculative to claim that enhancement would cause us to distort the values we give to different parts of an activity (home runs over bunts, or detail and focus over generalities). It seems more likely that the causation would work in the other direction: the most popular enhancements would point in the direction of what is already widely valued. Or perhaps, in a world of widespread CED use, the characteristics of enhanced thinking (if there are such things) would become less valuable as they became less rare. Third, this criticism assumes that changing cultural values would be a matter for concern because they were brought about by enhancement. But without specifying what those values would be, and explaining why they are flawed in themselves, the argument is begging the question. Without that explanation, it is just as plausible to argue that we should be grateful for cognitive enhancement for pointing us in the direction of better values.

With that said, it is difficult to make informed choices about CED use without a better understanding of their possible tradeoffs and risks (even if these are risks to a kind of thinking

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we value, rather than to safety). The Unintended Consequences criticism is, at the very least, a
reason for further study of the effects of drugs like Provigil and Adderall on cognition: in order
to make responsible decisions about their use, we should know if they impose cognitive tradeoffs
or long-term harms. And if those tradeoffs do exist, as some suspect, then they would be a strong
reason to limit CED use, so that we can continue to benefit from the cognitive functions they
may hamper. Some CED users are already developing strategies to manage those tradeoffs that
they have found in their own experience. Margaret Talbot writes that “a journalist I know, who
takes [Provigil] when he has to stay up all night on deadline, says that it doesn’t help in the phase
when he’s trying to figure out what he wants to say or how to structure a story; but, once he’s
arrived at those insights, it helps him stay intent on completing a draft.”

In fact, it is possible that some of the most useful information on such cognitive tradeoffs will
come not from the lab, but from the reports of CED users like Talbot’s friend. This is a powerful
argument for openness about CED use: developing an ethics of enhancement will require not just
scientific studies, but opportunities to compare enhanced and unenhanced work, to understand
the situations in which CEDs are helpful and harmful, and to develop context-specific social
norms for their use. In fact, those social norms are arguably the most effective means we have of
regulating the use of two of our most common mind-altering substances: caffeine and alcohol.
Consuming caffeine or alcohol at the “wrong” times or places—drinking coffee after dark or
drinking alcohol on the job—usually raises eyebrows, at the very least. I do not think it is a
coincidence that caffeine and alcohol are often consumed in elaborate social settings with their
own rituals, from coffeehouses to bars, or that drinking alone, where one is free from this kind of
social regulation, is often seen as a sign of alcohol abuse. Similar informal yet powerful norms

\[110\] Talbot, “Brain Gain.”
may develop around CED use—and for those who value moderation in CED use, such norms may be the best way to secure it. But these norms, and the experience needed to distinguish helpful enhancement from harmful, can hardly develop if CEDs remain “in the closet.”

**Negative Cultural Trends.** Finally, some claim that CEDs reflect some of the worst aspects of workplace and academic culture. Talbot gives a powerful summation of this case:

> Every era, it seems, has its own defining drug. Neuroenhancers are perfectly suited for the anxiety of white-collar competition in a floundering economy. And they have a synergistic relationship with our multiplying digital technologies: the more gadgets we own, the more distracted we become, and the more we need help in order to focus. The experience that neuroenhancement offers is not, for the most part, about opening the doors of perception, or about breaking the bonds of the self, or about experiencing a surge of genius. It’s about squeezing out an extra few hours to finish those sales figures when you’d really rather collapse into bed; getting a B instead of a B-minus on the final exam in a lecture class where you spent half your time texting; cramming for the G.R.E.s at night, because the information-industry job you got after college turned out to be deadening. Neuroenhancers don’t offer freedom. Rather, they facilitate a pinched, unromantic, grindingly efficient form of productivity.\(^{111}\)

Elsewhere, Talbot argues that CEDs also reflect a worrying trend toward the medicalization of behaviors and personality traits once considered normal. Just as pharmaceutical companies have

\(^{111}\)Ibid.
helped push expanded diagnoses and prescriptions for conditions like ADHD and social anxiety
disorder, a similar “mission creep” may cast CEDs as treatment for average cognition and focus.
In fact, while the federal government has penalized the maker of Provigil for promoting off-label
use, it has also sanctioned the prescription of the drug for a steadily wider range of uses:

