

Mental Privacy, Cognitive Liberty, and Hog-tying

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ABSTRACT: As the science and technology of the brain and mind develop, so do the ways in which brains and minds may be surveilled and manipulated. Some cognitive libertarians worry that these developments undermine cognitive liberty, or “freedom of thought.” I argue that protecting an individual’s cognitive liberty undermines others’ ability to use their own cognitive liberty. Given that the threatening devices and processes are not relevantly different from ordinary and frequent intrusions upon one’s brain and mind, strong protections of cognitive liberty may proscribe neurotechnological intrusions, but also ordinary intrusions. Thus, the cognitive libertarian position “hog-ties” others’ use of their own liberties. This problem for the cognitive libertarian is the same problem that ordinary libertarianism faces in protecting individual rights to property and person. But the libertarian strategies for resolving the problem don’t work for the cognitive libertarian. I conclude that the right to mental privacy is weaker than what cognitive libertarians want it to be.

KEYWORDS: Mental privacy; cognitive liberty; libertarianism; surveillance; enhancement

Suppose that while in your home on a nice day you like to leave your windows open. Also suppose that your neighbor does, as well. But your neighbor has a habit of cooking highly fragrant food. Their cooking produces tiny particles, and these tiny particles go from their property and travel through your window and into your nose, and maybe settle elsewhere, such as your clothes or upholstery. Regardless of whether you find the fragrance appealing, these tiny particles intrude upon your body and property. But suppose that you find the fragrance offensive. What, then, should be done about this property intrusion?

For theories that maintain strong protections of individual liberty, such as libertarianism, cases like this present a problem. The tiny particles intrude upon your property. In general, theories such as libertarianism imply that property intrusions are impermissible. But if this intrusion upon your property is impermissible, then your neighbor can't use their property how they want to use it (i.e., by cooking the food they want to cook with their windows open), which restricts their individual liberty, which libertarians purport to protect. This is the "hog-tying" problem (this is the terminology used in the literature—it is not original to me). Overly strong protections of individual liberties imply that others can't *use* those very liberties that are supposed to be morally fundamental.

The libertarian has strategies to deal with the hog-tying problem. But this paper isn't about libertarianism as it is ordinarily understood. This paper is about advocates for the strong protection of mental privacy and an individual's cognitive liberty. I refer to such advocates as "cognitive libertarians." As science and technology develop, especially the science and technology pertaining to the functioning of the brain and mind, some worry that these developments will make intrusions upon our brain and mind more frequent or invasive. Examples of scientific and technological developments that may undermine the right to mental privacy abound. One is the use of fMRI to decode the content of one's thoughts, even when one may not offer consent to do so, such as in psychiatric medicine or criminal court proceedings. Another example is the administration of cognitive or moral enhancements, such as a drugs or devices that distally cause someone to make certain judgments or behave in certain ways. If we have a right to mental privacy, then it is plausible that these and similar developments undermine it. Decoding thoughts with fMRI may undermine the freedom from surveillance, and cognitive or moral enhancements may intrude upon our liberty to think what we want to think, or to use our brains and minds the way we want to use them.

Cognitive libertarians claim strong protections of mental privacy and cognitive liberty. As is conceived here, the right to mental privacy is roughly analogous to the right to privacy one has in one's home. The ordinary right to privacy protects one from people who might want to intrude by surveillance, such as the government or nosy neighbors or voyeurs or the maleficent. But the right to privacy also protects one from others

intruding upon what one wants to do in one's home. Inside one's home, one is generally free to live their home life however they want to live it. Mental privacy, analogously, captures the idea that a person has a right to privacy of their mind, such that they have a right to be free of surveillance and influence and are generally at liberty to use their cognition how they want to use it. Specifically, I adopt Sententia's (Sententia, 2004, p. 223) foundational definition of cognitive liberty:

Cognitive liberty is every person's fundamental right to think independently, to use the full spectrum of his or her mind, and to have autonomy over his or her own brain chemistry. Cognitive liberty concerns the ethics and legality of safeguarding one's own thought processes, and by necessity, one's electrochemical brain states.

This definition is foundational to the subsequent seminal defenses of cognitive liberty.¹ While I adopt this definition, I argue below that we don't have cognitive liberty, or at least not to the degree that Sententia's definition suggests we do. In other words, there is no fundamental right to have autonomy over one's brain chemistry or the full spectrum of one's mind.

On this taxonomy, mental privacy encompasses cognitive liberty. Moreover, cognitive liberty arguably incorporates negative and positive liberties. Nothing of substance hinges on this particular taxonomy, however.

Strong protections of cognitive liberty imply protections of not only negative cognitive liberties, but also the liberty to voluntary use neurotechnologies—positive cognitive liberties—just as the libertarian position endorses strong protections of the right to use one's property the way one wants.² Thus, just as the right to privacy protects both negative and positive rights, so does the right to mental privacy. This

¹ See also Boire (2000) for a definition and Muñoz et al. (2023) for a thorough framework for thinking about neurorights and freedom of the will.

² The most obvious threats to cognitive liberty are the coercive type, just as the most obvious threats to individual liberty are coercive. But another way in which cognitive liberty might be threatened is when one voluntarily uses invasive neurotechnologies. Thanks to anonymous reviewers for suggesting this point. I don't address this issue here, but the analogy to the ordinary right to privacy might still be instructive. When a person handcuffs themselves to their bed, are they undermining their own individual liberty? Presumably not, which suggests that similar voluntary use of neurotechnologies fails to undermine cognitive liberty.

taxonomy is additionally consistent with other taxonomies, such as that issued in the recent (2021) UNESCO report on the use of neurotechnology. Also important for the present purpose is the recognition that the right to mental privacy can be stronger or weaker. A strong right to mental privacy would protect from all intrusions upon the mind, both those that surveil and those that influence, and it would protect one's right to voluntarily and non-coercively use neurotechnologies. A right to mental privacy is weaker to the extent that the scope of liberties it protects against is narrower. Thus, a weaker right to mental privacy might allow some surveillance or some influence or fail to establish the right to use neurotechnologies.

To say that cognitive libertarians want strong protections of cognitive liberty, specifically, and mental privacy, generally, is to say that when these protections are balanced against other rights and liberties, they carry lots of weight. All rights and liberties have to be balanced with each other, including cognitive liberties and the right to mental privacy. They, along with the almost all other rights and liberties, are not absolute, and I am not suggesting that cognitive libertarians think they are. Thus, when I claim that cognitive liberty and mental privacy are weaker than what the cognitive libertarian wants, I am claiming that whatever these rights and liberties protect and permit, they do so to a lesser degree than what the cognitive libertarian wants.

The present taxonomy is similar to that recently proposed by Farahany (Muñoz (2023, Farahany 2023)). Her taxonomy takes cognitive liberty to be the more general concept, which includes a subsidiary right to privacy, a right to self-determination, and freedom of thought. The taxonomy I propose is similar, in that there are components to the more general concept. But my taxonomy and Farahany's differ in that I take the more general concept to be the right to (mental) privacy, with cognitive liberty as a component. I do so because I adopt the classical interpretation of rights and liberties, according to which liberties are components of rights, rather than the reverse. However, nothing of substance hinges on this difference.

Relatedly, Farahany claims that cognitive liberty, generally, is not absolute—there are instances in which the general liberty can be limited. However, for her, freedom of thought (which I take to be more akin to cognitive liberty on my taxonomy) is absolute. Freedom thought, for Farahany (cognitive liberty, for me), ought not be

restricted. This is where we differ: cognitive liberty (freedom of thought) can be permissibly restricted, and establishing this claim is the purpose of the paper. But there is nothing about Farahany's position specifically that makes it a unique target of my claim.

