2010

Freedom of Thought for the Extended Mind: Cognitive Enhancement and the Constitution

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FREEDOM OF THOUGHT FOR THE EXTENDED MIND: COGNITIVE ENHANCEMENT AND THE CONSTITUTION

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Freedom of thought is often described as the central liberty in our constitutional system. Justice Oliver Wendell Holmes said that there is no principle that "more imperatively calls for attachment" than "the principle of free thought." The Supreme Court has likewise often placed it at the center of our First Amendment jurisprudence, saying that our "whole constitutional heritage" rebels at giving government the power to "control men's minds," and suggesting that the more well-known right to freedom of speech is important largely because of the support it provides for our freedom of thought.

But while the Court has often celebrated freedom of thought, it has never clearly defined it or delineated its contours. Is "freedom of mind" a liberty that operates and protects only when we *express* our thoughts in speech or religious action? Or does it have independent force? This Article suggests an answer by looking at a form of government regulation that arguably limits our right to think, or enhance our powers of thought, *without* limiting our freedom of speech or worship. More specifically, it asks whether the Constitution's freedom of thought places limits on the extent to which officials may restrict our use of cognitive-enhancement technology. Ultimately, I argue, the power to reshape our thinking processes biologically should be recognized as merely one form of a more general power that our "freedom of mind" is intended to place firmly in our own hands, not in the hands of government officials.

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INTRODUCTION

For decades, judges and scholars alike have celebrated our freedom of thought and described it as having a central place among our constitutional liberties. In 1937, Justice Benjamin Cardozo said that freedom of thought, together with freedom of expression, constituted "the matrix, the indispensable condition, of nearly every other form of

freedom."[1] Forty years later, the Supreme Court suggested that freedom of thought not only stood alongside freedom of speech as the foundation of First Amendment jurisprudence, but was perhaps more basic: "[F]reedom of mind," the Court said, is "the broader concept" of which freedom of speech is but one "component[]."[2] In fact, the Supreme Court said on another occasion, the Constitution protects speech largely because of its close connection to thought.[3] Academic writers have agreed, noting that freedom of thought and belief is as close to an absolute right as any that exists in the Constitution.[4]

But as central as freedom of thought is to our constitutional system, it is also something of a mystery: the Supreme Court has never said exactly what this freedom is. Does it protect thought from government restriction only when we put that thought into words—or some other form of First Amendment "speech"? Does it, in other words, recognize freedom of thought only where it is exercised or invoked together with freedom of expression—when we create, or serve as audience for, a book, painting, or film? Or where it is manifested in our exercise of freedom of association or of our religious liberty? Or might the freedom of thought also stand on its own and protect our thinking, even when that thinking is unaccompanied by any First Amendment expression, association, or religious practice?

In the past, perhaps, such a question may have seemed an entirely academic one. There was no reason for the law to protect our private, unexpressed thoughts because such internal thoughts were, in any case, beyond the reach of the state. Thus, John Locke said in 1689 that "such is the nature of the understanding, that it cannot be compelled to the

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1. *Palko v. Connecticut*, 302 U.S. 319, 326–27 (1937). Justice Holmes likewise said that "if there is any principle of the Constitution that more imperatively calls for attachment than any other it is the principle of free thought." *United States v. Schwimmer*, 279 U.S. 644, 654–55 (1929) (Holmes, J., dissenting).

2. *Wooley v. Maynard*, 430 U.S. 705, 714 (1977) (quoting *W. Va. State Bd. of Educ. v. Barnette*, 319 U.S. 624, 637 (1943)).

3. *Ashcroft v. Free Speech Coalition*, 535 U.S. 234, 253 (2002). *See also* RODNEY A. SMOLLA, FREE SPEECH IN AN OPEN SOCIETY 10–11 (1992) (stating that "the preferred position of freedom of speech" over other liberties can be traced to the fact that "speech is connected to thought in a manner that other forms of gratification are not").

4. *See* Christian M. Halliburton, *Letting* Katz *Out of the Bag: Cognitive Freedom and Fourth Amendment Fidelity*, 59 HASTINGS L.J. 309, 314 (2007) ("[T]he mind is a safe harbor from which all outsiders can and should be excluded should we so desire."); Neil M. Richards, *Intellectual Privacy*, 87 TEX. L. REV. 387, 408 ("[I]f there is any constitutional right that is absolute, it is [freedom of thought and belief], which is the precondition for all other political and religious rights guaranteed by the Western tradition.").

belief of any thing by outward force."[5] Modern jurists and scholars have likewise noticed the mind's natural invulnerability to governmental control. "Freedom to think," said Justice Frank Murphy, "is absolute of its own nature; the most tyrannical government is powerless to control the inward workings of the mind."[6] Frederick Schauer likewise notes that "thought is intrinsically free. The internal nature of the thought process erects a barrier between thought and the power of government sanction."[7]

Thus, there was not much the government could do to restrict our freedom of thought except attack the expression of that thought in speech or worship. The government could not manipulate our minds from the inside; its only way of restricting mental activity was to target the communication or other expression that embodies such activity.[8] Those who wished to recruit resources from the outside world to reshape their framework of internal beliefs would do so by seeking religious or other cultural resources in the world around them.

The development of neuroscience, psychiatry, and cognitive enhancement, however, has changed this state of affairs. Studies of the brain have in recent years generated a flood of discoveries about the biology that underlies our thinking. Francis Fukuyama aptly describes this neuroscientific revolution: psychologists and philosophers trying to explain (and repair malfunctions in) our thoughts and feelings were long akin to "a group of primitive tribesmen who found a working automobile and tried to explain its internal functioning without being able to open the hood."[9] Today, "[m]odern neuroscience has, in effect, lifted the hood and permitted us to peer, however tentatively, at the engine."[10] Thinking is no longer a process that emerges mysteriously from a hidden mechanism. It is increasingly something that can be linked, at least in part, to cellular processes that occur in and among

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5. *See* JOHN LOCKE, A LETTER CONCERNING TOLERATION 20 (Prometheus Books 1990) (1689).

6. *Jones v. Opelika*, 316 U.S. 584, 618 (1942) (Murphy, J., dissenting).

7. FREDERICK SCHAUER, FREE SPEECH: A PHILOSOPHICAL ENQUIRY 93 (1982). *See also* Dana Remus Irwin, *Freedom of Thought: The First Amendment and the Scientific Method*, 2005 WIS. L. REV. 1479, 1519 ("The Court has never held that there is a fundamental and absolute right to free thought because, as a practical matter, there has never been a need to do so."). *See also* J.B. BURY, A HISTORY OF FREEDOM OF THOUGHT 7 (1913) ("It is a common saying that thought is free. A man can never be hindered from thinking whatever he chooses so long as he conceals what he thinks.").

8. *See Jones*, 316 U.S. at 618 (Murphy, J., dissenting) (noting that while "[f]reedom to think is absolute of its own nature" the government may target it by targeting "freedom to communicate [the mind's] message to others by speech and writing").

9. FRANCIS FUKUYAMA, OUR POSTHUMAN FUTURE: CONSEQUENCES OF THE BIOTECHNOLOGY REVOLUTION 42 (2002).

10. *Id.*

our neurons. And just as studying and understanding a car's engine gives us far greater power to fix or modify it, so understanding the biology behind thinking gives us greater power to alter how it works.

Rather than reshaping our mental universe with words, music or pictures perceived through our sensory channels, we might reshape it *more directly* by altering the brain physiology that underlies it.[11] This, for example, is what psychiatric medications like selective-serotonin-reuptake inhibitors (SSRIs) do when they transform a brooding, depressed individual, fearful of social contact, into someone who sees the world more positively and lives more boldly.[12] Indeed, the most well-known of these SSRI drugs—fluoxetine (Prozac)—has already been the subject of extensive attention in books and newspapers. In *Listening to Prozac*, for example, Peter D. Kramer describes cases where the Prozac he prescribed to patients did not merely treat that patient's depression, but transformed their personalities: "Prozac," he writes, "seemed to give social confidence to the habitually timid, to make the sensitive brash, to lend the introvert the social skills of a salesman."[13]

Is such direct chemically-induced alteration of our mental functioning covered by the freedom of thought that jurists have long found in the First Amendment? Are we in the realm of that constitutional freedom when we reconfigure the emotional and cognitive lens on the world chemically rather than culturally? If, for example, we banish a state of depression or mental paralysis—not, as William Styron did, in responding to Brahm's music,[14] nor as John Stuart Mill did by reading Marmontel's Memoirs and Wordsworth's

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11. *See* PETER D. KRAMER, LISTENING TO PROZAC 259 (1993) ("Prozac performs chemically what has heretofore been an intimate interpersonal function."); RICHARD RESTAK, THE NEW BRAIN: HOW THE MODERN AGE IS REWIRING YOUR MIND 121–24 (2003) (noting that whereas "[f]or centuries the principle treatment for depression was talking to friends" and then talking in a more systematic manner to therapists, today the solution for this and many other problems is use of psychotropic treatments).

12. RESTAK, *supra* note 11, at 121–22.

13. *See* KRAMER, *supra* note 11, at xv; *see also* Laurence R. Tancredi, *Neuroscience Developments and the Law*, *in* NEUROSCIENCE AND THE LAW: BRAIN, MIND, AND THE SCALES OF JUSTICE 71, 97 (Brent Garland ed., 2004) ("Prozac and similar medications have been shown not only to treat depression but also to create sometimes dramatic changes in awareness in those taking them."); JOHN E. DOWLING, CREATING MIND: HOW THE BRAIN WORKS 50 (1998) ("Drugs that alter transmission at synapses using one of the monoamines, [as Prozac does with Serotonin,] or that alter the levels of these substances at synaptic sites, often dramatically change a person's mood or other mental state.").

14. *See* WILLIAM STYRON, DARKNESS VISIBLE: A MEMOIR OF MADNESS 66–67 (Vintage Books 1992) (1990) (recounting how suicidal thoughts, in the midst of a deep depression, were banished by watching a film in which he heard "a contralto voice, a sudden soaring passage from the Brahms *Alto Rhapsody*").

poetry[15]—but as many individuals now do, by taking Prozac, are we protected to any degree by our First Amendment freedom of thought? And are people protected when they use such drugs, neurofeedback, or other technologies of "cognitive enhancement," not to treat a psychological illness, but rather to move their psychologically healthy minds to a state they prefer?

I suggest in this Article that they sometimes are. The power to reshape our thinking processes biologically should be recognized as merely one form of a more general power that our "freedom of mind"[16] is intended to place firmly in our own hands, not in the hands of government officials: namely, the power to make autonomous choices about the shape of the self that perceives, learns, archives, and re-imagines the world. As Lawrence Tribe similarly suggests, whether the government decides to interfere with our mental autonomy by confiscating books and films or by denying us psychiatric medications, "the offense" is ultimately the same: "governmental invasion and usurpation of the choices that together constitute an individual's psyche."[17]

John Locke wrote over three centuries ago that it is the task of each individual—not the government or the community it represents—to make ultimate decisions about the care of that person's "soul[]."[18] In Locke's age, such decisions were primarily a matter of religious choice. Care of the soul, as Locke wrote, is about the "care of [one's] own salvation."[19] Today, however, care of the soul is not only about religious choice. It is also about how one shapes one's central beliefs about the world more generally and about how one shapes the mental framework through which one perceives and interprets the world. This belief system and mental framework may be shaped not just by a person's religious choices but by other activity. In the twenty-first

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15. *See* JOHN STUART MILL, AUTOBIOGRAPHY OF JOHN STUART MILL 97–105 (paperback ed. 1960) (describing his "heavy dejection of the melancholy winter of 1826–7" and how, with the reading of Marmontel, "a small ray of light broke in upon my gloom" and that Wordsworth's poetry was "a medicine for my state of mind" with "[t]he result was that I gradually, but completely, emerged from my habitual depression").

16. *Wooley v. Maynard*, 430 U.S. 705, 714 (1977) (quoting *W. Va. State Bd. of Educ. v. Barnette*, 319 U.S. 624, 637 (1943)).

17. LAWRENCE H. TRIBE, AMERICAN CONSTITUTIONAL LAW 1321–26 (2d ed. 1988). More recently, the Center for Cognitive Liberty & Ethics argues that "criminal drug prohibition violates freedom of thought by intimately infringing on the fundamental right to self-determine one's own mental states." Ctr. for Cognitive Liberty & Ethics, *CCLE & Drug Policy Reform*, CENTER FOR COGNITIVE LIBERTY & ETHICS, http://www.cognitiveliberty.org/faqs/faq_drugpolicy.htm (last visited Sept. 12, 2010).

18. *See* LOCKE, *supra* note 5, at 19.

19. *Id.*

century, "care of the soul" for some individuals may be as much a matter of psychotherapy as religious counseling. Its central tools may include not only prayer books, meditation methods, or ritual of worship, but also methods of cognitive-behavioral therapy, tools for neurofeedback, and use of anti-depressants or cognitive-enhancement drugs. In an age where science has shown us that that the "soul" arises largely from brain activity[20] and may be healed and strengthened with biological tools,[21] it does our constitutional jurisprudence little good to blind ourselves to this reality. The technologically enhanced "care of souls" should therefore remain, as much as possible, in the realm of individual autonomy.

Part I summarizes the debate surrounding cognitive enhancement and then focuses on an argument within it that forms a key part of my thesis: philosopher Neil Levy's position that since we already alter our minds by changing our environment, we should not view as unethical an equivalent change worked through our neurochemistry, unless we can identify an ethically relevant difference.[22] In other words, he argues, societies have long allowed—and even endorsed—people's

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20. There is still significant mystery over, and controversy about, what gives rise to the sentient experience. Some claim that such sentient experiences arise solely from the physical properties of brain activity. *See, e.g.*, FRANCIS CRICK, THE ASTONISHING HYPOTHESIS: THE SCIENTIFIC SEARCH FOR THE SOUL 3 (1994) (noting that all of a person's mental life is "in fact no more than the behavior of a vast assembly of nerve cells and their associated molecules"); RODOLFO R. LLINÁS, I OF THE VORTEX: FROM NEURONS TO SELF 1 (2001) ("[T]he brain and the mind are inseparable events."). Others, such as David Chalmers, believe that conscious experience arises from the non-physical properties of brain activity. *See* DAVID J. CHALMERS, THE CONSCIOUS MIND: IN SEARCH OF A FUNDAMENTAL THEORY 283–85 (1996) (hypothesizing that consciousness arises from information states rather than the physical states of the brain). Still others have not ruled out the possibility of an immaterial soul. *See,* e.g., Alvin Plantinga, *Materialism and Christian Belief, in* PERSONS: HUMAN AND DIVINE 99, 122–23 (Peter Van Inwagen & Dean Zimmerman eds., 2007) (arguing for a version of dualism which assumes that "I am an immaterial object intimately linked to a body"). Whichever of these approaches one endorses, it is difficult to deny that our brain structure and its activities play a very significant role in determining what we feel and think. *See, e.g.*, NEIL LEVY, NEUROETHICS: CHALLENGES FOR THE 21ST CENTURY 12–17 (2007) (considering various examples of the way that diseases and injuries to the brain affect mental functioning and observing that even though it is possible that "[t]he mind may not be a thing" and that "it may not be best understood as a physical object that can be located in space . . . it is entirely dependent, not just for its existence, but also for the details of its functioning, on mere things: neurons and the connection between them.").

21. Henry T. Greely, *The Social Effects of Advances in Neuroscience: Legal Problems, Legal Perspectives, in* NEUROETHICS: DEFINING THE ISSUES IN THEORY, PRACTICE, AND POLICY 245, 255 (Judy Illes ed., 2006) [hereinafter Greely, *Social Effects*] ("Tomorrow's neuroscience, . . . offers us the chance to enhance our consciousness, to change and improve our senses, our cognitive abilities, and the commanding power of our brains.").

22. *See* LEVY, *supra* note 20, at 129–31.

alteration of what Andy Clark and David Chalmers describe as the "extended mind": the uses of certain tools and machines in the world to carry out a function that would otherwise be carried out solely inside of our minds.[23] If we allow these alterations of thinking from the outside, why not also from the inside? Part II then extends this ethics argument to the realm of constitutional law, arguing that our freedom of thought should cover the certain crucial supports and tools for thinking we find in the environment, including cognitive enhancement with medications and other technologies.

This is not the only framework for understanding the place of cognitive-enhancement technology in freedom of thought jurisprudence, however, and Parts III and IV consider two other alternatives and explain why they fall short. Part III considers what I call the government purposes account. This approach allows freedom of thought to operate on its own, even where there are no free speech or free exercise rights at stake. But the government purpose account gives freedom of thought such independence through a questionable device. Whether there is a freedom of thought violation, under this approach, depends not on what the government actually restricts, but on what the government intends to restrict. This view of freedom of thought is embraced by a number of court decisions and scholarly analyses.[24] But I ultimately argue that it is too uncertain a foundation for so fundamental a right.

Finally, Part IV considers the possibility that, rather than a liberty that stands on its own, freedom of thought is always protected in conjunction with some other, more familiar, constitutional liberty. For

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23. *See* Andy Clark & David Chalmers, *The Extended Mind, in* ANDY CLARK, SUPERSIZING THE MIND: EMBODIMENT, ACTION, AND COGNITIVE EXPERIENCE, app. at 220–32 (2008).

24. *See, e.g., Ashcroft v. Free Speech Coalition*, 535 U.S. 234, 253 (2002); *see also Rochin v. California*, 342 U.S. 165, 172–74 (1952) (striking down as a violation of due process rights the use of stomach pumping to extract pills from defendant's body); *Washington v. Harper*, 494 U.S. 210, 229 (1990) ("The forcible injection of medication into a nonconsenting person's body represents a substantial interference with that person's liberty.") (citing *Winston v. Lee*, 470 U.S. 753, 759–67 (1985); *Schmerber v. California*, 384 U.S. 757, 772 (1966)); *Osborne v. Ohio*, 495 U.S. 103, 109 (1990) (upholding the Ohio laws barring possession of child pornography and noting that they were not aimed at "regulating Osborne's mind," but rather at "destroy[ing] a market for the exploitative use of children"); *Cruzan v. Dir. Mo. Dep't of Health*, 497 U.S. 261, 278 (1990) (recognizing a "constitutionally protected liberty interest in refusing unwanted medical treatment," in part on the basis of prior decisions in which "searches and seizures involving the body under the Due Process Clause and were thought to implicate substantial liberty interests."); *Doe v. City of Lafayette*, 377 F.3d 757, 765 (7th Cir. 2004) (only direct restriction on pure thought, not incidental restrictions, offend the First Amendment); Irwin, *supra* note 7, at 1479; Jed Rubenfeld, *The Freedom of Imagination: Copyright's Constitutionality*, 112 YALE L.J. 1, 40 (2002).

example, the "liberty" interests of the Fifth and Fourteenth Amendments' Due Process Clauses protect us against unwarranted bodily intrusion, and this shields the brain as well as the rest of the physical self.[25] Similarly, one might argue, to the extent that our freedom to think requires protected space, or resources, outside of our bodies, we can find all the protection for such "externalized thought" in the First Amendment's guarantee of free speech or religious practice.[26] Part IV ends by considering—and responding to—the argument that an expansive version of freedom of thought would leave government with too little room to regulate, and protect people from, the threat to safety raised by enhancement drugs and other enhancement technologies. Freedom of thought, I argue, can recognize, and protect, cognitive-enhancement technologies without denying government a role in regulating their safety.

I. THE TECHNOLOGY AND ETHICS OF COGNITIVE ENHANCEMENT

A. The Technology of Cognitive Enhancement

Forty years ago, the famous psychologist Abraham Maslow urged psychologists to think not only about how to "make[] sick people-not sick" but also about how to "make not-sick people healthy."[27] Therapy, he said, was focused simply on conquering mental illness, but people were justifiably interested in going further and improving their minds even beyond the point at which they left illness behind.[28] Today, the same possibility that Maslow advocated—to take the tools of psychological treatment and use them not merely to cure the sick, but to improve the already cured—has given rise to immense controversy, in large part because that treatment has come to involve more than talk

25. *See, e.g., Harper*, 494 U.S. at 229 (finding that a person's liberty interests in avoiding intrusions into his body were implicated when the state mandated the use of drugs to "alter the chemical balance in a patient's brain").