In 1998, Cephalon, the pharmaceutical company that manufactures [Provigil],
received government approval to market the drug, but only for “excessive daytime
sleepiness” due to narcolepsy; by 2004, Cephalon had obtained permission to
expand the labeling, so that it included sleep apnea and “shift-work sleep
disorder.”112

In responding to this criticism, it is important to first note that complaints like Talbot’s are not
necessarily directed at the use of CEDs per se. Rather, she sees CEDs as a response to the trends
she deplores, not their cause. In fact, the floundering economy and multiplying digital
technologies exist independently of CEDs; if CEDs are a response to those trends, they may be
able to mitigate their harms in the way Talbot grudgingly describes. While this may not be a
reason to celebrate CEDs, it is not a reason to deter their use, either.

Second, however, advocates of CED toleration have a responsibility to argue against those
negative cultural trends that they might be able to influence, such as medicalization as an excuse
for expanded use of enhancement. Given the option of calling an average attention span a
condition to be treated, or a normal quality to be enhanced, some might call the choice a
distinction without a difference. But for reasons I have already touched on, it is important to

112 ibid.
discuss CEDs with a vocabulary of enhancement, not treatment—to preserve, to the greatest extent possible, their ability to foster humility and to continue to value the forms of human cognition that are not enhanced by CEDs.

Third and finally, while the use of CEDs may be a reflection of a number of harmful cultural trends, I believe that they are also share Talbot’s “synergistic relationship” with several positive trends. The link between CEDs and the collaborative view of accomplishment seems at least as strong as the link between CEDs and “grindingly efficient productivity.” If grinding efficiency is an example of our culture at its worst, the collaborative view may be an example of our culture at its best. The credit-sharing or -disclaiming view seems inherent in some of the most distinctive cultural developments of our time, from anonymous, collaborative projects like Wikipedia and open-source programming, to pseudonymous online commentary, to the “remix” and sampling culture prized by writers like Lessig and McLeod. None of these activities need to be fueled by CEDs—but, on the other hand, neither do Talbot’s examples of working late on sales figures or cramming for a test. If the culture of CED use has something in common with corporate overwork, it also has something in common with collaborative, credit-sharing projects from an encyclopedia page to a remixed piece of music. CEDs, in other words, can encourage some tendencies that we value, and others that we don’t—and in that respect, they are no different from any other technology.

It would also be fair (though speculative) to ask whether the currently tacit culture of cognitive enhancement shapes the most common uses of CEDs. Talbot argues that overwork and cramming are the most typical activities for CED users—but would that still be true in a culture
of open use? Overwork and cramming will, no doubt, always be popular activities. But as long as cognitive enhancement is only available on the black market or through pliable doctors, it seems that only the most desperate or driven will seek it out. But what if one wanted to use CEDs for a less desperate purpose—say, reading a book on quantum physics for fun, like Johann Hari? In a culture of tacit use, the work of obtaining CEDs for anything other than the most high-pressure needs, overwork and cramming, hardly seems worth the trouble. I do not claim that a culture of open CED use would turn us into a nation of armchair physicists. But I do claim that the picture Talbot paints of the most typical uses of CEDs may be distorted by the culture of tacit use.

Conclusion

A number of policy recommendations follow from the arguments above. First, the potential economic benefits of CED use make further cognitive research a worthwhile investment of government funds. Even if the federal government does not directly fund the development of CEDs, their growing use by healthy individuals makes studying their long-term effects and safety an important public health concern. If CEDs (whether the current generation or future CEDs) prove largely safe, or if they prove to be within the wide range of currently acceptable risks for informed adults, I would urge the government to remove CEDs from the schedule of prohibited substances and make them available over-the-counter. If CEDs carry too many health risks or too much potential for abuse, the government should at least expand their labeling to explicitly include cognitive enhancement—rather than sanctioning labeling that sidesteps the question of enhancement by medicalizing, say, average attention span.

113 CEDs might also be placed in Schedule V, which permits over-the-counter sales in pharmacies, with quantity limits and minimum ages, in certain states.
A number of arguments about individual autonomy and informed risk-taking are used to counter restrictions on recreational drugs. Advocates of CED toleration might draw on similar arguments, but they could also make a strong economic case for toleration: if CED use increases productivity, then CED users will be far from the only people to reap the economic benefits. The greater those benefits, the more the government has an interest in expanding access to cognitive enhancement. It should also have an interest in expanding access to cognitive enhancement to the degree it has an interest in promoting equity. While I point out above that cognitive enhancement may not expand inequalities to the degree its critics fear, it is still the case that access to doctors—and especially the social connections needed to find doctors willing to write questionable prescriptions—continues to be a function of wealth. The tacit culture of CED use arguably makes access to enhancement less equal; promoting more equal access is another reason to support a culture of open use.

