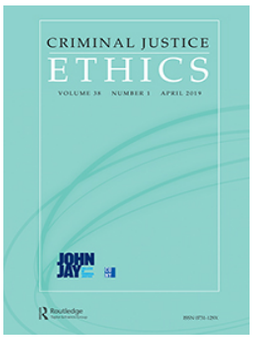

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ARTICLE

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Objections to Coercive Neurocorrectives for Criminal Offenders –Why Offenders' Human Rights Should Fundamentally Come First

LANDO KIRCHMAIR *

"Committing a crime might render one morally liable to certain forms of medical intervention", claims Thomas Douglas, who stated in this context that "compulsory uses of medical correctives could in principle be justified." This article engages critically with his and other arguments on the use of coercive neurocorrectives for criminal offenders. First, the rehabilitation assumption that includes—for coercive neurocorrectives to work as an alternative to incarceration—that rehabilitation is the "only goal" of criminal punishment is criticized. Additionally this article engages with the theoretical difficulty of solely rehabilitative approaches, and discusses why it is unfortunate to design neurocorrectives so as to be particularly harmful in order to imagine administering them as being a punishment. Second, until we know more about specific neurocorrectives, we are well advised not to undermine the most important objection against coercive neurocorrectives, namely offenders' human rights. This article argues that the use of coercive neurocorrectives would particularly violate Article 3 of the European Convention on Human Rights which guarantees as an absolute right that "[n]o one shall be subjected to torture or to inhuman or degrading treatment or punishment", and finally holds that a still weak human right to mental integrity and self-determination should fundamentally come first.

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I. Introduction

Criminal offenders are a threat to the public. Generally, at a total of 85,122, the size of the prison population in England and Wales is high.[1] Moreover, the numbers are rising steadily. When David Garland published his *Culture of Control* in 2002, the average prison population in England and Wales was 70,860, 7% higher than in 2001, and a 55% increase compared to 1992.[2] The prison population in Britain is peaking; however the uncontested champion is still the USA with seven hundred prisoners per one hundred thousand persons.[3] Worldwide more than 10,74 million people are in prison.[4] Relief is thus desperately needed.

While the typical methods of reducing the prison population can be difficult to identify, hard to achieve, and are usually time-consuming, so called neurocorrectives might offer a prompt improvement. In 2008 Thomas Douglas coined the term "moral enhancement" for the use of biomedical technologies to enhance our moral capacities, in order to leave us with morally better motives than we had before, challenging the standpoint that biomedical enhancements of any sort are always morally impermissible.[5] In 2014 he even proposed that "committing a crime might render one morally liable to certain forms of medical intervention,"[6] in contrast with his earlier, more moderate argument in favor of the moral permissibility of moral enhancement based on the claim that people can "freely choose whether or not to morally enhance" themselves.[7]

Due to the steady rise in prison populations worldwide, proposals to use biomedical technologies coercively to "heal" criminal offenders instead of imprisoning them seem very promising. Adrian Raine, for instance, promotes neurocriminology as a new discipline of criminal law and does not shy away from imagining future scenarios, which he himself relates to Orwell's *1984* or the film *Minority Report*.[8] Jeff McMahan likewise engages in a cost–benefit analysis, balancing the cost of imprisonment to society and the offenders' "Moral Liability to 'Crime-Preventing Neurointervention.'"[9] However, despite the magical promise of neurocorrectives, their suggested use gives rise to several concerns. In this article, I wish to advance a critique against the coercive use of neurocorrectives as proposed by Douglas, which is arguably the most advanced and sophisticated argument for moral permissibility of this sort. My critique mainly focuses on two points.

First, as I argue in part II., in order to establish the option of discussing coercive neurocorrectives as an *alternative* to incarceration, Douglas needs to believe that the purpose of criminal penalties is uniquely rehabilitative.[10] However, the assumption that today's criminal justice system would work by focusing exclusively on rehabilitation seems quite an outlandish position in current criminal law.[11]

Second, as I discuss in part III., important human rights relating to offenders speak against the use of coercive neurocorrectives. While the fundamental right to mental integrity and self-determination stands in opposition to coercive neurocorrectives, but might still need some

further development to become more concrete and clearly established in positive law, Article 3 of the European Convention on Human Rights (ECHR) and similar provisions enshrine an absolute right: "No one shall be subjected to torture or to inhuman or degrading treatment or punishment." Case law of the European Court of Human Rights (ECtHR) is quite clear: Medical treatment, like neurocorrectives, must not be imposed on anybody without their free and informed consent. Otherwise, human dignity and autonomy are violated.

While there is a historical precedent for astonishing nonchalance regarding ethical concerns on the brink of what seemed to be promising progress in psychiatry, namely the prefrontal lobotomy, there were also some critical reactions towards this procedure.[12] Interestingly, however, the emergence of psychosurgery in the 1930s can be explained, among other reasons, by the "socioeconomic context" and the high numbers of institutionalized mentally ill persons.[13] Moreover, not only concerns about the method and its ethical implications, but its poor efficacy and the development of drugs with similar effects reduced the incidence of psychosurgery in the 1960s.[14] Pharmacological treatments, used in the form of chemical castration for sex offenders or for drug addicts, are another example of ethically problematic psychiatric interference with a person's autonomy and self-determination.[15] Considering these historical and present-day examples, I am convinced that it is high time to elaborate on such concepts, arguing for the protection of offenders' human rights against the use of such nonvoluntary neurocorrectives. These are the right to "mental integrity" and "mental self-determination," as well as the right not to be "subjected to torture or to inhuman or degrading treatment or punishment." Hence, my plea is that we should join those scholars arguing for a firm (legal) protection of our mind.[16] The right to mental integrity and self-determination could thus serve as the safe harbor offering protection from future developments the possibility of which we should address today.

