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NEUROINTERVENTIONS AND INFORMED CONSENT

Abstract

It is widely believed that informed consent must be obtained from a patient for it to be morally permissible to administer to her a medical intervention. The same has been argued for the use of neurointerventions administered to criminal offenders. Arguments in favour of a consent requirement for neurointerventions can take two forms. First, according to absolutist views, neurointerventions should *never* be administered without an offender's informed consent. However, I argue that these views are ultimately unpersuasive. The second, and more plausible, form defences of the consent requirement may take are more moderate in that they accept the use of neurointerventions in some (rare) cases, but not in (most) others. Based on common rationales for consent in medical interventions, I discuss whether four moderate approaches in defence of the informed consent requirement for medical interventions succeed in establishing that informed consent must be obtained from offenders prior to administering neurointerventions to them. I offer novel critical perspectives on approaches that have already received some attention in the literature (i.e. bodily integrity and harm), and I critically discuss other approaches to defending informed consent in a medical context that have not yet received due attention (i.e. self-ownership and trust). Ultimately, I argue that it is not obvious that any of these considerations support a requirement of offenders' informed consent to neurointerventions. Lastly, however, I suggest that there is at least one overlooked fact as regards how courts currently employ mandatory neurointerventions, which may support such a requirement.

1. Introduction

During a visit to a physician, a person, let us call her Helena, is offered the injection of a novel drug which will ensure that she does not develop multiple sclerosis later in life. With an understanding of the possible benefits and side-effects of the treatment, as well as those that may result from refusing it, and without being influenced by others to do so, Helena declines the treatment. Let us call this case *Sclerosis shot*. Now, imagine another case where a person, let us call him Andy, is serving his third prison sentence for violent assault and is offered the injection of a novel drug that will reduce his level of aggression as part of an effort to reduce the likelihood of him re-offending. With an understanding of the possible benefits and side-effects of the treatment, as well as those that may result from refusing it, and without being influenced by others to do so, Andy declines the treatment. Let us call this case *aggression shot*. An important reason why most of us believe that it would, *ceteris paribus*, be wrong for the physician in *Sclerosis shot* to administer the drug to Helena without ensuring that she has a sufficient understanding of the treatment or without her decision being sufficiently voluntary is that it would invalidate, or blatantly fail to obtain, her informed consent. That is, it is typically believed that a patient's informed consent is necessary for it to be morally permissible to subject her to a medical intervention. The same has also been suggested for cases such as *aggression shot*. More generally, it has been argued that neurointerventionsⁱ, of which an aggression-hampering drug is an example,[1] should only be administered to an offender if he gives his informed consent.[2–4] I follow Thomas Douglas in referring to this view as *the consent requirement*. [5] In this paper, I argue that principled defences of *the consent requirement* face considerable challenges, but that there is at least one fact about the way in which criminal justice systems currently employ mandatory neurointerventions that may support it. Views regarding the moral import of *the consent requirement* may take two forms. Some

ⁱ Here I shall understand neurointerventions broadly as interventions that achieve their effect by working directly on individuals' brains.

proponents of *the consent requirement* seem to conceive of it as blocking any and all applications of non-consensual neurointerventions on criminal offenders. I call such views absolutist. In the next section, section 2, I argue that absolutist views face considerable challenges. In section 3, versions of more moderate defences of *the consent requirement* are critically scrutinised (I say more about the general structure of these views below). I consider four plausible rationales for the informed consent requirement for medical interventions, based on (1) autonomy or bodily integrity, (2) harm, (3) self-ownership and (4) trust. I then analyse whether these accounts imply that informed consent should be obtained for neurointerventions. I argue that this is not obviously the case. In section 4, however, I review a current practice relating to the use of one type of neurointervention, namely, chemical castration. On this basis, it is speculatively suggested that requiring informed consent for most neurointerventions may be morally desirable if their use will involve a similar practice. Section 5 offers a summary and conclusion.

