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ORIGINAL PAPER

Neurorights as Hohfeldian Privileges

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Abstract This paper argues that calls for neurorights propose an overcomplicated approach. It does this through analysis of 'rights' using the influential framework provided by Wesley Hohfeld, whose analytic jurisprudence is still well regarded in its clarificatory approach to discussions of rights. Having disentangled some unclarities in talk about rights, the paper proposes the idea of 'novel human rights' is not appropriate for what is deemed worth protecting in terms of mental integrity and cognitive liberty. That is best thought of in terms of Hohfeld's account of 'right' as *privilege*. It goes on to argue that as privileges, legal protections are not well suited to these cases. As such, they cannot be 'novel human rights'. Instead, protections for mental integrity and cognitive liberty are best accounted for in terms of familiar and established rational and discursive norms. Mental integrity is best thought of as evaluable in terms of familiar rational norms, and cognitive freedom is constrained by appraisals of sense-making. Concerns about how neurotechnologies might pose particular challenges to mental integrity and cognitive liberty are best protected through careful use of existing legislation on data protection, not novel rights, as it is via data that risks to integrity and liberty are manifested.

Keywords Neurorights · Jurisprudence · Hohfeld · Mental integrity · Cognitive freedom · Discursive norms · Rationality · Neurotechnology · Brain data

Introduction

Neurorights are proposed solutions for emerging challenges posed by novel neurotechnological capabilities that are seen by some as threats to, in particular, mental integrity and cognitive liberty (sometimes 'freedom of thought'). The mind as a 'last refuge of personal freedom' [1], p. 1) is considered by some to be under threat, especially by way of neuroscientific techniques that may reveal hitherto private attitudes, intentions, or preferences, or even perhaps manipulate them, through interventions on the brain (ibid 2017, pp. 4–5). The neurotechnologies that might pose these threats could come in the form of clinical devices aimed at treating psychiatric disorders, or devices operated in contexts of legal investigations, or consumer devices with a variety of applications [2–4]. In each case, recordings of brain activity through a means such as electroencephalogram (EEG) are processed and used to make predictions about subsequent brain states, and their correlations with mental states, dispositions, attitudes, and so on. Between this recording, processing, and prediction is where threats to mental integrity and freedom of thought emerge as it is not clear who ought to be entitled, under what

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conditions, and with what level of credence, to deploy these techniques. Yuste et al. suggest that,

> "…we are on a path to a world in which it will be possible to decode people's mental processes and directly manipulate the brain mechanisms underlying their intentions, emotions and decision... [that] could profoundly alter some core human characteristics: private mental life, individual agency and an understanding of individuals as entities bound by their bodies." ([5], p. 160)

It seems reasonable to suggest that these outcomes are not very likely soon, if at all. Claims concerning neurotechnologies are regularly overblown [6–8] and specific applications such as 'mind reading' have been critically examined [9–11]. Neurotechnologies in general do not appear to be able to reveal mental contents, as in sci-fi scenarios, but can be used a basis for making predictions about mental phenomena. This will be discussed more in due course. At any rate, in order to ward off these emerging threats and worrying outcomes, Yuste suggests novel rights are the way forward, and along with Senator Guido Girardi of Chile successfully pressed this agenda in the Chilean legal system [12]. This practical move is accompanied by ongoing conceptual analysis on the nature of neurorights and their scope, including a working definition of 'neurorights' as,

> "…the ethical, legal, social, or natural principles of freedom or entitlement related to a person's cerebral and mental domain; that is, the fundamental normative rules for the protection and preservation of the human brain and mind." [13]

The connection with mental integrity and cognitive liberty can be seen clearly here, but at the same time a conflation between brain and mind comes in that opens a problem as I see it. Is this a justified conflation? The brain as part of the body is covered by rights already, regarding physical bodily integrity. A physical intervention upon the brain would require as much justification as any other on the body, or more, given the level of intrusion required to physically access the brain itself. Given rights exist for bodily integrity, it looks like 'fundamental normative rules for the protection and preservation of the human brain' are already in place. Doubtless, it is possible that interventions on the brain can have effects on the mind too. Off-target effects from therapeutic direct brain stimulation (DBS) in cases of Parkinson's Disease, for example, demonstrate this, as does the oft-cited case of Phineas Gage [14–16]. Regardless of their wider significance, as genuine, or as permanent, 'personality changes' or something else, these examples nevertheless show brain interventions can alter mental characteristics.