II. Neurocorrectives and Rehabilitation

1. The Case for Coercive Neurocorrectives

In 2014 Douglas questioned whether so-called "medical correctives," which "consist in the injection of a drug—that is, a biologically active, non-food substance,"[17] can only be imposed on criminal offenders with their consent. He argues that as the state has the power to restrict the right to freedom of movement of criminal offenders against their consent, this could also hold true for medical correctives.[18] Douglas then sets out to examine what he takes "to be the most obvious defence" against nonconsensual medical correctives. This is "a right to bodily integrity."[19] He concludes that this defense is not successful and thus states "[i]f the Consent Requirement [to receive medical correctives] is incorrect, then compulsory uses of medical correctives could in principle

be justified. They would not be ruled out merely in virtue of their nonconsensual nature." It is worth mentioning that Douglas concedes that "it may not follow that the compulsory imposition of medical correctives is in fact justified. For there might be other moral reasons to prefer an approach in which medical correctives are offered as an optional alternative to (further) incarceration." He nevertheless expresses his skepticism about a defense of the consent requirement based on the right to mental integrity and concludes that "though the argument presented in this paper raises the possibility that the compulsory imposition of medical correctives might be justified, it does not of itself establish as much."[20] As he put it succinctly in a response to Gulzaar Barn and Elizabeth Shaw in 2016, he "tentatively concluded that, if minimal incarceration is permissible, then nonconsensual neurocorrectives are not impermissible in virtue of the kind of bodily interference that they involve."[21]

Moreover, in a recently published piece in a volume entitled *Treatment for Crime*, Douglas also considers the appropriateness of "conative neuromodulation: the nonconsensual modulation of a person's motivational states and dispositions through neurophysical or neurochemical means."[22] The use of varying terminology is proof of the topicality and the fast pace at which things are developing. I will use the term coercive neurocorrectives in this article to refer to what Douglas called nonconsensual neurocorrectives: "Brain-active drugs and other interventions that exert a direct chemical or physical influence on the brain [which] are sometimes imposed by criminal justice systems, on criminal offenders, for the purposes of facilitating offender rehabilitation."[23] The notion of imposing drugs "for the purpose of rehabilitation" is, however, actually quite broad and deserves further specification. While Douglas argued in 2008 that he understands moral enhancement as leaving the enhanced with morally better motives, the purpose of facilitating offender rehabilitation could be interpreted on the one hand as leaving the enhanced person with greater moral autonomy or self-determination. On the other hand, however, in relation to Douglas' suggestion from 2014, which is under scrutiny here, the purpose of rehabilitation could also be interpreted as being limited to making it less likely that the "corrected" person re-engages in criminal conduct. The broader interpretation could enjoy support from the argument that the offender's autonomy is not actually violated or limited but improved.[24] This argument, however, faces strong concerns from a liberal perspective, according to which the state must not ask, let alone coerce, a person to become more autonomous, or even to hold morally better motives. I do not consider such a broad interpretation of the rehabilitative purpose here.

Douglas' line of argument is theoretical due to several assumptions. One of these is of interest to me here. This assumption has serious implications for his argument on the moral permissibility of coercive neurocorrectives for criminal offenders (as an *alternative* to incarceration). It is the assumption that criminal law might exist solely for the purpose of rehabilitation. Following an overview of this assumption in section II.2 below, I will deal with the theoretical difficulty of solely rehabilitative approaches. Then I will elaborate in section II.3

on the question why it seems to be difficult to imagine neurocorrectives as punishment.

This consideration will be followed by a discussion in section II.4 of the conceptual question whether neurocorrectives actually are rehabilitative and whether volunteering to use neurocorrectives would make a difference. Another assumption of Douglas' argument is to consider neurocorrectives as being physically safe and effective. Even though this assumption is still quite hypothetical and thus a matter of controversy, I will grant that neurocorrectives are safe and effective. Thereby I will show that coercive neurocorrectives fare poorly in regard to the most significant normative issues even when the best case for using them is imagined.

2. The Rehabilitation Assumption

In order to establish the option of discussing coercive neurocorrectives as an alternative to incarceration, Douglas needs to assume that the purpose of criminal penalties is uniquely rehabilitative (even though he does not explicitly says so).[25] Indeed, the futuristic promise of neurocorrectives seems, at first glance, a promising candidate for a renaissance of the "rehabilitative ideal."[26] However, assuming that today's criminal justice system would work by focusing exclusively on rehabilitation seems quite an outlandish position in current criminal law.[27] First, a macro-global comparative overview of several European criminal law systems, as well as the jurisprudence of the European Court of Human Rights (ECtHR) and the variety of penalty purposes they propose demonstrates this assertion. Second, a glance at some non-European criminal law systems further strengthens the suspicion that a uniquely rehabilitative punishment theory is currently not in use in any jurisdiction known to the author.[28] Needless to say, such a brief and cursory juxtaposition of examples cannot claim global coverage. Nevertheless, by taking Germanic, Romance, and Anglo-American countries into account, while considering civil, common law and mixed systems, I do hope to demonstrate that a proposal relying on a uniquely rehabilitative penal theory faces difficulties.[29]

The purposes of punishment in almost all criminal law systems are varied and generally include retribution, specific and general deterrence, public protection, and rehabilitation.[30] In contrast, in Spanish criminal law "the Penal Code does not adopt a specific theory of punishment [and] article 25.2 of the Spanish constitution states that the main goal of criminal punishment is the rehabilitation of the offender. Additionally, the suspension or mitigation of imprisonment sanctions is sometimes dependent on whether the convict has been rehabilitated."[31] However, before jumping to premature conclusions about a potential testing ground for coercive neurocorrectives, we also have to take the Spanish Constitutional Court into account, which "has held that rehabilitation is not the sole aim of punishment in Spain, although it should be taken into account by the legislature when enacting criminal laws."[32] Thus, penal theories and punishment purposes in current European criminal law appear to be too diverse to easily embrace coercive neurocorrectives as an *alternative* to incarceration. At least advocates for coercive neurocorrectives need to justify how all these purposes can be covered.