2. A challenge for absolutist views

In this section, I pose a challenge to absolutist views. Advocates of such views hold, albeit for somewhat different reasons, that neurointerventions must *never* be used on offenders without their consent. Based on a review of the case law of the European Court of Human Rights Lando Kirchmair, has, for example, recently argued that “[m]edical treatment, like neurocorrectives, must not be imposed on anybody without their free and informed consent.”.[2, p. 21; see also [3], p. 18] The challenge facing any absolutist stance towards *the consent requirement* is perhaps best demonstrated by returning to the cases presented above. A salient feature of such cases as *Sclerosis shot* is that when Helena refuses to give her consent, Helena herself is the primary bearer of the possible negative effect of her refusal. Because multiple sclerosis is a non-communicable disease, if Helena acquires it and needs treatment, the harm it may cause others would typically be much less

extensive than the harm Helena herself may experience. Indeed, this is perhaps the most common kind of case in the medical context in which a medical practitioner seeks the patient's informed consent for a treatment or course of action: the patient is asked to choose which harm or risk of harm she is willing to take upon *herself*. In such cases, it seems plausible to say that what makes respecting the informed decision of a person morally appropriate (whatever one takes this to be) is precisely what prevents us from administering the treatment to Helena. There is, however, a relevant difference between this type of case and many cases where neurointerventions may be applied to offenders. In the latter cases, the primary bearer of any possible negative effect of refusing treatment is typically not the offender, but third parties. In *aggression shot*, for example, when the repeat violent offender, Andy, refuses to receive the aggression-hampering injection, the risks of harm due to his lack of treatment, i.e. the risk of him committing another violent assault (or worse), is not borne primarily by him, but by third parties, i.e. his potential future victims.[see also 6] Now, it seems at least arguable that if the potential harm caused to others resulting from an offender's refusal of treatment is sufficiently great, this provides a moral reason to not respect that offender's refusal. For example, suppose that there is reason to believe that an offender convicted of violent assault would, if released without an intervention, re-offend. Further suppose that this risk could be reduced by obliging the offender to receive aggression-hampering injections on a regular basis, but that the offender refuses to consent to the treatment. In this case, one could argue that the value(s) underpinning *the consent requirement* are outweighed by the potential harm to the offender's future victims.ⁱⁱ That sufficiently great harm to others can constitute a reason not to respect a person's dissent is a rather common view in the branch of medical ethics concerned with public health. Specifically, the permissibility of efforts to reduce the spread of infectious disease is

ⁱⁱ If this example is not convincing to the reader, suppose instead that the offender is a terrorist who would be known to kill hundreds or thousands of individuals if released without an intervention.

often taken to hinge (at least partly) on whether the carrier of an infectious disease's potential to harm others is sufficiently great so as to permit subjecting him to, for example, compulsory treatment or isolation.[7] The point here is not to argue that applying neurointerventions to offenders is similar to infectious disease control in the sense that the former may be morally permissible for the same reasons as the latter.[8] Rather, the point is to illustrate the plausibility of the view that the value(s) underpinning *the consent requirement* can, at least sometimes, be plausibly outweighed by a sufficient reduction in the well-being experienced by others. If this is true, then this constitutes a serious challenge to absolutist views.

3. Why informed consent?

If the arguments in the previous sections are sound, then absolutist views regarding *the consent requirement* are false. Defenders of the requirement could, however, opt for a more moderate position that would avoid this challenge, without abandoning the requirement altogether.

Specifically, they could adopt a threshold view;[9, p. 78-84] in other words, they could argue that if the amount of harm an offender who does not receive a neurointervention would likely inflict on others exceeds a specified threshold, then the offender's informed consent to the intervention is not necessary. However, if the amount of harm prevented by a mandatory neurointervention falls below that threshold, the value(s) that underpin *the consent requirement* prevent its being used in a non-consensual manner. Based on a threshold view, then, a proponent of *the consent requirement* would not be vulnerable to the charge levelled in the previous section. Furthermore, she can maintain that in all cases that fall below the threshold, it is still necessary to obtain an offender's consent for neurointerventions. Are such moderate threshold views cogent? To provide an answer to this question, scrutiny is needed of the specific rationales that could be provided for this requirement. In this section, I consider whether prominent rationales for informed consent to medical interventions

can be applied to show that offenders' informed consent to neurointerventions is required. I suggest that it is unclear that they can and, thus, that even moderate defences of *the consent requirement* may not succeed.