In political philosophy, there are obviously many views about moral fundamentals and liberty. But in biomedical ethics, the range of positions pertaining to the ethics of mental privacy—the most commonly expressed view is that of the cognitive libertarian. This paper offers a rarity—a dissenting view. I argue that cognitive libertarians, in virtue of their overly strong protection of individual cognitive liberties, negative cognitive liberties, in particular, must confront the hog-tying problem, but for the mind. The bigger problem for the cognitive libertarian, however, is that the libertarian strategies to confront the hog-tying problem are unavailable to their cognition-oriented cousins. The implication of this insurmountable hog-tying problem is that cognitive liberty, and thus the right to mental privacy, is rather more limited than the cognitive libertarian claims.

In the first section, I outline the basic position of the cognitive libertarian. The arguments for cognitive libertarianism are not usually well developed moral arguments, though there are indications of what these moral arguments might look like. In the second section, I introduce Douglas and Forsberg's (2021) extraction of these arguments. In the third section, I introduce the first hinge of my argument. This is the notion that our brains and minds are consistently intruded upon. I argue that there is no morally relevant way to separate these intrusions from those intrusions that cognitive libertarians typically worry about.

One potential morally relevant difference between these ordinary intrusions upon brain and mind and those that the cognitive libertarian worries about is that the latter, but not the former, are manipulative. In the fourth section, I argue that the appeal to manipulation and its wrongness will not help the cognitive libertarian distinguish ordinary intrusions and those that they worry about, nor will appeal to a variety of other potential differences between neurotechnological intrusions and ordinary intrusions. Thus, the cognitive libertarian should treat all such intrusions similarly.

Treating ordinary intrusions and those that the cognitive libertarian worries about in a similar way is problematic for their position. The problem is that no matter how the

cognitive libertarian tries to separate the ordinary intrusions from the neurotechnological intrusions, some presumably non-allowable neurotechnological intrusions will end up being allowable (undermining cognitive libertarianism) or some presumably allowable ordinary intrusions will be non-allowable (resulting in the hog-tying problem). The cognitive libertarian must then either accept less protection of negative cognitive liberties or find a way to solve the hog-tying problem. In other words, the cognitive libertarian must resolve the hog-tying problem or else give up their position. But the cognitive libertarian is unable to resolve the hog-tying problem, which means that the only option available is to give up cognitive libertarianism and settle for a weaker right to mental privacy. I discuss this second hinge of my argument in the sixth section, but prior to that in section five address a potential objection to my argument.

Claiming that neurotechnological intrusions don't undermine cognitive liberty might seem to be open to the objection that my position implies that intuitively impermissible interventions are permissible, which is supposed to show that my position is untenable. I consider and respond to this objection, noting a tenable fallback position. This fallback position is that there are other ways in which a person might be protected from influence. The right to bodily integrity, or even the ordinary right to privacy, offer the needed coverage such that these problematic interventions are prohibited, even if one denies the protection of negative cognitive liberties.

I finish in sections seven with a discussion of the cognitive libertarian's fallback position, which preserves strong protections from mental surveillance, but only weak protections from influence.

1. Cognitive Libertarianism

I argue that we don't have negative cognitive liberty (i.e, protections against intrusions that influence), and thus a strong right to mental privacy, at least not to the extent that some want or need us to have .³ There are, generally, three ways mental

³ For additional examples of those advancing the arguments in support of mental privacy and cognitive liberty, see Bublitz, 2014, 2016, 2019; Bublitz & Merkel, 2014; Ienca & Andorno, 2017; McCarthy-Jones, 2019; Paulo & Bublitz, 2019

privacy may be under threat. In one category are devices or processes that take information out of the brain and mind. As the sophistication of fMRI increases, so does the ability to decode the content of brain activity, such that it is currently possible to know what thought a person is having by looking at how the brain responds to certain stimuli. This ability is quite limited presently, but we can anticipate that this ability will get stronger in the future. One reason we can anticipate that this ability will improve is that there is a significant financial incentive for it to do so. Already, marketers for products and services routinely employ neuroimaging to better understand how people respond to advertisements, so that the marketers can make ads that are more likely to induce their audience to spend money how they want them to spend money. These inducements can be explicit and overt, but they may also be subliminal.

A second type of threat to mental privacy is the limitation of one's right to use neurotechnologies, limitation of positive cognitive liberties. This right could be infringed upon by regulating how neurotechnologies are used such that certain psychological states are prohibited. For example, drugs that may enhance cognition may be prohibited for that purpose in spite of robust data supporting safety and efficacy.⁴ Or suppose a new virtual reality device makes possible the virtual experience of sexual experience that some would consider deviant, and on such grounds policymakers limit its use for that purpose. Such policies would threaten positive cognitive liberties, and thus the right to mental privacy.

A third way mental privacy maybe threatened comes from those scientific and technological developments that don't take information out (surveillance) but that put information in or otherwise influence which psychological states one is in. Such influence may threaten negative cognitive liberties, and thus threaten mental privacy. For advertisers to get people to buy their things, they must engage people in some way, and when they do so they may use "persuasive technologies" (Lighthart et al., n.d.). Persuasive technologies are just those technologies that may be used to persuade the user to do things, and includes apps, video games, or virtual reality. Such technologies are arguably less invasive than others in this category of devices or processes that

⁴ This may include new drugs, or drugs that are commonly used for other reasons, but using them for cognitive enhancement would be off-label.

influence the information in the brain and mind, rather than take information out. More invasive developments include transcranial direct stimulation and transcranial magnetic stimulation, which send signals into the brain but do not physically penetrate the skull. Deep brain stimulation does penetrate the brain. These devices are used to treat a variety of disorders, but they can also have significant effects on the person's thoughts and behavior. These effects can be so significant that some authors worry that they change a person's personality too much (Pugh et al., 2017, 2018). Other threats to cognitive liberty that fall into this category are cognitive or moral bioenhancements, such as pharmaceuticals or the aforementioned devices (Douglas, 2008; Harris, 2011; Persson & Savulescu, 2008). Cognitive liberty may be especially threatened by bioenhancements that are compulsory or administered covertly (Crutchfield, 2019; Persson & Savulescu, 2014).

Others have catalogued all the ways in which the scientific and technological developments in these categories threaten mental privacy and cognitive liberty. Fewer authors have proposed standards by which to measure allowable intrusions from non-allowable intrusions. Cristoph Bublitz (2014) claims that one way to draw the boundary between allowable and non-allowable intrusions is to demarcate those intrusions which affect a person's mental self-determination, or one's rational self-control of their mental states. Those that affect one's ability to do so are not allowable. This right to mental self-determination is comprised of two subsidiary rights: the right to use neurotechnologies and the right to refuse their use. Others have claimed that one is entitled to mental integrity, not to be surveilled, or psychological continuity (Ienca & Andorno, 2017), arguably the key criterion for personal identity.

2. Moral Arguments for Cognitive Libertarianism

Douglas and Forsberg (2021) note that cognitive libertarians have done very little to provide *moral* arguments for the right to mental privacy. Douglas and Forsberg do, however, find some common attempts at providing moral justification for the right to mental privacy in the seminal articles from Bublitz and Merkel (2014) and Ienca and Adorno (2017). While these authors may be concerned with the legal right to mental

privacy, the case for a legal right to privacy is significantly weaker if no moral right can accompany it. One justification for the moral right to privacy that Douglas and Forsberg identify is that it is simply intuitive that we have a right to mental privacy, over and above whatever right we have to bodily integrity. It just *seems* like we have such a right.

Another argument Douglas and Forsberg identify is that technological development creates the need for such a right. The core idea is that up until recently, the mind has been off-limits to external influence and surveillance. But now that it is open to others *and* that existing protections, such as rights protecting bodily integrity, are insufficient, an additional right to mental privacy is needed.

Lastly, Douglas and Forsberg identify the claim that consistency in justification for rights supports a moral right to privacy. The reasons that support a right to bodily integrity also apply to mental privacy. In particular, the libertarian notion of self-ownership seems to justify our right to bodily integrity. But this same libertarian reasoning also justifies a strong right to mental privacy.