In terms of rights covering the mind, Ienca [13] discusses the European Union's Charter of fundamental rights which includes "…the right to respect for his or her physical and mental integrity," but 'mental integrity' itself is a difficult notion to get a grip of. Notably, the right just mentioned is a right to *respect for* mental integrity, not mental integrity itself. Moreover, the subsequent, short, discussion appears to suggest mental integrity is connected primarily with free and informed consent in medical and biological contexts. The EU Charter appears to locate the right to mental integrity somewhere within a wider context of autonomy. Rights to cognitive liberty are similarly difficult to cash out. Sententia defines 'cognitive liberty' in terms of "…the right and freedom to control one's own consciousness and electrochemical thought process." ([17], p. 227) Ienca ([13], p4) goes on to discuss the freedom of thought in terms of Article 18 of the Universal Declaration of Human Rights (UDHR), which states,

> "Everyone has the right to freedom of thought, conscience and religion; this right includes freedom to change his religion or belief, and freedom, either alone or in community with others and in public or private, to manifest his religion or belief in teaching, practice, worship and observance."

This is further shown to be an unconditional right, with reference to commentary by the United Nations Human rights Committee who say of the UDHR that it:

> "…does not permit any limitations whatsoever on the freedom of thought and conscience or on the freedom to have or adopt a religion or belief of one's choice. These freedoms are protected unconditionally"

But between these two references, there seems more obscured than revealed regarding a neuroright

to cognitive liberty. Regarding Sententia, we might ask: are we in control of our 'electrochemical thought process' at the best of times? It might make little sense in this context to assert a future right to something we do not normally have anyway. One issue here, to be addressed throughout the rest of this paper, is that 'Right' as used in this definition is unanalysed. Likewise, in the reference to the UDHR, there are questions about what 'Right' means. For instance, in a context of mental integrity and cognitive liberty it seems that what entitles a person to have a thought or belief is not rights, but *reasons*. Likewise, a person may change their thinking or their beliefs on the basis of new or better reasons. The reasons entitle the change or give the 'right' to change. Unconditional protection for the freedom to adopt a belief looks incoherent since it undermines reasoned inference as a condition on rational thought. This serves to highlight a potential inapplicability of rights-talk in this domain. Stated more soberly, this might amount to a protection of freedom of thought *within reason.* But this then places the responsibility for normative analysis of cognitive liberty or freedom of thought in terms of established formal and informal modes of reasoning. This places it in realm of rationality, not legal rights.

Without further clarity on exactly what work 'rights' is doing here, it seems puzzling to refer to them as desirable protections for emerging or future challenges to the mind. Is talk of 'rights' a useful way forward in this context?

Hohfeld's Analysis

Wesley Hohfeld, in his *Fundamental Legal Conceptions as Applied in Judicial Reasoning* [18], sets out to address gaps in legal reasoning as generated by conceptual unclarities with certain legal terms. It is a feature of English language usage in particular that talking about rights can range over a variety of meanings (like claim-rights, permissions). It is also a feature of English that privileges are sometimes portrayed as lesser than rights, as in the phrase, "x is a privilege, not a right." This suggests rights are inalienable and absolute, whereas privileges can be granted and withdrawn. This usage creates conceptual confusions that seep into judicial discourse, highlighted by Hohfeld. Centrally, he analyses talk of 'rights' and tries to strip back instances of rights-talk in judicial contexts to provide a minimally burdened sense of that talk, addressing perceived contradictions and tensions within it [19]. By removing unclarity, Hohfeld is aiming to generate a maximally useful account of rights-talk recognising that it is not univocal [20].

Hohfeld's aim is to delineate legal concepts of rights more carefully than general usage permits. By noting that rights-talk in general involves more than one actor, with regard to some specific matter of fact, Hohfeld also clarifies how different dimensions of rights-talk interact. For instance, 'privileges' are not subordinate to claim rights somehow, as common usage suggests. Instead, they are different dimensions of rights that operate like permissions rather than claims, and that generate no duties in others. From Hohfeld, we see that speaking of 'rights' can mean speaking of claim-rights, privileges, powers, or immunities. Each, moreover, signals a 'jural relation', meaning they ought to be considered relationally among at least two actors. With this in mind, we end up with the following set of 'correlatives':

Claim-right as correlated with Duty
Privilege as correlated with No Right
Power as correlated with Liability
Immunity as correlated with Disability

If I have a claim right to something with respect to another person, I can restate that right in terms of their duty to me with respect to that thing. If my claim right is to be credited for written work undertaken, I can restate this as another's duty to acknowledge me for that work if they put it to use. If I have a privilege of access to some piece of land, I can restate this as another having no right (read throughout: *no claim right*) to restrict that access. Powers and Immunities are second order entities in that they relate to abilities to waive or not rights and privileges [21], p. 306). If I have power to give orders at the workplace in which you are employed, I can restate this as your liability to follow those instructions. If I am immune to criminal prosecution owing to diplomatic status, the police officers at the door have a disability regarding my arrest.