My main strategy is to argue that it is not obvious that imposing non-consensual neurointerventions on offenders is morally worse than other responses by the criminal justice system to wrongdoing which are usually considered morally acceptable. Specifically, I assume that incarceration can be regarded as an appropriate response to some types of wrongdoing. Note, however, that nothing said below assumes that current prison conditions or sentencing practices, which no plausible penal theory would consider ethically appropriate,[6, chapter 7] are ethically justified. Against the backdrop of these practices, many neurointerventions might quite easily be shown to be the lesser evil. The arguments made below will assume instead, following Thomas Douglas, that incarceration entails offenders be:

[...] held in institutions that placed serious and constant constraints on free movement and association, but otherwise exposed offenders to no greater risks to their health and security than average members of the unincarcerated citizenry, and took all reasonable steps to safeguard opportunities for political participation, legal representation and education.[5, p. 105]

Besides assuming this (unfortunately) merely ideal view of prison conditions, I also assume that the lengths of periods of incarceration received by offenders are morally defensible. (One could argue, perhaps, that given these assumptions the relevant difference between mandatory neurointerventions and incarceration is simply that the latter and not the former is a deserved response from the state. And this, it may be argued, is why consent is needed for neurointerventions, but not for punishments. I cannot give full attention here to such desert-based

concerns, but let me briefly list two reasons why one might doubt that such considerations are sufficient for establishing that consent is needed for neurointerventions. First, neurointerventions could in principle be given not as an alternative to punishment, but as an *alternative punishment*. [6,10] If this is true, the imposition of mandatory neurointerventions would thus not require offenders' consent qua its constituting a punishment. Second, it is not clear that a mandatory neurointervention can never be deserved even if it does not function as a punishment. In principle, there may be cases in which the offender deserves to receive a neurointervention although the desert-base is not one that could justify punishment.) Having presented these preliminary remarks, let us turn to accounts of why informed consent matters from a moral standpoint.

3.1 Autonomy and bodily integrity

A standard view in medical ethics is that the moral value of informed consent is derived from the principle of respect for autonomy. [11–13] Alternatively, and as I shall follow others in understanding it here, one may frame this value in terms of a more basic right to bodily integrity; that is, as a right to have autonomous control over who and how others interfere with one's body. [5] To be sure, much can be said in favour of this view in the medical context, but it is arguably unclear whether this should lead us to reject the use of non-consensual neurointerventions in the criminal justice context. Specifically, as Douglas has noted, [5] most of us believe that offenders' informed consent is not necessary for it to be morally permissible for the state to infringe upon some of their rights when administering punishment. When punishment is meted out in the form of incarceration, for example, most seemingly accept that offenders' rights to, *inter alia*, free movement and association do not provide a sufficiently strong reason for considering incarceration as morally impermissible. The challenge for the proponent of *the consent requirement* is thus to explain why these and other moral rights can be permissibly violated when responding to criminal wrongdoing,

but that this is not the case if the right in question is the right to bodily integrity. How could this challenge be met? Two attempts to do so have been proposed based on the notion that the offender's agency is threatened by employing mandatory neurointerventions.[5] Let us consider each argument in turn.

First, one may suggest that violations of bodily integrity by neurointerventions are a threat to agency because their use could be detrimental to the capacities necessary for agency as such. In contrast, incarceration has no (or, at least, less of an) effect on these capacities. However, while some neurointerventions could have this effect, e.g. lobotomies, it is surely not a necessary feature of mandatory neurointerventions. For example, it seems plausible to maintain that administering neurointerventions to, for instance, curb a sex offender's strong sexual desires[14] or to minimise a drug addict's craving for drugs[15] both enhance rather than impede an offender's capacity for agency.[see also 6, chapter 2] In sum, employing these neurointerventions at least constitutes no threat to offenders' capacity for agency.

The second way one may try to establish that violations of bodily integrity by means of neurointerventions are a threat to agency in a way that incarceration is not, would be to argue that only the former constitute a *symbolic threat* to agency. In other words, violations of bodily integrity by means of neurointerventions send the morally problematic message that the offender is not an agent, or, at least, that he is less of an agent than others. As one proponent of this view has recently put it "[i]nvading the profoundly intimate sphere of the offender's mind and body, depriving a person of control over herself, seems to convey the objectionable message that this person is fundamentally inferior and needs to be remoulded." [16, p. 324, see also 17] As might already be clear, this objection, as it is developed by Shaw, concerns not only violations of bodily integrity, but also violations of *mental integrity*.