26. *See* U.S. CONST. art. I ("Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech . . . ."); *see also infra* Part IV.A.1 (elaborating upon idea that free speech and free exercise protection might be understood as protection for freedom of thought).

27. ABRAHAM H. MASLOW, TOWARD A PSYCHOLOGY OF BEING 38 (2d ed. 1968).

28. *Id.* at 37–38 (explaining that even people who have overcome "a deficiency-disease" such as neurosis may desire help and—given psychotherapy's focus on curing the sick—will largely be addressed by "intrapersonal means").

therapy.[29] As noted above, it now involves use of powerful psychoactive drugs such as Prozac and other SSRI drugs.[30]

One of the most well-known accounts of such enhancements is psychiatrist Peter Kramer's vivid account of the changes he saw in some of the patients to whom he had prescribed Prozac.[31] Kramer observed that Prozac seemed to do more than treat their underlying depression; it markedly changed their personalities.[32] In one patient, it was not only a deep and abiding feeling of sadness and hopelessness that disappeared, but the shyness, uncertainty, and caution that had characterized her as a person.[33] Another reported that Prozac not only made him feel better after years of depression, but "better than well."[34] Indeed, Kramer was stunned by how "global" the drug's effects were.[35] The drug did not merely banish the patient's illness, but "reshape[d] [her] identity."[36]

As Kramer noticed, these personality modification powers might well be of interest not only to those who want to banish illness, but to those who want to change their personalities for other reasons.[37] Just as it is not only patients with severe burns or disfigurement who benefit from plastic surgery, but also those who seek cosmetic surgery to improve the appearance they have lived with (even successfully), so the mentally healthy may likewise seek what Kramer dubbed "cosmetic psychopharmacology."[38]

Prozac is only the most well-known of a growing number[39] of cognitive-enhancement drugs.[40] Most of these were developed (and are

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29. *See* KRAMER, *supra* note 11, at 259 (1993) ("Prozac performs chemically what has heretofore been an intimate interpersonal function."); RESTAK, *supra* note 11, at 121 (noting that whereas "[f]or centuries the principle treatment for depression was talking to friends," and then talking in a more systematic manner to therapists, today the solution for this and many other problems is use of psychotropic treatments).

30. *See supra* notes 11-12 and accompanying text.

31. *See generally* KRAMER, *supra* note 11, at 258-59.

32. *Id.* at 10-11 ("[A]n unchronicled reason for Prozac's enormous popularity [is] its ability to alter personality.").

33. *Id.* (recounting the transformation of a patient he calls "Tess").

34. *Id.* at x.

35. *Id.* at 13.

36. *Id.* at 18.

37. *Id.* at 15. *See also* Henry Greely et al., *Towards Responsible Use of Cognitive-Enhancing Drugs by the Healthy*, 456 NATURE 702, 702 (2008) ("Many of the medications used to treat psychiatric and neurological conditions also improve the performance of the healthy.").

38. KRAMER, *supra* note 11, at xvi, 15, 273.

39. *See* Anjan Chatterjee, *The Promise and Predicament of Cosmetic Neurology*, 32 J. INST. MED. ETHICS 110, 111 (2006) ("The armamentarium of drugs that could be used to enhance healthy individuals is growing.").

40. *See* Greely et al., *supra* note 37, at 702.

still used primarily) to treat psychological illnesses.[41] SSRI drugs like Prozac and paroxetene (Paxil), for example, were developed to treat clinical depression and anxiety.[42] Methylphenidate (MPH) and mixed-amphetamine salts—better known respectively by their brand names, Ritalin and Adderall—are used to treat attention deficit hyperactivity disorder (ADHD).[43] Modafinil (Provigil) was developed and used to treat sleep disorders such as narcolepsy.[44] In addition, donepezil (Aricept), a drug "which raise[s] the level of acetylcholine in the brain," is used to improve memory in Alzheimer's patients.[45] But healthy individuals have also found these substances helpful aids to increase their calmness or happiness, sharpen their focus and attention, improve their memory, and maintain alertness when they would normally be overwhelmed by fatigue.[46]

Drugs are not the only instruments of cognitive enhancement. Just as patients currently get pacemakers or artificial hearts, they may one day get surgically-implanted "brain chips" designed to replicate missing brain function or add to normal brain functions.[47] Indeed, while "[k]ey safety issues must be resolved," says one analyst of this technology, "[b]rain-implantable devices have a promising future."[48] Additionally, other enhancement technologies do not require implantation of any

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41. *See* Henry T. Greely, *Enhancing Brains: What Are We Afraid Of?*, CEREBRUM, July 14, 2010, at 2–3 [hereinafter Greely, *Enhancing Brains*] (describing the cognitive enhancement drugs and other medical technologies and noting that "[a]ll were developed for therapeutic purposes, but many have potential uses for enhancement."); Martha J. Farah, *Emerging Ethical Issues in Neuroscience*, 5 NATURE NEUROSCIENCE 1123, 1123 (2004) (discussing how individuals have noticed the "enhancement potential of some psychiatric treatments" and used various psychiatric treatments for enhancement).

42. *See* ANDREW SOLOMON, THE NOONDAY DEMON: AN ATLAS OF DEPRESSION 333–34 (2001) (discussing how fluoxetine was one of a number of drugs developed to treat depression by targeting the serotonin system and how "[o]ther SSRIs followed fast" including "paroxetine (Paxil/Seroxat)").

43. Greeley et al., *supra* note 37, at 702.

44. *Id.*

45. *Id. See also* Jerry J. Buccafusco, *The Cholinergic Hypothesis—Past and Present*, *in* COGNITIVE ENHANCING DRUGS 1, 3 (J.J. Buccafusco ed., 2004) (noting that new discoveries about memory's biological basis have "engendered the potential use of cholinergic agonists" that help preserve or increase acetylcholine in the brain).

46. *See* Henry T. Greely, *Neuroethics and ELSI: Similarities and Differences*, 7 MINN. J. L. SCI. & TECH. 599, 628 (2006) ("Caffeine, alcohol, Prozac[], Ritalin[], Provigil[], and other drugs — some traditional and others approved by the FDA — are among many of the legal compounds that are sometimes taken to affect brain function, not just by the ill, but by normal, healthy people.").

47. Kenneth R. Foster, *Engineering the Brain*, *in* NEUROETHICS: DEFINING THE ISSUES IN THEORY, PRACTICE, AND POLICY, *supra* note 21, at 193–97 (discussing brain implants and their ethical implications).

48. *See* Jens Clausen, *Man, Machine, and in Between*, 457 NATURE 1080, 1080 (2009).

device or chemical into our bodies. For example, brain changes can be triggered from outside of our bodies with electrical currents, either by placing electrodes on our heads (transcutaneous-electric stimulation, or TES) or with a "coil placed near the head [transcutaneous magnetic stimulation (TMS)]."[49] Some studies have suggested that TMS and a form of electrical stimulation called transcranial direct current stimulation (tDCS) have some success in treating medication-resistant forms of depression.[50] We can also now obtain brain-computer interfaces that allow us to see our brain-wave patterns on a computer screen and, in doing so, better control them.[51] These "neurofeedback" devices allow us to change features of our mental processes that were previously unknown to us, such as the activation level of a part of our cerebral cortex or the frequency with which certain sets of neurons fire in synchrony.[52]

B. The Ethics of Cognitive Enhancement

The rise of these new cognitive-enhancement tools has sparked a vigorous debate among scientists, policymakers, and public intellectuals about whether such use is wise or ethical and whether it is acceptable for psychiatrists to prescribe these drugs to individuals who are not mentally ill. Recently, a group of prominent neuroscientists and neuroethicists added energy to this debate by proposing, in *Nature*, that healthy people should generally be allowed to take advantage of enhancement-technology, where it is safe to do so, calling for "a presumption that mentally competent adults should be able to engage in cognitive enhancement using drugs."[53] By contrast, other prominent commentators have urged extreme caution—if not outright opposition—regarding the use of such drugs to enhance mental function rather than to treat mental illnesses. Carl Elliott worries that cognitive-

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49. Foster, *supra* note 47, at 187.

50. *See, e.g.*, Alvaro Pascual-Leone et al., *Rapid-Rate Transcranial Magnetic Stimulation of Left Dorsolateral Prefrontal Cortex in Drug-Resistant Depression*, 348 LANCET 233 (1996). *But see* Colleen K. Loo & Philip B. Mitchell, *A Review of the Efficacy of Transcranial Magnetic Stimulation (TMS) Treatment for Depression, and Current and Future Strategies to Optimize Efficacy*, 88 J. AFFECTIVE DISORDERS 255, 263–64 (2005) (reviewing relevant studies including some which find TMS ineffective in treating depression); Marcelo T. Berlim et al., *Estimulação transcraniana por corrente direta: uma alternative promissora para o tratamento da depressão maior? [Transcranial Direct Stimulation: A Promising Alternative for the Treatment of Major Depression?]* 31 REVISTA BRASILEIRA DE PSIQUIATRIA S34, S35 (SUPP. 1 2009) (discussing studies on the use of transcranial direct current stimulation to treat otherwise "treatment-resistant depression").

51. *See infra* notes 135–37 and accompanying text.

52. *See infra* notes 131–34, 139 and accompanying text.

53. *See* Greely et al., *supra* note 37, at 703.

enhancement may make our lives or identities less authentic.[54] Even if SSRI drugs afford someone a better personality, he writes, "it isn't [his] personality."[55] Francis Fukuyama warns that far from enhancing our freedom, drugs like Prozac may lead us to seek a quick dose of "self-esteem in a bottle" where we have previously sought it in human achievement and development of character.[56] President George W. Bush's Council on Bioethics likewise warns, in a 2003 report on enhancement technologies, that "mood brighteners" might produce "feelings of contentment severed from action in the world or from relationships with other people."[57]

This debate is a complex and multi-faceted one. However, there are a few key issues at its core, and it is worth briefly taking note of them. One important issue on which there is largely agreement between both sides of the debate is safety. Critics have expressed concern that harmful side effects have sometimes been downplayed by the pharmaceutical industry.[58] Even those who believe cognitive enhancement is often acceptable add the caveat that it should only be used where care is taken to assure its safety, among other things, by requiring the oversight of psychiatrists and other medical professionals.[59] As Henry Greely and his colleagues note in their *Nature* article, "[c]ognitive enhancements affect the most complex and important human organ [the brain], and the risk of unintended side effects is therefore both high and consequential."[60]

The key area of disagreement is not this widely accepted insistence on safety protections, but rather on whether—where such safety precautions are in place and effective—there is still cause to worry about the social and moral consequences of cognitive enhancement.[61] Some worry that even if people are not required to take such drugs, they may well feel difficult-to-resist social or professional pressures to

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54. Carl Elliott, *The Tyranny of Happiness: Ethics and Cosmetic Pharmacology*, *in* ENHANCING HUMAN TRAITS: ETHICAL AND SOCIAL IMPLICATIONS 177, 182 (Erik Parens ed., 1998).

55. *Id.*

56. FUKUYAMA, *supra* note 9, at 46.

57. PRESIDENT'S COUNCIL ON BIOETHICS, BEYOND THERAPY: BIOTECHNOLOGY AND THE PURSUIT OF HAPPINESS 207–08 (2003).

58. DAVID HEALY, LET THEM EAT PROZAC: THE UNHEALTHY RELATIONSHIP BETWEEN THE PHARMACEUTICAL INDUSTRY AND DEPRESSION xiv–xv (2004).

59. Greely et al., *supra* note 37, at 704.

60. *Id.* at 703.

61. As Francis Fukuyama writes, "the more difficult political and moral problem will occur if Prozac is found to be completely safe and if it, or similar drugs yet to be discovered, work just as advertised." FUKUYAMA, *supra* note 9, at 44.

do so.[62] They may, for example, feel pressure to use chemicals to give them the kind of personality that is most popular or successful in their community. As Erik Parens notes in his summary of the ethics debate, many "worry . . . that so-called enhancement technologies will be used mostly to help individuals live up to dominant conceptions of normality and or perfection."[63] Fukuyama similarly wonders "whether modern biotechnology will not soon be in the business of providing powerful new biological shortcuts to the reaching of politically correct ends."[64] Individuals may also feel pressure to take cognitive enhancers to remain competitive in education and work environments. A recent *New York Times* article reported that cognitive enhancers are becoming increasingly popular with test-takers on college campuses.[65] As Frank Pasquale observes, such an environment may conceivably lead to an "arms race" where even those who strongly oppose medicating themselves feel that is their only choice.[66]

Even if an individual's choice to use cognitive-enhancement drugs is made willingly—not as a reluctant concession to social conformity or the demands of professional survival—critics worry that such freely-chosen cognitive enhancement will still come at a steep cost. First, it may sever individual achievement from a close connection with external relationships. For example, Richard Restak writes of patients who "ask[] for tranquilizers to help them get through such experiences as the upcoming funeral of a loved one."[67] In circumstances where it is not only appropriate to feel grief, but inappropriate to be callously indifferent or happy, people might nonetheless seek to produce the more positive feeling simply because they prefer it. Second, if those freely choosing cognitive enhancement can afford it, while others

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62. *See* Martha J. Farah et al., *Neurocognitive Enhancement: What Can We Do and What Should We Do?*, 5 NATURE REVIEWS NEUROSCIENCE, 421, 423 (2004) ("If neurocognitive enhancement becomes widespread, there will inevitably be situations in which people are pressured to enhance their cognitive abilities.").

63. Eric Parens, *Creativity, Gratitude, and the Enhancement Debate*, *in* NEUROETHICS: DEFINING THE ISSUES, *supra* note 21, at 78.

64. FUKUYAMA, *supra* note 9, at 53.

65. *See* Benedict Carey, *Brain Enhancement is Wrong, Right?*, N.Y. TIMES, Mar. 9, 2008, at WK1 ("Surveys of college students have found that from 4 percent to 16 percent say they have used stimulants or other prescription drugs to improve their academic performance — usually getting the pills from other students."); *see also* WALTER GLANNON, DEFINING RIGHT AND WRONG IN BRAIN SCIENCE: ESSENTIAL READINGS IN NEUROETHICS 233 (2007) ("Many psychotropic drugs are being prescribed for off-label purposes. These are purposes for which the drugs were not originally designed and for which they did not initially receive FDA approval.").

66. Frank Pasquale, *Technology, Competition, and Values*, 8 MINN. J. L. SCI. & TECH. 607, 609-10 (mentioning "chemical-based emotional enhancement" as one possible weapon in a "technological arms race[]" that leads to unfair results).

67. *See* RESTAK, *supra* note 11, at 138.

cannot, this may cause a worrisome kind of inequality in intellectual ability. In its mild form, such lopsided distribution of cognitive-enhancement tools might yield complaints from those unable to afford or tolerate the side effects of such tools that they are being unfairly disadvantaged relative to others during a particular test. Some college student, for example, may be unable to afford Ritalin or Adderall or tolerate their side effects, and feel unfairly disadvantaged when classmates of theirs who are wealthier or less negatively affected by these drugs use and benefit from them.[68] At the extreme, writes Michael Sandel, such inequality might take the form not only of differences in temporary performance, but in permanent ability or nature: "[s]ome who worry about the ethics of cognitive-enhancement point to the danger of creating two classes of human beings—those with access to enhancement technologies, and those who must make do with an unaltered memory that fades with age."[69]

For these reasons, say critics, SSRI drugs should be limited to treating the mentally ill, not enhancing the rest of us.[70] They should be tools that psychiatrists use to help reconnect dysfunctional individuals with experience and with their community, not to shed or escape the responsibilities, struggles, and natural emotional rhythms that come with and define this communal existence.[71]

To be sure, each of these concerns has drawn skepticism from those more optimistic about the prospect that cognitive-enhancement treatments may improve lives marred by significant sadness, inability to focus, or shyness, and not simply lives marked by mental illness.[72] For example, some have doubted that SSRI drugs will, in doing so, destroy

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68. *Id.* (noting potential complaints that allowing cognitive enhancements in education would be "unfair to students who are not using the drug").

69. MICHAEL J. SANDEL, THE CASE AGAINST PERFECTION: ETHICS IN THE AGE OF GENETIC ENGINEERING 15 (2007).

70. *See, e.g.*, FUKUYAMA, *supra* note 9, at 53–54; *see also* RESTAK, *supra* note 11, at 146–47 (expressing concern about routine use of memory dampening drugs to eliminate unpleasant memories, but noting he "wouldn't blame anybody for" wanting to use such drugs); PRESIDENT'S COUNCIL ON BIOETHICS, *supra* note 57, at 241 (expressing concern about use of SSRI and other "mood-brighteners" for purposes of cognitive enhancement, but stating that for "major depression and other emotional problems so disabling as to indicate the presence of mental illness" these "drugs are true medicines of great benefit").

71. Fukuyama, *supra* note 9, at 48–49; PRESIDENT'S COUNCIL ON BIOETHICS, *supra* note 57, at 208 (expressing concern about the use of drugs that allow us to generate "mere feelings divorced from their natural and proper ground").

72. *See, e.g.*, David DeGrazia, *Prozac, Enhancement, and Self-Creation*, *in* PROZAC AS A WAY OF LIFE 33, 41–43 (Carl Elliott & Tod Chambers eds., 2004) (arguing that "Prozac can be an authentic part of a self-creation project" and that concerns about Prozac generating inequality or conformity are concerns that have more to do with our broader culture and societal values than with cognitive enhancement per se).

one's moral judgment, erase commitments to others, create inauthentic selves, or sap one's interest in meeting personal, artistic, or other challenges.[73] New technologies may well give rise to new challenges even as they erase earlier ones by making previously-difficult goals easy to attain.[74]

Others wonder whether it is possible to limit the use of drugs to "treatment" rather than "enhancement" when the line between these two uses of medication is often difficult to mark. As Parens notes, even those who oppose enhancement acknowledge "how exceedingly difficult it is to distinguish neatly between: medical and non-medical interventions, between treatment and enhancement, and between disorders rooted in the body and those rooted in the mind or social norms."[75] Still others doubt that access to drugs is likely to be marked by significant inequality, or that those who take such drugs will be significantly better off than those who do not.[76]

Finally, those who support the responsible use of cognitive-enhancement drugs argue that enhancement with drugs is just a new method of doing what human beings have long done: use technology to improve themselves. As Arthur Caplan writes, "we are clearly creatures who have long tinkered with ourselves, using all manner of technologies from clothing to telescopes to computers to airplanes" and we predictably adapt ourselves to these technologies.[77] Greeley and his fellow authors similarly note that cognitive-enhancement drugs and "newer technologies such as brain stimulation and prosthetic brain chips, should be viewed in the same general category as education, good health habits, and information technology — ways that our

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73. *See, e.g.*, RESTAK, *supra* note 11, at 140–41 (quoting letter in United Kingdom's *Times Literary Supplement* asking: "Why would taking Prozac make it pointless to do worthwhile things, like giving to charity or stopping to see an ailing friend in the hospital? No reason to suppose that those on the drug will be less motivated to do such things.").

74. *See* Arthur L. Caplan & Paul R. McHugh, *Shall We Enhance? A Debate*, 6 CEREBRUM 14, 16 (2004) (pointing out that the fact that fighter and helicopter pilots can easily overcome challenges that would have been far more daunting for soldiers of earlier eras—like viewing a target from a higher vantage point—does not mean that they do not face newer, equally daunting challenges of their own).

75. Parens, *supra* note 63, at 79. *See also* Anjan Chatterjee, Op-Ed., *Cosmetic Neurology: For Physicians the Future Is Now*, 6 VIRTUAL MENTOR, Aug. 2004, http://virtualmentor.ama-assn.org/2004/08/oped1-0408.html.

76. *See, e.g.*, WALTER GLANNON, BIOETHICS AND THE BRAIN 106–07 (2007) (noting that the "claim about unfair access rests on the questionable assumption that the drugs would have only beneficial outcomes" and that the data does not yet tell us if that assumption is correct).

77. Arthur Caplan & Carl Elliot, *Is it Ethical to Use Enhancement Technologies to Make Us Better than Well?*, 1 PUB. LIBR. SCI. MED. 172, 173 (2004).

uniquely innovative species tries to improve itself."[78] These authors argue that enhancement technologies are not as novel as some claim, and, in many ways, merit the same treatment (and acceptance) as technologies before the era of neuroenhancement. Later I turn to a particular variant of this argument that I will claim is of special interest for legal thinkers.