For the purposes of this paper, the main focus is on the *right-duty* and the *privilege-no right* correlates. Using the Hohfeldian backdrop using these correlates in particular, the analysis lays out a basis for understanding what ought to be meant when we

are trying to talk about 'neurorights,' like a right to mental integrity, or a right to cognitive liberty [1]. To pre-empt, in arguing that the most reasonable way to think of neurorights is in terms of *privilege* and *no right*, not *right* and *duty* there will be implications for how legal recourse under purported neurorights ought to be conceptualised. In summary, the topic of neurorights is not ideally suited to discussion in terms of legal protection or of duties borne by others, so recourse so such 'rights' ought to be thought of differently.

The next sections will briefly discuss the ideas of mental integrity and cognitive freedom, before analysing them in terms of Hohfeld's account of rights and privileges. Next, discussion will turn to neurorights as privileges protected not by legal remedies or duties, but by norms of discourse and rationality. Alongside some objections to the paper's general account, lastly some implications for the specific case of neurotechnologies as prompts for new neurorights will be drawn out.

Put bluntly, neurotechnologies present no challenges that cannot be accounted for with revisions to data laws.[1] Data, in a specific sense of processed brain signal recordings, are a cross-cutting infrastructural element in neurotechnology in general. They ground the predictions made with neurotechnologies, and would be the basis for interventions on the brain (e.g. by way of neurostimulation). Hence, data law must protect brain data. The jurisprudential analysis presented, derived from Hohfeld, is an analysis precisely in that it is aimed to clarify obscure uses of rights concepts. It therefore suggests no novel paradigm besides judicious use of existing law and updating of data law is required for neurotechnology. If we are going to talk at all about 'rights' with respect to mental integrity and cognitive freedom, I will conclude, we had better think of them as Hohfeldian *privileges* – which means they can't stand as 'novel human rights' in being unprotected by claims over infringement. This can be pursued, first of all, through considering the putative novel rights in terms of what duties we could think of them as generating.

[1] A more general philosophical discussion of why I think mental content is – in principle – inaccessible to neurotechnologies is out of scope here, unfortunately, but will have to be taken up in subsequent writing.

Right to Mental Integrity

If I have a right to mental integrity, how should this be understood? An analogue might be drawn between this idea and the right to bodily integrity that is more widely understood. Another cannot without good reason or justification impinge upon one's bodily integrity, injure it, constrain it unduly, and so on. 'Integrity' here means something in the same sense as 'structural integrity,' that is, having to do with robustness.

An attack on mental integrity might then be akin to an attack on structural integrity – a breaking of supporting timbers or rattling of foundations. In terms of bodily integrity, it seems clear what this amounts to at least in some ways (there will always be grey areas). Breaking bones or injuring another would be an attack on their bodily integrity in a clear way. Carrying out emergency surgery on an unconscious patient could less obviously be an example. In this case it would depend on what reasonably could be presumed about the patient at hand, such as their willingness to be intervened upon or the appropriateness of the magnitude of the intervention.

What would such a breaking or rattling amount to in the case of the mental? It is not clear one can damage mental integrity in the same way that a bruise on flesh shows some impingement as the result of an encounter with an assailant. The robustness of the mental, on the structural analogy, might include such things as the capacity for following a train of thought, or for producing spontaneous thoughts. Capacities like these could certainly be interrupted by another, and so in this sense mental integrity could be considered vulnerable. Lavazza pursues a line something like this, suggesting that,

> "Mental Integrity is the individual's mastery of his mental states and his brain data so that, without his consent, no one can read, spread, or alter such states and data in order to condition the individual in any way." ([22], p. 4)

This is clearly aiming at addressing technological infringements of mental integrity. It is interesting in recognising an active component to integrity, in terms of mastery, rather than a static picture of something like solidity. But in the context of discussing general rights to mental integrity, this is surely too broad. Something as innocuous or as desirable as

informing someone of a pertinent fact could be seen as *conditioning someone in some way*, altering their mental state. In an organic, non-technological sense too maleficence could come in the form of lying to someone. Lying might produce in the other a set of thoughts that have a distorted relation to the wider world. It might bring them to believe, desire, act on, or say things they wouldn't otherwise. The integrity of their mind might be said to have been attacked in having come to contain elements it oughtn't to, in virtue of the lie. This might be like a structure that had been modified by a poor or a malevolent architect.