Moreover, not only European criminal law systems appear to exclude uniquely rehabilitative penal theories. The Australian High Court in *Veen v. R* (No. 2) (1988) stated that: "The purposes of criminal punishment are various: protection of society, deterrence of the offender and of others who might be tempted to offend, retribution and reform."[33] The range of sentencing purposes in Canadian criminal law is equally broad.[34] Argentine criminal law even states that the "rehabilitation-organizing goal … is of limited force."[35] Interestingly, the Indian Supreme Court has ruled that the "sentence should bring home to the guilty party the consciousness that the offence committed by him was against his own interest and also against the interest of the society of which he happens to be a member."[36] Precisely this point can be questioned in the case of coercive neurocorrectives. It is completely unclear how an injection, Douglas' described method of administration, and one which provokes an immediate reduction in temper or aggression, can at the same time enhance understanding or awareness in the criminal offenders in relation to their deed.[37]

Japanese criminal law could, however, provide fruitful ground for the specific way in which coercive neurocorrectives work. According to John D. Haley, "Japanese law-enforcement authorities—police, procurators, and judges—have long adhered in practice to a correctional theory of punishment based on the restoration of community relationships and the reintegration of offenders into society." Furthermore "[i]ncarceration, especially long-term imprisonment, has generally been perceived, albeit rarely explicitly, as a socially detrimental option that should be avoided unless it is necessary for public safety. Deterrence is achieved primarily by detection and exposure through effective policing and conviction. Retribution is rejected as a socially beneficial response."[38] Similarly, Stephen C. Thaman informs us that "[p]unishment is imposed in Russia in order to 'restore social justice' and to 'correct the convicted person and prevent the commission of new crimes.'"[39] As long as public safety is not endangered, neurocorrectives could indeed be imagined in such criminal law cultures.

Finally, although the Rome Statute of the International Criminal Court is unlikely to be the first addressee of a call for neurocorrectives instead of incarceration, as the crimes prosecuted by the ICC are only the most atrocious crimes of international criminal law, such as genocide, crimes against humanity, war crimes and, since recently, the crime of aggression, it is, nevertheless, remarkable that retribution and deterrence "are the Court's primary sentencing objectives."[40]

Therefore, it is not surprising that Douglas only finds support from Alexis de Toqueville for an account identifying only rehabilitation as the sole purpose of criminal punishment.[41] The French genius from the nineteenth century, however, is probably not the best companion for current and future criminal law theory. The Gacaca trials in Rwanda could be another case in point, as they primarily focus on rehabilitation.[42] Yet, they are not a very convincing model for most national criminal law systems in the Western hemisphere—or at least they provoke quite a different debate. Hence, in the vast majority of (Western) liberal democracies, rehabilitation is not a central aim of punishment, and it is

not a priority among the justifications of punishment.

3. Neurocorrectives as Punishment?

The difficulties of rehabilitation as the only purpose of punishment might provoke the question as to whether coercive neurocorrectives could be perceived of as punishment. Are coercive neurocorrectives treatment or punishment? An argument on neurocorrectives as punishment might hinge on their non-voluntariness. If persons generally regard neurocorrectives as an intrusion on their integrity as an individual, then coercive neurocorrectives might be regarded as punitive even though they are not intended to be. Despite the fact that it might be appealing to answer—in this line of thinking—that neurocorrectives are both treatment and punishment,[43] I think this would amount to squaring the circle, as it goes against the magical promise of neurocorrectives. Their selling argument is that they outperform conventional methods open to criminal law for rehabilitating the offender. This becomes particularly obvious if we consider arguments on the potential of neurocorrectives to be purposely designed to inflict pain so that they are perceived as punishment.[44] This is particularly regrettable. Greely has fittingly described such ideas as "dark paths."[45] First, this suggestion readily contradicts the assumption that neurocorrectives are physically safe and effective. If we start to consider making neurocorrectives particularly evil, for instance by making them particularly harmful, we might easily take one step forward and two steps back. We are not faced with this challenge, however, if we accept that neurocorrectives cannot be the single answer for the criminal justice system in relation to criminal offenders. This article holds, therefore, that neurocorrectives might be, at best, a voluntary supplement instead of an *alternative* to typical forms of punishment such as incarceration. By doing so, at least we avoid engaging in the kind of thinking that speculates how neurocorrectives could possibly be shaped to be particularly painful (so that they could count as punishment).