C. Cognitive Enhancement and the Extended Mind

In their essay, "The Extended Mind," Andy Clark and David Chalmers raise the possibility that the "mind" extends into, and that mental processes may include, certain parts of the external environment.[79] When we think, they argue, our thinking is done not only with the biological machinery in our brain, but also with certain resources in the external environments—journals or computer storage devices that we write in, for example, or slide rules or calculators that we use to perform complex mathematical operations.[80] If critics of enhancement raise no objection to letting people enhance and extend their minds from the outside, with tools like computers, calculators, and talk therapy sessions, then, writes Levy, it is not clear why it is any worse for people to extend and enhance their minds from the inside, by altering their neurochemistries.[81]

To better understand this argument, it is helpful to consider Clark and Chalmers's most well-known illustration for how it is that mental processes can partly occur outside of our brains and bodies. They tell the story of two individuals, Inga and Otto, who are in Manhattan and want to go to the Museum of Modern Art.[82] They try to recall where it is located.[83] However, Inga and Otto perform this recall task quite differently.[84] Inga "thinks for a moment and recalls that the Museum is on 53rd Street."[85] Otto, by contrast, suffers from Alzheimer's disease and no longer has the kind of intact neuronal circuitry that allows for unaided recall.[86] He thus relies on a notebook to help record and remember facts he could otherwise not remember.[87] He does so in this

78. Greely et al., *supra* note 37, at 702.

79. *See* Clark & Chalmers, *supra* note 23.

80. *Id.*

81. *See* Levy, *supra* note 20, at 130–31.

82. Clark & Chalmers, *supra* note 23, at 226–27 (arguing that cognitive processing extends into the environment).

83. *Id.*

84. *Id.*

85. *Id.* at 226.

86. *See id.* at 226–27.

87. *Id.*

case, and he learns from his journal that the museum is on 53rd Street.[88] In this example, Clark and Chalmers argue, Otto's notebook should be regarded as part of the cognitive process itself because "in relevant respects the cases are entirely analogous: the notebook plays for Otto the same role that memory plays for Inga."[89]

Some might argue that the cases are different because Inga knows the location of the museum and simply must remember it, while Otto does not know it until he first relearns it by opening the notebook and seeing what address he wrote down on a previous occasion. But as Clark and Chalmers pointed out, this characterization is misleading: neither Inga nor Otto is aware of the location of the museum—neither has it in his or her consciousness—until they retrieve it into consciousness from some other source.[90] In Inga's case, she retrieves it from neuronal codings that store this information, and in Otto's case he retrieves it from pen marks on paper that perform the same storage function outside of the brain.[91]

How does this example inform an ethical analysis of cognitive-enhancement drugs? Clark and Chalmers use this example to underscore the conceptual equivalence of the two recall tasks, to argue that both external and internal storage devices constitute essential components of the cognitive process.[92] They set forth what they call a "parity principle" to put external cognition on par with its internal equivalent:

> If, as we confront some task, a part of the world functions as a process which, were it done in the head, we would have no hesitation in recognizing as part of the cognitive process, then that part of the world is (so we claim) part of the cognitive process.[93]

Levy further observes that this example might weigh in favor not only of treating the use (or restricting the use) of the two processes as conceptually equivalent, but also as ethically equivalent. He thus proposes what he calls an "ethical parity principle," holding that "[u]nless we can identify *ethically relevant* differences between internal

88. *Id.* at 227.
89. *Id.*
90. *Id.* at 227–28
91. *Id.* at 228.
92. *Id.* at 227–28 ("[I]n relevant respects the cases are entirely analogous . . . .").
93. *Id.* at 222–23.

and external interventions and alterations [in the mind], we ought to treat them on a par."[94]

Imagine that Otto wishes to explore some different methods of addressing his brain's inability to remember facts as easily as Inga's does. Instead of buying a journal, and establishing a routine of consulting it each time he needs to retrieve important information, he opts for either (a) implantation of an electronic brain chip from which he may retrieve such information from inside of his body, or (b) taking a newly-developed drug that can either repair the neuronal circuitry that his Alzheimer's has weakened or, alternatively, induce the brain to develop other biological mechanisms that restore his memory in a different way. Of course, altering one's brain function with a drug or surgically-implanted device raises safety concerns that do not arise from the use of a journal. But if such safety concerns can be overcome or substantially reduced—as some scientists predict will happen[95]—then does there remain any basis for treating Otto's use of a memory-enhancing drug or brain chip as more ethically problematic than his use of pen and paper?

Moreover, while Otto's use of any of these enhancement devices serves the purpose of treating Alzheimer's, a similar line of thinking weighs in favor of allowing for cognitive enhancement by those who are free of any such mental illness. After all, it is not only Alzheimer's patients, but also many individuals with generally well-functioning memories, who rely upon external technologies to expand their memories. Numerous individuals carry and consult notebooks or, in more recent times, iPhones and other electronic devices. If it is unproblematic for them to extend their memories with such external technologies, is it any more worrisome to let them do so with brain chips or memory-enhancing drugs?

Levy argues that the answer is generally not.[96] After examining various objections to cognitive-enhancement drugs and other

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94. Levy, *supra* note 20, at 60, 62. This is actually the weaker of two versions he describes of the ethical parity principle (EPP). He also briefly considers a "strong" EPP, which holds "that our ethical responses to interventions into the cognitive environment" ought to match those made into the brain. This is strong because it treats the two as equivalent. The weaker version leaves open the possibility that there might be an ethically relevant dis-analogy between internal and external interventions, but demands such a difference be identified before the two are subject to different ethical treatment. *Id.* at 61-62.

95. *See infra* notes 319-21 and accompanying text.

96. Levy, *supra* note 20, at 62. More specifically, what Levy insists upon is not that we generally find all forms of pharmacological cognitive enhancement to be ethically *acceptable*, but rather that we treat them in the same way we treat other equivalent forms of enhancement from the outside. As Levy puts this point: "That there are . . . existing techniques that are ethically analogous to new technologies does not

interventions to the brain, he concludes that "the distinction between the inner—the brain, the genome, the authentic self, and so on—and the outer, the publicly accessible environment, cannot bear the weight all too often placed on it."[97] It is true, he acknowledges, that drugs and brain chips do not work by appealing to our understanding and self-reflection as psychotherapists and other interlocutors generally do when they help us alter our habits of thought.[98] But, as he notes, "traditional means" of therapy "include many techniques that are not addressed to the rational agent."[99] Moreover, what is true of our interactions with therapists—that they often involve at least some appeal to our rational understanding—is not true of all external enhancements of our cognition. When someone carries a notebook or an electronic storage device and comes to rely on its contents unquestioningly, they are changing their mental operations not through self-reflection or social interaction, but rather by adding to the cognitive machinery they use for memory. An implanted brain chip constitutes precisely the same kind of addition. Such cognition-extending technology might also come in the form of an enhancement drug ingested to add to (or alter) the mix of chemicals in one's neurons and synapses.

Levy emphasizes that not all forms of cognitive enhancement will merit the same analysis. Rather, he proposes that we need to assess each enhancement technique "one by one, in the context in which they are used and examining the details of their application, before we accept or reject them."[100] But we cannot simply assume, in doing so, that enhancement of thoughts with SSRI or other drugs is any less legitimate or ethically acceptable than therapy by less invasive means. On the contrary, where such drug therapies can be done safely, their thought-shaping powers may weigh against restricting or forbidding them. As Clark and Chalmers write, where mind extends into the environment, then "in some cases interfering with someone's environment will have the same moral significance as interfering with their person."[101] It is at least possible (and worth considering) that this would be true of state measures that bar individuals from using SSRI drugs or other means of cognitive enhancement to reshape their psyches.

II. THE FIRST AMENDMENT AND THE CHALLENGE OF COGNITIVE

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show that these new technologies are permissible. It might show that *neither* is permissible." *Id.* at 63.

97. *Id.* at 130.

98. *Id.* at 108–09.

99. *Id.* at 130.

100. *Id.* at 131.

101. Clark & Chalmers, *supra* note 23, at 232.

ENHANCEMENT

The concept of the extended mind arguably has constitutional as well as ethical significance. Consider, again, the way in which Otto extends his cognitive process of recalling a piece of information: he writes information down in a journal and then consults it at a later time. In doing so, he engages in a kind of expressive activity which, in the American constitutional system, is protected under the First Amendment. To be sure, he is not engaging in the kind of First Amendment speech that is at issue in most court cases on the subject—he is not using writing to communicate with another person as a "short cut from mind to mind."[102] Rather, he is using it as a means of enhancing his own thinking. Nonetheless, courts protect such solitary speech under the First Amendment.[103] They protect notes taken for one's own use and drawings made for one's own benefit.[104] We can make sense of such protection for the journal, not based only on freedom of speech, but freedom of the thinking that underlies it. It is thus appropriate that, in George Orwell's portrait of a thought-police-dominated dystopia, the protagonist's opening rebellion against thought control begins with an entry in a diary.[105] While such a journal entry is a speech act, it is also an act by which one records memories, ideas, and feelings, and, by doing so, can not only preserve one's thinking but better sharpen or expand upon it.

These observations raise a question: if the enabling, and enhancement, of thought is protected when carried out with the aid of a journal, does it receive the same or similar constitutional protection when it is enhanced with other technologies? In an earlier essay, I argued that it is: the use of virtual-reality technology to embody and build upon the products of one's imagination may merit First Amendment protection for the same reasons we provide it to a paper or electronic journal.[106] Seth Kreimer has made a similar argument about the use of a camera to capture information, drawing directly on Clark

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102. *W. Va. State Bd. of Educ. v. Barnette*, 319 U.S. 624, 632 (1943).

103. *See, e.g.*, *Baumgartner v. United States*, 322 U.S. 665, 673–74, 676–77 (1944) (rejecting an attempt to use a person's allegedly pro-Nazi private diary entries as a basis for revoking citizenship and emphasizing that one of the prerogatives of citizenship is "the freedom to speak foolishly and without moderation"); *Porter v. Ascension Parish Sch. Bd.*, 393 F.3d 608, 611, 620 (5th Cir. 2004) (extending protection to a drawing made by a student in the "privacy of his own home").

104. *See Baumgartner*, 332 U.S. at 677; *Porter*, 393 F.3d at 620.

105. *See* GEORGE ORWELL, 1984, at 6–9 (Signet Classics 1950) (1949).

106. *See* Marc Jonathan Blitz, *The Freedom of 3D Thought: The First Amendment in Virtual Reality*, 30 CARDOZO L. REV. 1141, 1188–89 (2008).

and Chalmers's concept of the extended mind.[107] If Otto's use of a journal to record and remember facts is protected by the First Amendment, so too, he argues, should a person's use of a cell phone camera be protected to capture such information in photographs.[108]

To be sure, both virtual reality and pervasive image capture closely resemble the artistic activity that the courts already typically classify as First Amendment "speech."[109] But the analysis might extend freedom of thought to more unfamiliar territory. If Otto receives First Amendment protection when he inscribes the information he perceives into a journal, why not give him the same protection when he records it in a brain chip or in chemically-altered neuronal circuits? Moreover, if the government would infringe upon his First Amendment rights by denying him a journal, or forbidding other methods of recording his thoughts, would it also infringe upon the same rights if it forbade him from having a memory chip implanted in the first place, or barred use of the drugs that make his neurons work the way he wants them to?

In short, the equivalence that Clark and Chalmers draw between external and internal enhancement of mental processes may not only be a conceptual and ethical equivalence, but also one with constitutional import. If freedom of thought covers journal writing because it is an extension of one's thought and makes further use or refinement of that thought possible, it should perhaps also insulate from state regulation alterations of one's thinking with neural prosthetics or cognitive-enhancement drugs.

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107. *See* Seth F. Kreimer, *Pervasive Image Capture and the First Amendment: Memory, Discourse, and the Right to Record*, 159 U. PA. L. REV. (forthcoming Dec. 2010) (manuscript at 53), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1553920.

108. *Id.* at 54 (noting Clark and Chalmers's argument, and stating "[r]ecorded images can serve the same function" as journals in this regard, and image capture might thus sometimes be counted as part of "an extended cognitive system").

109. A virtual-reality experience is not unlike the movie watching and video-game playing that courts already protect under the First Amendment. *See Joseph Burstyn, Inc. v. Wilson*, 343 U.S. 495, 502 (1952) ("[E]xpression by means of motion pictures is included within the free speech and free press guaranty of the First and Fourteenth Amendments."); *see also, e.g., Am. Amusement Mach. Ass'n v. Kendrick*, 244 F.3d 572, 577-79 (7th Cir. 2001) (story-based video games constitute protected speech under the First Amendment); *Interactive Digital Software Ass'n v. St. Louis County*, 329 F.3d 954, 957-58 (8th Cir. 2003) (story-based video games constitute protected speech under the First Amendment). In addition, courts' protection of artistic expression extends to the work of photographers, which provides another basis for extending it to other kinds of image capture (perhaps even automated) that are done for more mundane purposes. *See Kaplan v. California*, 413 U.S. 115, 119-20 (1973) ("[P]ictures [and] films . . . have First Amendment protection until they collide with the long-settled position of this Court that obscenity is not protected by the Constitution.").

There is, however, an important challenge that arises for such a constitutional analysis: the need to set limits. Virtually every intentional act we take, and observe ourselves taking, is both an exercise of our mental powers and a basis for creating new memories and mental capacities. As the Seventh Circuit recently noted, "[t]hought and action are intimately entwined; consequently, all regulation of conduct has some impact, albeit indirect, on thought."[110]

The concern about limits is one that has already appeared in, and shaped, First Amendment jurisprudence. It arose, for example, after the courts recognized that the First Amendment right to express information entails a concomitant right to receive it.[111] Defined broadly, this right would protect virtually any kind of act we take that involves perception of the world. Thus, in 1965, in the case of *Zemel v. Rusk*,[112] an American seeking to travel to Cuba—in defiance of a government ban—claimed that his First Amendment "right to gather information" and ideas entailed a right to travel there, because he could not get a first-hand account of life in that country while kept outside of it.[113] Realizing that accepting this reading of the "right to gather information" would make it virtually limitless, the Court firmly rejected his claim: "There are few restrictions on action," it said, "which could not be clothed by ingenious argument in the garb of decreased data flow."[114] Thus preventing the government from ever restricting information flow would effectively prevent it from governing.[115]

The Court invoked similar logic in *Employment Division v. Smith*[116] when it narrowed the protection provided by the Free Exercise Clause.[117] Just as the *Zemel* court worried that any person might overcome any government regulation simply by characterizing the regulated activity as a kind of information seeking, so too the *Smith*

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110. *Doe v. City of Lafayette*, 377 F.3d 757, 765 (7th Cir. 2004)). As Frederick Schauer likewise notes, "[a]ny form of government action has potential for influencing thought, and to say that government may not attempt to influence our thoughts would be to deny all power to government." SCHAUER, *supra* note 7, at 94.

111. *See, e.g.*, *Thomas v. Collins*, 323 U.S. 516, 534 (1945) (finding that the First Amendment not only gave the speaker a right to address workers, but also gave his audience a right to "hear what he had to say"); *Martin v. City of Struthers*, 319 U.S. 141, 141, 143 (1943) (recognizing "the right of the individual householder to determine whether he is willing to receive [a] message" at his door).

112. *Zemel v. Rusk*, 381 U.S. 1 (1965).

113. *Id.* at 16–17.

114. *Id.*

115. *Id.*

116. 494 U.S. 872 (1990).

117. *Id.* at 888 (noting that a rule barring government from regulating religiously-inspired activity, except where it had a compelling interest, "would be courting anarchy").

court worried that they might do so by characterizing it as arising from religious commitment.[118] Putting religiously motivated activity off limits to government regulation would, the Court worried, "open the prospect of constitutionally required religious exemptions from civic obligations of almost every conceivable kind—ranging from compulsory military service, to the payment of taxes, to health and safety regulation such as manslaughter and child neglect laws, compulsory vaccination laws, drug laws, and traffic laws."[119]

Freedom of thought seems to raise the same problem. Since all intentional action arises from thought and generates perceptions and perhaps other thoughts in those who see the action, it would be just as easy to characterize any regulation as "limiting thought" as it is to characterize it as "decreas[ing] data flow." And it may thus seem necessary that the Court limit the boundaries of freedom of thought in the same way that it has limited the right to receive information or the right to exercise religion: It might place limits on it by holding that just as the Court has protected receipt of information only when that information is embodied in a speech, it might likewise protect only thought that is expressed in speech. Alternatively, it might hold that just as the Court has protected religious activity only against government restriction that targets activity on the basis of its religious nature, it might likewise protect thought only from thought-targeting measures.

There is, however, another possibility which is a better fit with our constitutional commitments. Rather than define free thought based on the different demands of free speech or religious liberty, one might find principled limits in the nature and logic of freedom of thought itself. More specifically, freedom of thought cannot and should not protect all activity that arises from or influences thought, but rather activity that is either (1) the functional equivalent of thought, or (2) a reshaping of the self that does that thinking. Freedom of thought, in other words, entails the freedom to think with certain tools or cultural resources in the outside world or to use similar technologies or resources to change the way that one thinks. The first of these categories of free thought essentially involves the right to exercise certain environmentally supported mental capacities, the second, the right to mental autonomy.

These two forms of non-speech activity mark out boundaries for freedom of thought that differ from, and extend beyond those marked by speech, religion, or a focus on government purposes. They also provide a basis for explaining why constitutional protection should extend out to these alternative limits. As Steven J. Heyman writes, one key purpose of the First Amendment is to delineate and safeguard the

118. *Id.* at 888–89.

119. *Id.* (citations omitted).

"boundary [that liberal thinkers have long] drawn between the outward realm of the state and the inward life of the individual."[120] When we look more closely at how we think with tools or technologies or how we exercise mental autonomy, it becomes clear that many of these activities are central components of the soul-shaping activity that the liberal tradition has long insisted be under the control of the individual, not the state.[121]

B. Functional Equivalents of Thought

How then does one identify activity outside of our heads that is functionally equivalent to thinking? The philosophical arguments by Clark and Chalmers and Levy are our best guides here. For Clark and Chalmers, as I noted, we might use certain tools or technologies in ways that are not simply aids to our thinking but are rather an essential part of that thinking.[122] Such extended cognition might include someone's regular and automatic use of a journal or iPhone to recall information that others might summon from elsewhere in their brain.[123] It might likewise include use of a slide rule or calculator to perform mathematical operations we might otherwise perform (with far more difficulty) in our imaginations.[124] Many observers—including critics of the extended mind thesis—describe such use of journals and phones as actions that supplement and aid thought, not as actions that alone constitute thought.[125]

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120. Steven J. Heyman, *Spheres of Autonomy: Reforming the Content Neutrality Doctrine in First Amendment Jurisprudence*, 10 WM. & MARY BILL RTS. J. 647, 657 (2002).

121. *See* Immanuel Kant, *What is Enlightenment?*, *in* KANT'S POLITICAL WRITINGS (Hans Reiss ed., H. B. Nisbet trans., Cambridge Univ. Press 1970) 58-59 (praising the leader who leaves "men free to use their own reason in all matters of conscience" and arguing that while freedom is, and must be restricted, in numerous ways by state and society, there is no reason for such restriction to prevent people from "mak[ing] *public* use of their own reason"); LOCKE, *supra* note 5, at 19–20 (arguing that "care of souls" is the responsibility of the individual, not of the state); JOHN STUART MILL, ON LIBERTY AND OTHER ESSAYS14, 65 (John Gray ed., Oxford Univ. Press 1991) (1859) ("In the part which merely concerns himself, [a person's] independence is, of right, absolute. Over himself, over his own body and mind, the individual is sovereign.").

122. *See* Clark & Chalmers, *supra* note 23, at 221.

123. *See id.* at 227 (describing how use of a journal is part of a cognitive process); David Chalmers, *Forward* to CLARK, *supra* note 123, at ix (describing how the iPhone Chalmers purchased "has already taken over some of the central functions of [his] brain. It has replaced [his] memory, storing phone numbers and addresses").

124. *See* Clark & Chalmers, *supra* note 23, at 224.

125. *See, e.g.*, Fred Adams & Ken Aizawa, *Defending the Bounds of Cognition*, *in* THE EXTENDED MIND 67, 67–68 (Richard Menery ed., 2010).