Another possibility would be the creation or inducing of mental states without the consent of a person. This would also be akin to a physical attack in the sense that another might damage my bodily state if they were to punch or kick me. The analogy with mental integrity would need to conceptualise a similar attack on the mind. This might be illustrated by giving someone unwanted information, such that they are shocked, or otherwise destabilised mentally, in virtue of learning the unwanted information. Here, someone might refer to the possibility of an evil hypnotist bent on producing in the mind of their victim inducements to act against their own will and better judgement. Imagining such a hypnotist, it could be seen as an attack on the mental integrity of another in a way more active than a lie. This might be the most vivid thought in terms of the possibility of an attack on mental integrity. Nevertheless, I think it can be addressed, and ultimately dismissed (in due course).

The question of mental integrity and its proper protection, by way of existing or novel legal rights, is worth pursuing in more detail. Following Hohfeld's analysis to boost clarity of the analysis, the exploration of this area can begin with the question: *Does another have a legal duty regarding my mental integrity, thought of in these ways?*

Right-Duty

Kant may well have thought it a duty not to lie to another. This isn't so much out of a direct concern for mental integrity as it is a respect for reason in oneself, and in itself (encompassing others *qua* reasoners). The motives for lying are not compatible with a good will, which is the only thing Kant considers being possibly good or bad as such [23]. Even if we grant that Kant's prohibition is correct, however, there is still no guarantee that another might not mislead me somehow in virtue of their acts or omissions. If another simply misinforms me through their own ignorance, or opts to withhold information from me and I take from this something unintended, they might be said to have misled me. But in the case of ignorance, there can be no duty to be omniscient as this would be impossibly demanding. Ought a duty not to lie also include a duty to correct misapprehension? This too would be too onerous. Certainly, in terms of this discussion the kinds of rights at issue are *legal* or at least *quasi-legal* rights, and so these wider issues would not be translatable into such a model.

Mental integrity on this structural model might require legal duties that another does not directly lie to me in various circumstances, but not that they ought to correct my confusions. There is no general legal duty to ensure I am not misled. If this is the case, then the prohibition on lying too seems weakened. If mental integrity is yours to ensure in the face of potential ignorance or misapprehension, why wouldn't lying too come under one of these headings?

Mental integrity requires taking care in believing things, but it seems hard to translate this into a legal duty borne by another. My mental integrity cannot be your duty to maintain. It also seems that the unintentional actions or omissions of another can interfere with my mental integrity. If I have a right to mental integrity in terms of a claim right, it is difficult to sketch out what this means for another person with respect to cases like lying or ignorance. Without an account of what another's duties might be with regard to my mental integrity, the case for mental integrity as a claim right is eroded on the Hohfeldian analysis.

Privilege-No Right

It might be more easily affirmed that another has no right to lie to me, insofar as so lying would affect my mental integrity. This seems more reasonable than the claim they have a duty not to lie. On this account, the right to mental integrity would be a privilege that no one has a right to interfere with. But then as a privilege, mental integrity seems like something which each person is permitted to pursue or not. Discussing Hohfeld's account of legal privileges, Schlag points out that,

> "If all we are talking about is A's privilege to do X, then that privilege, in and of itself, does not afford a legal remedy when B does something that interferes with A doing X. It may well be, of course, that other legal relations preclude certain types of interference by B (e.g., B cannot shoot A). But again, those are different relations requiring their own separate analyses" ([19], p. 202)

Put differently: No one has a right that I don't have mental integrity, as it is my privilege. But nor does anyone have a duty toward me to refrain from interfering in that integrity [20], p. 18). 'Other legal relations' might protect mental integrity. For example, legal consequences might be apt for actions that might compromise mental integrity: If I am isolated, and systematically misled in some matter, this might have effects on my mental integrity. But legal remedies ought to attach to the isolation rather than the integrity issue itself. Likewise, if one-sided journalism slides into propaganda, say, and risks skewing people's ability to conceptualise their government objectively that might be seen as hampering the maintenance of one's mental integrity [24]. But effects on mental integrity notwithstanding, one would have claims against systematic isolation, manipulative lying, and misinformation whether or not a specific 'right' to mental integrity were to be instantiated.

The 'right to mental integrity' looks a bit like a right (if you are a Kantian), but it is best suited to the garb of a moral right rather than a legal one. The right to mental integrity seems to look much more like what Hohfeld discusses as a privilege and correlates with the absence of a right in another to interfere. In each case what seems paramount is the role played by prudence and attention to already-existing rational or discursive norms rather than that which legal recourse could feasibly protect.