This position is also related to the question as to whether we must differentiate between mentally sane and physically healthy criminals on the one hand and mentally or physically ill criminal offenders on the other. To be sure, there are various complex ways of differentiating between treatment and punishment.[46] Without delving into this delicate topic further, I simply wish to highlight that it is important to clearly state that the analogy between crime and illness generally is unfortunate. As a consequence, it is important to speak of neurocorrectives, as Douglas has recently done, instead of medical interventions, as Douglas did previously.[47] Moreover, I think that the burden of proof for arguing that and why coercive neurocorrectives could be classified as punishment remains with those arguing for the use of coercive neurocorrectives in the first place. The attempts of past rehabilitative approaches to reconceptualize punishment in medical or pedagogical terms should, in any case, be remembered as a warning.[48]

4. Are Neurocorrectives Rehabilitative?

An additional difficulty for coercive neurocorrectives and their

rehabilitative purpose is the question whether they actually are rehabilitative. Those approaches that oppose traditional retributivist or utilitarian theories of punishment emphasize the role of the autonomous agent. This is a challenge for coercive neurocorrectives, because if they are used against the will of the offender and if they involve an "organic impact" or a "direct impact" in the sense that they change instantly and directly the offender's mind, then this effect is very difficult to reconcile with the autonomy and self-determination of the offender.

Herbert Morris' Paternalistic Theory of Punishment, for instance, "relies essentially on the idea of punishment as a complex communicative act."[49] Furthermore, the moral good Morris wants to promote in the wrongdoer is "essentially one's identity as a morally autonomous person." Finally, Morris holds that "[the] good places logical and moral constraints on the means that it is permissible to employ to realize it," which is why he stresses the medium of communication.[50] The offender's understanding of his offense and the significance of understanding and thereby accepting the punishment is essential. In Morris' words, "[t]hus, unacceptable to this theory would be any response that sought the good of a wrongdoer in a manner that bypassed the human capacity for reflection, understanding, and revision of attitude that may result from such efforts."[51] It seems that coercive neurocorrectives would not stand up to the requirements established by Morris, who pointedly states: "What must be aimed at is that the afflicted become autonomous not automatons."[52]

Jean Hampton's Moral Education Theory of Punishment also holds human freedom in high regard. This is a challenge to which it is hard for coercive neurocorrectives to rise. Hampton also states explicitly that the offender's autonomy must be respected:

> *The moral education theorist does not want "education" confused with "conditioning." Shock treatments or lobotomies that would damage or destroy the criminal's freedom to choose are not appropriate educative techniques. On this view, the goal of punishment is not to destroy the criminal's freedom of choice, but to persuade him to use his freedom in a way consistent with the freedom of others. Thus, any punishment that would damage the autonomy of the criminal is ruled out by this theory.*[53]

Recently, however, the rehabilitative approach has been defended against its major weakness. With his concept of Punishment as Moral Fortification, Jeffrey Howard claims to have immunized rehabilitation against the objection that criminals are seen "as blameless patients to be treated, rather than culpable moral agents to be held accountable." According to him, offenders have the duty to "reduce their own likelihood of recidivism" because "moral agents owe it to one another to maintain the dependability of their moral capacities."[54] He diagnoses a failure among the defenders of rehabilitation "to distinguish adequately between approaches that empowered offenders as moral agents—that *fortified* their moral powers—and those that bypassed them."[55] Yet it is instructive that Howard, facing the challenge to "respect criminal offenders as responsible moral agents,"[56] mentions in passing in a footnote that he has "deliberately taken no stand on medical interventions that sharpen human beings' capacities for moral reasoning, or remove pathological

urges that compromise agents' moral motivation."[57] It seems that according to Howard the "insistence that criminal offenders undertake such proactive efforts [to "reckon productively with the causal forces that subverted successful moral decision-making"] is precisely what treating them as responsible agents involves." Yet, how far does our responsibility go towards "maintain[ing] the dependability of [our] moral capacities" and to what extent should punishment "reckon productively with the causal forces that subverted successful moral decision-making" in Howard's view? What means are justified and what coercive actions do we have to accept in the case of wrongdoing? I think that Howard's Moral Fortification Theory can only hold to immunize against the objection of taking offenders as blameless patients if coercive neurocorrectives are not considered suitable means for moral fortification. At least, it seems that a duty of an offender to reduce his or her likelihood of recidivism and a fortification of his or her moral powers via non-voluntary neurocorrectives is very difficult to reconcile, because the insight of the duty does not come from the offender, but is enforced upon him.[58]

Additionally, we might then ask whether a corresponding obligation of society also exists to encourage and aid persons to be morally dependable. And if so, would coercive neurocorrectives be an adequate tool for pursuing such an obligation, or would they merely be an inadequate convenience to surpass such an obligation? If we allowed for coercive neurocorrectives under the umbrella of Moral Fortification, I think, we would be quite close to being made responsible—legally—not only for crimes, but also for being undependable moral agents. This, however, would be a far-reaching claim, potentially overloading criminal law with strong moral ideas reaching beyond the law. The crucial point of rehabilitative approaches is the activation of a sense for the wrongdoing of the offender. Howard, for instance, speaks of "proactive efforts."[59] If we are ready to bypass this active process by making the offender a passive instrument of a coercive "treatment" with neurocorrectives or similar techniques, we fail to address this sense for wrongdoing in the offender. We would simply be changing him or her without including him or her in the process. Finally, the exclusion of coercive neurocorrectives from adequate rehabilitative means also seems to be suggested by Howard himself, when he ends his essay with a quote by a fictive criminal judge in an imaginary society upholding his idea of Punishment as Moral Fortification. It goes like this: "You are under a standing moral requirement, as a fallible person, to sustain yourself as the kind of person who can be relied upon not to do wrong—to keep yourself together, morally speaking. Through your criminal choice, you have demonstrated that you do *not* have it together. *Get it together.*"[60] Allowing for coercive neurocorrectives within the Moral Fortification approach would arguably allow the judge to say: "*I'll make you get it together.*"