Yet this distinction becomes untenable, according to Clark and Chalmers, once one concedes that certain activity counts as cognitive activity even if it operates outside of one's consciousness.[126] For example, we may have in our minds certain beliefs about the world, such as beliefs about what the word "cogitate" means or where Chicago is located in the United States. But much of the time that information is not information on which we are dwelling or of which we are even aware. When watching an action film or engaging in small talk with a colleague, our knowledge of these things will probably lie dormant, waiting to be summoned back into the spotlight of our awareness only when we need it. In other words, such beliefs are "dispositional" rather than "occurrent."[127] They are in our heads and will very likely dispose us toward a certain behavior when the time for that behavior comes (such as answering a question about what 'cogitate' means or planning a drive to Chicago). But much of the time we hold these beliefs, we are not conscious of them or their content.[128] If, however, we are willing to count as part of our minds the information that lies outside of our consciousness—preserved in that state until we are reminded of or need to focus on it—then why not also include the information outside our brain's natural architecture that has the same relationship to consciousness? Imagine, for example, that a person of the future receives a surgically implanted brain chip, and her knowledge of the meaning of "cogitate" or the location of Chicago is encoded in, and drawn into consciousness from, that electronic chip rather than from an assembly of brain cells. Why not count the brain's interaction with this chip as an instance of thought? Moreover, what difference should it make if the chip, instead of being implanted in the brain, is left outside of one's skull (say, in a cap)?

Levy observes that for purposes of ethics it is not crucial that one follow Clark and Chalmers in treating neuronal codings, brain chips, and notebooks as all equally deserving of being called "thought."[129] Rather, what matters is that if all of these devices perform the same function for us, we should presumptively accord them the same treatment. If we perform the same tasks with, and gain the same benefit from, the use of a journal or iPhone that we get from using the

126. *See* Clark & Chalmers, *supra* note 23, at 230 (arguing that once one is willing to classify as beliefs those "*available* for consciousness" rather than just those that are actually in consciousness, "it is difficult to resist that conclusion that Otto's notebook has all the relevant dispositions").

127. *Id.* at 226–30 (distinguishing between "dispositional" beliefs that are available to consciousness and "occurent" beliefs actually in consciousness).

128. *See* COGNITION, BRAIN AND CONSCIOUSNESS: INTRODUCTION TO COGNITIVE NEUROSCIENCE 240–41 (Bernard J. Baars & Nicole M. Gage eds., 2007).

129. LEVY, *supra* note 20, at 61–62.

knowledge storage capacities of our brain, then—for ethical purposes—we should treat them the same way.

The same, I propose, is true for law. We would view as a grave infringement of free thought any state measure which prevented us from using our brains to access and store our memories. Why then should we not take a similar view of a measure that crippled Otto's (Alzheimer's-transformed) memory by taking away the memory storage equipment that he uses for the same purposes that others use neuronal circuits?[130] Or by taking away the neurofeedback devices or psychiatric medications that certain people use to generate the state of calm or concentration that others can generate from within their own brains? To be sure, if the key logic underlying freedom of thought is to protect the brain itself, and not what it does, then it might make sense to see it as barring invasive neurosurgery or coerced use of psychotropic drugs, while raising no barrier to government measures that weaken our memories or emotional control from the outside. However, this assumption about the central purpose of freedom of thought seems deeply counterintuitive. The reason for protecting our mental powers—the use of our memory or the generation of emotional calm or focus—is likely *not* that we value the biological machinery (the brain) that makes mental powers possible, but that we do not value these mental powers themselves. Rather, we value our mental capacities, not simply the particular machinery or resources that make them possible. If so, it makes sense to protect not only the internal biological resources crucial for their exercise, but other resources as well.

1. ENHANCEMENT THROUGH NEUROFEEDBACK

Consider one example of how someone might take a resource or technology in her external environment and make it a central part of her mental operations: the use of a neurofeedback device to dampen pain or enhance concentration. One such device allows a person to reduce the amount of pain she feels by viewing, and responding to, a screen that shows the level of activation of her anterior cingulate cortex (ACC), a part of the brain that appears to play a significant role in determining how intensely individuals feel pain.[131] The ACC's activity level is measured with a functional Magnetic Resonance Imaging (fMRI) scanner and is depicted to the patient on a "scrolling line graph" as well as a "virtual fire image," the size of which varies as the ACC becomes more or less active.[132] This kind of device has been used, with some

130. *See supra* notes 84–90 and accompanying text.

131. R. Christopher deCharms et al., *Control over Brain Activation and Pain Learned by Using Real-Time Functional MRI,* 102 PNAs 18626, 18629 (2005).

132. *Id.* at 18627.

apparent success, in certain laboratory situations.[133] The device is an alternative to another strategy used for decades in similar experiments, where some subjects were taught mental strategies for reducing the pain they felt.[134] It is hard to see how the use of a neurofeedback device is any less crucial a part of a feedback loop that allows someone to gain better control over their internal sensations than the unadorned, mental pain-reduction strategies. Neurofeedback in this circumstance serves as another, potentially very important, tool in allowing a person to perform the same function. The pain reduction he could previously achieve only by mentally rehearsing and following verbal instruction he might now enhance by using computers that let him visualize and control his brain physiology. Even if it seems inappropriate to count the use of such a machine as nothing more than "thought," it serves precisely the same function as internal modifications of a mental state, namely, the degree of pain one feels in response to a particular external or internal stimulus.

One could conceivably argue that use of such neurofeedback is already shielded, not by freedom of thought, but by freedom of expression. If freedom of expression protects the drawings or video games people use to give external form to their imagination, perhaps it also protects people's ability to watch (and alter) the visual computer-generated forms originating in their brains. Indeed, some neurofeedback devices already function as video games. A company called Emotiv, for example, has developed a headset "for the gaming market" that allows gamers to control video-game activity by generating certain brain-wave patterns.[135] Steven Johnson describes another neurofeedback device, the "Attention Trainer," that uses a video game to help people conquer attention deficit disorder: it "reward[s] high-attention states and discourage[s] more distracted

133. *Id.* at 18629 (reporting that patients trained to control ACC stimulation with fMRI showed "improvement in control over pain intensity and unpleasantness [that] . . . was significantly larger than" in control groups and that "[e]ight chronic pain patients following a similar rtfMRI-based training protocol . . . reported substantial decreases in their average baseline pain level").

134. *See, e.g., id.* at 18627 (describing how subjects in the experiments were provided with "instructions regarding strategies for use in increasing/decreasing brain activation or pain"). *See also* Bernard Blitz and Albert J. Dinnerstein, *Effects of Different Types of Instruction on Pain Parameters*, 73 J. ABNORMAL PSYCHOL. 276, 276–80 (1968) ("It is thus evident that appropriate instructions may alter behavior to threshold and moderate levels of noxious stimulation."); Bernard Blitz & Albert J. Dinnerstein, *Role of Attentional Focus in Pain Perception: Manipulation of Response to Noxious Stimulation by Instructions*, 77 J. ABNORMAL PSYCHOL. 42, 42–45 (1971).

135. *See* Mike Steere, *The Future of Gaming Is All in the Mind*, CNN (Sept. 8, 2008), http://www.cnn.com/2008/TECH/science/08/06/Futureofgaming/.

ones."[136] "Start zoning out while connected to the Attention Trainer software," he explains, "and you'll see it reflected on the screen within a split second. Start paying attention, and you'll find yourself winning the game."[137]

The fact that neurofeedback can be used to control activity (like a video game) that is "speech" under the First Amendment, does not mean it also must receive constitutional protection when it controls a non-speech activity. But it is harder to understand why such non-expressive use of a neurofeedback device should not be covered by freedom of thought. If it allows us to alter our thinking in a manner that would otherwise be possible only with will power, then it acts as a thought analogue.

2. ENHANCEMENT THROUGH PSYCHOPHARMACOLOGY

Moreover, if generating such a mental state with computer technology falls within our freedom of thought, it is hard to see why the same should not be true when we do so through the safe and responsible use of cognitive enhancing drugs, such as Prozac or Adderall. To be sure, a drug is not the functional equivalent of a thought component in the way that Otto's notebook was in Clark and Chalmers's key example.[138] Prozac, for example, does not contain any of the information with which Otto's notebook provided him. It is a synthetic chemical generated outside of and introduced to the brain, which, as noted earlier, appears to do its work by increasing the level of serotonin in the synaptic gaps between neurons.[139] Still, it works very much like a neurofeedback device. Such a device gives us a new tool, outside of our biology, that we can use to change the thought-generating component of that biology. Psychiatric medication serves the same function.

Unlike computers that detect our brain's electrical activity from outside our bodies, drugs work by being transferred into our brain. It is for this reason that Levy treats them as an internal biological equivalent of external enhancement tools such as computers or therapy sessions.[140] Yet, for purposes of the legal analysis here, it is important to emphasize that, on closer examination, drugs and neurofeedback devices alike are actually hybrid technologies with both external and

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136. STEVEN JOHNSON, MIND WIDE OPEN: YOUR BRAIN AND THE NEUROSCIENCE OF EVERYDAY LIFE 71-72 (2004).

137. *Id.* at 72.

138. *See supra* notes 80–87 and accompanying text.

139. *See supra* notes 11–12 and accompanying text.

140. LEVY, *supra* note 20, at 130 (describing pharmacological interventions into the mind as those that "proceed from the inside").

internal components. While we put them into our bodies, drugs like Prozac and Adderall are not manufactured naturally within our brains, but are made available to us only in the external environment. Similarly, while the computer that generates neurofeedback remains outside of our body, the effects it has (like those of a drug) manifest themselves in biological changes within our brain. The point of the pain-controlling neurofeedback device I described above, for example, is precisely to change the activation level of the ACC.[141] It is thus hard to exclude them on the basis that they are partly internal or partly external. What is essential to understanding their place in our free-thought jurisprudence is that—like a paper or electronic notebook that enhances memory from outside the body—these devices help us to generate certain mental states (such as emotional calm or concentration) that we would otherwise be able to generate solely with our own will-power, self-encouragement or the guidance of friends and counselors.

C. Mental Autonomy

There is another crucial element in freedom of thought, apart from our ability to generate different mental states. This freedom must assure not only that we can use our minds, but also that we can shape them. In other words, it entails not merely mental liberty, but also mental autonomy. Some might object to this characterization of free thought as entailing a right to psychological self-transformation. There is a constitutionally significant difference, they might argue, between a right to have a thought or belief and a right to transform the self that holds that belief; freedom of thought gives us a right to think what we want, not the right to become what we want.

But on closer examination, it becomes apparent that our right to generate thoughts will, in some cases, be worth little if we are barred from reconfiguring the personality that molds them. Anxiety and shyness, for instance, are not discrete thoughts, but rather psychological traits. Scientific studies have recently discovered that the extent to which one is anxious, shy, or depressed often correlates with having a short (rather than long) copy of a particular stretch of DNA called the "serotonin transporter promoter" gene.[142] These studies indicate that those with the shorter copy of the gene are more likely to have lower serotonin activity in their brain than those with the longer

141. *See supra* notes 133–34 and accompanying text.

142. *See* Marco Battaglia et al., *Influence of the Serotonin Transporter Promoter Gene and Shyness on Children's Cerebral Responses to Facial Expressions*, 62 ARCHIVE OF GEN. PSYCHOL. 85, 91 (2005) (finding that "shyness was significantly different across the genotypes," with those with the shorter allele having a "higher shyness-BI index").

copy, which in turn somehow makes it more likely that they will feel more anxiety about social interaction or in general.[143] Similar findings have been made in relation to another gene, DRD4, which helps determine the amount of dopamine in one's system.[144] The short variant of this gene also correlates with greater shyness and anxiety.[145] The genes themselves, of course, are not thoughts or feelings, nor are the tendencies to have more or less serotonin or dopamine in one's brain.[146] But such biological activity appears to powerfully shape the thoughts we have.[147] The preferences and value-assessments of the shy and anxious will likely be quite different than those who revel in social exchange and welcome risk. They will also likely have different emotional responses to a similar situation (for example, similar situations that requires public speaking).

It is an odd and confined notion of freedom of thought that would deny us any right to modify the mental processes and tendencies—often grouped under the heading of "personality"—that shape so much of what we consciously think and feel. Our constitutionally-enshrined freedom of thought should not only leave us free to tinker with the contents of our conscious mind *after* these contents enter our consciousness. It should also protect our right to alter our thinking at the roots, with the aid of psychotherapy, neurofeedback technology, and (where safe) with cognition- and mood-enhancing drugs.

In this respect, such cognitive-enhancement technology is only the latest tool for bolstering and enabling the personal autonomy that liberal, individual-rights-oriented thinkers have long championed.[148] As Will Kymlicka notes, the capacity to revise and reflect upon the contents of one's own beliefs and psychology is central to a liberal order of the kind embodied in the American constitutional system and many other Western democracies.[149]

The focus of liberal thought has been self-revision through conscious self-reflection. But the insights provided by neuroscience and

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143. *Id.*

144. Melissa Hendricks, *Is There a Gene for Shyness?*, GENOME NEWS NETWORK (April 21, 2000), http://www.genomenewsnetwork.org/articles/04_00/shyness.shtml.

145. *Id.*

146. *Id.*

147. *See* JOSEPH LEDOUX, SYNAPTIC SELF: HOW OUR BRAINS BECOME WHO WE ARE 189 (2002) (discussing the effects of dopamine on memory).

148. *See* KANT, *supra* note 121, at 59; LOCKE, *supra* note 5, at 19; MILL, *supra* note 121, at 65; WILL KYMLICKA, CONTEMPORARY POLITICAL PHILOSOPHY: AN INTRODUCTION 204 (1990); STEPHEN MACEDO, LIBERAL VIRTUES: CITIZENSHIP, VIRTUE, AND COMMUNITY IN LIBERAL CONSTITUTIONALISM 204 (1990).

149. *See* WILL KYMLICKA, MULTICULTURAL CITIZENSHIP: A LIBERAL THEORY OF MINORITY RIGHTS 41-42 (1995).

psychology over the past century-and-a-half suggest that certain kinds of self-transformations are difficult, or impossible, to achieve through conscious direction. As Joseph LeDoux writes: "What a person is, and what he or she thinks, feels, and does, is by no stretch of the imagination influenced only by consciousness. Many of our thoughts, feelings, and actions take place automatically, with consciousness only coming to know them as they happen . . . ."[150] Where central aspects of our self are shaped by these automatic processes that are not easily brought under conscious control, then a person's only chance of changing this aspect of her character may lie in the control imposed through medication or other technology. Where, for example, low levels of serotonin cause (at least in part) a person to live with shyness, anxiety, or melancholy, it may be that a person will find herself unable to escape these psychological tendencies through philosophical or religious meditation, psychological counseling, or sheer willpower.

The technologies I have been discussing in this Article thus simply add neurofeedback and psychotherapy (both with and without medication) to the tool set that individuals have for revising the self in this way. As Gerald Dworkin writes, autonomy entails being able to "shape[] one's life [and] construct[] its meaning."[151] And this is precisely what individuals, like those described by Peter Kramer, do when they use Prozac as one part of the process of transforming themselves from socially anxious people into more extroverted and socially comfortable people.[152] Framed differently, one might say that cognition enhancing drugs or other enhancement technologies advance autonomy by helping individuals modify their "first-order" desires (to want something in a particular instance) in light of deeper "second-order" preferences about the kind of person they wish to be.[153] Harry Frankfurt, the philosopher responsible for proposing this distinction between first- and second-order desires, explains it as follows:

> Besides wanting and choosing and being moved *to do* this or that, men may also want to have (or not to have) certain desires and motives. They are capable of wanting to be different, in their preferences and purposes, from what they are. Many animals appear to have the capacity for what I shall call "first-order desires" or "desires of the first order," which are simply desires to do or not to do one thing or another. No animal other than man, however, appears to have the capacity

150. LEDOUX, *supra* note 147, at 10–11.

151. GERALD DWORKIN, THE THEORY AND PRACTICE OF AUTONOMY 31 (1988).

152. *See generally* KRAMER, *supra* note 11, at 10–11.

153. Harry G. Frankfurt, *Freedom of the Will and the Concept of a Person*, 68 J. PHIL. 5, 7, 10–11 (1971).

> for reflective self-evaluation that is manifested in the formation of second-order desires.[154]

According to many analysts of autonomy, this ability to override and transform one's desires is essential to living an autonomous life. Frankfurt himself writes that the ability to form second-order desires is central to our humanity.[155] According to Kurt Eggert, a very similar idea—that "reflection and the ability to choose among first-order desires by considering second-order volitions is the crux of autonomy"—has become the core of Gerald Dworkin's influential thinking of autonomy.[156] One reason that cognitive-enhancement drugs may sometimes be necessary to autonomy, then, is that they allow us to reshape ourselves to meet our "second order desires" about the type of person we wish to be.

The problem with this account is that cognitive-enhancement drugs may not *always* support our attempt to achieve our second-order desires. They might instead alter or erase these desires. When Prozac changes a person's neurochemistry, it sometimes does not merely transform her into the person she wants to be, it changes who she wants to be.[157] It alters not only her preferences and first-order desires, but also her deeper values and "second order desires." As Peter Kramer writes, use of Prozac modifies the very "self" that is deciding what it wishes to be.[158] Carl Elliot writes, "even if [Prozac] gave me a better personality . . . it isn't my personality," but rather it is an inauthentic substitute.[159] Such a transformation, in other words, is not an enhancement of autonomy, because it undermines the original self that is trying to exercise control over the psyche. As the President's Council on Bioethics argues, "our happiness is bound up with our personhood and our identity. We would not want to attain happiness (or any other object of our desires) if the condition for attaining it required that we become someone else, that we lose our identity in the process."[160]

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154. *Id.* at 7.

155. *Id.* at 10–11.

156. Kurt Eggert, *Lashed to the Mast and Crying for Help: How Self-Limitation of Autonomy Can Protect Elders from Predatory Lending*, 36 LOY. L.A. L. REV. 693, 726 n.145 (2003). *See also* DWORKIN, *supra* note 151, at 20.

157. *See* KRAMER, *supra* note 11, at 17–20.

158. *Id.*

159. Carl Elliot, *The Tyranny of Happiness: Ethics and Cosmetic Psychopharmacology, in* ENHANCING HUMAN TRAITS: ETHICAL AND SOCIAL IMPLICATIONS 177, 182 (Erik Parens ed., 1998).

160. PRESIDENT'S COUNCIL ON BIOETHICS, *supra* note 57, at 211. *See also* KRAMER, *supra* note 11, at 268 ("The change Prozac [brought] about ... [in the patient was] so profound that there are almost two different persons in the story, one discontented and driven, the other contented and complacent. Whose autonomy are we out to preserve?").

Is it the case then that the state may restrict use of medication or other technologies (perhaps including certain neural prosthetics) that carry the risk of inducing not precisely the kind of self-transformation one plans on and hopes for, but rather a more unpredictable shift in individual identity?

This question is a difficult one, in part because philosophers who write about autonomy disagree regarding how to think about, and value, the stability of second-order desires that a psychiatric medication puts at risk.[161] Why, some ask, should we insist on keeping second-order desires as fixed lodestar for the reshaping of first-order desires, when an individual can conceivably have third-order (or still higher-order) desires that trump all of these? We might, for example, have a first-order desire to drink excessive amounts of alcohol and a second-order aspiration to be a sober individual who lives a life of moderation. But we might question not only the first-order desire (to drink alcohol) but also the second-order desire (to live sober). In some moments, we might find that our commitment to sobriety and moderation seems like a foolish and simple-minded adherence to values we internalized in growing up, but that would condemn us to a passionless existence we might later regret. In such a case, we are arguably judging a second-order preference as conflicting with another (perhaps, third-order) preference. One difficulty is that there is no clear, objective method for determining where in this hierarchy of commitments a particular aspiration of ours actually lies. Moreover, even assuming that there is such a method, and that there is some stopping point, there is still another difficult question: why should we feel ourselves defined by and bound to such a highest-order commitment when this commitment itself is not chosen but simply comes to us through nature, perhaps quite randomly? For example, if a person wants to be bolder rather than give in to anxiety each time it moves him to avoid uncomfortable confrontations, why should his unchosen desire for boldness guide him if he cannot endorse it on the basis of some other, deeper commitment?