What are the responsibilities of the institutions in which CEDs are most likely to be used, universities and businesses? They might continue to ignore the question of cognitive enhancement. They might also stake out a strong position against cognitive enhancement, even if it grew more legally tolerated. It is possible to imagine a future in which widely-available CEDs are legal, but in which their use is discouraged as an ethical matter by school or workplace policy. In any case, largely ignoring the question of cognitive enhancement will grow to be a less and less tenable policy, especially if CED uses continues to expand.

Businesses and universities should be prepared with explicit policies on enhancement. Further—while I do not argue that universities and businesses should openly flout laws on controlled
substances—I do believe that they have a responsibility to promote legal toleration of CED use and a culture of open enhancement. In large part, this responsibility stems from the fact that universities and businesses already seem to be “free-riding” on the culture of tacit use. In the culture of tacit use, universities may benefit from more productive researchers and businesses from more hours spent in the office—but as long as institutions remain officially blind to CED use, any risks of breaking the law fall on individuals alone. The culture of tacit use harms individuals in other ways, as well: it stifles the emergence of the social norms that can effectively regulate CED use, and it may heighten the problem of coercion. In a culture of open use, workers concerned about coercion might press for workplace policies limiting CED use; under the status quo, workers, such as the one who wrote to an advice columnist complaining about his modafinil-using colleague, have little recourse, and employers have good reason to turn a blind eye.\textsuperscript{114}

Even if universities and businesses are not willing to advocate for changes to the law, I would urge them to adopt CED policies that lean as far toward toleration as legally possible. This position is strengthened by my criticisms of the most pertinent ethical argument for universities and businesses, the Accomplishment Argument, and by the weak or questionable nature of other arguments against cognitive enhancement. There might, however, be a few exceptions to a policy of toleration: competitive circumstances in which cognitive enhancements function as positional

\textsuperscript{114} On the other hand, there would be a number of difficulties in implementing such workplace policies. Could they be enforced without violating privacy? If workplaces used an “honor system” instead, would it be enforceable? If workplace policy set a limit to enhancement, how would they balance one individual’s willingness to exceed the limit against another’s desire not to be coerced over it? While these are all difficult questions, I would point out that the problem of coercion exists with both tacit use and open use—but under the status quo, it will continue to be difficult for workers to speak out about the problem. Because conceiving of a workplace policy to limit CED coercion is so difficult, I believe that the informal social norms I have discussed—which are much more likely to develop in a culture of open use—would be more effective at mitigating the problem.
goods, such as competitive exams graded on a curve. In these cases, it is in the interest of fairness to create a level playing field, just as a teacher might by banning calculators on a math test, or by making calculators an expectation. In principle, a level playing field could be created either by restricting or encouraging the use of CEDs (though even a temporary CED ban around a competitive exam might be difficult to enforce in practice). However, I agree with Bostrom and Sandberg that these instances are fairly rare: for the most part, enhanced cognition would be likely to create positive externalities, benefitting rather than harming those who do not use enhancement.

Finally, responsible use of CEDs depends on openness from individual users, on a willingness to make their use of enhancement public. To my mind, the greater ethical problem is not enhancement, but concealing enhancement. I have argued that cognitive enhancement can and should lead its users to an attitude of humility and a collaborative view of their accomplishments. There is no guarantee that CED use will make those attitudes more widespread, but I have argued that they are a plausible and likely outcome of honest reflection on CED use. No one can force that reflection, but I would argue that it is CED users’ responsibility. Cognitive enhancement may very well remain “in the closet,” contributing to a culture of “grindingly efficient productivity.” But if CED users have the power to foster such a world—by keeping enhancement hidden, and by viewing it as a means to personal success and nothing else—they also have the power to foster something better. I have attempted to describe what that something better might look like. Whether it can be achieved, along with legal and institutional policies of greater toleration, depends above all on the advocacy and the attitudes of those who use cognitive enhancement.
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