Finally, it also seems to be difficult to bring Peter Raynor and Gwen Robinson's suggested understanding of rehabilitation in line with coercive neurocorrectives. For them, rehabilitation "is best understood not primarily as the prevention of re-offending,

but as the promotion of desistance from offending. Rehabilitation then becomes something done *by* the offender rather than *to* the offender."[61]

If rehabilitation requires an act of an autonomous agent in order to qualify as proper rehabilitation, if desistance requires voluntariness and efforts on the part of the offender, then *coercive* neurocorrectives cannot properly be said to encourage such behavior. Hence, neurocorrectives are, in criminal law, only acceptable as a *voluntary* supplement to ordinary penalties such as incarceration. However, if neurocorrectives—supposing that they are administered with consent—encourage desistance, rehabilitate offenders, or enable offenders to overcome tendencies to criminal conduct, then we could readily consider them as one goal of criminal sanction. Hence, as long as we are careful to obtain consent, and as long as we use only those neurocorrectives that can be regarded as safe (given plausible standards of testing), I hold that neurocorrectives as discussed here could be used as an alternative choice for the offender, for instance, as a condition of parole or early release (instead of remaining imprisoned). Yet, I do not develop this point here further but restrict myself to arguing that *coercive* neurocorrectives as suggested by Douglas face serious objections.

5. Summary

Admittedly, this position does not disqualify the project of using coercive neurocorrectives in criminal law. Douglas could respond, for instance, by saying that the fact that many jurisdictions do not solely aim at rehabilitating offenders is no objection to his proposal. He could say that these jurisdictions simply fail to treat offenders as they ought to. However, if this were the case, he should say so explicitly and, above all, he should then give reasons for thinking that all those jurisdictions fail to treat offenders as they ought to. I do not think though that this is a promising strategy. In order to render Douglas' arguments more practical and plausible, I think it would be far better to explicitly speak of a cumulative approach for *voluntary* neurocorrectives and conventional criminal punishment (also covering retribution and deterrence) instead of overloading the arguments with implausible assumptions in practical terms (such as a criminal justice system working exclusively with rehabilitation) or very unfortunate developments (to design neurocorrectives to be particularly harmful in order to count as proper punishment). Yet, there is an even more fundamental objection to coercive neurocorrectives, which I will deal with in the next section.

III. Human Rights Objections: Article 3 ECHR and the Right to Mental Integrity and Mental Self-determination

Even though neurocorrectives are somewhat futuristic, it is high time to think about normative objections against coercive neurocorrectives. What normative objections might be raised in case neurocorrectives become real, and their coercive usage, for instance against criminal offenders, a matter of criminal politics? Thomas Douglas is already considering

mental integrity as an important concept which deserves to receive better protection. He refers to the concept of mental integrity as "another possible response" to his proposal of coercive neurocorrectives.[62] Indeed, criminal law and the character of public law require more than a simple "what works" approach. Instead of considering mental integrity as a potential objection to the justified use in principle of coercive neurocorrectives, we have to turn things on their head. Arguments on the moral permissibility of coercive neurocorrectives as an alternative to incarceration are premature. I think, for now, it is high time to support scholars like Jan Christoph Bublitz and Reinhard Merkel, whose first aim it is to put mental integrity on fundamentally solid ground.[63] Even though neurocorrectives are somewhat futuristic, there is already a vast array of fundamental rights that could be invoked as a protection against coercive neurocorrectives. Bublitz holds that "the case for mandatory rehabilitation is weaker than it may appear at first glance because it is anything but clear that and why the penological aim of rehabilitation justifies severe interferences of offenders' rights."[64] Under the concept of "a human right to mental self-determination" he refers in conjunction to "the rights to freedom of thought and conscience, to privacy and personality along with the respect for autonomy, [which] provide protection against neuro-interventions."[65]

While I have strong sympathy for the approach to clearly identifying and establishing a clear human rights position based on various rights, I do not have enough space here to discuss this wealth of rights. I will limit myself instead to a brief discussion of Article 3 of the European Convention on Human Rights (ECHR), which, I think, already provides for substantial fundamental rights protection against coercive neurocorrectives.[66] Article 3 ECHR furthermore has the advantage that it is highly respected positive law. Such a stance gives us time until the clear identification and consolidation of those rights described by Bublitz gather momentum and provide for an adequate human rights protection of the mind in the twenty-first century.

Article 3 ECHR explicitly states that "[n]o one shall be subjected to torture or to inhuman or degrading treatment or punishment." Article 3 ECHR provides an absolute minimum threshold, which must not be undermined.[67] This includes the point that Article 3 ECHR applies "regardless of the conduct of the victim."[68] However, the European Court of Human Rights (ECtHR) stated that "[t]he assessment of this minimum is, in the nature of things, relative; it depends on all the circumstances of the case, such as the duration of the treatment, its physical or mental effects and, in some cases, the sex, age and state of health of the victim."[69] Nevertheless, human dignity plays a key role in the case law of the ECtHR on Article 3 ECHR. Hence, if treatment or punishment undermines this minimum level of severity and disrespects a person's humanity, the integrity of that person is violated according to Article 3 ECHR.[70] Of relevance for potential infringements of Article 3 ECHR caused by the use of coercive neurocorrectives is particularly the ECtHR's understanding of degrading treatment or punishment. Treatment