These are difficult questions, to which it is very difficult to provide a comprehensive and uncontroversial answer. Still, it is possible to make some observations that might help guide further analysis. Much depends on just how unpredictable (and radical) the self-transformation potentially caused by a drug or other technology would be. Allowing

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161. *Compare, e.g.*, the different views of autonomy advanced by Frankfurt, *supra* note 153, at 7, 10–19, *with* Irving Thalberg, *Hierarchical Analyses of Unfree Action, in* THE INNER CITADEL: ESSAYS ON INDIVIDUAL AUTONOMY 123, 125–33 (John Christman ed., 1989), *and* John Christman, *Autonomy and Personal History*, 21 CANADIAN J. PHIL. 1, 3–13 (1991). *See generally Autonomy in Moral and Political Philosophy*, STANFORD ENCYCLOPEDIA OF PHILOSOPHY (AUG. 11, 2009), http://plato.stanford.edu/entries/autonomy-moral/.

people to take a chemical gamble with their self-identity—a throw of the dice that might leave them starkly and permanently different in a way they can hardly predict—seems to provide little benefit for advancing the kind of autonomy long championed by liberal thinkers. While there is dispute about the exact contours of this conception of individual autonomy, it is hard to square it with the unqualified endorsement of a state of affairs where the selves that should ideally be in control of their psyches might be dissolved and replaced upon a momentary, mistaken whim. By contrast, where radical psychological change, despite its radical nature, is characterized by more continuity and predictability, it is harder to justify placing it out of bounds for individuals. Imagine, for example, that a person seeking SSRI drugs denies that she wants to eliminate her personality and replace it with a randomly-generated alternative. Rather, she wants to be a happier, more confident version of the person she is now—someone with the same commitment to family and the same interests in art, music, or other hobbies, but with a psychological profile that allows her to develop and enjoy these aspects of herself more fully.[162] If she can safely transform herself in this way—whether by relying solely on talk therapy or by pharmacologically altering her neurochemistry, why should a state committed to freedom of thought be entitled to stop her?[163]

In sum, these arguments indicate that freedom of thought should not only protect our (naturally protected) ability to engage in reflection. It should also lead courts to identify and protect technologies and resources that support mental autonomy and externalized thought. In this respect, free thought should parallel free speech. Freedom of speech not only gives people the right to write or speak, it allows them to use computers to help create this speech and electronically disseminate it over the Internet.[164] The same is true of the First

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162. As Martha Farah and her colleagues point out, this is true not only when we compare our self before and after taking a medication or other drug, but also in other before and after comparisons: "[I]f we are not the same person on Ritalin as off, neither are we the same person after a glass of wine as before, or on vacation as before an exam." Farah et al., *supra* note 62.

163. It is also relevant how much mental autonomy she has post- as opposed to pre-transformation. *See* Sarah Waller, Neuro-Enhancement: Warning, Autonomax May Be Necessary 9–10 (July 16, 2010) (unpublished manuscript) (on file with author) (considering how hypothetical enhancement drugs would create increased mental autonomy by giving individuals "more options and more ability to act on them").

164. *See Reno v. ACLU*, 521 U.S. 844, 870 (1997) (noting that the Internet allows for "unlimited, low-cost capacity for communication of all kinds," and with Internet access, "any person with a phone line can become a town crier with a voice that resonates farther than it could from any soapbox," and that "our cases provide no basis for qualifying the level of First Amendment scrutiny that should be applied to this medium"); *Griswold v. Connecticut*, 381 U.S. 479, 482 (1965) ("The right of freedom

Amendment public forum doctrine.[165] It does not protect expression per se.[166] Rather, it protects an essential condition of expressing oneself in public: access to some public space in which one can address an audience.[167] The same, I argue here, should be true for freedom of thought. Government is under no obligation to provide individuals with journals, computerized memory aids, therapy sessions, neurofeedback devices, or medications that enhance cognitive abilities. But where such resources are available to individuals, government should not be left free—under the Constitution—to take them away whenever it can find a rational basis for doing so. Freedom of thought, in other words, extends a protective aura to environmental and institutional resources distinct from those encompassed by freedom of speech or religion (although there may be some overlap). One of the tasks that courts and other constitutional actors will face in the years ahead will be defining which spaces and resources merit such protection.

III. FREEDOM OF THOUGHT AS A BAR ON IMPERMISSIBLE GOVERNMENT PURPOSES

There is, however, another approach that might be used to spare us the task of identifying particular spaces or resources for mental liberty and autonomy. This approach focuses not on protecting thought per se, but on "government motives": protecting against intentional government targeting of that thought. It need not address difficult questions about precisely what human activity is sheltered by First Amendment freedom of thought because its protection extends to any human activity that government chooses to target for the purpose of punishing thought. The Supreme Court lent support to precisely this view both in *Stanley v. Georgia*,[168] and more recently, in *Ashcroft v.*

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of speech and press includes not only the right to utter or to print, but the right to distribute . . . .").

165. *See* ERWIN CHEMERINSKY, CONSTITUTIONAL LAW: PRINCIPLES AND POLICIES 1123-24 (3d ed. 2006) ("Speech often requires a place for it to occur. . . . [People] need to have a place to distribute leaflets, or a corner to place a soapbox. Moreover, some types of expression require a larger area than a private person is likely to own. . . . The Court has dealt with this issue by identifying different types of government property—public forums, limited public forums, and nonpublic forums . . . .").

166. On the contrary, the same speech that is protected in a public forum may be forbidden by a private entity on its own property. *See Denver Area Educ. Telecomm. Consortium, Inc. v. FCC*, 518 U.S. 727, 783 (1996) (Kennedy, J., concurring in part and dissenting in part) (citing *Hudgens v. NLRB*, 424 U.S. 507 (1976)) ("As a general matter, a private person may exclude certain speakers from his or her property without violating the First Amendment . . . .").

167. *See* CHEMERINSKY, *supra* note 165, at 1123-24.

168. *Stanley v. Georgia*, 394 U.S. 557, 566 (1969).

Free Speech Coalition.[169] In both, the Court stated that "[G]overnment 'cannot constitutionally premise legislation on the desirability of controlling a person's private thoughts.'"[170] "First Amendment freedoms," it added in *Ashcroft*, "are most in danger when the government seeks to control thought or to justify its laws for that impermissible end."[171] A free-thought infringement, on this view, appears to consist not in what the government is regulating, but what it is "seek[ing]" to do in the "end" sought by the legislation, and in how the government is "justify[ing]" its action.[172] Jed Rubenfeld likewise advocates for the protection of "freedom of imagination" that focuses not on what the government is doing, but the government's reasons for doing it. Freedom of imagination "does not mean that you have a right to exercise your imagination in any way you like. It means that you cannot be punished *for* exercising your imagination."[173]

This is one way to restate the key test used by some courts to determine when the government may take action affecting thought. Under the test, the government is generally barred by the hurdle of strict scrutiny from "directly" intruding upon our thoughts.[174] However the government has more freedom under an intermediate-scrutiny standard to regulate where doing so has "only an incidental impact on a private realm of thought."[175] The most natural way to define a "direct" attack is as one that targets thought, since to describe an impact as "incidental" is to indicate that it was an unintended or accidental consequence of an action taken to achieve some other goal.[176]

Does this account provide us all the analytical tools we need to decide if and when our freedom of thought is implicated by government regulation of a cognitive-enhancement technology—like use of SSRI drugs, TMS stimulation, or neurofeedback technology? I argue that it

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169. *Ashcroft v. Free Speech Coal.*, 535 U.S. 234 (2002).

170. *Id.* at 253 (quoting *Stanley*, 394 U.S. at 566).

171. *Id.*; *see also Video Software Dealers Ass'n v. Schwarzenegger*, 556 F.3d 950, 962 (9th Cir. 2009) (citing *Ashcroft* and noting, in assessing the constitutionality of a restriction on video game sales, that "the government may not restrict speech in order to control a minor's thoughts . . .").

172. 535 U.S. at 253.

173. Rubenfeld, *supra* note 24, at 40.

174. *See* Irwin, *supra* note 7, at 1507, 1510–15.

175. *Id.* at 1507. *See also Doe v. City of Lafayette*, 377 F.3d 757, 765 (7th Cir. 2004) ("[R]egulations aimed at conduct which have only an *incidental* effect on thought do not violate the First Amendment's freedom of mind mandate.") (emphasis added).

176. *See* WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE UNABRIDGED 1142 (2002) (defining "incidental" inter alia as "occurring merely by chance or without intention or calculation"); *see also Wicker v. Shannon*, 2010 WL 3812351, at *9 (M.D. Pa. Sept. 21, 2010) (contrasting an "incidental" discriminatory effect with one that is "purposeful or intentional").

falls short.[177] But it is useful to see how it provides one possible framework for analyzing—even protecting—individuals' use of cognitive-enhancement technologies.

Restricting the use of cognitive-enhancement drugs might count as a government-motives restriction depending on the legislature's intent for enacting it. An exercise of government power as well-established as a driving regulation, for example, might implicate our freedom of thought if its primary purpose is to prevent us from having certain perceptions or sensations. Of course, this will not be a problem in most instances of legislation because the government should be able to easily identify why the regulation is directed at our physical or financial interactions rather than our mental states.[178] Restrictions on driving can always be justified on the basis of how such restrictions affect driving behavior, and thus need not be justified solely on the basis of the way they affect the driver's thoughts and perceptions.[179] Indeed, even a regulation that focuses on preventing certain sensations (e.g., listening to music or hearing conversation with a cell phone) might be justified as targeting such sensation only as an intermediate step in achieving the ultimate goal of assuring safe driving.

Restriction of cognitive-enhancement drugs, on the other hand, seems much more likely to implicate thought because, unlike driving, the primary purpose of cognitive-enhancement drugs is to generate changes in our thought patterns.[180] Thus, where government limits our use of such drugs, it knowingly limits our ability to generate certain mental states or changes in thought processes.[181]

This does not mean that the government purposes-based account of freedom of thought can be relied upon to provide constitutional protection for use of cognitive-enhancement drugs or other technology.

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177. *See infra* text accompanying notes 232–37.

178. *See* Rubenfeld, *supra* note 24, at 41 (discussing that even when driving has a communicative purpose, regulation can easily be justified as based on government purposes that have nothing to do with regulating communication).

179. *Id.*

180. *See* Brief of the Center for Cognitive Liberty and Ethics as Amicus Curiae Supporting Petitioner at 7, *Sell v. United States*, 539 U.S. 166 (2003) (No. 02-5664) (arguing that forcible administration of psychotropic drugs violated freedom of thought because it was "an effort aimed *directly* at changing [Sell's] *mind* and *mental processes* by forcibly manipulating his brain chemistry").

181. It is possible to imagine hybrid approaches that combine the environment- or resource-based approach with the purpose-based approach: For example, courts need not necessarily begin their inquiry into a government's purposes on an entirely blank slate. Even *before* courts look at the government's account of its own purposes or motives for enacting a statute or adopting a regulation, they might begin with some guesses about these purposes based on knowledge of the activity the government is regulating, and perhaps on the government motives that have typically driven such legislation in the past.

A legislature interested in restricting the use of cognitive-enhancement drugs might argue that its motive is not to put certain mental states or mental alterations out of reach altogether, but rather to place certain limits on the means that individuals might use to reach them. Given that these drugs generally raise safety issues,[182] it might justify restrictions on drugs in order to steer individuals toward safer, non-pharmacological methods of attaining cognitive enhancement, such as self-reflection, modification, or psychotherapy.

The government might also be able to restrict cognitive-enhancement drugs for non-safety reasons. Legislators might, for example, adopt the Council on Bioethics's concern that "there is a danger that our new pharmacological remedies will keep us 'bright' or impassive in the face of things that ought to trouble, sadden, outrage, or inspire us."[183] This concern presents a more complex question for a "government motives" analysis. On the one hand, one might argue that legislation generated by that concern is aimed at controlling thoughts because it is denying individuals use of cognitive enhancement precisely in order to prevent them from achieving certain mental states—like the confidence or happiness they might receive from a mood brightener. On the other hand, one might argue that such legislation is not opposed to a particular mental state, but simply opposed to generating it effortlessly where it is ill-fitting, unnatural, and disconnected from any external experience.

In short, this situation raises the question: what kind of government motive counts as an impermissible one? Does the government directly target our freedom of thought only when it wishes to rule out certain thoughts or feelings altogether? Or might it also violate freedom of thought even if it finds those thoughts or feelings acceptable, but wishes to limit when and how we can generate those thoughts and feelings?

Courts have not squarely faced such questions, but there is reason to think they would likely allow the government substantial leeway. One court has already found that freedom of thought only protects us against government attempts to restrict "pure thought."[184] The court favored government intervention where the steps we take to generate certain thoughts not only make it more likely we will think certain thoughts, but also make it more likely that we may act on those thoughts.[185] Other courts might similarly find that restrictions on cognitive-enhancement drugs are *not* restrictions that focus on "pure

182. *See supra* Part I.B.

183. PRESIDENT'S COUNCIL ON BIOETHICS, *supra* note 57, at 255.

184. *See Doe v. City of Lafayette*, 377 F.3d 757, 765 (7th Cir. 2004).

185. *See id.* at 765–67.

thought." Rather, they are government measures that might strongly affect our interactions with other people, by changing the behaviors produced by the moods or mental states we have during those interactions. If, for example, Francis Fukayama is right to worry that mood-brightening powers of an SSRI drug might lead individuals to turn to medication instead of making otherwise reasonable efforts to seek achievements or build and strengthen relationships,[186] then taking an SSRI drug is not just about an individual and his thinking patterns. It is also about how an individual's actions affect others. And if government regulation of SSRI drugs focuses on these external consequences, it may be erroneous to classify it as a regulation that targets thought.

But there is good reason to be skeptical that the government-motives account provides us with a satisfactory framework for elaborating on freedom-of-thought jurisprudence and applying it to novel technologies for enhancing or changing our thinking processes. First, this account clearly does not banish the line-drawing problems that made it attractive. It just recasts them in a different form. Instead of asking whether a particular human activity counts as "thought" or is so closely bound up with "thought" that it should be insulated from government regulation, courts ask an equivalent question about the behavior that government is expressly targeting.[187] If government restricts certain drugs because it worries that the mental changes wrought by them will weaken our bonds with other members of the community or sap us of the will to solve problems through social cooperation rather than self-medication, it is not clear whether this restriction is one that impermissibly targets thought or one that only incidentally affects thought in order to regulate its consequences.

Second, as noted earlier, this complication may lead courts to resolve these questions in the government's favor by giving it a pass to regulate any activity that can be described in terms which differentiate it from "pure thought."[188] This level of permissiveness makes it far too easy for government to impose significant limits on mental autonomy. Consider, for example, how a state government might re-litigate its attempt to restrict private viewing of obscene films, like those seized from the home in *Stanley*.[189] The Court in that case struck down a state law criminalizing the private possession of obscenity, observing that such state control of a person's "private library" offended the principle that government may not "control men's minds."[190] It might argue that

186. *See supra* note 56 and accompanying text.
187. *See supra* notes 170–74 and accompanying text.
188. *See infra* notes 284–87 and accompanying text.
189. *Stanley v. Georgia*, 394 U.S. 557, 558–59 (1969).
190. *Id.* at 562, 565.

it is seeking not to prevent sexual arousal of the kind Stanley was seeking, but rather to limit the ease with which individuals can trigger such arousal at will without seeking it from human relationships. Thus, at a minimum, cases like this appear to require that when government restricts technologies used primarily to give individuals additional control over their mental states or perceptions, a court must evaluate those restrictions with some form of heightened scrutiny.[191]

Third, there is some oddity in letting government circumvent freedom of thought restrictions by redefining its stated purposes when such redefinition of purposes is (at least theoretically) inadequate for constitutionally justifying restrictions on speech. As the Court made clear in *United States v. O'Brien*,[192] although government regulations of symbolic speech (like burning of a flag or a draft card) are impermissible if suppression of speech is their purpose, this is not the only element that can make them a First Amendment violation.[193] Even when a government measure barring or limiting symbolic speech is not aimed at, or related to, "the suppression of free expression," that does not mean the government may be as restrictive as it wishes on the theory that its impact on speech is only incidental.[194] On the contrary, under the *O'Brien* test, even when the impact on the expressive component of symbolic speech is incidental or unintended, the government must still show (i) that its regulation "furthers an important or substantial governmental interest," and (ii) that its "incidental restriction on alleged First Amendment freedoms is no greater than is essential to the furtherance of that interest."[195] To be sure, commentators argue that the court's protection of symbolic speech is far weaker in practice than in theory.[196] Even in *O'Brien* itself, the court seemed to simply brush aside powerful evidence that the measure reviewed in that case was aimed at suppressing anti-war speech.[197] Yet even if the *O'Brien* test has not lived up to its promise, it is clear why at least a part of that promise makes sense—it protects symbolic speech not merely from the government regulation that targets it, but also from government regulation that unnecessarily burdens or restricts it (even

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191. A more elaborate argument for insulating such activity from government regulation is presented in *supra* Part II.

192. 391 U.S. 367 (1968).

193. *Id.* at 375-77.

194. *Id.* at 377.

195. *Id.*

196. *See* Robert Post, *Recuperating First Amendment Doctrine*, 47 STAN. L. REV. 1249, 1250-60 (1995).

197. *See* Jed Rubenfeld, *The First Amendment's Purpose*, 53 STAN. L. REV. 767, 775 (2001) (although O'Brien contended that Congress's real purpose in prohibiting the destruction of draft cards was to target antiwar protesters, "the *O'Brien* Court explicitly and emphatically dismissed [this contention] as irrelevant").

unintentionally). Expression has too much importance in our constitutional order to leave it vulnerable to indirect (or well-disguised) attack. There is no reason to provide weaker protection for freedom of thought, especially if Cardozo was right that it is, as much as freedom of expression, a key component of "the matrix" that forms "the indispensable condition, of nearly every other form of freedom."[198]

IV. FREEDOM OF THOUGHT AS A COMPONENT OF OTHER CONSTITUTIONAL RIGHTS

A. Free Speech and the Free Exercise of Religion

1. FREEDOM OF THOUGHT AS JUSTIFICATION FOR SPEECH AND RELIGIOUS EXERCISE RIGHTS

The two accounts I have considered earlier—my own account and the government-motives approach—both treat freedom of thought as a liberty that can stand on its own. Even where people are not engaging in protected speech, under the First Amendment, or exercising their religious liberty, they might still invoke their right to freedom of thought. Thus, I argued earlier that people should be shielded by free-thought protection against government attempts to restrict their use of cognitive-enhancement technology.[199] Dana Remus Irwin, drawing on the government-purposes account, similarly argues that freedom of thought might protect the non-speech activity in scientific experiments.[200]

Yet one might posit that it is a mistake to treat as two separate rights—a right of speech and right of thought—that which is actually a single, indivisible one. Consider Cardozo's pronouncement in *Palko v. Connecticut*[201] that "freedom of thought, and speech" is "the matrix" of every other freedom.[202] Although Cardozo speaks of freedom of both thought and speech, he speaks of them not as two distinct forms of liberty, but as a single "freedom." This limited conception of freedom of thought—as a liberty that is simply a component of our right to free expression—also arguably receives some support from the Constitution's text. The First Amendment nowhere mentions the phrase

198. *Palko v. Connecticut*, 302 U.S. 319, 326–27 (1937). Justice Holmes likewise said that "if there is any principle of the Constitution that more imperatively calls for attachment than any other it is the principle of free thought . . . ." *United States v. Schwimmer*, 279 U.S. 644, 654–55 (1929) (Holmes, J., dissenting).

199. *See supra* Part III.

200. Irwin, *supra* note 7, at 1519.

201. 302 U.S. 319 (1937).

202. *Id.* at 326–27.

"freedom of thought." It speaks only of "freedom of speech," of the press, the right to petition and assemble, and religious liberty.[203] Freedom of thought, one still might argue, is thus not a separate constitutional right, but rather a liberty that is implicit in those that the Amendment actually mentions.