In what follows, for the sake of simplicity, I will continue to speak in terms of bodily integrity, but what is said below applies to symbolic threats to agency posed by integrity violations by neurotechnological means in general.ⁱⁱⁱ First, incarceration *might* involve a similar symbolic threat to agency. To see why, it would be helpful to say a little more about Shaw's position. Rather than rely on purely abstract notions about the communicative threat posed to offenders by mandatory neurointerventions, Shaw laudably supports her argument with empirical evidence regarding the social meaning of violations of bodily integrity. By drawing on empirical work from such fields as psychology and sociology, she argues that there is evidential support for her view that violations of bodily integrity by mandatory neurointerventions send a particularly problematic message. As she maintains, employing them would "have troubling associations with both animalistic and mechanistic metaphors [...]".[16, p. 328] Roughly speaking, applying neurointerventions to offenders in ways that violate their bodily integrity sends the dehumanising and disrespectful message that offenders are like animals or machines. However, even if evidence supports the assertion that applying mandatory neurointerventions would convey this type of message, Shaw cites no studies indicating that incarceration *does not* communicate a similar message. Indeed, to my knowledge, no such studies are available. However, it is not inconceivable that empirical scrutiny might reveal incarceration to indeed send such a message. After all, it is common to prevent animals (at least those considered dangerous to humans) from living freely in our communities, something that is often achieved by restricting their freedom of movement. Consequently, it does not seem implausible to claim that incarceration, which excludes offenders from the community and, *inter alia*, restricts their freedom of movement, might also, to use Shaw's

ⁱⁱⁱ That is, it would seem to make no difference to the arguments offered whether one holds that it is sufficient for a problematic message to be conveyed that bodily integrity *or* mental integrity is violated or whether one holds that these two kinds of integrity must *both* be violated for such a message to be conveyed (or, alternatively, that an intervention that violates both mental and bodily integrity sends a *more* problematic message than an intervention that violates only one of them).

phrase, be associated with animalistic metaphors. Incarceration might, in other words, send the message that offenders, just like dangerous animals, must be excluded from living among the rest of “us”. (Of course, some scholars would reject incarceration as an appropriate response to wrongdoing if this is indeed the message it conveys.[18] It is not clear, however, whether Shaw would accept this conclusion.) Note that I am not claiming that such an association, in fact, exists. Rather, my point is that without empirical studies that rule out such a connection, Shaw is not in a position to conclude, as she does, that mandatory neurointerventions constitute a greater communicative threat to offenders’ agency than incarceration. Secondly, it is an open empirical question whether *all* mandatory neurointerventions indeed convey a morally objectionable message of the kind that Shaw and others envisage. Until such work can be done, it is entirely possible that the message conveyed by administering a mandatory neurointervention is less severe than Shaw and other authors fear. Furthermore, it is an open question whether some neurointerventions convey more than one message and, perhaps more importantly, how to determine the moral status of employing them if some of the messages they convey are morally problematic while others are morally desirable. For example, suppose that a mandated neurointervention(s) enhances an offender’s cognitive and moral capacities so that they are at a considerably *higher* level than those possessed by the average person. Would such an intervention exclusively convey a disrespectful message along the lines of “You are inferior to others and need correction”? Or might it also send the more positive message that post-intervention, the offender is intellectually and morally superior to most of us? And supposing that it is desirable to convey the latter message, does this reduce or cancel out the moral objectionability of the inferiority message expressed by violations of bodily integrity? All in all, more work seems to be required in order to uphold the conclusion that mandating neurointerventions for offenders constitutes a greater communicative threat to agency than incarceration.

In summary, I have argued in this section that if informed consent is morally important because of its relation to autonomy or bodily integrity, then it is unclear whether all non-consensual neurointerventions should be ruled out. However, a proponent of *the consent requirement* could argue that it is in fact justified based not (or not exclusively) on the need to respect autonomy or bodily integrity, but on another important value, or several other important values. If *the consent requirement* derives its moral merit from (or at least partly from) one of these sources, then the challenges raised above can perhaps be avoided. So, let us consider some other plausible ways to motivate the requirement.