Right to Cognitive Liberty

If one has a right to cognitive liberty, what is this in respect to? A central part of cognition includes thinking. If the right to cognitive liberty is thought of as a right to liberty of thought, perhaps on the face of it this seems unimpeachable. But thought isn't in general 'free' in the sense of negative liberty. Logic, for one thing, constrains what ought to be thought. One is not free to conclude just anything from a set of given propositions. It isn't a matter of liberty as to whether 'A&B' entails 'A' and entails 'B'. It is a matter of deductive clarity. There is at least this normative or procedural condition on cognitive liberty. And to the extent that this kind of rationality involves meaningful terms and ideas, it also relates to mental content. An account of *meaningfulness* might be drawn upon to suggest that a negative conception of cognitive liberty would fail to substantiate everyday examples of reasonably constrained thought.

Grice discusses pragmatic features of interpersonal communication and includes an example of how some conspicuously flouted conventions can serve to express meanings that aren't explicitly stated. We are asked to imagine a reference letter for a prospective job candidate. Grice writes,

> "A is writing a testimonial about a pupil who is a candidate for a philosophy job, and his letter reads as follows: 'Dear Sir, Mr. X's command of English is excellent, and his attendance at tutorials has been regular. Yours, etc." ([25], p. 33)

Given what most people can be expected to know about reference letters, this is odd. It obviously flouts conventions normally associated with the genre. And the author of the letter can only be presumed to be knowingly flouting those conventions. What does this say of the prospective employee? It is complementary, but about things of little relevance to a philosophy job. And it is silent on anything that is relevant. We ought to take this as being far from a recommendation. The reader of the letter is steered toward a particular evaluation despite it not being overtly stated. They are being reasonably constrained to conclude that this candidate is no good, based on what this strange testimonial *means*.

It's true that one may be free to conclude 'F' from 'A&B', in the sense that no one can stop me. But the cost is not making sense. Anyone is free to take Grice's reference letter as a simple case of parsimonious description, or a sign that this referee is unprecedentedly terrible at recommending their candidates. But this would be to miss the pretty clear fact that it's an explicitly unstated warning not to employ the candidate. A right to cognitive liberty ought not, presumably, be freedom for irrationality nor credulity.

Right-Duty

What about seeking clarity through Hohfeld's correlative approach: It is one thing to claim a person has a right to exercise cognitive liberty, and another to claim a duty ought to be imposed on someone else not to interfere with the exercise. What exactly could that duty mean? For one thing, propositional logic classes would become legally trying contexts where students deriving 'F' from 'A&B' might seek recourse for being corrected. A right to cognitive liberty would permit students to derive anything they liked from anything they liked, which would suggest the end of pedagogy.

Even beyond the structure of the classroom, conversation would be vulnerable to claims of rights being infringed: A friend sees the number 9 bus approaching and claims this is the best way to Shepherd's Bush. How can this person be corrected that it's actually a way to Aldwych without implications for their rights to cognitive freedom? They can think what they want after all, so no constraint but their own ought to condition the direction and content of what they consider to be so. And correlating with this would be a duty not to interfere, that being the correlate of the right.

These somewhat absurd examples ought to serve as illustrations of the blunt instrument that rights-duty talk becomes in relation to cognitive liberty. The examples aren't supposed to be a prediction of something bound to happen under a mental rights regime. Rather, they show that were such a right to be promoted it would require careful elucidation so as to rule out them out. What's more, in the absence of a definitive account of cognitive liberty per se this elucidation might be as problematic as the problem cases just referred to. The problems highlighted in describing the right-duty correlate would be shifted into the elucidation of that which the right and duty ought to protect.

If we were to ask what entitles a thinker to their thoughts, the answer might be at least two-fold: spontaneity of mind, and reasons. Simply having something occur to oneself isn't something that can be inhibited. The 'entitlement' here is like 'finder's keepers'. Coming to a conclusion based on true premises and a valid form of argument too justifies a thought. Cognitive liberty is bounded by rationality in this sense, in being rationally entitled to conclude B from "A&B". How this relates to a legal conception of rights is at best obscure.

In a negative sense, no one ought to have a claim right to confound another's spontaneity of mind or their processes of reasoning. But nor ought they to have a duty of non-interference. There is at least some sense in which another's success in confounding of my reasoning co-varies with my taking in and adapting to what they say to me. The 'interference' of another person in my cognitive processes paradigmatically depends upon their persuading me their input is worth modifying my cognitive processes for. This will depend on at least two things: the coherence of the content offered and my decision whether to entertain it in any case. This dimension of a proposed mental 'right', like that of integrity above, seems more apt for discussion in terms of Hohfeld's *privilege*.