In support of this claim, one might point out that, in virtually all of the cases in which the Supreme Court has used the phrases "freedom of thought" or "freedom of mind," it did so in justifying another, express, First Amendment right. Take, for example, two cases where the Supreme Court heavily emphasized "freedom of thought" or "freedom of mind": the compelled speech decisions in *West Virginia State Board of Education v. Barnette*,[204] and *Wooley v. Maynard*.[205] In *Barnette*, the Court held unconstitutional a school requirement that students participate in the flag salute.[206] In *Maynard*, it likewise struck down a New Hampshire law that required that all registered vehicles have a license plate with the state's motto, "Live Free or Die."[207] In neither of these cases did the government's action directly require that someone adopt a certain belief or think a certain thought. Mental liberty thus was not itself directly infringed by the government's requirements. Rather, its role appeared to provide a *justification* for what was then a new variant of First Amendment speech rights, namely, a right not to speak. The cases make most sense if one assumes that a person's use of language is a central repository of his thinking and identity. Letting the state restrict a person's use of language can potentially disrupt his thinking, or offend his autonomy, in a way that is not repaired simply by giving him the chance to later (or elsewhere) speak his own beliefs. Thus, the "Bill of Rights . . . guards the individual's right to speak his own mind" and to keep his language from becoming a vessel for the state.[208]

Freedom of thought plays a similar justificatory role elsewhere. Judges, philosophers, and legal scholars have often referred to such a special connection between speech and thought in order to explain why speech has the extraordinary constitutional status it does. First Amendment scholar Rodney A. Smolla, for example, observes that "the preferred position of freedom of speech" over other liberties can be

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203. *See* U.S. CONST. art. I ("Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances.").

204. 319 U.S. 624, 645 (1943) (Murphy, J., concurring).

205. 430 U.S. 705, 714 (1977).

206. 319 U.S. at 642.

207. 430 U.S. at 715, 717.

208. 319 U.S. at 634.

traced to the fact that "speech is connected to thought in a manner that other forms of gratification are not . . . ."[209] The Supreme Court has made a similar point. Speech, it held, is central to constitutional order not only because it gives expression to our thinking, but because it often initiates it.[210] "The right to think," it said, "is the beginning of freedom," and we protect speech because "speech is the beginning of thought."[211] The same idea has found adherents not only in legal writing on the First Amendment, but in philosophical defenses of freedom of expression more generally.[212] One of the most famous of these—John Stuart Mill's essay *On Liberty*—emphasizes that while "[t]he liberty of expressing and publishing opinions may seem to fall under a different principle" from "the liberty of thought," it rests "in great part on the same reasons, is practically inseparable from it."[213]

Freedom of thought has played a similar role in justifying, and helping judges give shape to, religious liberty protection. Americans of the founding era developed the constitutional doctrine of religious freedom, and the foundation for the doctrine was precisely this protection of "conscience" or internal belief. "Liberty of conscience," writes John Witte, Jr., "was the cardinal principle for the new experiment in religious liberty" and other aspects of religious liberty "built directly on this core principle."[214] One of the Court's most well-known discussions of religious liberty draws heavily on the notion that unlike religious actions, thoughts and beliefs should be insulated from state control. Upholding a federal law barring polygamy in United States territories, the Supreme Court declared in the 1878 case of *Reynolds v. United States*[215] that the Constitution's guarantee of religious freedom deprived Congress of control "over mere opinion, but [leaves it] free to reach actions . . . ."[216] Under the Court's current jurisprudence, moreover, it is clear that protecting religious thought might also entail protecting religious practice from some government attacks, namely, restrictions that target such practice merely because of its religious nature.[217] For example, while the killing of animals is a

209. *See* SMOLLA, *supra* note 3, at 11.

210. *Ashcroft v. Free Speech Coal.*, 535 U.S. 234, 253 (2002).

211. *Id.*

212. *See, e.g.*, MILL, *supra* note 120, at 16–17; TIMOTHY MACKLEM, INDEPENDENCE OF MIND 1–13 (2006).

213. MILL, *supra* note 121, at 16–17.

214. John Witte, Jr., *The Essential Rights and Liberties of Religion in the American Constitutional Experiment*, 71 NOTRE DAME L. REV. 371, 394 (1996).

215. 98 U.S. 145 (1878).

216. *Id.* at 164.

217. *See Employment Div. v. Smith*, 494 U.S. 872, 877 (1990). The Court acknowledged that the First Amendment excludes not only state restriction of "religious *beliefs* as such," but also controls that restrict "acts or abstentions" only because such

practice in every-day life, when the government bans such killing because it is part of a particular religious ritual, the government is in effect attacking religious belief.[218] In such a case, the freedom to adhere to certain beliefs or convictions extends beyond the freedom merely to express oneself in words, providing some protection for actions that have a religious dimension.

2. THE NARROW ACCOUNT OF FREEDOM OF THOUGHT AND THE EXTENDED MIND

How does this narrow approach to freedom of thought deal with Clark and Chalmers's claim that our mental activity necessarily spills over—outside of our brains and bodies—and into the environment outside of us? The answer, perhaps, is that instead of protecting all types of extended cognition, the First Amendment's focus on speech and religion embodies a constitutional judgment that our democracy can afford to insulate from state regulation only some types of this externalized thought.

Indeed, the same close connection between thinking and speech is repeatedly noted by Clark and Chalmers in their description of "the extended mind." Many of their key examples of extended cognition locate it in language.[219] "Language," they note, "appears to be a central means by which cognitive processes are extended into the world."[220] It is not simply a "mirror of our inner states but a complement to them."[221] It is thus not surprising that our minds have evolved to use the "sea of words" around us and that "[w]ords and external symbols are . . . [now] paramount among the cognitive vortices which help constitute human thought."[222] As discussed earlier, speech figures in their most prominent example of extended cognition: the notes that a person writes and later consults in a journal.[223]

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acts or abstentions are "engaged in for religious reasons" or "display" religious beliefs. *Id.* (quoting *Sherbert v. Verner*, 374 U.S. 398, 402 (1963)).

218. *See Church of Lukumi Babalu Aye, Inc. v. City of Hialeah*, 508 U.S. 520, 531 (1993).

219. For example, in addition to Clark and Chalmers's account of how we are engaging in a cognitive process when we use journals to remember an event, Clark also considers—as examples of extended cognition—the way in which cognitive processes are extended by labeling items with words, *see* CLARK, *supra* note 23, at 45–46, through "linguistic rehearsal in expert performance," *id.* at 48, in the use of language to perform mathematical operations, *id.* at 52–53, and in gesturing, *id.* at 123–27.

220. Clark & Chalmers, *supra* note 23, at 225.

221. *Id.* at 232. *See also* MACKLEM, *supra* note 212, at 11 (explaining that when language "is more than bare transmission of information, expression becomes a fundamentally creative act").

222. Clark & Chalmers, *supra* note 23, at 226.

223. *See supra* notes 82–88 and accompanying text.

Clark elaborates upon this idea in his recent book, *Supersizing the Mind*, where he examines various ways in which language acts as "mind-transforming cognitive scaffolding."[224] In short, the existence of language allows us to order our thoughts in ways that would be impossible without words.[225] It allows us to group parts of the world into abstract conceptual categories for which there are few external markers in nature, but for which we find vivid markers in language.[226] "[T]he act of labeling creates a new realm of perceptible objects upon which to target" human learning.[227] And this capacity of language to mark out objects for attention that would not otherwise be marked by sensory experience may be a necessary condition for human beings' distinctive capacity for self-reflection.[228] Language allows for metathinking—thinking about thought—because we may often need to "formulate a thought in words or on paper" in order to make it "an object for both ourselves and for others" to further consider.[229]

A very similar account of free expression's value has been provided by the philosopher Timothy Macklem. He emphasizes that "mediums of expression do not simply convey a person's thoughts to the world; they do a great deal to shape the content of those thoughts."[230] Such a view of language[231]—as a key resource through which we not only express but also forge our thoughts—helps bolster the justificatory account I have given above. Freedom of thought helps justify freedom of speech and freedom of religion because, where government is allowed to stifle our external acts of speech and worship, it simultaneously damages our internal freedom to choose or develop our own ideas.

B. Bodily Autonomy and Substantive Due Process

One vision of how the Constitution defines and protects freedom of thought, then, is that it protects the thought that we forge and shape in

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224. CLARK, *supra* note 23, at 44.

225. *Id.* at 49–50 (arguing that language expands human cognitive capacities by "enabl[ing] new forms of selective attention").

226. *Id.* at 45.

227. *Id.*

228. *Id.* at 58.

229. *Id.*

230. MACKLEM, *supra* note 212, at ix.

231. The view that language can become a part of thought is not without critics. Robert D. Rupert argues that while "[l]anguage profoundly influences our thoughts and greatly affects the development of the human cognitive system" it is "not . . . [a] part of that system." Robert D. Rupert, *Representations in Extended Cognitive Systems: Does the Scaffolding of Language Extend the Mind, in* THE EXTENDED MIND, *supra* note 125, at 325.

our religious activity, communication, and cultural activity. Yet such an understanding seems, at best, incomplete. It protects from state manipulation the expression of thought but not the underlying biological activity that generates that thought in the first place. This seems deeply counterintuitive. If the state may not, as the Court insisted in *Stanley v. Georgia*,[232] banish pornographic fantasies from a person's head by confiscating films or books,[233] it would be odd to hold that it may constitutionally do so by forcibly administering drugs that suppress such fantasies. Indeed, such coerced psychiatric treatment seems like the most direct form of the mind control that the Court claimed is at odds with "[o]ur whole constitutional heritage."[234] It is often this form of mental manipulation that fiction writers envision when they imagine mind control.[235] And dissidents in authoritarian regimes have described being subjected to forcible psychiatric treatment and drugging to make them more amenable to government demands.[236] Yet the Supreme Court, when faced with cases in which state officials order prisoners or institutionalized defendants to take antipsychotic drugs, makes no mention of freedom of thought.[237]

Based on these cases, one might argue, all the protection that some might seek for freedom of thought can be performed through due process protection. When the state is not restricting ideas, but rather

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232. *Stanley v. Georgia*, 394 U.S. 557 (1969).

233. *Id.* at 564–65.

234. *Id.* at 565; *see also* LEVY, *supra* note 20, at 113 ("It is surely . . . wrong to manipulate the minds of other people without their knowledge. Putting antidepressants in someone's coffee is disrespectful of their autonomy, even in many cases in which they would clearly benefit from the antidepressants.").

235. *See, e.g.*, STAINSLAW LEM, THE FUTUROLOGICAL CONGRESS: FROM THE MEMOIRS OF LJON TICHY (Michael Kandel trans., 1974) (1971) (describing a society where the government laces tap water with hallucinogenic drugs to produce socially-positive dispositions); *see also* ALAIN CARRAZÉ & HÉLÈNE OSWALD, THE PRISONER: A TELEVISIONARY MASTERPIECE 52–60 (1989) (describing episodes where the protagonist is drugged in order to make him divulge information he wishes to keep secret).

236. *See, e.g.*, Robert van Voren, *Political Abuse of Psychiatry—An Historical Overview*, 36 SCHIZOPHRENIA BULL. 33, 33 (2009) ("Historically seen, using psychiatry as a means of repression has been a particular favorite of Socialist-oriented regimes."); Nazila Fathey & Robert Mackey, *Iranian Diaspora Heads for New York to Confront Ahmadinejad,* N.Y. TIMES LEDE BLOG (Sept. 22, 2009, 1:01 PM), http://thelede.blogs.nytimes.com/2009/09/22/Iranian-diaspora-heads-for-new-york-to-confront-ahmadinejad/ ("At least one political prisoner and the daughter of another high-profile prisoner, Mohammad Ali Abtahi, a former vice president, have confirmed that the political prisoners have been forced to take drugs—blue pills, they reported, that are said to make them less resistant and more cooperative with their interrogators.").

237. *See Washington v. Harper*, 494 U.S. 210 (1990); *Riggins v. Nevada*, 504 U.S. 127 (1992); *Sell v. United States*, 539 U.S. 166 (2003). *See also* Rodney J.S. Deaton, *Neuroscience and the* In Corpore*-ted First Amendment*, 4 FIRST AMENDMENT L. REV. 181, 183 (2006).

altering physiology, it is not First Amendment protections for thought that apply, but rather due process protections for our bodies.

In fact, it was precisely this form of substantive due process protection that the Court relied upon in three coerced-drug-use cases it has decided. The Supreme Court first squarely addressed this issue in *Washington v. Harper*,[238] when it had to determine whether a robbery convict—who had previously consented to the administration of antipsychotic drugs—could be forced by the state to continue taking these drugs without a judicial hearing.[239] The Court did not doubt that individuals (including prisoners) "possess[] a significant liberty interest in avoiding the unwanted administration of antipsychotic drugs under the Due Process Clause of the Fourteenth Amendment."[240] Nevertheless, it found that the state's administration of antipsychotic drugs served a legitimate interest—namely, protecting others in the prison against "mentally ill" inmates "who, as a result of their illness . . . represent a significant danger to themselves or others."[241] The prisoner's interests in avoiding unjustified or dangerous use of such drugs, the Court held, "are adequately protected, and perhaps better served, by allowing the decision to medicate to be made by medical professionals rather than a judge."[242]

Since *Harper*, however, the Court has been less tolerant of government attempts to compel use of antipsychotic drugs in other circumstances. Two years after *Harper*, the Court in *Riggins v. Nevada*[243] addressed whether the state could require a prisoner awaiting trial to continue taking antipsychotic drugs during the trial.[244] Citing *Harper*, the Court reemphasized that forced administration of antipsychotic drugs was restricted by the Due Process Clause of the Fourteenth Amendment.[245] More specifically, it stated that "forcing antipsychotic drugs on a convicted prisoner is impermissible absent a finding of overriding justification and a determination of medical appropriateness."[246] This standard was also extended to prisoners forced to take drugs during a trial.[247] The Court reversed the lower court's ruling that government had met this high burden.[248]

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238. 494 U.S. 210 (1990).
239. *Id.* at 213–14, 220.
240. *Id.* at 221–22.
241. *Id.* at 226.
242. *Id.* at 231.
243. 504 U.S. 127 (1992).
244. *Id.* at 129–30.
245. *Id.* at 133–34.
246. *Id.* at 135.
247. *Id.* at 137–38.
248. *Id.* at 129.

In 2003, the Court decided its most recent case on involuntary antipsychotic medication, *Sell v. United States*.[249] In this case, a magistrate had ordered forcible administration of drugs to make the defendant competent to stand trial.[250] The Supreme Court, however, struck down the order.[251] It held that the Constitution "permits the Government involuntarily to administer antipsychotic drugs to a mentally ill defendant facing serious criminal charges in order to render that defendant competent to stand trial," but only when the government can show that "the treatment is medically appropriate, is substantially unlikely to have side effects that may undermine the fairness of the trial, and, taking account of less intrusive alternatives, is necessary significantly to further important governmental trial-related interests."[252]

In short, the Supreme Court has so far declined to invoke freedom of thought in such cases, relying instead on that branch of substantive due process (under the Fifth and Fourteenth Amendments) that deals with an individual's refusal to accept medical treatment, whether it is aimed at their psyche or other aspects of their physical functioning.[253] Some lower courts, however, have concluded that forced medication decisions clearly implicate freedom of thought.[254] So too have scholars.[255] The Center for Cognitive Liberty and Ethics (CCLE) has also vigorously argues that such forced medication should be recognized as an infringement of our freedom of mind.[256] The Supreme Court, however, has yet to address such arguments. Does it make sense

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249. 539 U.S. 166, 169 (2003).

250. *Id.* at 171–72.

251. *Id.* at 186.

252. *Id.* at 179.

253. *See infra* text accompanying notes 268–71.

254. *See, e.g.*, *Bee v. Greaves*, 744 F.2d 1387, 1393–94 (10th Cir. 1984) ("The First Amendment protects the communication of ideas, which itself implies protection of the capacity to produce ideas. . . . Antipsychotic drugs have the capacity to severely and even permanently affect an individual's ability to think and communicate."); *Scott v. Plante*, 532 F.2d 939, 946 (3d Cir. 1976) ("[I]nvoluntary administration of drugs which affect mental processes, if it occurred, could amount, under an appropriate set of facts, to an interference with Scott's rights under the first amendment.").

255. *See* Richard Glen Boire, *Neurocops: The Politics of Prohibition and the Future of Enforcing Social Policy from* Inside *the Body*, 19 J.L. & HEALTH 215, 236 (2004–05).

256. *See* CTR. FOR COGNITIVE LIBERTY & ETHICS, THREATS TO COGNITIVE LIBERTY: PHARMACOTHERAPY AND THE FUTURE OF THE DRUG WAR 15 (2004), http://www.cognitiveliberty.org/issues/pharmacotherapy.html (arguing that forcible administration of psychoactive drugs "present[s] an emerging threat to freedom of thought and to cognitive liberty"); *see also* Brief for the Center for Cognitive Liberty, *supra* note 180, at 1 (arguing that forcible administration of psychotropic drugs violated freedom of thought).

for the courts reviewing coerced-drug-use cases to consider them only in light of substantive due process protections for bodily autonomy (and not First Amendment freedom of thought)?

Consider three arguments that might be offered in favor of such a narrow approach, as well as my counterarguments. First, coerced-drug-use cases do not implicate freedom of thought, because such freedom deals solely with mental life itself and not with the biology that makes it possible. A second argument makes more room in the jurisprudence of free thought for protecting against intervention into neurochemistry and brain activity, but does so only when such intervention can be linked to changes in our ideas or thought contents, rather than our thought processes more generally. Finally, a third argument holds that courts should resist expanding freedom of thought to cover the novel territory of coercive changes to our neurochemistry simply because there is no need for such a constitutional innovation. The integrity of our neurochemistry, it holds, is *already* shielded by our Fourteenth Amendment due process rights to refuse medical treatment. Below I examine each of these arguments more closely.

1. THE ARGUMENT THAT FREEDOM OF THOUGHT PROTECTS MIND, NOT BODY

First, one could argue that freedom of thought protects the activity of the mind, not the physiology of the brain. Government measures which target the latter might thus be constitutionally problematic under Due Process Clause protection of our bodies, but not First Amendment protection of our minds. Such a distinction between the mind and the brain might seem, at first glance, to revive and rely upon the now discredited assumption of "Cartesian" or "substance" dualism—the view that the inner reflection which occurs when we think, dream or daydream is not a biological process that occurs in the brain, but a ghostly, substanceless process that occurs in an immaterial soul.[257] Such dualistic views, however, are not necessarily at the root of legal decisions or arguments that distinguish between mind and brain. On the contrary, a judge or scholar can be a thoroughgoing materialist—that is, she can believe that the mind arises solely from the physical properties of chemical and electrical brain activity—but still believe that the law should have one set of rules for government measures aimed at minds and another for government measures aimed at brain processes.

257. *See* RENÉ DESCARTES, MEDITATIONS ON FIRST PHILOSOPHY: WITH SELECTIONS FROM THE OBJECTIONS AND REPLIES 54 (John Cottingham trans., Cambridge Univ. Press 1986) (1641) ("[I]t is certain that I am really distinct from my body, and can exist without it.").

Take, for example, the idea that a war is unjustifiable. We can only generate and give voice to such a thought if certain events happen in and among our neurons. Certain groupings of neurons have to "fire" an electrical potential and trigger other neurons to fire in order for us to remember and understand what war is, what is happening in this particular war, what injustice is, and to formulate the reasons that we regard this war as unjust.[258] The act of remembering an event or a concept's meaning can only happen when the brain retrieves information previously encoded in patterns of neurons.[259] Still, this does not necessarily mean that laws that censor or punish those who oppose a war should be seen as equivalent for constitutional purposes to government-imposed psychiatric treatments affecting the brain's memory-encoding and retrieval process. One law targets the ideas themselves, the other targets only the cellular and physiological processes that create the ideas. In short, even if the distinction between "mind" and "brain" does not describe two different substances or types of existence in the world, as Cartesian dualism holds, it can plausibly be used to distinguish two different types of government measures and to prescribe a different constitutional regime for each.

Indeed, some legal scholars have suggested that precisely such a distinction underlies (and limits) existing jurisprudence on free thought. Rodney J.S. Deaton, for example, uses it to describe what is perhaps the Supreme Court's most forceful and extended defense of freedom of thought, its 1969 decision in *Stanley v. Georgia*.[260] As Deaton writes, this decision's conception of free thought was "pre-brain."[261] "What happens after the content of a book or film enters one's brain," he explains, "and what the state can or cannot do once that happens, is not addressed by the case."[262] *Stanley* deals with government control over what we see and hear, not how our mind processes such visual and

258. *See* RITA CARTER ET AL., THE HUMAN BRAIN BOOK 154 (2009) ("Learning is a process in which neurons that fire together to produce a particular experience are altered so that they have a tendency to fire together again. The subsequent combined firing of the neurons reconstructs the original experience, producing a 'recollection' of it.").