The cognitive libertarian approach is erroneous in at least one respect: we are not entitled to protection from influence of our brains and minds. Though we may be entitled to not have our brains and minds be surveilled, we don't have the other component of mental privacy, cognitive liberty. What cognitive libertarians miss is that our brains and minds are already, and always have been, under a barrage of influence from other people, other stimuli, and even other parts of the brain and mind. There is nothing relevantly new about influences that occur by way of drugs or devices. That our brains and minds are constantly under invasion is also a relatively recent neuroscientific discovery. Thus, as neuroscience develops, it not only enables intrusions, but also illuminates those that have been there all along.

3. Ordinary Intrusions

Developing neurotechnologies don't present any new challenge to cognitive liberty. Cognitive and moral bioenhancements, for examples, are supposed to cause changes in a person's ability to think and act. The targeted behaviors may be to pass a test or gain an advantage over one's peers or be more selfless. It's plausible that there are

other reasons why bioenhancements might be undesirable. But they don't undermine cognitive liberty, at least not in any novel way.

Even our most ordinary mental states are easily and commonly influenced. For example, perception is cognitively penetrable, which is to say that a person's background mental state (e.g., their beliefs, desires, dispositions) influences the content of a perceptual experience (Stokes, 2013). Something, say, a piece of fruit, may appear to be the color due to one's dispositions or attitudes toward that fruit (Hansen et al., 2006). Color is not the only property perception of which is cognitively penetrable. Perception of shape, size, and causal properties, among others, are also cognitively penetrable. The cognitive penetrability of perception may not be the sort of influence that can be induced synchronically, with, for example, a one-shot pill. But it can be induced diachronically, slowly by influencing one's background cognitive state.

Perception of properties can be easily influenced by how they are framed. Here is a way one person can influence the content of one's perceptual representation of color: frame it with another color. Putting a frame of one color around a swatch of another will change how that color swatch appears. This occurs routinely. The same is true of other mental states. One's moral judgments—especially moral intuitions—can be influenced according to how they are “framed” with language (Sinnott-Armstrong, 2008; Tversky & Kahneman, 1981).

Moral judgments aren't just subject to framing effects. By now, the range of situational factors that influence moral judgment and behavior has been demonstrated to be quite wide. Finding money may make a person more likely to help out a stranger; hearing loud noises may make them less likely (Isen & Levin, 1972); being in a crowd makes a person less likely to help a person in need (Fischer et al., 2011); being instructed to hurt someone causes someone to inflict harm (Milgram, 2009); being in a position of power over another person may make abuse of that person more likely (Zimbardo, 2007). It has been repeatedly demonstrated that in the Trolley Problem, morally irrelevant factors influence one's judgment that one should make the deontological choice (Greene, 2008; Greene et al., 2009; Levine et al., 2020). When subjects have to physically push the trackworker onto the track rather than pull a switch,

they are less likely to do so (Greene, 2008). Physical distance and personal force are morally irrelevant factors that influence moral judgment.

Human behavior is also easily and routinely influenced. Behavioral economics demonstrates this conclusively. Various games show that how one person behaves in cooperative endeavors influences how other people behave. If you and I are in prisoner's dilemma, I can get you to defect by defecting myself. If this game is iterated, such as in a public good's game, I can get you to withdraw your cooperation in achieving a public good by either withholding my own cooperation or by punishing yours (Bowles & Gintis, 2011; Fehr & Fischbacher, 2004b, 2004a; Fehr & Gächter, 2000). I can get you to increase your contribution by making you feel shame for not contributing more (Bowles & Gintis, 2011). These are moral judgments and moral behavior that are being influenced. The same is true of other games, such as the ultimatum and trust games (Berg et al., 1995; Güth et al., 1982).

The relevant implication of these examples is that the contents of very many of our mental states are already easily and routinely influenced. We don't determine the contents of these states. They are not the result of rational self-control. They are the result of factors external to the brain and mind. We generally don't have much of a say in what the contents of our mental states are. Indeed, right now I am influencing the contents of your mental states. Stephen King has said that writing is telepathy (King, 2000). Authors transfer thoughts to readers, and do so remotely. Granted, this telepathy is usually consented, such as when one picks up a book and reads it. But often it is not, such as when one drives by an advertisement on the highway.

The above examples are all instances of mental content being partly determined by stimuli external to the brain and mind. But processes that are already "in the head" also undermine mental self-determination. A common view of cognition is that it is in some sense probabilistic, Bayesian, relying heavily on the value of the "priors", which are not typically under rational self-control (Clark, 2013; Hohwy, 2013). Well known theories of System 1 and System 2 thinking are similar (Kahneman, 2011). System 2 thinking may be under rational self-control. But System 1 thinking—thinking fast—is an automatic process over which a person typically can exert no rational self-control. Much mental content results from such thinking.

The strategy for undermining the idea that we have cognitive liberty such that neurotechnologies threaten it should now be clear. These ordinary intrusions should be lumped together with those intrusive influences that the cognitive libertarian worries about. If this is a lump made up of permissible intrusions, then cognitive liberty, and thus mental privacy, is much weaker than cognitive libertarians claim. If it is a lump of impermissible intrusions, then ordinary intrusions are impermissible boundary crossings. To restrict them would thus be to restrict others' use of their own minds; it would be to hog-tie the mind.

4. Ordinary Intrusions and Manipulation

The cognitive libertarian is likely to respond that this is much too quick: there is an important distinction between ordinary intrusions and the intrusions on the brain and mind that they worry about. The difference is that ordinary intrusions aren't manipulative, but that the intrusions that they worry about are. This difference carries moral weight, because manipulation of others' brains and minds is wrong, but ordinary intrusions, because they are not manipulations, are not wrong.

There are some problems with this strategy. They may not be insurmountable, but it is not so easy to say (a) influences on the brain and mind are manipulations and (b) manipulation is wrong. Both (a) and (b) need support, for this strategy to work (Noggle, 2020). Supporting (a) requires some account of identifying which sorts of influence are manipulative and which are not. There are several options available to the cognitive libertarian.

One option is that a type of influence is manipulative if it bypasses reason. Given the cognitive libertarians' focus on the subversion of rational self-control as one of the more threatening properties of the types of influence they worry about, one might think that they would separate ordinary influences from manipulations using this criterion. For example, subliminal advertising bypasses reason, and it is intuitive that this is what makes such practices manipulative. But appealing to this criterion doesn't work, because there are some ordinary intrusions that also bypass reason. Framing effects, for example, bypass reason. One is not aware of the framing effect, and it occurs

outside of rational self-control. If this is the criterion that cognitive libertarians use to separate problematic manipulation from ordinary intrusion, then framing effects will end up on the side of problematic manipulation. Any influence on System 1 thinking would also bypass reason and, by this criterion, be manipulative.

Another possible way to identify manipulative influence is by whether it uses trickery. Covert moral enhancement would fall into this category, as would, plausibly, subliminal advertising. It's not only influence that would fall into this category, but surveillance, as well. For example, a tech company may use trickery to induce a person to share sensitive data seems manipulative. But whereas the bypassing reason criterion counts too many things as manipulative, the trickery criterion counts too few. For example, one frontier of neuro-interventions are those that seek to reform the mental states of prisoners, such that when released they comply with the law. Such interventions would clearly run afoul of the cognitive libertarians' protection of cognitive liberty. But the interventions in this case don't amount to trickery. It's just straightforward coercion. The problem, then, is not that ordinary intrusions count as manipulative, but that the criterion would fail to count some intuitively problematic manipulations as such.

A third way of separating ordinary intrusions from problematic manipulations is to claim that influences manipulate when they use pressure, but that ordinary intrusions do not. For example, Persson and Savulescu argue that moral enhancement should be compulsory, a practice which would use pressure to compel a biomedical intervention upon one's moral capacities. By this criterion, compulsory moral enhancement of this kind would count as manipulative. Rarely do ordinary intrusions use pressure to influence mental states, so the criterion is unlikely to be overly broad, as the bypassing reason criterion is.