3.2 Harm

One alternative way to defend the informed consent requirement for medical interventions is to point to the fact that it protects patients from non-consensual harm.[12, p. 118] However, if one attempts to provide a similar argument in favour of *the consent requirement*, a similar challenge to the one raised above arises. The challenge, as is probably clear, is that non-consensual incarceration often causes harm to offenders. More precisely, and as Thomas Douglas rightly points out, the harm caused by restrictions of rights such as the rights to free movement and association can be significant because such restrictions would be likely to “damage existing personal relationships while making it difficult to form new ones, they would seriously restrict sexual freedoms, they would make it impossible to pursue most careers, and they would more generally prevent the realisation of many life-plans.”[5, p. 114] Yet, importantly, despite these harmful effects, most of us continue to believe incarceration to be a permissible (or even desirable) response to some criminal wrongdoing. Thus, the challenge for a harm-based defence of *the consent requirement* is to show that mandating neurointerventions for offenders is typically *more* harmful to them than

incarceration. Three kinds of harm that mandatory neurointerventions may be said to cause offenders to a greater degree than does incarceration can be distinguished.

First, mandatory neurointerventions can be said to be more harmful than incarceration because they would be more invasive of offenders' bodies. However, while it is ultimately an empirical question as to whether this is true, there seems to be some reason to be sceptical. Suppose, for example, that a neurointervention consists of non-consensually adding omega 3 supplements to an offender's food, consumption of which has recently been linked to reductions in anti-social behaviour.[19] Or, alternatively, suppose that the intervention consists of the offender having to receive Transcranial Direct-Current Stimulation (tDCS), i.e. a non-invasive neuromodulation technique which delivers a low electrical current to the scalp by electrodes, which has also recently been shown to reduce aggression among some offenders.[20] Now, the case of adding omega 3 supplements to offenders' food seems equivalent, in terms of its level of bodily invasiveness, to the morally innocuous fluoridation of public water supplies to prevent tooth decay. And, as Douglas points out, the level of bodily intrusiveness involved in tDCS sessions seems equivalent to that involved in waking up a sleeping person by turning on the light:

Just as tDCS results in electrical energy penetrating a person's skull, turning on a light results in electromagnetic radiation penetrating her skull—the light rays pass through the sleeping person's eye lids, cornea and lens and reach her retina, which lies some distance within the skull.[21, p. 114]

Plausibly, then, neither of these techniques, at least, seems to involve a morally problematic level of bodily invasiveness.^{iv}

^{iv} For an argument that neurointerventions involving the injection of a drug might also not be more harmful than incarceration, see [5, p. 113-115].

However, and second, one may instead argue that non-consensually administering neurointerventions to offenders is likely to be more harmful than incarceration because of its detrimental effects on offenders' "inner lives". Marcello Ienca and Roberto Andorno, for example, have recently pointed out that non-consensual intrusions into individuals' "brains ... may ... have a direct impact on their neural computation and result in direct harm to them." [22, p.17] One obvious way that non-consensually altering offenders' neurological makeup might harm them would be in worsening their mental health. [22, p. 19]^v At least some neurointerventions do seem capable of causing such mental deterioration. For example, according to a recent review, the possible side-effects of Deep Brain Stimulation (DBS)^{vi} include, among other things, hallucinations, mania, apathy and depression. [23] But there are reasons to be sceptical of the view that mandatory neurointerventions are *generally* more harmful than incarceration since incarceration can also have detrimental effects on offenders' mental health. [24] For example, studies have shown that there is likely a causal relationship between incarceration and major depression [25] as well as other mood disorders, such as bipolar disorder and dysthymia, among offenders. [26] In addition, at least one other element of the criminal justice system prior to being incarcerated, namely, being arrested, has been argued to be an independent source of mental health risk. [27] Consequently, it is not obvious that there is a relevant difference between incarceration and mandatory neurointerventions in terms of their respective detrimental effects on offenders' "inner lives". [see also 6, p. 85f]

Third, one could argue that the simple *prospect* of receiving a neurointervention might be significantly distressful in at least two ways for offenders even if the administration of the intervention is not by itself more harmful than incarceration in either of the senses previously

^v The authors also seem to consider reductions of mental control as a harm that might follow the use of mandatory neurointerventions. For a critical discussion of this concern, see [6, chapter 3].