259. *See id.* at 154, 160-62; *see also* Morris Moscovitch et al., *Learning and Memory*, *in* COGNITION, BRAIN, AND CONSCIOUSNESS: INTRODUCTION TO COGNITIVE NEUROSCIENCE 255, 270 (Bernard J. Baars & Nicole M. Gage eds., 2007) (describing how existing evidence indicates that input becomes memory by being "represented via [the] neocortex" and "integrated for memory purposes in the MTL (medial temporal lobes)" and later consolidated into "longer-lasting memory").

260. *Stanley v. Georgia*, 394 U.S. 557 (1969).

261. Deaton, *supra* note 237, at 190.

262. *Id.* at 191.

auditory stimuli.[263] The information we learn is one thing, the brain's processing of that information is another.

This legal and pragmatic boundary between "mental" and "physical," however, is a porous one at best. Government measures are of course aimed at a person's ideas when the government censors or arrests war protesters to punish people for having such thoughts, and to discourage others from doing so. But the government may also aim at ideas where it forcibly drugs them to weaken their resolve to resist or dampen memories of a brutal interrogation. Measures aimed at brain chemistry may be the state's weapon of choice in some attacks on mental freedom.[264] As Dov Fox argues in discussing the Fifth Amendment right to silence, trying to resurrect mind-body dualism in law, even for pragmatic reasons, is problematic because "even the most sophisticated operations of mind are deeply integrated with the mechanical operations of biological organisms."[265] For this reason, it is untenable to treat coerced drug use or other intrusions into brain activity as without any consequence for our freedom of thought. As Richard Glen Boire writes, "For the right to freedom of thought to mean anything, it can no longer exist in a Cartesian quarantine, blind to the connection between our thoughts and our brains. . . .[I]t must be found to inherently protect the integrity of a person's underlying functional neurochemistry."[266]

2. THE ARGUMENT THAT FREEDOM OF THOUGHT PROTECTS THOUGHT CONTENT, NOT THOUGHT INTENSITY OR EMOTION

The second argument in favor of the more general point I am considering here—that due process protection may be all that is needed to protect our mental freedom in cases of coerced drug use—is that even if antipsychotic drugs powerfully affect thought, they might not necessarily implicate First Amendment freedom of thought protections.[267] Deaton argues that in *Stanley* the Supreme Court presented freedom of thought as freedom from control of thought contents.[268] The Court was worried that by placing restrictions on

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263. Deaton, *supra* note 237, at 191.

264. *See Washington v. Harper*, 494 U.S. 210, 221-22 (1990).

265. Dov Fox, *The Right to Silence as Protecting Mental Control,* 42 AKRON L. REV. 763, 793-95 (2009).

266. Boire, *supra* note 255, at 236.

267. *See generally* Deaton, *supra* note 237. The Supreme Court in *Sell v. United States* held that one's right to refuse antipsychotic drug treatment was protected by the Fifth Amendment's Due Process Clause without mentioning the First Amendment's Free Speech Clause as another constitutional basis. *Id.* at 184.

268. Deaton, *supra* note 237, at 190.

"what books [a person] may read or what films he may watch" in his own home, the State was acting "to control the moral content of a person's thoughts."[269] But as Deaton observes—drawing on empirical studies—antipsychotic medications "do not *control* the specific content of defendants' mental processes; they only *alter* the intensity with which defendants experience those mental processes."[270] So unless "freedom of thought" entails a "freedom of intense thought," he says, there may not be a First Amendment claim here at all.[271]

Deaton's proposal has the virtue of placing a limit on the type of mental activity shielded by the First Amendment. As noted earlier, every state regulation of which we feel or of which we are aware triggers some activity in our brains (e.g., the activity necessary for us to become aware of the regulation or feel its impact).[272] While forcing drugs into the body changes a person's neurochemistry, so too, as Deaton points out, does the less invasive alteration of our thoughts that occurs when the government uses mandatory education programs or therapy sessions.[273] But it is absurd to think that freedom of thought is essentially freedom from all government authority. Rather, it can plausibly include only freedom from certain kinds of interference with our thought processes. Deaton's proposal gives us one means to identify this limited set of intrusions into our thinking. Instead of providing such a limit by trying, implausibly, to limit freedom of thought to a realm of immaterial and disembodied ideas, we might extend that freedom to include human biology—with an important caveat. It is only when such government intrusion into our biology causes us to hold or abandon certain beliefs or ideas that it violates our freedom of thought. Where a forced drug treatment or medical procedure falls short of that result, it may still run afoul of other constitutional provisions, such as the Due Process Clause's protection of liberty interest or the Fourth Amendment's protection against unreasonable search and seizure. But a government act would not, merely by virtue of affecting or altering our brain function, become a First Amendment freedom of thought concern.

Yet while Deaton helpfully clears room for neuroscience and neuroscience-technology in the First Amendment landscape, even the room he creates seems too limited. More specifically, there is something suspicious about the proposal that Harper, Riggins, and Sell (unlike the hypothetical victim of a maliciously generated reality or

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269. *Stanley v. Georgia*, 394 U.S. 557, 565 (1969).

270. Deaton, *supra* note 237, at 201.

271. *Id.* at 203; *see, e.g.*, Adam J. Kolber, *Therapeutic Forgetting: The Legal and Ethical Implications of Memory Dampening*, 59 VAND. L. REV. 1561 (2006).

272. *See supra* note 110 and accompanying text.

273. Deaton, *supra* note 237, at 207–08.

memory erasure) faced forced drug use with their freedom of thought entirely intact and unthreatened. The problem with this proposal is that it is quite hard, upon close analysis, to differentiate brain alterations that change thought contents from those that allegedly affect only thought "intensity."[274] The "intensity" of a thought could refer to a number of different characteristics, but all of them are difficult to separate from thought content or the thinking process. "Intensity" might refer, for example, to what the philosopher David Hume describes as a "vividness" of an idea representing a particular past perception—that is, the strength of a remembered perception.[275] But a more vivid memory may well be different in important ways from a faded equivalent.

Nor can we treat the emotional intensity of an experience as something separate from the contents of thought. Emotions are a key part of our thought contents. The sadness, joy or despair we feel are not minor characters in our mental life; they are central components of our memories and mental experiences. They play a leading role in how we remember facts about our experience. As Steven Johnson writes: "Emotions do not merely mark certain memories as being more important than others. They also affect which details get recorded."[276] Indeed, it is precisely by changing the "emotional intensity" of a stressful memory that the drug proplanalol treats post-traumatic stress syndrome, making a remembered experience less salient for a patient.[277] A drug like this certainly seems to alter the contents of our thoughts, and it does so not by implanting or erasing a particular idea, but by altering the intensity of our thoughts at a particular time and circumstance.[278]

Emotional content is not only an inseparable part of our mental life, it is also part and parcel of the terrain that the Supreme Court meant to protect in *Stanley*.[279] The Court did not focus single-mindedly on content of thought, understood merely as a specific belief or idea. Its conception was broader than that: it recognized that First Amendment principles are offended not only by manipulation of individuals' beliefs, but also by manipulation of "their thoughts, their emotions and their

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274. *Id.* at 203.

275. *See* DAVID HUME, A TREATISE OF HUMAN NATURE 122 (L.A. Selby-Bigge ed., 2d ed. 1978).

276. JOHNSON, *supra* note 136, at 148.

277. *See* Kolber, *supra* note 271, at 1562 ("[B]y reducing the emotional intensity of a memory, propranolol may be capable of dampening its factual richness as well.").

278. *Id.*

279. 394 U.S. 557, 564 (1969).

sensations."[280] This reference to emotions and sensations appears to embrace not simply the possession in the mind of a particular belief, but the vividness or feelings that characterize it.

3. THE ARGUMENT THAT FREEDOM OF THOUGHT IS REDUNDANT GIVEN DUE PROCESS PROTECTIONS FOR BODILY AUTONOMY

Finally, the third and most plausible argument that could be posited in favor of the Court's preference for due process protections over freedom of thought in the coerced-drug-use cases is not that this freedom is left unscathed in such cases, but that it would be redundant. The harm that is done to mental autonomy in those cases, one might argue, is the same as the harm done to bodily autonomy. There is thus no need to discuss the two separately. Rather than puzzle over how to adapt First Amendment freedom of thought language to a realm largely unfamiliar to First Amendment jurisprudence—that of medical treatment—the Court can instead apply the body of due process jurisprudence developed by courts with precisely such medical issues in mind. Faced with patients' complaints that they are being subjected against their will to unwanted medical intervention, the Court could more easily draw upon case law regarding the constitutional right to refuse treatment than to protect freedom of thought.

The constitutional protection offered by the Due Process Clause against unwanted psychiatric treatment, one might further argue, is just as powerful as that which would be offered by the First Amendment. The government, after all, must generally satisfy strict or other heightened scrutiny to satisfy substantive due process and exercise control over a person's body or medical health.[281] To be sure, the protection that the Court has offered for refusing medical treatment has not been as absolute as the staunch protection that some scholars believe exists for pure thought.[282] In *Cruzan v. Director of Missouri Department of Health*,[283] for example, the Court acknowledged that individuals have a Fourteenth Amendment liberty interest in refusing

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280. *Id.* (quoting *Olmstead v. United States*, 277 U.S. 438, 478 (1928) (Brandeis, J., dissenting)).

281. *See Cruzan v. Dir. Mo. Dep't of Health*, 497 U.S. 261, 278 (1990) ("[A] competent person has a constitutionally protected liberty interest [under the Due Process Clause] in refusing unwanted medical treatment. . . ."). The Court also noted in *Washington v. Harper* that a person has "a significant liberty interest in avoiding the unwanted administration of antipsychotic drugs." 494 U.S. 210, 221 (1990).

282. *See* Irwin, *supra* note 7, at 1519 (arguing that where the government restriction on thought is direct, it presents a compelling case for strict scrutiny); Richards, *supra* note 4, at 408 ("[I]f there is any constitutional right that is absolute, it is [freedom of thought and belief].")

283. 497 U.S. 261 (1990).

unwanted medical treatment, but still allowed the state to balance this interest against its own interest in preserving human life and in assuring family members are acting in the best interests of a patient unable to decide for herself.[284] Similarly, in *Harper*, the Court recognized that the liberty interests threatened by coerced drug use were not "insubstantial," but still balanced them against the state's interest in—and obligation to—provide protection to others in the prison system.[285]

As I explore in more depth below, it is quite possible that where freedom of thought comes with risks to physical safety, courts would have to strike a similar balance in protecting it—as they already do in certain First Amendment cases, such as those dealing with symbolic speech.[286] Thus, one might think that whether the hurdle the Court places before forcible medication is framed as a freedom-of-thought hurdle or a due-process hurdle makes little difference: each hurdle would present a similar obstacle to government interference with autonomy, and thus ensure the same protection for threatened individuals.

This argument is problematic. Upon closer examination, the Court's refusal to acknowledge freedom-of-thought concerns is not without significance. The cases demonstrate this when they describe the threats to individual interests primarily in terms of side effects on physical health and not as threats to autonomy over one's psyche.[287] Consider, for example, the way that the Court defined the threat to the individual in *Harper*: the antipsychotic drugs used, it says, can cause effects such as acute dystonia, "a severe involuntary spasm of the upper body, tongue, throat, or eyes" and tardive dyskinesia, "a neurological disorder, irreversible in some cases, that is characterized by involuntary, uncontrollable movements of various muscles, especially around the face."[288]

Even if the Court exercises heightened scrutiny here, the hurdle it would force the government to overcome may be a different—and perhaps lower—hurdle than that which would be used in a freedom of thought case. It is quite possible, for example, that judges and policy-makers will be more accepting of a physical intrusion that temporarily pains an individual[289] than a mental intrusion that leaves him a different

284. *Id.* at 280–82.

285. 494 U.S. 210, 222–23 ("[T]he State's interests in prison safety and security.").

286. *See infra* Part IV.C.

287. *See supra* notes 232–42 and accompanying text.

288. 494 U.S. at 229–30.

289. The Court in *Harper*, for example, stressed that the trial court found that acute dystonia "may be treated and reversed within a few minutes" and "that the portion of patients treated with antipsychotic drugs who exhibit the symptoms of tardive

person.[290] As Justice John Paul Stevens pointed out in his dissent in *Harper*, such an analysis, while acknowledging the inmate's liberty interest, failed to recognize that it was "both physical and intellectual" and that the threat posed by coerced drug use was not only to the body, but also to "the will and the mind of the subject."[291]

To meet such attacks, the Constitution must sometimes protect thought itself, and not just thought bound up with words or acts of worship. This is not to say that courts or others must locate such liberty solely, or even primarily, in the First Amendment. While they could, as the Supreme Court has done,[292] define "freedom of mind" as a freedom implicit in the First Amendment, they could also plausibly reserve First Amendment protection for activity that is in some way connected to speech or religion and locate freedom for unexpressed thought in the Due Process Clause of the Fifth and Fourteenth Amendments. Wherever it is located, however, it will have to have independent force.

4. THE POSSIBLE SYMMETRY BETWEEN GOVERNMENT COMPULSION AND GOVERNMENT RESTRICTION OF COGNITIVE-ENHANCEMENT DRUG USE

If government may not, without good reason, impose neurochemical changes on us against our will, then government should also not be able to lock us into an existing identity by forbidding neurochemical changes that would otherwise be an option. That government is constitutionally barred from subjecting an activity to coercion, does *not* mean that officials are wholly barred from regulating that activity. The fact that officials cannot order us to get in a car and drive twenty miles over the speed limit, for example, does not mean they must allow us to drive at any speed we like. One can similarly argue that government may forbid us from voluntarily possessing or

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dyskinesia ranges from 10% to 25%," and the effect is mild or minimal in 60% of those cases. *Id.*

290. To be sure, one of the reasons the Court in *Harper* and similar cases might not have worried as much about this issue is that to the extent the antipsychotic medications left someone a different person, the Court was convinced the medications left him a more free and autonomous person. *Id.* at 229 ("[T]he therapeutic benefits of antipsychotic drugs are well documented . . . ."). Even so, this does not make freedom of thought irrelevant.

291. 494 U.S. at 237–38 (Stevens, J., concurring in part and dissenting in part).

292. *See Wooley v. Maynard*, 430 U.S. 705, 714 (1977) ("The right to speak and the right to refrain from speaking are complementary components of the broader concept of 'individual freedom of mind.'" (quoting *Bd. of Educ. v. Barnette*, 319 U.S. 624, 637 (1943)).

using the same drugs it is barred from forcing us to take (without a compelling reason).

But there are certain circumstances where there is greater symmetry between activities the government may compel and those it may restrict. First Amendment speech law provides an example, since the government may neither compel us to voice support for a particular policy nor forbid us from doing so. Moral philosophers argue for such symmetry with respect to other rights, such as the right to make decisions about undergoing medical treatment. Joel Feinberg, for example, says that this symmetry should apply to bodily autonomy and medical decision-making.[293] Our sovereignty over our bodies, he says "implies both negative rights (e.g., the right *not* to have surgery imposed on oneself against one's will) and positive rights (e.g., the right to have surgery performed on oneself if one voluntarily chooses—and the surgeon is willing)."[294]

Should such symmetry apply also to any kind of cognitive enhancement? As with other questions I have raised here, there are complexities I do not have the space to consider in this analysis. Yet there are a number of considerations that weigh in favor of finding symmetry. If we agree that certain mental states (depression or significant shyness) would make people worse off when imposed on them, then we should acknowledge that people have a good claim that they make themselves better off by banishing such states. Adam Kolber offers a helpful illustration of this point in his discussion of memory-dampening drugs.[295] He asks us to imagine a person whose biology makes him less likely than a normal person to develop traumatic memories in response to a traumatic event.[296] We would likely agree that a person should not be forced to become more like the rest of the world, and "should take a drug that will create a significant risk that he will develop upsetting memories from a recent traumatic experience."[297] But if he has good grounds for avoiding a state where he has such traumatic experiences, he may, for the same reasons, have good grounds "to use memory-dampening drugs to prevent those memories from forming."[298] As Kolber writes, if such a hypothetical person "is permitted to avoid a bad state of affairs by not taking a pill, [a normal

293. 3 JOEL FEINBERG, THE MORAL LIMITS OF THE CRIMINAL LAW: HARM TO SELF 53 (1986).

294. *Id.*

295. *See* Kolber, *supra* note 271, at 1610–11.

296. *Id.* at 1610.

297. *Id.* at 1610–11.

298. *Id.* at 1611.

person] should be able to avoid that same bad state of affairs by taking one"[299]

Still, even if a prohibition on cognitive enhancement locks us into the same negative state (for example, anxiety or inability to concentrate) that it would be unconstitutional for the government to forcibly impose upon us, that does not by itself mean that the two should have the same constitutional status. After all, what is objectionable about coerced drug use is not simply what the drugs do to us, but that it is coercive. We thus need to consider whether any of the unacceptable government coercion present in the compelled ingestion of drugs is also present in a government ban or limit on voluntary use of such drugs. One might argue that the latter measure is not really coercion. There is a great deal of difference between being ordered to walk or drive down a particular route (when one wants to go somewhere else or nowhere at all) and being told one remains free to use (or not use, according to one's desires) any of one hundred routes except one that the government has blocked. As Joel Feinberg says, using the metaphor of a railway network, our liberty is not entirely eliminated if "[w]e are not at liberty to go to one precise destination, but the whole network of tracks with all its diverse possibilities, may yet be open before us."[300] Of course, if the government blocks a larger percentage of the total routes one may take, perhaps including all of the routes to a particular destination, then it begins to have effects that are more like coercion. One might conclude, then, that a government restriction that prevents us only from generating one particular mental state, or enhancing one particular mental capacity, should not count as coercive, since it leaves us with numerous other opportunities for psychological change.

Yet there are two flaws in such reasoning, each of which helps explain why the government may well act impermissibly when it thwarts voluntary cognitive enhancement, whether it is undermining the autonomy-promoting function of such enhancement or that which is functionally equivalent to thought. Consider a person's voluntary use of cognitive enhancement to promote autonomy—and where it fits into Feinberg's railway metaphor. Cognitive enhancement—like a major religious or cultural shift in one's views—does more than just move a person to one more "precise destination" among a network of connected destinations. It is not simply akin to a move that changes the location of the traveler, but rather something that changes his nature, and possibly the way he experiences every subsequent destination. Thus, a state restriction that bars one from adopting a certain religious

299. *Id.*

300. FEINBERG, *supra* note 293, at 208.

belief or other vision of the good life is more than just a bar on moving to one particular place in the network. It is a restriction on the way one navigates and experiences the entire "network" of experiences from that point forward. The same is true of a state restriction that prevents one from using technologies to transform one's personality, for example, from escaping extraordinary shyness or the inability to concentrate, or a personality that reacts fearfully or pessimistically to events and challenges.

Even when the benefit of cognitive enhancement is not such a significant self-transformation but something more temporary and limited—like a temporary increase in alertness or concentration or a boost to memory—there is still something deeply concerning about government restriction of such technology. The following analogy makes this clearer. Imagine that the government forces us to take a certain psychoactive drug, or undergo a form of psychosurgery, not in order to place us in a particular state of mind, but rather to prevent the possibility that a particular mental state will arise. The government may intervene to assure that a mentally healthy person would be less likely to experience antisocial feelings. On the one hand, such an intrusion arguably infringes on freedom less than one that imposes a particular mental state on a person. It merely removes one possible mental state as an option, but otherwise leaves the individual free to think and feel as she pleases. To return again to Joel Feinberg's railway metaphor, one option is eliminated but "the whole network of tracks with all its diverse possibilities may yet be open before us."[301] Still, such a pharmacological or surgical destruction of a particular mental route seems intuitively like a blatant freedom of thought infringement. Why then is it not also offensive when a mental route is blocked from the outside? If, for example, we would object to a state-mandated drug treatment that suppressed the production of norepinephrine or serotonin in the neurons that create these chemicals, why should we not also object to a measure that condemns us to a state of suppressed neurotransmitter production, by preventing us from using SSRIs?