or punishment is degrading when it "humiliates or debases an individual showing a lack of respect for, or diminishing, his or her human dignity or arouses feelings of fear, anguish or inferiority capable of breaking an individual's moral and physical resistance."[71] Natasa Mavronicola specifies that the "(in)humanity or degradation involved in an act hinges on the way the act relates to the dignity of the individual subjected to it. Respect for dignity entails a minimum level of respect for one's exercise of agency and choice." [72] William Schabas states furthermore that the absence of the purpose or the intention to humiliate and debase the person "does not conclusively rule out a finding of a violation of article 3."[73] Punishment must be proportionate to the crime committed by the offender in order to respect dignity, otherwise, individual autonomy might be undermined. "As such," as Mavronicola puts it, "the criterion of penal proportionality is an appropriate means through which to delineate the boundaries of inhumanity or degradation, in the sense that it upholds respect for an individual's exercise of agency."[74] While reactions towards specific risks posed by an individual might be addressed without violating dignity, specific types of punishment, such as corporal punishment, total sensory and social isolation, or a specific manner in which the death penalty is imposed violate dignity by default. Mavronicola therefore holds that "the Court appears to be protecting both a core of personhood and fundamental facets of personality development by zealously overseeing the degree, manner and contextualized experience of punishment and treatment associated with punishment under Article 3 of the ECHR."[75] This means in effect an understanding of dignity that entails respect of agency, individual choice and personhood.

Moreover, Schabas notes that "[i]ll-treatment may arise as a result of medical treatment, in particular if it is administered to detained persons against their will."[76] In *VC v. Slovakia*, for instance, the ECtHR stated clearly that the imposition of "treatment" without free and informed consent from a capable individual violates Article 3 ECHR, as it violates the respect for human freedom and dignity. This position holds despite the fact that there was no intention of ill-treatment by the medical personnel. Thus, the treatment of a person is "capable of raising an issue under Article 3 when, inter alia, it was such as to drive the victim to act against his or her will or conscience."[77] Only in the event that "medical necessity has been convincingly shown to exist and that procedural guarantees for the decision exist and are complied with"[78] might mandatory treatment be in accordance with Article 3 ECHR. Requiring informed consent from the individual is inter alia an issue of "promoting autonomy of moral choice for patients."[79]

The case of Mr. Herczegfalvy on standards of care and treatment and therapeutic necessity in psychiatric facilities indicates that, despite the remaining uncertainties, the threshold for "medical necessity" is high. The ECtHR held that it was only Mr. Herczegfalvy's "resistance to all treatment, his extreme aggressiveness and the threats and acts of violence on his part against the hospital staff

which explained why the staff had used coercive measures including the intramuscular injection of sedatives and the use of handcuffs and the security bed. These measures had been agreed to by Mr Herczegfalvy's curator, their sole aim had always been therapeutic, and they had been terminated as soon as the state of the patient permitted this."[80] This is nowhere near the effects coercive neurocorrectives are envisaged to produce. The proposed goal of administering coercive neurocorrectives is not to immediately prevent dangers issuing from aggressive persons, but to rehabilitate them in the long run. Bluntly speaking, coercive neurocorrectives envision making morally deficient criminal offenders morally fit against their will. Such morally deficient criminal offenders are thus not perceived as autonomous human beings who can change by themselves, but as non-autonomous, deficient beings who must be fixed. The protection by Article 3 ECHR is hence of utmost importance in this regard, as "[i]t is difficult to imagine a matter more directly related to the right to physical and personal integrity and autonomy than the right to control the chemicals that are introduced to one's body."[81] Therefore, it comes as no surprise that the ECtHR declares that Article 3 ECHR "enshrines one of the most fundamental values of democratic society."[82] The use of coercive neurocorrectives would thus violate Article 3 ECHR as the Court's case law clearly insists upon free and informed consent for medical interventions.

IV. Conclusion: Fundamental Rights for the Protection of the Human Mind Should Fundamentally Come First

As a conclusion I wish to highlight that—despite my objections above—the topic is already important and will very likely (with the progress of neuroscience) become increasingly so. Nevertheless, in Henry T. Greely's words of caution, this means that "we need to be vigilant to avoid the over-enthusiastic adoption of unproven new 'treatments'—practiced in the brains of, at best, unsympathetic and, at worst, despised people."[83] Hence, it even has to be feared that—once feasible—such neurocorrectives will be used regardless of objections against them. A rather pessimistic standpoint gives rise to concerns that the use of coercive neurocorrectives does not depend on the moral permissibility attributed to them by ethicists. The recently published genetic engineering of the so-called CRISPR babies might be an unfortunate example to support such skepticism.[84] Therefore, proposals for the use of coercive neurocorrectives and their moral permissibility are particularly deplorable.

In this article I engaged critically with arguments on the moral permissibility of coercive neurocorrectives. I particularly addressed Thomas Douglas' argument stating that criminal offenders might be morally liable to coercive neurocorrectives. His arguments are based on several assumptions. In this article I explored his assumption that rehabilitation, the primary purpose of neurocorrectives, can serve as the single purpose of

punishment. By giving an overview of various criminal law jurisdictions in some European countries, as well as by considering criminal justice systems from all five continents, civil and common law, as well as mixed systems and various quite diverse legal cultures, I highlighted that not a single country has established a uniquely rehabilitative penal theory at present. Arguments which aim at changing this consensus must face the challenge that rehabilitation as the exclusive aim of a liberal democracy's criminal justice system easily invites illiberal requirements. Moreover, I found that coercive neurocorrectives can and should not be conceived of as being particularly harmful in order to count as punishment.