Privilege-No Right

If an actor has cognitive liberty, as with mental integrity, it looks like it is best seen as the privilege to think or refrain from thinking various thoughts. Cognitive freedom is bound by norms of rationality and meaning, on pain of incoherence. But no one has a right to try to constrain another's cognitive activity, but they certainly don't have a duty not to intervene. As groups of interacting people we are all vulnerable to the effects of others' ways of thinking. As soon as people begin a conversation they are potentially confronting one another with cognition-influencing propositions. The wills, arguments, expressions, perspectives of each and every one of us can affect the wills, arguments, expressions, and perspectives of everyone else. A parallel example might be useful here, in terms of a 'right' to self-defence:

> "Suppose I am attacked and exercise my "right" (privilege) of self-defense. Others could interfere with the exercise of my privilege by (say) "counter-attacking", or by restraining me in such a way that I could not fight back. It is clear that these are impermissible forms of interference; yet the obligation to forbear from engaging in them is not grounded on my privilege of self-defense, but rather on *claims* that I have against others that they not do certain things to me (such as violate my bodily integrity). And these are claims

> that I would have whether or not I had a privilege to defend myself in the situation imagined." [20], p. 18)

Physically restraining someone who is attempting to defend themselves from an attack violates their bodily integrity. Their privilege to defend themselves remains intact, albeit obviated by the infringement of their rights to bodily integrity. Another parallel might be that one's Article 10 human right to a fair and public hearing is not infringed by one not having been arrested and charged for an offence [26]. The right remains, though not being exercisable. Interference with a privilege of self-defence might come in the form of attempted dissuasion. Counselling the attacked that 'violence is never the answer' would be one way to interfere with their privilege of self-defence, as this kind of intervention would directly seek to forestall exercise of the privilege through changing the decision of the victim to engage. No duty would exist such that another ought not to try to dissuade someone from exercising their privilege for self-defence, hence no duty not to interfere obtains. Which is why this is a privilege and not a right: it has no correlative duty.

The sort of liberty that attaches to the cognitive is not that which attaches to overt action. Legal recourse can't be called upon to sway or neutralise arguments as they occur to people's minds or circulate among interlocutors. If I think of myself as a productive and respected member of the workforce, but another person informs me that I am in fact an underemployed pariah, I have no claim right against them for bursting my delusional bubble. No one has the legal right to constrain the holding of incorrect views or the entertaining of delusional ideas. *But no one could be reasonably said to have a duty not to interfere*, through means like dissuasion, such that the holder of unusual beliefs would have claims on the dissuader. If you want to know someone's state of mind or disposition, the best thing to do is ask them. This is complemented by the idea that intervening on the mind is also, often, a dialogical intervention. Proposing novel human rights as protections in this area uproots this idea and produces absurdities like that pointed out in terms of teaching as somehow an infringement of a protected right to think just whatever one pleases.

Neuro-privileges

The 'rights' to mental integrity and cognitive liberty seems to look much more like what Hohfeld discusses as privileges. They correlate with the absence of a right in another to interfere, not with duties another bears. From Hohfeld, this means that:

> If person A has a right to do x, another person B has a duty not to interfere with A's pursuit of x. A can expect legal recourse should B try to interfere.
> If person A has a privilege to do x, then person B simply has no right to interfere in A's pursuit of x. B has no duties with respect A's pursuit of x, and A can expect no legal recourse should B interfere.

Whether or not mental integrity or cognitive freedom are affected by the dis-entrenching of points of view through criticism, or journalism, or learning, at some point the matter is given over to judgement and individual decision to change or dig in.

The reason this conception of things is more compelling that rights-duties talk is that it doesn't rule out normal interpersonal modes of attempting to influence the mind and cognition of another person. Teaching, conversation, leading by example, writing, challenging, debating are all ways in which the integrity of another mind or their 'free' cognition might be affected. Not only does rights-talk make these standard ideas difficult to account for, it overlooks the enhancing effects they can have on mental integrity and cognitive liberty such as through gaining knowledge such that one can operate more autonomously in the world, or think more clearly about a greater range of things.

Indoctrination, Manipulation

None of the foregoing discussion deals directly with abuses of power or position such that a person might be indoctrinated in some way. Cases of manipulation can come about owing to misinformation, or inappropriate control such that a victim is disempowered sufficiently as to become malleable for the purposes of another's wishes. The discussions above do not take these fully into consideration as they are aiming at the conception of a right to protect the very nature of mind. The discussion therefore begins with all things

being equal. In the real world *ceteris* is rarely *paribus*, but for this analysis it is taken that there exist already policy discussions regarding rights, and legal remedies (however insufficient) to address instances of abuse, coercion, and indoctrination [24].

The discussion here focusses on mental rights as they would be applied generally. The suggestion is that these cases, where one person is victimised by another, are not standard cases of how law ought to apply to the mind and cognition. They are cases where actual power is abused, or some other malignant relationship is at work in. The starting point here instead is something like: what would it look like if the mind and cognition were specifically subject to legal rights? This is why the objections here are considered in hypothetical and somewhat abstract mode. They are meant to capture generality and principle, rather than specificity and reality.