But this criterion faces the same problem as the trickery criterion, namely that it fails to count as manipulations things that the cognitive libertarian would want to count as such. Although compulsory moral enhancement would count as manipulative, covert moral enhancement wouldn't, as *only* trickery is involved. Similarly, subliminal advertising, or any other type of problematic advertising, wouldn't count as manipulative, because it doesn't pressure the person into anything.

It is thus a difficult, if not outright impossible, task to separate ordinary intrusions from the intrusions that the cognitive libertarian worries about, such that the latter, but not the former, are counted as manipulative.

Even if the cognitive libertarian could accomplish this task, they still must establish that manipulation is wrong (Noggle, 2020). But this also requires argument. Even if manipulation is always wrong, which I do not grant, the duty to not manipulate will not always be an actual duty, unless one adopts an extreme and implausible view of manipulation. That is, if manipulation is always wrong, it will, at best, always be either *prima facie* (i.e., defeasibly presumed to be) wrong or *pro tanto* (i.e., should be avoided, unless countervailing reasons outweigh it) wrong. Given that there may be considerations that imply that some manipulations are permissible (e.g., leveraging ultimate harm to permit compulsory moral enhancement), some of those manipulations may end up being as permissible as ordinary intrusions.

Still, the cognitive libertarian may object that they are primarily concerned with coercion, rather than manipulation. However, if an intervention is manipulative, then it is also coercive, but the converse is not true. Given that manipulation entails coercion, and that ordinary intrusions can be manipulative, ordinary intrusions can also be coercive. If I can show that appealing to the manipulative nature of neurotechnological interventions is insufficient to separate them from ordinary intrusions, which I have, appealing to coercion will not enrich the cognitive libertarian with distinct argumentative resources.

Appealing to manipulation thus appears to be a losing strategy for the cognitive libertarian. But there may be other ways unrelated to manipulation to separate ordinary intrusions from those the cognitive libertarian is ordinarily concerned with.

One way to segment the neurotechnological intrusions from the ordinary intrusions would be to do so according to causal proximity. Neurotechnologies may be more causally proximal to the state that the stimulus ends up changing. But this strategy doesn't work, because causal proximity is morally irrelevant. Peering into a person's home isn't made slightly better if it's done through binoculars.

One may be tempted to say that for allowable ordinary intrusions, the intrusion itself is not foreseeable, but that for non-allowable neurotechnological intrusions, the intrusion is foreseeable. But this also won't work, because for some of the ordinary

intrusions upon our brain and mind, the intrusion is foreseeable. I may foresee the influence of my running a loud motor outside upon my neighbor's mental state, but she, a virologist, likely does not. If foreseeability were relevant to the allowability of intrusions, then my running of a loud motor would be less allowable than her running a similar motor. This outcome is implausible. Similarly, when picture framers frame a painting, knowing that the choice of frame will influence the viewer's perceptual representation of the painting, it is implausible that they are doing so inappropriately. The same is true for those intrusions related to social and cooperative behavior. One doesn't need to know about experimental economics to foresee that one's withdrawal of cooperation will intrude upon the other person's reasoning.

Causal proximity and foreseeability won't help to show that neurotechnological intrusions are relevantly dissimilar from ordinary intrusions. Another potential way to draw the boundary between the ordinary and the neurotechnological would be the causal route of the intrusion. Ordinary intrusions are mediated by one's sensory apparatus, while sensation need not mediate intrusions associated with neurotechnologies. For example, deep brain stimulation or transcranial magnetic stimulation don't intervene through any sensory apparatus. But this strategy also won't work, because some intrusions that cognitive libertarians would find wrong, such as pharmaceutical cognitive or moral enhancers, do stimulate by sensory apparatus—the oral cavity if the intruding agent is a pill or the haptic system if it's an injection. Allegedly problematic marketing practices manipulate by visual and auditory channels.

Another possible way to draw the boundary is with intention. But this strategy still won't work. Picture framers *intend* to influence a person's brain and mental states. The person increasing their contribution to a public good *intends* that increase to induce others to increase their contribution. Artists and authors *intend* to influence a person's brain and mental states. If whether an intrusion is intentional draws the boundary between the allowable ordinary intrusions and the non-allowable neurotechnological intrusions, then these ordinary behaviors are going to end up on the wrong side of it.

One might yet think that intention does matter, and claim that in the case of allowable, ordinary intrusions, the intrusion itself is a secondary intention that is a

necessary consequence of a primary intention. But in the case of neurotechnological intrusions, the intrusion is the primary intention.

This sort of double effect reasoning doesn't work to draw the necessary boundary. The problem is as before. For some ordinary intrusions the intrusion is the primary intention. Picture framing is one of these. And for some neurotechnological intrusions, the intrusion is a secondary intention. The primary intention of widespread cognitive and moral enhancement is to save the world (Persson & Savulescu, 2014). A necessary byproduct of this intention is intrusion upon people's brain and mental states.

Another way to draw the boundary between the ordinary and the neurotechnological is by significance of effect (Douglas and Forsberg, 2021). The effect ordinary intrusions have is quite limited, according to this line of reasoning, but the effect of intrusions associated with neurotechnologies can be quite significant. This difference in significance of effect is morally relevant, and sufficient to draw the needed boundary. On one side of this boundary are the allowable low-effect ordinary intrusions and on the other side the non-allowable high-effect neurotechnological intrusions.

I grant that a significant difference in effect would be morally relevant. But this line of reasoning overstates the degree of difference in effect. Ordinary intrusions can have a significant effect on one's judgments, and intrusions associated with neurotechnologies don't necessarily have a significant effect. Framing effects aren't likely to make a blue square look red, but they will cause someone to choose to forego a public health intervention rather than endorse it (Sinnott-Armstrong, 2008; Tversky & Kahneman, 1981). These effects aren't significantly different from the effect a moral enhancement might have on one's decision to eat fake meat rather than beef or the effect subliminal advertising might have on one's choice of product.

Yet another way the cognitive libertarian might argue is that neurotechnologies may change a person's identity while ordinary intrusions will not. Indeed, some authors even claim that moral bioenhancement can change a person's identity so much that it kills the person (Crutchfield, 2018). If true, this would obviously be a morally relevant difference between neurotechnologies and ordinary intrusions: finding money on the sidewalk might make one more likely to help someone pick up a bag of dropped groceries, but it's not going to kill them.

However, this argument doesn't work, even if I grant the assumptions upon which it is built. For it to be true that neurotechnologies may change a person's identity, it must be true that the things that neurotechnologies influence are stable dispositions or traits *and* that these dispositions constitute one's identity. It is highly doubtful that both of these are true. First, many of person's psychological traits are not stable, especially moral dispositions.⁵ Even if moral traits constituted one's identity, they would be too unstable to do so. The empirical literature seems to establish this. Claiming that one has a stable moral character is a reach. But it is an even further reach to say that this is also what makes a person who they are. What might be more stable are personality traits. And it might be true that neurotechnologies influence these stable personality traits to such a degree that they change a person's personality. But, personal identity is not a matter of personality traits.

Second, even if people had stable dispositions and traits that ground personal identity, it is still extremely unlikely that neurotechnologies would disrupt these to such a degree that they change a person's identity. Fabiano (2021) argues from the perspective of virtue ethics (i.e., moral character, etc.) that enhancements do not threaten identity. And even Crutchfield (2018) argues that neurotechnologies are extremely unlikely to disrupt psychological continuity, arguably the determinative factor of personal identity, so much that it ends up changing, or "killing," the person. Specifically, he argues that neurotechnologies are unlikely to disrupt higher-order mental states, which means that these states will be preserved and continuous in spite of neurotechnological interventions.

Nevertheless, some interventions may entail consequences for some types of identity that are relevant to, but not the same as, numerical identity. For example, a moral bioenhancement may make moral behavior more stable (indeed, it must do so if it is to be effective). It may even engender a stable moral character. And stable moral character may have implications for a person's "narrative" identity. Narrative identity is distinct from numerical identity, however. Whereas numerical identity is a matter of what makes a person that person and not someone else, narrative identity is a matter of the

⁵ See, for example, the aforementioned studies and especially Doris (2002) for a detailed argument regarding the implications of this work for moral psychology.

person's story they tell about themselves (DeGrazia, 2005) Narrative identity is, according to DeGrazia, a person's "self-conception: her most central values, implicit autobiography, and identifications with particular people, activities and roles" (2005, p. 266).