Most importantly, I argued that criminal offenders—like all human beings—enjoy human rights, which are an important objection against coercive neurocorrectives. I particularly looked at Article 3 ECHR and the jurisprudence of the ECtHR. I found that the absolute right that "[n]o one shall be subjected to torture or to inhuman or degrading treatment or punishment" is violated if human beings, and this includes criminal offenders, are treated with neurocorrectives without their consent. Finally, I appealed particularly to ethicists and lawyers and argued for the importance of establishing a firm legal protection of the mind. This protection consists of respecting pertinent guarantees such as dignity, autonomy, self-determination and freedom of thought, and the right to bodily integrity as much as of elaborating these guarantees further in order to make them respond adequately to the challenges of the twenty-first century. With regards to neurocorrectives and their non-voluntary use, the concepts of the right to mental integrity and mental self-determination are crucial. To be fair, proponents of coercive neurocorrectives are already considering mental integrity as an important concept that deserves to receive more attention. Douglas and Birks, for instance, ask "what is the nature, scope, strength and robustness of our moral rights against mental interference?"[85] Thus, we seem to have consensus that the concept of a fundamental right to mental integrity or mental self-determination is of utmost importance for adequate protection of the human mind in the twenty-first century. Hence, there is a glimmer of hope that we will turn our way of thinking about neurocorrectives and the protection of the mind upside down. Instead of considering mental integrity as a potential objection to principally possible coercive neurocorrectives, we might support those scholars, like Jan Christoph Bublitz and Reinhard Merkel, whose first aim it is to put mental integrity on fundamentally solid ground. Freedom of thought and mental self-determination need to be protected and thus a firm fundamental rights protection of the human mind in the twenty-first century needs to be established first.[86]

Notes

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1 Prison population figures from 18 January 2019 according to the Ministry of Justice, National Offender Management Service, HM Prison Service, and Her Majesty's Prison and Probation Service. https://www.gov.uk/government/statistics/prison-population-figures-2019.

2 See Garland, *The Culture of Control*; Councell, "Prison Population."

3 See Travis, Western, and National Research Council, *Incarceration in the United States.*

4 See Walmsley, "World Prison Population List."

5 See Douglas, "Moral Enhancement"; Douglas, "Enhancing Moral Conformity."

6 Douglas, "Criminal Rehabilitation," 101. See also Pugh and Douglas, "Non-Consensual Medical Intervention."

7 Douglas, "Moral Enhancement," 234.

8 See Raine, *Anatomy of Violence*, chap. 11.

9 McMahan, "Moral Liability." See also Burcu Akbaba, *Permissibility of Pharmacotherapy.*

10 See Douglas, "Criminal Rehabilitation," 106.

11 See Kleinig, *Ethics and Criminal Justice*, 193–211.

12 See Robison et al., "Surgery of the mind," 669 with further references. For the voluntary attempt of a criminal on trial to undergo a prefrontal lobotomy in the hope of receiving less severe sentencing, see Mayer, "Prefrontal Lobotomy."

13 See Robison et al., "Surgery of the mind," 666; Faria, Jr., "Violence." For a detailed analysis, see Pressman, *Last Resort*; Raz, *The Lobotomy Letters*. For an evaluation of Nazi atrocities and their criminal use of medicine, see López-Muñoz et al., "Psychiatry and Political-institutional Abuse."

14 Mathews, Rabins, and Greenberg, "Deep Brain Stimulation," 445 with further reference to El-Hai, *The Lobotomist*.

15 See e.g. McMillan, "The Kindest Cut?"; see also, however, Douglas et al., "Coercion, Incarceration, and Chemical Castration."

16 See Bublitz, "Mandatory Moral Enhancement;" Bublitz and Merkel, "Crimes Against Minds;" Bublitz, "Moral Enhancement and Mental Freedom."

17 Douglas, "Criminal Rehabilitation," 104.

18 Ibid., 105.

19 Ibid., 106.

20 Ibid., 120.

21 Douglas, "Nonconsensual Neurocorrectives and Bodily Integrity," 2.

22 Douglas, "Modulation of Motivation," 208.

23 Douglas, "Nonconsensual Neurocorrectives and Bodily Integrity," 1.

24 For such an argument regarding chemical castration, see Douglas et al., "Coercion, Incarceration, and Chemical Castration."

25 See Douglas, "Criminal Rehabilitation," 106. See generally on rehabilitation Allen, *Decline of the Rehabilitative Ideal*; Raynor and Robinson, *Rehabilitation, Crime and Justice*.

26 Compare, for instance, for a brief overview Luna, "Sentencing," 981–2. See also Dubber, "Right to be Punished."

27 See e.g. Dubber, "Comparative Criminal Law," 1287; Demleitner, "Types of Punishment," 944; Kleinig, *Ethics and Criminal*

Justice, 193–211; and Claessen, "Theories of Punishment."

28 See Eser, *Comparative Criminal Law,* 19–21 for aims, methods, and prerequisites of comparative criminal law.

29 See Eser, *Comparative Criminal Law,* 109. Eser cautions that by such a "higher perspective … one can only achieve a rough, preliminary choice for the actual comparative law undertaking." Nothing else is claimed here. In order to comply with a minimum standard of comparability, I will mostly refer to criminal systems dealt with in Heller and Dubber, *Handbook of Comparative Criminal Law,* which follow a specific structure. See Zaibert, "Why Compare?" for praise of the handbook precisely for such a purpose.

30 Kugler, "Israel," 355. See also Burchell, "South Africa," 458; Weigend, "Germany," 258, 276; Ashworth, "United Kingdom," 535; as well as Terrill, *World Criminal Justice Systems*, 183; Jacobsen and Sandvik, "New Norwegian Criminal Code," 167. See also ECtHR, Vinter and Others v United Kingdom, App. Nos. 66069/09, 130/10 and 3896/10, Judgment 9 July 2013, para 111, 115. See also Schabas, *European Convention on Human Rights*, 183 with further references.