^{vi} DBS consists of the surgical implementation of electrodes in the brain, which delivers electrical impulses in order to stimulate specific parts of it.

discussed.[17, p. 103] First, this might be the case because, like most adults, offenders are used to having control over their own bodies and being denied such control would be particularly distressing. Alternatively, and second, one could argue that the prospect of receiving direct changes to one's mental life, i.e. changes occurring without one engaging one's own rational capacities, is likely to cause significant distress. Is this a promising approach to establishing that mandatory neurointerventions are likely to be more harmful than incarceration? I believe the answer to this question should be in the negative. First, it seems plausible that for most people the prospect of becoming incarcerated, and thus, for example, being separated from one's family and friends, would also be significantly distressing and harmful. One might suggest that the level of distress experienced by offenders at the prospect of incarceration is likely to be lower than the level of distress they experience when faced with the prospect of receiving a mandatory neurointervention. To my knowledge, however, there is no data available that would support this assertion. Second, if the courts were to ensure that offenders are informed that the neurointervention would be no more invasive than, for example, drinking fluoridated water or being awoken from one's sleep by the lights being turned on, then this may calm offenders' anxieties concerning the interventions.

To summarise this section, I have argued that harm-based rationales for *the consent requirement* face the challenge of making plausible the case that administering to offenders mandatory neurointerventions is generally *more* harmful than incarceration. Three approaches to doing so were considered, all of which were shown to be challengeable.

3.3. Self-ownership

Another rationale sometimes invoked for requiring informed consent for medical interventions is that in its absence the proprietary rights individuals have over their bodies and their minds are violated.[28] Persons, it is said, own themselves and for reasons similar to why trespassing or using

another person's property without her consent is wrong, so too is trespassing on or using a person's body without her consent.[29,30] The self-ownership account of the requirement of informed consent is appealing because it accommodates the intuition that individuals should be the final arbiters of what medical interventions they receive even if the interventions are "safe, low-impact, and clearly beneficial, and requires no agency on our part." [31, p. 15] Furthermore, the self-ownership rationale for *the consent requirement* seems to be able to justify why consent is needed for neurointerventions, but not for incarceration. (Although not all proponents of self-ownership believe that it implies this.[32]) As Kasper Lippert-Rasmussen observes, defenders of self-ownership can plausibly argue that traditional punishments, such as incarceration, involve manipulation of the offender's *external* environment.[33] Thus, incarceration is not a violation of self-ownership. By contrast, mandating a neurointervention does involve such a violation, because directly manipulating offenders' brains necessarily involves "doing something *to them*, not to their external surroundings ...".[33, p. 143 italics in original]^{vii} In sum, whether informed consent is required should track whether an intervention manipulates the external environment or directly manipulates offenders' bodies and minds, since only the latter violates self-ownership. There is, however, at least one major challenge to arguments in favour of *the consent requirement* based on self-ownership.

Consider what is likely to be an ordinary series of events that an offender encounters with respect to the criminal justice system. First, the offender is apprehended by law enforcement. Then, he is brought before a court and, if found guilty, sentenced to, say, incarceration. Finally, he is transported to prison. Proponents of self-ownership will presumably suggest that these are clear cases of external changes to an offender's environment and, thus, no threat to his self-ownership. Hence, no consent is required. However, this only seems to be true based on the assumption that the

^{vii} Note that Lipper-Rasmussen ultimately argues in favour of rejecting the notion of self-ownership.

offender will not attempt to resist any of these external manipulations. Suppose that he walks away from law enforcement when they attempt to apprehend him, that he refuses to get up from his chair after having received his sentence, or he refuses to get off the bus that has transported him to jail. Presumably, grabbing the offender's arm to stop him from walking away or lifting him and carrying him out of the courtroom or off the bus are all violations of his self-ownership. After all, these things are done *to* the offender, not to the external environment. If this is true, it seems that in some cases, manipulating an offender's external environment, i.e. placing him in prison, cannot be achieved without violating his self-ownership. Of course, proponents of self-ownership could embrace this implication: if the external environment cannot be manipulated without violating self-ownership, they may say, the external environment should not be manipulated. But this implies, among other things, that offenders should not be prevented from walking away from law enforcement and should not be removed from a courtroom or from a prison transport if they insist on staying seated. Few, I believe, find these implications acceptable. Alternatively, one could argue that self-ownership can permissibly be violated in such cases. But such arguments would presumably need to appeal to something other than the distinction between manipulations of the external environment and direct manipulation of offenders' bodies and minds. Put otherwise, an argument would be needed to show why coercive and self-ownership infringing measures taken to alter an offender's external environment are permissible, while any such violation resulting from mandating neurointerventions is not. I do not know what such an argument would look like.