While moral bioenhancement, or other interventions on the brain or mind, might induce changes in narrative identity, some of which might be quite abrupt, this still doesn't help separate ordinary intrusions from neurotechnological intrusions. First, narrative identity is not constitutive of numerical identity, which means that changes to the former may not imply changes to the latter. Second, ordinary intrusions can also cause significant changes in a person's narrative identity. For example, transformative experiences can shift a person's narrative identity (Krag, 2023). Becoming a parent is transformative (Paul, 2014) and causes significant and abrupt shifts to a person's narrative identity (DeGrazia, 2005; Krag, 2023). So does the rather ordinary intrusion of perceiving injury to one's child. The important points are that ordinary intrusions often cause changes to a person's narrative identity (making it difficult to separate the neurotechnological from the ordinary) and that no one thinks that these changes cause changes to the person's numerical identity.

The same is true of personality traits, which may or may not be incorporated into a person's narrative identity. Personality traits, like narrative identity, may go into numerical identity, especially if they help to support psychological continuity. They may be relevant to numerical identity, but, if they are, they are but one factor among others. Like changes in narrative identity, changes in personality traits don't imply changes to numerical identity. After all, people change personality traits all the time, and we don't think that they are a numerically different.

Another way the cognitive libertarian may wish to separate ordinary intrusions from neurotechnological is by claiming that ordinary intrusions are reversible but that neurotechnological intrusions are irreversible, and that this makes a moral difference. However, this strategy will also fail, because many ordinary intrusions are irreversible and neurotechnological interventions may be reversible. For an example of the former, a person may be victimized by free-riding in social cooperation, and be irreversibly "jaded" and disposed to be mistrustful of others. For an example of the latter, moral

bioenhancements may need to be administered repeatedly to maintain the effect, which suggests that withholding the intervention would return a person back to their baseline moral behavior.

Another reason this strategy may fail is that it is rather difficult to operationalize the “reversibility”. Consider, for example, other areas the concept of reversibility is operationalized, such as in determination of death. Operationalizing the concept is problematic in the determination of death by cardiac criteria, because death requires “irreversible” cessation of circulation and respiration. Once declared dead by such criteria, it is still possible to restart the heart and respiration, which calls into question whether the patient’s condition was irreversible in the first place, and thus whether the patient was dead (readers of this journal may be familiar with the presently controversial practice of normothermic regional perfusion, which is controversial precisely because of the difficulty of operationalizing the notion of irreversibility; see, for example, Entwistle et al. (2022)). In short, appealing to the irreversibility of some neurotechnological interventions will not help the cognitive libertarian.

A final way of drawing the needed boundary between the ordinary and the neurotechnological is to claim that neurotechnological intrusions are not allowable because they are new and cutting edge. But such a claim makes cognitive libertarians appear too similar to the technophobes of the past, those who asserted that the development of the book was dangerous, that television would make people vulgar, or that the internet would undermine social relationships (maybe the jury is still out on this one) (Bell, n.d.). Socrates warned in the *Phaedrus* that writing itself would undermine memory and cause people to be more forgetful. The cognitive libertarians begin to look much like Socrates in this way.

The cognitive libertarian has some significant obstacles to surmount to establish a neat and clean boundary between ordinary intrusions and those intrusions that they typically worry about. They are yet to surmount these hurdles, and there are good reasons to think they will not be able to do so.

I am now in a position to dispense with the first two cognitive libertarian arguments that Douglas and Forsberg identify. Recall that one justification for a moral right to mental privacy supposedly rests on the intuitive appeal of such a right. Intuitively,

cognitive libertarians claim, we have a right to mental privacy, generally, and cognitive liberty, specifically. There are several problems with grounding these values in intuition. One is that intuitions about moral rights can't pull any dialectical weight. I don't have the same intuition. Thus, on the intuitiveness of such a right, it's a draw. But there is second, deeper problem with using intuitions to ground the moral right to mental privacy and cognitive liberty. Moral intuitions plausibly play a foundational role in moral epistemology (Huemer, 2008). But whatever justification moral intuitions can provide, it is merely *prima facie*. The above considerations defeat that justification in this case (Sinnott-Armstrong, 2008).

A second argument for the right to mental privacy and cognitive liberty is that the brain and mind are now open to influence and surveillance, whereas up until recently this has not been the case, and that existing protections are insufficient. For example, Ienca and Andorno write (p.1)

While the body can easily be subject to domination and control by others, our mind, along with our thoughts, beliefs and convictions, to a large extent beyond external constraint. Yet, with advances in neural engineering, brain imaging and pervasive neurotechnology, the mind might no longer be such unassailable fortress.

For this reasoning to justify a right to mental privacy and cognitive liberty, it has to be the case that the mind has, until recently, been off limits to influence and surveillance. But that's false—it's always been open to "external constraint." We just didn't know about it until recently. Thus, this reasoning can't justify a right to mental privacy or cognitive liberty.

5. Cognitive Liberty and Bodily Integrity

The above argument attempts to establish the idea that whatever metaphysical differences there are between ordinary intrusions upon the mind and the neurotechnological intrusions that cognitive libertarians worry about are insufficient to draw a morally relevant boundary. I am claiming that ordinary intrusions and the

neurotechnological intrusions should be put in the same moral bucket. Appealing to manipulation won't work to separate them into different moral buckets, and neither will looking for other metaphysical differences. Or, more specifically, these considerations don't separate ordinary intrusions from neurotechnological intrusions into different moral buckets without also leaving some intrusions in the wrong bucket.

Another strategy the cognitive libertarian might use doesn't attempt to separate out the ordinary from the neurotechnological in a morally relevant way. Instead, it attempts to show that leaving them all in the same bucket leads to implausible consequences, a *reductio ad absurdum* on my claim. If ordinary intrusions and the worrisome neurotechnological intrusions are all lumped together *and* all of these intrusions are allowable, then some intuitively impermissible intrusions will end up being permissible. For example, the argument goes, if I am right, then what is to prohibit a government from putting a drug in the water supply that makes everyone more compliant with an authoritarian regime? Intuitively, it would be wrong for the government to do so. But if ordinary intrusions are lumped with neurotechnological intrusions, and none of them are prohibited, then it seems like I am committed to the permissibility of this government action. Since that consequence is absurd, either ordinary intrusions must not be lumped together with neurotechnological intrusions *or* the entire lump must be prohibited. I take the latter disjunct up in the next section, as it results in the hog-tying problem.

This strategy might work, if I were committed to the permissibility of the allegedly problematic consequence of the authoritarian regime dosing the population with a drug that makes them compliant. But I am not so committed. First, some authors do argue for the claim that moral enhancement can permissibly be administered to everyone without their knowledge (Crutchfield, 2021). But a drug to induce compliance would not count as a moral enhancement. Second, and more to the point, one can consistently deny that the authoritarian intervention is permissible and still think that ordinary intrusions are lumped with neurotechnological interventions and that this lump is, at least on cognitive liberty grounds, allowable. There are other wrong-making features of the authoritarian intervention that are unrelated to cognitive liberty. One of these is that the intervention may violate bodily integrity and the right to privacy we have for our own bodies.

If the authoritarian intervention violates bodily integrity, which it plausibly does, it is still open to me to claim that ordinary and neurotechnological intrusions are problematically similar and that the authoritarian intervention is wrong. The intervention isn't wrong because it wrongly intrudes on cognitive liberty, however, but because it wrongly intrudes on bodily integrity. In effect, this strategy would find that when neurotechnological intrusions are wrong, the wrongness is due to inappropriate surveillance or because the intrusions are associated with impermissible intrusions of bodily integrity.