The reason that such a focused state intrusion into our mental freedom seems impermissibly coercive is that the coerciveness of a restriction depends not only on how many or what percentage of other options it blocks, but also the nature of the activity or condition it puts out of reach.[302] Consider, for example, a government measure that forbade us from playing a particular board game or eating a certain (non-harmful) meal in the privacy of our own home. One might argue

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301. *Id.*

302. *See id.* ("[S]ome closed options can be more restrictive of liberty than others."); *see also* DWORKIN, *supra* note 152 at 62–81 (arguing against the idea that "more choices are [always] preferable to fewer").

that this government bar on a single activity should be just as inoffensive as a law that prevented us from driving a certain kind of car on the road or denied us entrance to a particular government building. It hardly condemns us to a life of suffering if we are left with plenty of other games we might play or meals we might enjoy. But there is nonetheless something offensive about the government removing an option to act a certain way in a realm of life—namely, the private life of the home—where it should not be ruling out *any* options without very good reasons. An individual's own thinking, and the transformation he undertakes in it, whether through self-reflection and will-power, counseling, or cognitive-enhancement technology, is a realm where the government should generally not wield its power to coerce or restrict our activities.

It may seem to some that the Court's ruling in *Employment Division v. Smith*[303] rules out such a result. In that case, the use of peyote by Klamath Indians in religious ceremonies was, for many who used it, a transformational experience and an invaluable support to personal change.[304] The experience, as Garrett Epps describes it, focused the participants "inward, on their own weaknesses and flaws and on spiritual tasks they need[ed] to perform."[305] Indeed, Epps quotes another writer as saying that the use of it was is in some respects "similar to the patient's reliance on the analyst."[306] None of this saved the activity from criminalization or convinced the Supreme Court to give it First Amendment protection.[307] If the use of a chemical in self-transformation does not have First Amendment protection as part of a religious ceremony, why would it have it outside that context?

There are two reasons to doubt that *Smith* places a decisive limit on the scope of freedom of mind. First, perhaps the holding of *Employment Division v. Smith* itself requires rethinking if there is merit to the proposal I have defended here: that there are certain realms of life that are of such importance in providing a stage for the development and exercise of mental autonomy that they should be constitutionally insulated against state intrusion. The Court in *Smith* held that the restrictions at issue in the case—barring the ritual use of peyote—did not implicate any First Amendment right other than the

303. 494 U.S. 872 (1990).

304. *See* GARRETT EPPS, PEYOTE VS. THE STATE: RELIGIOUS FREEDOM ON TRIAL 55-56 (2009).

305. *Id.* at 56.

306. *Id.* at 58 (quoting Paul Pascarosa et al., *Observations of Alcoholics in the Peyote Ritual: A Pilot Study*, 273 ANNALS N.Y. ACAD. SCI. 518, 523 (1976)).

307. 494 U.S. at 890 ("Because respondents' ingestion of peyote was prohibited under Oregon law, and because that prohibition is constitutional, Oregon may, consistent with the Free Exercise Clause, deny respondents unemployment compensation when their dismissal results from use of the drug.").

right of free exercise: the free speech clause, it observed, offered no protection to the petitioner's peyote use because such drug use was "unconnected with any communicative activity."[308] It did not, however, consider the possibility that while not covered by freedom of speech, this activity might be covered by freedom of thought. It did not consider whether a mental chemically induced transformation might be enough like the transformation created by meditation, or some other means of generating a transcendent state of mind, to merit protection under the First Amendment's distinctive protection for freedom of thought.[309] If, as observed in Epps account, the use of peyote was the analogue of a "patient's reliance on [an] analyst,"[310] then perhaps it merits freedom of thought protection for the same reason that such protection should apply to neurofeedback and other technology that acts as a tool in, or substitute for, psychotherapy. In short, then, a government intrusion into religious activity should be met with strong judicial skepticism not only when the it is the target of an intentional government attack on religion, but also when such an intrusion interferes with freedom of mind as well as freedom of worship.[311]

Second, even if one rejects the possibility that freedom of thought should ever shield use of a hallucinogen like peyote, that does not automatically justify taking the same position with respect to SSRI or other cognitive enhancement drugs. Perhaps the Court refused to interfere with government drug control measures of the sort at issue in *Smith* because, given the hallucination possible with use of peyote,[312] it would have been difficult to claim that restriction of the drug was just about restriction of thought (and not behavioral consequences). But cognitive-enhancement drugs might merit a different answer: while not entirely free of side effects or safety risks, the use of drugs such as Prozac and Ritalin is not only compatible with the conduct of ordinary

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308. *Id.* at 878, 882.

309. *Id.* (noting that the only part of the First Amendment at issue was the Free Exercise Clause, not any aspects of freedom of expression or any other First Amendment right).

310. EPPS, *supra* note 304, at 58. (quoting Pascarosa et al., *supra* note 306, at 523).

311. *See* Brian Galle, Note, *Free Exercise Rights of Capital Jurors*, 101 COLUM. L. REV. 569, 603 (2001) ("[I]n accordance with longstanding legal respect for freedom of thought, *Smith* might be interpreted to except from its prohibition on balancing laws that seek to restrict or control mental processes, even where those laws are neutral and of general applicability.").

312. *See* ALDOUS HUXLEY, THE DOORS OF PERCEPTION AND HEAVEN AND HELL 6, 8–13 (1954) (describing hallucinations Huxley experienced while under the influence of mescaline, the psychoactive component of peyote).

life, but, in the view of some of their users, improves their mental capacity to handle ordinary tasks in employment and elsewhere.[313]

C. A Final Hurdle for an Expansive Freedom of Mind: The Risks and Harms of Cognitive Enhancement

Many of the ethical analyses discussed do not linger on the safety concerns that currently characterize use of cognitive-enhancement drugs (or other drugs). Fukuyama writes that, while safety is a concern, "the more difficult political and moral problem will occur if Prozac is found to be completely safe and if it, or similar drugs yet to be discovered, work just as advertised."[314] Restak writes that there is a good chance that the risks of physical side effects will diminish as pharmacology and other science advances.[315] As new technology allows scientists to custom design specific medications to match an individual's distinctive genetic and biological makeup, we may ultimately reach the point where we "won't experience side effects. The drug will have no other actions in [our] bod[ies] than correcting the cellular defect or defects underlying [our] illness," (or in the case of enhancement, the characteristic one wants to modify).[316]

For the present, however, enhancement and other neurofeedback technology do raise safety concerns—and this may have implications for whether they can be protected by freedom of thought. Indeed, given the harms associated with use of medications, and the fact that the First Amendment has never covered medications or barred governments from regulating drugs, it is highly unlikely courts will extend freedom of thought to cover them. Thus, in the 2007 case of *Abigail Alliance for Better Access to Developmental Drugs v. von Eschenbach*,[317] the D.C. Circuit squarely rejected a claim that individuals had a constitutional right (under the Due Process Clause) to use experimental drugs.[318] Drug access and use, it held, cannot be constitutionally

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313. *See* Margaret Talbot, *Brain Gain: The Underground World of "Neuroenhancing" Drugs*, THE NEW YORKER, Apr. 27, 2009, at 32 (reporting interview with college students who took Adderall and found it to increase productivity in some tasks); *see also* Henry Greely et al., *Towards Responsible use of Cognitive-Enhancing Drugs by the Healthy*, NATURE, Dec. 11, 2008, at 702 (describing how ADHD drugs "increase executive functions in patients and most healthy normal people, improving their abilities to focus their attention, manipulate information in working memory and flexibly control their responses").

314. FUKUYAMA, *supra* note 9, at 43–44.

315. RESTAK, *supra* note 11, at 129–30 (explaining how dangerous side effects for drugs might be reduced or eliminated entirely when you prescribe a drug custom-designed for your DNA and other biochemical makeup).

316. *Id.* at 130.

317. 495 F.3d 695 (D.C. Cir. 2007).

318. *Id.* at 697.

insulated from government regulation in a country where the government traditionally regulates drugs to assure their "efficacy and safety."[319]

But it is not only courts that are charged with upholding the Constitution,[320] and the presence of potential harm is not by itself enough to exclude an activity from the realm of constitutional rights.[321] On the contrary, constitutional rights have managed to play a role in protecting speech and privacy rights despite the presence of other powerful public interests[322] and despite the delicacy required to disentangle the state's justifiable pursuit of these interests from unjustifiable infringements upon privacy or expression.[323]

In some cases, for better or worse, human action in which we require individual sovereignty over thought and expression become intermingled with human action over which the government must exercise control to fulfill its duties. In First Amendment freedom of speech law, for example, individuals sometimes find that their most

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319. *Id.* at 703, 709; *see also* Greely, *Social Effects*, *supra* note 21, at 256 (observing that cognitive-enhancement drugs, brain interfaces or other technology "would appear largely, although not entirely, to require advance FDA approval after proof of safety and efficacy").

320. *See* Jack M. Balkin, 79 N.Y.U. L. REV. 1, 6 (2004) (explaining why protecting the technological supports for freedom of speech will be the responsibility not only of courts but also of "legislatures, administrative agencies, and technologists").

321. *See, e.g., City of Indianapolis v. Edmond,* 531 U.S. 32, 42–43 (2000) (noting that "[t]here is no doubt that traffic in illegal narcotics creates social harms of the first magnitude[,]" but refusing to find that the mere existence of such harms justified an exception to the Fourth Amendment-mandated "rule of individualized suspicion where governmental authorities primarily pursue their general crime control ends"); *see also, e.g., Vill. of Skokie v. Nat'l Socialist Party of Am.*, 373 N.E.2d 21, 24, 25 (Ill. 1978) (noting that despite the fact that Holocaust survivors would be "tormented by their recollections" upon being confronted with swastikas, the "shocking quality, . . . obnoxiousness, and even . . . alarming impact" if speech is not sufficient to justify its restriction).

322. The Court has done so, for example, in balancing society's need to assure traffic safety and airline safety while protecting individual rights against unreasonable searches under the Fourth Amendment. *See, e.g., City of Indianapolis v. Edmond,* 531 U.S. 32, 37, 43–44 (2000) (finding that while the Court had allowed suspicionless searches for "special needs, beyond the normal needs for law enforcement[,]" the need to conduct randomized searches at roadblocks for drugs carried by drivers did not constitute such a special need and did not justify an exception to the warrant requirement (quoting *Vernonia Sch. Dist. 47J v. Acton*, 515 U.S. 646, 653 (1995)); *United States v. $124,570 U.S. Currency*, 873 F.2d 1240, 1247–48 (9th Cir. 1989) (rejecting the use of airport security screening procedures to search for all evidence of criminal activity).

323. *See, e.g., N.J. v. T.L.O.*, 469 U.S. 325, 332–33, 341, 346–48 (1985) (finding that a student retains Fourth Amendment privacy interests even in the heavily regulated environment of a school, but that the drug search conducted by the principal was a reasonable search under the circumstances).

effective vehicles for powerfully communicating a set of ideas or feelings consists in expressing themselves not with their voices, or in a painting, but in symbolic conduct—such as burning a flag or other symbol of authority, leading a procession of marchers and vehicles along a protest route, or setting up a tent city in a public park.[324] This may also be true for First Amendment freedom of thought. An electronic device we use to record our thoughts may present dangers to ourselves (or others) that are not presented when we perform the equivalent mental task inside of our heads. Cognitive-enhancement drugs carry short-term risks, or long-term side effects, not raised by alternative treatments—like talk therapy—that have been shown in some studies to increase the serotonin levels in patients. Clark and Chalmers might draw a *conceptual* parity between such an external and internal intervention.[325] They could argue, for example, that use of a journal and use of a memory-enhancing drug are conceptually similar, and functionally identical, extensions of our "thought" or "cognition." But this conceptual parity does not by itself lead to an ethical or legal parity. One way of thinking or enhancing our thought (the use of the journal) will be safe; the other (the use of the memory-enhancing drug) may raise a threat of harm.

This does not, however, mean that our freedom-of-thought interests simply disappear in such circumstances. Rather, they have to share space, and coexist, with the government's duty to preserve and improve citizens' safety and welfare. Striking such a balance while respecting constitutional liberties is sometimes complicated. But it is not beyond the power of courts (and other legal actors). In cases of this sort, courts sometimes adopt a test that allows for state restriction, but limits it to specific purposes and specific criteria.[326] In part, this test borrows from what I previously called the government-purposes approach. For example, in applying the *O'Brien* test to regulate symbolic conduct, the Court asked, among other things, whether the

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324. *See, e.g., Tinker v. Des Moines Indep. Cmty. Sch. Dist.*, 393 U.S. 503, 504 (1969) (students protested the Vietnam War by the symbolic act of wearing black arm bands, an act that allowed a protest that otherwise might have disrupted school activities to take a non-disruptive form). Similarly, picketing a workplace allows workers to convey protest in a way they probably could not with speech alone.

325. *See* Clark & Chalmers, *supra* note 23.

326. For example, the Fourth Amendment special-need cases allow for the government to conduct warrantless searches for a particular purpose, subject to particular restrictions that help secure privacy (such as limits on the discretion of the authority conducting the search). *See supra* notes 322–23 and accompanying text; *see also Vernonia Sch. Dist. 47J*, 515 U.S. at 658 (noting that the chemical tests allowed for little discretion by authorities and that "it is significant that the tests at issue here look only for drugs, and not for whether the student is, for example, epileptic, pregnant, or diabetic").

government's restriction of that conduct had the goal of suppressing speech and whether the restriction was proportionate to that goal.[327] Legal actors might similarly play a role in assuring that government limits on individual use of cognitive-enhancement drugs are (1) focused on the purpose of protecting them from significant dangers to physical safety and (2) designed so that they advance that purpose without sweeping too broadly, for example, by preventing individuals from using cognitive-enhancement drugs (or other methods) that are valuable for their well-being and are largely safe. Such a regime would, for the most part, be consistent with the D.C. Circuit's ruling in *Abigail Alliance*, which recognized a long tradition of government monitoring and restricting drugs, not on the basis of whim or arbitrary legislative preferences, but rather to assure "safety and efficacy."[328]

It is important to point out that while such a regime draws on the government-purposes approach, it cannot rely on it entirely. Rather, it needs some conception of *which sort of activity* merits the *O'Brien*-like protection I have just described. It is in answering that question that judges and legal scholars need the kind of framework I described in Part II of this Article, one which makes the case that freedom of thought extends to certain resources and technologies for exercising mental liberty or assuring mental autonomy.

It is also important to emphasize that even where the risks of harm are real, it is not clear that this would always justify a flat ban on the use of cognitive-enhancement technology. Instead of banning it, courts or others in the legal system might instead question whether the risks attending it (or a particular form of it) are significant enough to justify limiting our freedom of thought. After all, in cases like *Harper*, the Court permitted the state to inflict the risk of harm from compelled medication on certain patients to further its own interests.[329] The Court held that a prisoner judged to be dangerous could be forced to take antipsychotic medication even though the medication had a chance of producing serious physical side effects.[330]

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327. 391 U.S. 367, 376–77 (1968).

328. *Abigail Alliance for Better Access to Developmental Drugs v. von Eschenbach*, 495 F.3d 695, 703, 723–24 (D.C. Cir. 2007) ("[O]ur Nation has long expressed interest in drug regulation, calibrating its response in terms of the capabilities to determine the risks associated with both drug safety and efficacy.")

329. 494 U.S. 210, 236 (recognizing that while an inmate has a "liberty interest in avoiding the forced administration of antipsychotic drugs" this must be balanced against "the State's interests in providing appropriate medical treatment to reduce the danger that an inmate suffering from a serious mental disorder represents to himself or others" and that a decision made by an independent medical expert was constitutionally sufficient).

330. *Id.* at 229–31.

Why then should we not also allow individuals to voluntarily subject themselves to some risk of harm in order to advance their own interest in mental freedom? [331] If people must face the possibility of serious side effects so the state can make them amenable to safe detention or justice, why may people not decide that *their interest in autonomy* is just as good a reason to risk such side effects? This is not to say that the government will never have an answer to such a question. Perhaps certain side effects are more tolerable (and easier to treat) in a controlled environment, like a prison or mental institution, than when they arise in a person's day-to-day life. The government might argue that the risks imposed with the compelled medication are worth getting a person from a state of insanity to one of rationality, but that the same gamble wouldn't be worth taking simply to enhance an already functional mental state. Still, as Greely observes, "outside the world of medicine we allow people to take non-trivial risks without requiring the government to agree with consumers' cost-benefit assessments. In some cases, like the long-term safety of dietary choices, we scarcely regulate at all."[332] It may be that a regime committed to freedom of thought should also allow people to undertake at least some risk in seeking to enhance their emotion or exercise mental autonomy.

CONCLUSION

In the previous century of First Amendment jurisprudence, freedom of thought has had extraordinary importance, but almost no independence. In almost all decisions where it is has played a role, it has been a supporting role—a right that shadows and helps justify some other First Amendment liberty, such as freedom of speech, association, or religion.

For much of the twentieth century, this derivative conception of free thought may have made sense, because the resources for rethinking and revising one's thoughts and feelings about the world were cultural resources. Beliefs, assumptions, and prejudices, for example, could be questioned and challenged by arguments from others or by stories or other expressive works that placed familiar facts in a new light or

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331. Children, of course, represent a special case because the law (understandably) does not trust them with such judgments—and there are reasons not to trust parents as completely in decisions about their children's welfare as the state does (or should) in the decisions they make about their own health. *See* Greely, *Social Effects*, *supra* note 21, at 259–60.

332. Greely, *Social Effects*, *supra* note 21, at 258.

implicated not merely our right to think freely, but also to express ourselves.

In recent decades, however, neuroscience has provided a new set of technologies for transforming our mental processes. These tools are so powerful that they can transform in a period of weeks or months aspects of ourselves that we previously thought to be impervious to modification or changeable only with many years of therapy and psychological work. Because these new technologies of autonomy work by changing our brains, rather than appealing to our conscious understanding, they require a new jurisprudence of freedom of thought—one that can operate independently of freedom of speech.

Some might well question this step. They might argue that the First Amendment was not intended to extend rights into the realm of biology and that when one is dealing not with the mind alone, but with the bodily processes that underlie it, then the appropriate constitutional rules—if any—will be where courts have found them in past cases on government regulation of the body. They will be found, in other words, in the "right of privacy cases" that courts have drawn out of the Fifth and Fourteenth Amendment due process cases. Thus, Greely notes that if judges find limits on government's interference in our uses of cognitive enhancement, they may well find them in *Lawrence v. Texas*,[333] a case not about First Amendment law, but about the limits that the right of privacy places on anti-sodomy law, and perhaps other "moral" legislation aimed at bringing individual behavior into line with communal conceptions of the good.[334] But taking this path misses something important about cognitive-enhancement technology, which is not like a blood sample or a kidney or liver operation. It is a tool that can shape the self in a much more fundamental way, a way that implicates "the freedom of mind" that is at the core of the First Amendment.

This is not to say that government should be deprived of all ability to regulate drugs or other technologies of cognitive enhancement. Rather, I have argued that while freedom of thought may be close to absolute in certain situations (for example, in the use of neurofeedback technology, where its exercise merely entails private sensory experience and raises little or no threat of physical harm) it is more limited where it is bound up with action that can inflict serious physical injury on the individual actor or others. But to say that freedom of thought is more limited in these circumstances doesn't mean it is absent or can be ignored. On the contrary, courts and others responsible for

333. 539 U.S. 558 (2003).

334. Greely, *Social Effects*, *supra* note 21, at 260–61.

interpreting and giving force to constitutional values have to take careful account of it.

Justice Anthony Kennedy observed that the First Amendment has to adapt to new advances in technology, because public forum doctrine, for instance, has failed to develop with the changing social and scientific landscape.[335] "Minds," he declared, "are not changed in streets and parks as they once were. To an increasing degree, the more significant interchanges of ideas and shaping of public consciousness occur in mass and electronic media."[336] What he said then about First Amendment freedom of speech is also true of freedom of thought. Technological shifts have not only transformed where minds are changed, but also how they are changed. It is no longer simply words and associational activities that help us reshape our mental lives, but medications and other instruments of self-modification provided to us by science. Our freedom-of-thought jurisprudence must sooner or later come to terms with this shift, as well as with the revolution that neuroscience has wrought in our understanding of what thought is and how we can reshape it.

335. *Denver Area Educ. Telecomms. Consortium, Inc. v. FCC*, 518 U.S. 727, 802–03 (1996) (Kennedy, J., concurring in part and dissenting in part).

336. *Id.* (Kennedy, J., concurring in part and dissenting in part).

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