In sum, while the self-ownership rationale for *the consent requirement* may have initially seemed appealing, serious problems arise when one considers what is likely to be an ordinary series of events encountered by an offender within the criminal justice system.

3.4 Trust

Some favourable accounts of the informed consent requirement in the medical context are based on its relation to trust. The most prominent view seems to be that informed consent is instrumental in restoring and/or preserving individuals' trust in caretakers or in the medical system in general.[34–36] (Other trust-based view focuses on the fiduciary relationship between healthcare professionals and patients, and its relation to informed consent.[37] The appropriate role of physicians in the administration of neurointerventions has been critically discussed at length elsewhere.)[6, chapter 5] Regarding the importance of informed consent for medical interventions, some have suggested, among other things, that if individuals do not trust healthcare professionals to respect their refusal of an unwanted treatment, they may avoid contact with members of the medical system altogether, with possibly dire consequences for themselves and others.[38,39] Some have also argued that such public trust can similarly be eroded by coercing criminal offenders to receive medical treatment. As one proponent puts it, “unless a sharp demarcation is made between punishment and care, there is a definite risk that the trust in the health care system will be undermined.”[35, p. 86] So, the question arises as to whether mandating neurological treatment for some offenders is likely to decrease societal trust in the healthcare system and, equally important, whether such a decrease of trust would necessarily lead to the outcome that proponents of the trust rationale fear. In my view, both of these questions should be answered in the negative.

First, to the best of my knowledge, no empirical data exists indicating that a decline of societal trust in the medical system would likely follow from the non-consensual administering of neurointerventions to some offenders.

Second, and more importantly, even if this were to follow, it is not necessarily clear that this would be undesirable. To see why, note that just as the level of trust in the medical system can be too low, it seems plausible that the level of trust in the medical system can also be too high. In other words, individuals might trust the medical system when in fact they *should not* trust it.

Such excessive trust might, for example, lead individuals to accept a proposed treatment without considering whether this treatment aligns with their other values. More generally, it may lead people to uncritically accept a problematic degree of medical paternalism in which their own wishes and interests are curbed by medical practitioners. Now, the optimum level of trust in the medical system in any given society seems such that it, *inter alia*, ensures as many individuals as possible seek out its representatives when they are in need of aid, but simultaneously ensures that these individuals do not easily fall prey to medical paternalism. If true, this implies that a decrease in trust is only worrisome to the extent that it decreases the trust level below this optimum.[36] If the public (or the majority of it) places excessive trust in the medical system, i.e. if their trust level is above the optimum level, then the decrease in trust that may follow the administering of non-consensual neurointerventions to offenders may in fact bring their trust level closer to the optimum. This shows that one cannot straightforwardly conclude that a decrease in public trust in the medical system due to the implementation of non-consensual neurointerventions should necessarily be avoided.

However, and third, let us *arguendo* suppose that the non-consensual administering of neurointerventions to criminal offenders would typically lead to trust levels falling below the optimum. Even if this were so, it still would not necessarily lead to the consequences that proponents of the trust rationale fear, because other steps could be taken to counteract this negative effect. There are many suggestions for how to build such trust in the healthcare system, including collecting and disclosing levels of patient satisfaction to the public,[40] and increasing the transparency of the relationship between doctors and the pharmaceutical industry.[41] If these or other ways of increasing societal trust are effective, this could perhaps compensate for the presumed loss of trust resulting from administering mandatory neurointerventions to offenders. At least, it is an open question as to whether this may be the case.