Or they may violate some other duty or right, such as the right to not be harmed. In other words, although the present argument limits cognitive liberties, there are lots of ways a particular intrusion might be wrong. When neurotechnological intrusions are wrong, they are not wrong because they inappropriately intrude upon negative cognitive liberty, but because of some other reason. I am not arguing that neurotechnological intrusions of a certain type are necessarily permissible; I am arguing cognitive liberty doesn't protect one from them. Other liberties and entitlements might offer that protection. My view can thus avoid the *reductio*.

A related objection gets the same response. Some intrusions seem worse than others. The authoritarian intrusion seems worse than subliminal advertising. One doesn't need cognitive liberty to arrive to account for this moral difference, however. The authoritarian intrusion may be worse because it violates bodily integrity to a greater degree or because it is more harmful.

6. Hog-tying the Mind

The challenge for the cognitive libertarian is to segment ordinary intrusions from neurotechnological intrusions in a morally relevant way. I've argued they are presently not equipped to do so. The cognitive libertarian thus faces a dilemma. On one hand, she can claim that this whole lump of intrusions, all of these boundary crossings, should be permitted, at least on the grounds of cognitive liberty. But agreeing to that is tantamount to abandoning cognitive libertarianism, and so not a viable option. On the other hand, she can claim that all of these intrusions should be restricted on the

grounds that they violate cognitive liberty. But then the cognitive libertarian must confront the hog-tying problem.

That the cognitive libertarian must confront the hog-tying problem should not be surprising. As Douglas and Forsberg note, the third argument that cognitive libertarians use to justify restrictions on neurotechnological intrusions derives from the Lockean libertarianism that motivates protections of bodily integrity. According to this view, libertarian self-ownership justifies a right to bodily integrity, so by the same token libertarian self-ownership or mental self-determination justifies a right to mental privacy and cognitive liberty.

The hog-tying problem, recall, is that strong protections of liberty possession undermine strong protections of liberty use. Cognitive libertarians are aware of the fact that the protection of cognitive liberty conflicts with others' use of their own liberties. Bublitz (2014, p. 22) notes that there is indeed conflict between one's "freedom of thought" (cognitive liberty) and others' rights to use their freedom to speak. His response is to assert that these ought to be balanced and that more research is needed, but offers no method of such balancing. He dismisses out of hand the idea that we may not have cognitive liberty to the extent that cognitive libertarians think we do. Similarly, McCarthy-Jones (2019, p. 11) notes the same conflict: others' freedom of expression intrudes on cognitive liberty. Where the boundary lies between expressions that are allowable and those that aren't, he writes, is something that requires society have a debate. But where this boundary is just is the important moral matter. Where to draw the line between those intrusions that are allowable and those that aren't is the whole ballgame. Deferring the task of line-drawing to "more research is needed" and "society should debate it" is unhelpful, even if such deference is common in biomedical ethics.

Granted, Bublitz and others (Ienca & Andorno, 2017) offer general advice on where in logical space we might draw a boundary—where these intrusions undermine mental self-determination (or rational self-control) and psychological continuity. But these suggestions don't help. If the preceding sections are right, mental self-determination is not something that we generally have, at least synchronically and when we interact with the world and people in it. So, this criterion is too strict. Psychological continuity is too

lose a criterion, however. Neurotechnologies are an unlikely threat to psychological continuity. As long as one can maintain higher-order psychological states—states that take as their intentional object one’s other mental states—one can preserve psychological continuity (Crutchfield, 2018, Fabiano, 2021). It is extremely unlikely that neurotechnologies can intervene such they sever the temporal and causal continuity between second- or third-order mental states.

Thus, a strong right to mental privacy, one that implies freedom from surveillance *and* cognitive liberty, can be saved by identifying a different criterion that fixes the hog-tying problem. The cognitive libertarian must find a way to draw the boundary of allowable and non-allowable intrusions, such that ordinary intrusions are on one side, and intrusive neurotechnologies are on the other.

Adequate compensation

One strategy of drawing the boundary between allowable and non-allowable intrusions upon the brain and mind is by holding that allowable intrusions are those for which one can be adequately compensated (Mack, 2015; Nozick, 2013; Sobel, 2012). What counts as adequate will vary according to the intrusion. But this is the problem with this strategy—any intrusion could potentially be allowable, so long as one can be adequately compensated. In principle, there are some intrusions that are never allowable. It is doubtful this strategy works to save the libertarian from the hog-tying problem. And it is doubtful that this strategy will work to save the cognitive libertarian from the hog-tying problem they face. If they use the adequate compensation strategy, then in principle all intrusions on the brain could be allowable, so long as the person intruded upon is adequately compensated. Presumably there are some technological intrusions upon the brain or mind that the cognitive libertarian would find unacceptable, such as the surveillance of one’s thoughts for purely commercial purposes.

In-kind compensation

A related attempt at resolving the hog-tying problem is to allow those liberty intrusions for which one can be compensated in-kind (Epstein, 1979). For example, when the dog-walker intrudes upon my property by allowing his dog to defecate on my lawn, and then promptly cleans up, this intrusion is allowable because I am compensated in kind. I get to do the same to his lawn when I walk my dog. Or when one is driving and lost and pulls into another person's driveway to reverse course, they allowably intrude on that person's property, as that person is compensated in-kind. They can do the same to someone else's property when they are lost.

What counts in favor of this strategy is that neurotechnological intrusions require access to the neurotechnology, which most people lack. Thus, it will be difficult to compensate those intruded upon with the opportunity to similarly intrude. If having such opportunity is what makes intrusions allowable, then neurotechnological intrusions will count as not allowable. But such is not the case with ordinary intrusions, which everyone has the opportunity to carry out.

The problem with in-kind compensation is similar to the problem that the adequate compensation strategy faces. In principle, any kind of intrusion can be allowed, so long as other people can similarly intrude. This seems at odds with the cognitive libertarian position, which is principled protection of mental privacy and cognitive liberty. Furthermore, at some point, many of the problematically intrusive neurotechnologies will be widely accessible, opening the opportunity for others to use them. At that point, in-kind compensation will count those intrusions as allowable, even if they intrusively surveil or influence. One would then need additional criteria for non-allowable intrusions. That is, the in-kind compensation strategy, once a given neurotechnology is widely available, may reduce to some other account of allowable intrusions

Elbow room

A third method defines minor intrusions and claims that having and using liberties requires a little "elbow room" (Mack, 2015). Allowable, minor intrusions are those that

are (a) not done for the sake of intrusiveness and (b) incidental to person's decisions about how to use that liberty they have a right to use. Thus, for example, a neighbor allowing their dog to defecate on my lawn but then promptly cleaning it up falls into the elbow room for allowable intrusions, because it is not done for the sake of intrusiveness and it is incidental to how I might use my property. But if they don't clean it up, then it is plausibly non-incidental to how I use my property, especially if I step in it. If so, then that dog walkers' intrusion on my property is an impermissible boundary crossing. It is straightforward that most intrusions by neurotechnologies are not done for the sake of intrusiveness. They are done in order to make money for the intruders and their investors. Governments may also intrude, but this also is not typically with malice. It is so they can make better policy or satisfy some other aim (such as national security or public health).

On the elbow room account, an intrusion is allowable if either it's not for the sake of intrusiveness *or* it's incidental. Many neurotechnological intrusions are not for the sake of intrusiveness. But an equally pressing problem for the cognitive libertarian is showing that technological intrusions upon the brain and mind are not incidental to how a person decides to use their brain and mind, but that ordinary intrusions are incidental. If intrusions are not incidental (and they are done for the sake of intrusiveness), then they are not allowable intrusions, falling outside the elbow room one needs to get around and not inappropriately intrude. The problem is that if neurotechnological intrusions are non-incidental, then parity of reasoning would suggest that other intrusions, such as those associated with typical human behavior, are similarly non-incidental.