The Evil Hypnotist Objection

The case of the evil hypnotist was raised at the outset as one general objection. This is a parallel for some future, unspecified neurotechnology that would be able to intrude upon one's mind in a substantial way, realising the concerns of Chile's Senator Girardi of a neurotechnology that "…can also manipulate the human brain, introduce thoughts, or know the unconscious." [12]. The idea here would be that without specific rights to mental integrity and cognitive liberty, there could be a gap in accounting legally for how such a notional technology could influence on one's own thoughts could play out. I'll sketch the objection in terms of the evil hypnotist, suggest a way to address the objection, but overall recommend it is rejected as an objection and explain why.

We are to imagine an evil hypnotist whose hypnosis puts a person in a trance. From the suggestible state of trance, the hypnotist (i) plants false beliefs that are against that person's will (ii) alters the normal reasoning of the person and (iii) creates a disposition such that the person is apt to behave in ways that fail to cohere with their expressed beliefs and desires.

Hypnotists are sometimes entertainment figures who put on shows that seem to suggest they have a deep power for manipulating the consciousness of others. Sometimes, they seem to convince someone they cannot move a limb, or that an inanimate object is a long-lost friend, or the ground on which they stand is slippery with ice. Certainly, these seem to be cases of planting false beliefs. They also seem to suggest the reasoning of the person is affected. If someone treats a mop as an old friend, it would also seem an obvious case of acting in ways incoherent with established ways of living. Why these examples are not particularly ethically troubling, nor legally actionable, relates to the voluntariness with which they are undertaken. Those who agree to take part in the hypnotist's show know what to expect and are game. If the hypnotist were to take their show further and plant a reprehensible rather than a silly idea, things would be different.

The evil hypnotist might decide he needs a patsy to commit a burglary for him. He would go about his craft planting ideas and ways of thinking in a hapless victim such that, when the time came, they found themselves behaving illegally and completely out of step with their own beliefs and desires. This would be an assault on the mind directly, we are to believe, as no physical coercion was undertaken. No threats were made, no blackmail, just hypnotic suggestion such that the victim suddenly finds that they have become a perpetrator. In terms of mental integrity, this would look like a violation. In terms of cognitive liberty, likewise.

Realistically, no hypnotist could claim to be able to make someone behave in ways that radically depart from their established moral standpoint. The kinds of antics seen in a hypnosis stage show are undertaken by audience members who volunteer, having already attended a hypnosis show. They are disposed to play along with the kind of thing that goes on at hypnosis shows. The stage trance would not last long where a volunteer was induced to debase themselves, hurt others, or go beyond their own standards of behaviour. In research settings, where hypnosis is seen to be effective, it is in particularly responsive individuals and used to produce effects like arm movements [27]. In clinical setting, some evidence suggests efficacy in anaesthesia [28]. These kinds of outcomes are not like those imagined by the evil hypnotist objection.

In a case where moral judgement is affected by hypnosis, through associating disgust reactions with specific descriptions of practices, this comes close to manipulating a person's judgement. But this still does not amount to the subverting of the hypnotised person's mind to prompt an ensemble of reprehensible behaviours, departing radically from their general

standpoint [29]. Even if this were not true anyway, if an evil hypnotist found a way to induce a person to transgress their own moral code, no recourse need be made to neurorights. Mental integrity and cognitive liberty might be compromised in a case where the evil hypnotist conditions a person to break the law for them. But what's required for a crime is the presence of an intention and execution of an action – *mens rea* and *actus reus* – which is certainly present in the evil hypnotist example.

The plan to break the law includes the recruiting of a patsy and hypnotising them to commit a crime. The act of hypnosis, meanwhile, is an overt action. Be it a swinging watch, or an elaborate neural intervention, the hypnotist physically intervenes upon the body and brain of the patsy in order to bring about the desired behaviour. While we might think of the offence against the mind of the victim as paramount, or as particularly terrible, the means of committing the act of hypnosis is physical and reliant on exploiting physical aspects of the victim's perception and brain function. As a crime, this is easily characterisable as another kind of physical assault, or a form of coercion.

The hypnotist objection is best rejected, rather than countered. It ought to be rejected because it can only be formulated by exaggerating the possibilities and ignoring the mechanism of hypnotism. The 'hypnotism' it relies on isn't anything real or possible, so it isn't really hypnotism. It's a thought experiment that aims to simply rule out that to which it is addressed by manufacturing a fictional counterpoint. It isn't possible and wouldn't land anyway.