In conclusion, it seems that basing an informed consent requirement for neurointerventions on its instrumental role in securing public trust would be unpersuasive. No empirical data seems to support the idea that using such interventions would decrease societal trust, and even if such a decline were to indeed follow, this may not necessarily be morally undesirable. Importantly, however, these observations do not warrant the strong conclusion that the instrumental relation of informed consents to trust can never morally prevent the use of mandatory neurointerventions. More modestly, the considerations in this section imply the much weaker conclusion that without further empirical data, it is not possible to decide whether it would or not.

4. Why current legal practice may favour the consent requirement

If the arguments in the previous sections are sound, this should at least weaken the belief held by proponents of *the consent requirement* that a principled defence of it is available. In this section, however, I will suggest that there may be at least one feature of the use of one particular neurointervention currently mandated in certain jurisdictions, namely chemical castration, that favours the requirement. While an admittedly speculative claim, I will suggest that if other neurointerventions are applied in similar ways, then it may be preferable to require informed consent from offenders. In other words, requiring consent may ensure that already ethically-defective criminal justice systems do not become *even worse*. I will assume it to be uncontroversial that one way in which the criminal justice system could become worse would be by pursuing courses of action that inflict or result in more unjustified harm to offenders or others than not pursuing these courses of action.

My focus on the practice of court-mandated chemical castration starts from the observation that most legal statutes allowing or requiring judges to impose chemical castration on sex offenders do not differentiate between types of sex offenders and instead opt for a broad legal

definition. A sex offender is roughly, on this conception, someone who has been found guilty of committing one or more grievous sexual crimes. Furthermore, the statutes often do not require that a full psychological or psychiatric evaluation of the offender be conducted prior to the administration of the intervention.[42,43] One possible consequence of this lack of differentiation and medical scrutiny is that the administering of libido-reducing drugs to certain types of sex offenders will not prevent recidivism as the drugs may not target the offender's main motivation for committing the crime. As one commentator has noted, chemical castration will likely not reduce crime rates among sex offenders whose motivation for committing a sexual crime was the desire to dominate or harm their victims because "this group of offenders, even if rendered impotent ... would simply find some other weapon with which to violate their victims." [44, p. 648, see also 43] While this is a speculative remark, one general worry would be that the legal statutes on other mandatory neurointerventions for criminal offenders would be similarly defective: for example, failing to differentiate between types of violent offenders. There are at least two reasons why this would be morally undesirable. First, it may lead to some dangerous offenders being released from prison, because they are falsely believed (by others and perhaps even themselves) to be prevented from committing new crimes. This, in turn, may result in harm to innocent victims that could otherwise have been avoided had the offender been sentenced to another form of treatment, for example psychotherapy, or simply remained incarcerated. Second, and related to the former, in cases where the neurointervention has no crime-preventive effect, the harm to the offender from side-effects serves no ethically desirable end that could justify inflicting such harm. The offender would, as it were, be harmed for no good reason. (Of course, the harm of using these drugs due to their use on offenders who are not appropriate targets for the treatment must be balanced against the harm that usage on offenders who *are* appropriate targets for the treatment prevents. It is worth noting, however, that the consensus among scholars seems to be that more work must be done

before any firm conclusions about the preventive effect of mandatory chemical castration can be reached).[45,46] Thus, assuming that requiring informed consent from offenders for neurointerventions would reduce the chance that they are used on offenders on which they would have no crime-preventive effect, if for no other reason than that the offender himself recognises that the neurointervention will not aid in his rehabilitation, this would surely count in favour of the requirement.

5. Conclusion

Most people believe that it would be wrong for a medical practitioner to administer a medical intervention to a patient without her informed consent. However, contrary to what some theorists have suggested, I have argued that both absolutist and moderate views regarding an informed consent requirement for neurointerventions are, in principle, challengeable. Of course, other accounts of the moral import of informed consent may avoid the challenges made above, so one should not conclude on the basis of the current discussion that the non-consensual administering of neurointerventions to offenders is in fact permissible. Furthermore, as I have suggested, there is at least one feature of the current use of mandatory chemical castration that may support *the consent requirement* if it were to become a general feature of how legal systems employ neurointerventions. My hope is that this paper has illustrated how a clear, principled defence of the requirement is harder to come by than many seem to believe. Furthermore, and more positively, I maintain that support for *the consent requirement* may be more successfully pursued in the actual and non-ideal workings of the criminal justice system.

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