Although there may be no precise libertarian account of what it means for an intrusion to be incidental (it is, after all, a challenging metaphysical problem), presumably if a cognitive enhancer is non-incidental, then plausibly so is my inadvertently dropping a small wad of cash while I'm walking down the street. Finding the cash is likely to change the finder's moral judgments or affective states, at least for a time. Or when I run a loud motor on my property, and my doing so increases the likelihood my neighbor kicks his dog, the noxious intrusion may influence my neighbor's decisions (Mathews & Canon, 1975). If the cognitive enhancer is not allowable because

it changes a person's pattern of reasoning, then my dropping cash or running a loud motor are also non-incidental, thus non-allowable. Using the elbow room strategy isn't going to help the cognitive libertarian unless they can find a plausible strategy of finding a neat and clean way of identifying neurotechnological intrusions as non-incidental but ordinary intrusions as incidental. Apart from the criteria that I discuss above (e.g., manipulation, causal efficacy, etc.), there aren't other obvious candidate criteria according to which the neurotechnological are non-incidental and the ordinary are incidental.⁶

7. Mental Privacy and Cognitive Liberty

The cognitive libertarian's position is intuitively plausible. It *seems* right that there is something special about our minds that justifies special moral and legal entitlements. And it seems that if these special moral and legal entitlements protect anything, they protect us from being influenced. But the similarities between the types of influence that cognitive libertarians want protection from and the types of influence that occur ordinarily suggest that these intuitions aren't enough. The problem is not that neurotechnological influence and ordinary influence are the same in all the relevant respects. The problem is that once one tries separating them out, there is no way to do so that aligns with the intuitive separation. No matter how the cognitive libertarian separates the types of influence, some intuitively impermissible neurotechnological influence will end up, by that criterion of separation, permissible, while some intuitively permissible ordinary influence will end up, by that same criterion, impermissible. Different criteria of separation will slice up the lump of intrusions differently. I have discussed a range of possible criteria. But no matter which way one slices it up, something intuitively impermissible will end up being permissible *or* something intuitively

⁶ I use the analogy to one's property simply because those are terms that libertarians use and interact with. It is not to suggest that one's home is perfectly analogous to one's mind. There are features of one's mind that may not be applicable to one's property, namely that one's mind seems more constitutive of the self and one's property does not. See the above section on neurotechnological interventions and identity for why appealing to the relation between one's mind and the self will not help solve the de-lumping problem for the cognitive libertarian.

permissible will end up being impermissible. The result is that protecting negative cognitive liberty hog-ties others use of their own liberties.

So, either the cognitive libertarian needs to adjust her position or she needs to solve the problem. Solving the problem requires the cognitive libertarian to show how neurotechnological influence can be protected in such a way that doesn't also hog-tie others' behavior. Perhaps there is a way to draw this needed separation. If there is, the cognitive libertarian needs to develop it, or else adjust the scope of what cognitive liberty and mental privacy protect us from. I finish with one such adjustment.

The present argument undermines negative cognitive liberty and thus a strong right to mental privacy. It does not, however, undermine positive cognitive liberties, such as those liberties one has to voluntarily and non-coercively use neurotechnologies. For all I have argued here, if a neurotechnology is available and its use won't harm others, one should be able to use it. Or not. The present argument has no implications for such liberties.

The present argument also leaves intact any right to not be surveilled. It's much more plausible that one can restrict peeking into one's mind than it is that one can restrict the stimuli that influence our brain and mental states. Surveillance of the mind is not a feature of ordinary human thought and behavior in the way that influence from others is (though one might argue otherwise (Ryberg, 2017)). It may not be possible to protect against this influence, but that doesn't imply that it's also impossible to protect against surveillance. Neurotechnologies that surveil may be a legitimate threat to our right to mental privacy.

But neurotechnologies that intrude by influencing or manipulating one's brain and mental states pose no such threat to our right to mental privacy, because the right to mental privacy offers no coverage. As policymakers continue to try to find ways to regulate the use of invasive technologies, they should keep in mind that mental privacy is much more limited than cognitive libertarians claim. Policies can and should target surveillance and positive cognitive liberties; they can't (and thus shouldn't) target influence and negative cognitive liberties.

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References

- Bell, V. (n.d.). *A history of media technology scares, from the printing press to Facebook*. Retrieved April 22, 2021, from <https://slate.com/technology/2010/02/a-history-of-media-technology-scares-from-the-printing-press-to-facebook.html>
- Berg, J., Dickhaut, J., & McCabe, K. (1995). Trust, reciprocity, and social history. *Games and Economic Behavior*, 10(1), 122–142.
- Bowles, S., & Gintis, H. (2011). *A Cooperative Species: Human Reciprocity and Its Evolution*. Princeton University Press.
<https://books.google.com/books?id=dezaI9XMp0UC>
- Bublitz, C. (2016). Moral Enhancement and Mental Freedom. *Journal of Applied Philosophy*, 33(1), 88–106. <https://doi.org/10.1111/japp.12108>
- Bublitz, J. C. (n.d.). *Freedom of Thought in the Age of Neuroscience*.
- Bublitz, J. C. (2014). Freedom of thought in the age of neuroscience: a plea and a proposal for the renaissance of a forgotten fundamental right. *ARSP: Archiv Für Rechts-Und Sozialphilosophie/Archives for Philosophy of Law and Social Philosophy*, 1–25.
- Bublitz, J. C. (2019). Saving the World through Sacrificing Liberties? A Critique of some Normative Arguments in Unfit for the Future. *Neuroethics*, 12(1), 23–34.
<https://doi.org/10.1007/s12152-016-9265-8>
- Bublitz, J. C., & Merkel, R. (2014). Crimes Against Minds: On Mental Manipulations, Harms and a Human Right to Mental Self-Determination. *Criminal Law and Philosophy*, 8(1), 51–77. <https://doi.org/10.1007/s11572-012-9172-y>
- Clark, A. (2013). Whatever next? Predictive brains, situated agents, and the future of cognitive science. *Behavioral and Brain Sciences*, 36(03), 181–204.
<https://doi.org/10.1017/S0140525X12000477>
- Crutchfield, P. (2019). Compulsory moral bioenhancement should be covert. *Bioethics*, 33(1), 112–121. <https://doi.org/10.1111/bioe.12496>
- Crutchfield, P. (2018). Moral enhancement can kill. *Journal of Medicine and Philosophy (United Kingdom)*, 43(5), 568–584. <https://doi.org/10.1093/jmp/jhy020>
- DeGrazia, D. (2005). *Human Identity and Bioethics*. Cambridge University Press.
<https://books.google.com/books?id=zQQQB1SLvSwC>
- Doris, J. M. (2002). *Lack of Character: Personality and Moral Behavior*. Cambridge University Press. <https://books.google.com/books?id=hnrQcJLaHVEC>
- Douglas, T. (2008). Moral Enhancement. *Journal of Applied Philosophy*, 25(3), 228–245. <https://doi.org/10.1111/j.1468-5930.2008.00412.x>
- Entwistle, J. W., Drake, D. H., Fenton, K. N., Smith, M. A., Sade, R. M., Backhus, L., Blitzer, D., Carpenter, A. J., Cohen, R. G., D’Amico, T., Dearani, J., Loebe, M., Luc, J. G. Y., McKneally, M. F., Millikan, S. J., Moffatt-Bruce, S. D., Murthy, S., Nason, K. S., Pickens, A., ... Zwischenberger, J. B. (2022). Normothermic regional perfusion: Ethical issues in thoracic organ donation. *Journal of Thoracic and Cardiovascular Surgery*, 164(1), 147–154.
<https://doi.org/10.1016/j.jtcvs.2022.01.018>