Novel Neurotechnologies Objection

Much of the reason for discussing neurorights at all come from the discourse emerging from apprehension about novel neurotechnologies. These novel devices, and associated techniques of neural signal recording and data processing, are taken to mean the mind and its contents are made vulnerable in an unprecedented manner thanks to a new dawn in rendering the brain legible [30]. This position recommends addressing new concerns with neurorights as additions to existing human rights. This is certainly a more compelling case than a gerrymandered thought experimental hypnotist. Nevertheless, I think the foregoing analysis shows new rights to miss the point.

The dangers in new neurotechnologies appear to reside mainly in the provenance of those technologies as growing from technology companies, and the lifeblood of new systems in terms of data. A disregard for respectful handling of personal data has marked many of the technology companies we are familiar with, like Facebook, Google, Amazon, and Twitter. A wholesale datafication of every dimension of technology-users' lives seems part and parcel of engaging with these and other companies. With a move into the neural, a new front is opened. For some, there is nervousness about what brain data could reveal. For some, there is fear that Big Tech's influence could give brain data undue influence in profiling individuals, or swaying policies, and create a new 'weapon of math destruction' [31] based in subcranial goings on. Yet others are concerned that a data economy is a bad thing anyway, and giving over yet more data to the existing irresponsible players simply erodes privacy and cedes more power to those with too much already [32].

Neurorights emerge as a counter to these and related concerns. But the problems that would be raised in really pursuing a scheme of new rights specific to the neural mean efforts should be focussed elsewhere, and specifically on data as the central, infrastructural element in neural decoding and possible neurostimulation paradigms. Interventions on the mind are an ambition of neurotechnology developers, but these are not based in understanding a general model of mind and neurodynamics, as much as they are on prediction, specifically, based in neural data processing [33]. In this sense, the too-strong for a general account of mental integrity from Lavazza (above) seems relevant again.

We can generally decide how seriously to take an interlocutor based on a variety of factors like their level of knowledge, their disposition toward us, as well as the coherence of what they say – these are 'familiar rational or discursive norms'. The reading of data regarding the brain and making predictions about mental content on the basis of that data, could compete with these norms. Not being based in familiar rational or discursive norms, this kind of intervention would have no established place in a 'received wisdom' of 'mental mastery'. In terms of authority, for instance: Should a prediction be believed, because it is based in complex data science? Could it be better at predicting mental states than a person themselves?

These questions could constitute a novel threat to mental integrity. But rather than looking to discussions on human rights focus ought to be on brain data regulation as that which can regulate brain data and its uses.

It has been argued elsewhere that brain data ought to be as protected as sensitive medical data is protected, regardless of the purpose for which they are collected [34, 35]. Where 'neurorights' are conceived of as an umbrella term for specific legal protections afforded to brain data, this would serve to foreclose on the worst excesses of data-vampiric technology companies. Using specific, targeted legal approaches the problems that could emerge following on from neurotechnology development can be anticipated and mitigated, at least until a mature discourse can arise around what 'we' want or expect from neurotechnologies. In this future discourse, existing law, social, and technical values could be parsed and examined, and perhaps modified in light of emerging technologies [36]. In the meantime, a proactive use of existing measures that can be adapted to protect the sector – including its developers and users – from data misuse seems a sensible way forward.

Conclusion

The concepts of mental integrity and cognitive liberty are bound by norms of rationality and discourse. Mental integrity and cognitive liberty are familiarly evaluated according to phenomena such as a person's general levels of coherence, decision-making capacity, self-control, or behavioural disposition. They are typically evaluated by talking to people, critically engaging with ideas, and other such dialogical engagements. Were these to be conceptualised as 'rights,' they would require an openness not typical of human rights. Through analysing the concept of 'rights' via Hohfeld, it has been shown that these concepts fit best under a category of *legal privileges* against which no claim rights can sensibly be raised, and no legal duties of non-interference can be justified. This rules them out as 'novel human rights,' which ought to suppose remedies for violation. Dangers posed to mental integrity or cognitive freedom that go beyond what can be protected through prudent attention to rational and discursive norms will either be protected by existing rights (such as to bodily integrity) or established proscriptions concerning coercion or manipulation. Beyond this, in order to protect against the potential for novel issues arising about predictive neurotechnology in particular, mental integrity and cognitive liberty themselves are not the best focal points for action. Since emerging threats will likely emerge through (mis)use of neurofunctional data – for instance through neuroprofiling or prediction based in neuro-data – application of data protection to neuro-data ought to be pursued. Talk of neurorights in this context may serve mainly to distract from this more realistic, practical, and effective means of dealing with emerging concerns for the protection of brains and minds.

Declarations

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