- Epstein, R. A. (1979). Nuisance Law: Corrective Justice and Its Utilitarian Constraints. *The Journal of Legal Studies*, 8(1), 49–102. <https://doi.org/10.1086/467602>
- Farahany, N. A. (2023). *The Battle for Your Brain: Defending the Right to Think Freely in the Age of Neurotechnology*. St. Martin's Publishing Group. <https://books.google.com/books?id=FFdrEAAAQBAJ>
- Fehr, E., & Fischbacher, U. (2004a). Social norms and human cooperation. *Trends in Cognitive Sciences*, 8(4), 185–190. <https://doi.org/10.1016/j.tics.2004.02.007>
- Fehr, E., & Fischbacher, U. (2004b). Third-party punishment and social norms. *Evolution and Human Behavior*, 25(2), 63–87. [https://doi.org/10.1016/S1090-5138\(04\)00005-4](https://doi.org/10.1016/S1090-5138(04)00005-4)
- Fehr, E., & Gächter, S. (2000). Cooperation and punishment in public goods experiments. *American Economic Review*, 90(4), 980–994. <https://doi.org/10.1257/aer.90.4.980>
- Fischer, P., Krueger, J. I., Greitemeyer, T., Vogrincic, C., Kastenmüller, A., Frey, D., Heene, M., Wicher, M., & Kainbacher, M. (2011). The bystander-effect: A meta-analytic review on bystander intervention in dangerous and non-dangerous emergencies. In *Psychological Bulletin* (Vol. 137, Issue 4, pp. 517–537). American Psychological Association. <https://doi.org/10.1037/a0023304>
- Greene, J. D. (2008). The secret joke of Kant's soul. In *Moral psychology, Vol 3: The neuroscience of morality: Emotion, brain disorders, and development*. (pp. 35–80). MIT Press.
- Greene, J. D., Cushman, F. A., Stewart, L. E., Lowenberg, K., Nystrom, L. E., & Cohen, J. D. (2009). Pushing moral buttons: The interaction between personal force and intention in moral judgment. *Cognition*, 111(3), 364–371. <https://doi.org/10.1016/j.cognition.2009.02.001>
- Güth, W., Schmittberger, R., & Schwarze, B. (1982). An experimental analysis of ultimatum bargaining. *Journal of Economic Behavior & Organization*, 3(4), 367–388. [https://doi.org/https://doi.org/10.1016/0167-2681\(82\)90011-7](https://doi.org/https://doi.org/10.1016/0167-2681(82)90011-7)
- Hansen, T., Olkkonen, M., Walter, S., & Gegenfurtner, K. R. (2006). Memory modulates color appearance. *Nature Neuroscience*, 9(11), 1367–1368.
- Harris, J. (2011). Moral Enhancement and Freedom. *Bioethics*, 25(2), 102–111. <https://doi.org/10.1111/j.1467-8519.2010.01854.x>
- Hohwy, J. (2013). *The predictive mind*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199682737.001.0001>
- Huemer, M. (2008). *Ethical Intuitionism*. Palgrave Macmillan. <https://books.google.com/books?id=wXKIGwAACAAJ>
- Ienca, M., & Andorno, R. (2017). Towards new human rights in the age of neuroscience and neurotechnology. *Life Sciences, Society and Policy*, 13(1). <https://doi.org/10.1186/s40504-017-0050-1>
- Isen, A. M., & Levin, P. F. (1972). Effect of feeling good on helping: Cookies and kindness. *Journal of Personality and Social Psychology*, 21(3), 384–388. <https://doi.org/10.1037/h0032317>
- Kahneman, D. (2011). *Thinking, Fast and Slow*. Farrar, Straus and Giroux. <https://books.google.com/books?id=ZuKTvERuPG8C>
- King, S. (2000). *On writing: A memoir of the craft*. Simon and Schuster.

- Krag, E. (2023). Identification with Change: Narrative Identity, Enhancements and Transformative Experience. *Philosophia*, 51(4), 2151–2170.
<https://doi.org/10.1007/s11406-023-00666-5>
- Levine, S., Kleiman-Weiner, M., Schulz, L., Tenenbaum, J., & Cushman, F. (2020). The logic of universalization guides moral judgment. *Proceedings of the National Academy of Sciences*, 117(42), 26158 LP – 26169.
<https://doi.org/10.1073/pnas.2014505117>
- Lighthart, S., Meynen, G., & Douglas, T. (n.d.). *Persuasive technologies and the right to mental liberty: The “smart” rehabilitation of criminal offenders*.
- Mack, E. (2015). Elbow Room for Rights. *Oxford Studies in Political Philosophy, Volume 1*, 194–221. <https://doi.org/10.1093/acprof:oso/9780199669530.003.0009>
- Mathews, K. E., & Canon, L. K. (1975). Environmental noise level as a determinant of helping behavior. *Journal of Personality and Social Psychology*, 32(4), 571–577.
<https://doi.org/10.1037/0022-3514.32.4.571>
- McCarthy-Jones, S. (2019). The Autonomous Mind: The Right to Freedom of Thought in the Twenty-First Century. *Frontiers in Artificial Intelligence*, 2.
<https://doi.org/10.3389/frai.2019.00019>
- Milgram, S. (2009). *Obedience to Authority: An Experimental View*. HarperCollins.
<https://books.google.com/books?id=vYGA45EODogC>
- Muñoz, J. M. (2023). Achieving cognitive liberty. *Science*, 379(6637), 1097.
<https://doi.org/10.1126/science.adf8306>
- Muñoz, J. M., Bernácer, J., & Güell, F. (2023). A Conceptual Framework to Safeguard the Neuroright to Personal Autonomy. *Neuroethics*, 16(3), 1–13.
<https://doi.org/10.1007/s12152-023-09523-4>
- Nozick, R. (2013). *Anarchy, State, and Utopia*. Basic Books.
<https://books.google.com/books?id=fVITAAAQBAJ>
- Paul, L. A. (2014). *Transformative Experience*. Oxford University Press.
<https://books.google.com/books?id=zIXjBAAAQBAJ>
- Paulo, N., & Bublitz, C. (2019). Introduction: Political Implications of Moral Enhancement. *Neuroethics*, 12(1), 1–3. <https://doi.org/10.1007/s12152-018-9352-0>
- PERSSON, I., & SAVULESCU, J. (2008). The Perils of Cognitive Enhancement and the Urgent Imperative to Enhance the Moral Character of Humanity. *Journal of Applied Philosophy*, 25(3), 162–177. <https://doi.org/10.1111/j.1468-5930.2008.00410.x>
- Persson, I., & Savulescu, J. (2014). *Unfit for the Future: The Need for Moral Enhancement*. Oxford University Press.
<http://books.google.com/books?id=EGHengEACAAJ>
- Pugh, J., Maslen, H., & Savulescu, J. (2017). Deep Brain Stimulation, Authenticity and Value. *Cambridge Quarterly of Healthcare Ethics: CQ: The International Journal of Healthcare Ethics Committees*, 26(4), 640–657.
<https://doi.org/10.1017/S0963180117000147>
- Pugh, J., Tan, J., Aziz, T., & Park, R. J. (2018). The Moral Obligation to Prioritize Research Into Deep Brain Stimulation Over Brain Lesioning Procedures for Severe Enduring Anorexia Nervosa . In *Frontiers in Psychiatry* (Vol. 9, p. 523).
<https://www.frontiersin.org/article/10.3389/fpsy.2018.00523>
- Ryberg, J. (2017). Neuroscience, Mind Reading and Mental Privacy. *Res Publica*, 23(2), 197–211. <https://doi.org/10.1007/s11158-016-9343-0>

- Sententia, W. (2004). Neuroethical considerations: cognitive liberty and converging technologies for improving human cognition. *Annals of the New York Academy of Sciences*, 1013(1), 221–228.
- Sinnott-Armstrong, W. (2008). *Framing moral intuitions*. MIT Press.
- Sobel, D. (2012). Backing away from Libertarian self-ownership. *Ethics*, 123(1), 32–60. <https://doi.org/10.1086/667863>
- Stokes, D. (2013). Cognitive Penetrability of Perception. *Philosophy Compass*, 8(7), 646–663. <https://doi.org/https://doi.org/10.1111/phc3.12043>
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211(4481). <http://science.sciencemag.org/content/211/4481/453>
- Zimbardo, P. (2007). *The Lucifer Effect: Understanding How Good People Turn Evil*. Random House Publishing Group. https://books.google.com/books?id=_q4hMhniseAC