31 Gómez-Jara Diez and Chiesa, "Spain," 496.

32 Ibid., 497.

33 Quoted in Bronitt, "Australia," 76.

34 Roach, "Canada," 102. See also Luna, "Sentencing," 968.

35 Ferrante, "Argentina," 20.

36 Yeo, "India," 291–2.

37 A similar difficulty arises with punishment in the Iranian criminal law system. See Tellenbach, "Iran," 325–6. Speaking more generally of Islamic law with regard to sanctions "the primary purpose was deterrence (both specific and general) rather than retribution." See Terrill, *World Criminal Justice Systems*, 572.

38 Haley, "Japan," 399. C.f., however, Terrill, *World Criminal Justice Systems,* 251. Terrill holds that Japan is no different to other countries with regard to "traditional objectives behind sanctioning an offender," which are retribution, deterrence, isolation, and rehabilitation.

39 Thaman, "Russia," 419. See also Terrill, *World Criminal Justice Systems*, 414, with reference to Article 43 of the 1996 Criminal Code.

40 Heller, "The Rome Statute," 601.

41 Douglas, "Criminal Rehabilitation," 106, n5.

42 See Schabas, "Genocide Trials and Gacaca Courts."

43 See Akbaba, *Permissibility of Pharmacotherapy,* 267–78. Akbaba describes pharmacotherapy (i.e. chemical castration) as a "pendulum swinging between treatment and punishment."

44 For an overview see Pugh and Douglas, "Neurointerventions as Criminal Rehabilitation," 95–9.

45 See Greely, "Neuroscience and Criminal Justice," 1104, n8. See also Dubber, "Right to be Punished," 125 with further references. Yet, see by contrast Ryberg, "Punishment, Pharmacological Treatment, and Early Release," 238–42, who claims that pharmacological treatment is compatible with retributivism. He only discusses this option regarding offering treatment as a condition of early release (and not as an option of coercive neurocorrectives). Yet, his argument indeed is the "dark path" referred to by Greely for he sees no reason why it should not be possible to "somehow make the treatment inconvenient" (239).

46 See e.g. Akbaba, *Permissibility of Pharmacotherapy,* 62–71 with further references (for instance to Bayles, "Dismantling the Criminal Law System," 2–3).

47 Yet, consider his recent *Treatment for Crime* co-edited with David Birks.

48 See Pugh and Douglas, "Neurointerventions as Criminal Rehabilitation," 98. The article addresses the objection that "neurocorrectives would fail to achieve the deterrent and retributive objectives of criminal justice" in the sense that "they would cause insufficient harm." However, discussing the potentially harmful side effects (98–9) of neurocorrectives seems to be a bit odd to say the least. There must be better

arguments. See critically Dubber, "Right to be Punished," 137.

49 Morris, "Paternalistic Theory of Punishment," 264.

50 Ibid, 265, 268. Note, too that Morris further emphasizes the importance that "one feel guilt over the wrongdoing, that is, that one be pained at having done wrong, that one be distressed with oneself, that one be disposed to restore what has been damaged, and that one accept the appropriateness of some deprivation, and the making of amends" (265). It is difficult to see how this might be achieved by a coerced neurocorrective, which aims at correcting the offender immediately, or at least in a way which is difficult to equate with this process described by Morris.

51 Ibid. 265. For those who might insist that "medical interventions" would address the good of the offender Morris explicitly holds that "[i]t is important, too, to recognize that this good differs markedly from those particular goods associated with specific paternalistic legislation. It is not one's health; it is not even one's moral health with respect to any particular matter that is sought to be achieved; it is one's general character as a morally autonomous individual attached to the good" (266).

52 Ibid., 269.

53 Hampton, "Moral Education Theory of Punishment," 222. Hampton explicitly holds that she "takes a strong stand on human freedom." Her theory "rests on the idea that we can act freely in a way that animals cannot." Moreover, "this theory assumes that we are autonomous, that we can choose and be held accountable for our actions" Ibid. 213.

54 Howard, "Punishment as Moral Fortification," 45. For a pointed critique of rehabilitationism, see Dubber's claim that "[r]ehabilitationism, however, not only affected perceptions of and interest in the legitimacy of punishment. It also reconceived the once autonomous equal offender as deviant and defective" "Right to be Punished," 138.

55 Howard, "Punishment as Moral Fortification," 65–6 (italics in original).

56 Ibid., 61.

57 Ibid. 66, n. 61 with further reference to Persson and Savulescu, *Unfit for the Future*, ch. 10.

58 If non-voluntary neurocorrectives are considered as an appropriate tool within Punishment as Moral Fortification, then this approach seems to be problematic as well. Compare e.g. Dubber's statement that "[t]he Enlightenment had attempted to justify punishment based on the empathic identification of equal persons; rehabilitationism called for punishment based on pity for the deviant and the inferior." "Right to be punished," 142. In addition to this point it is also questionable whether Punishment as Moral Fortification might face further criticism. Any argument for the state pushing a person to become more virtuous or at least less prone to criminal conduct faces serious liberal objections for instance. Although Howard limits his approach to "first moral powers," i.e. "to identify and be moved by moral duties of justice," ("Punishment as Moral Fortification," 49–50), instead of all moral duties as in the distinction made by Rawls in *Political Liberalism* (47–88), doubts remain as to whether moral fortification is nevertheless an illiberal requirement. Yet, I do not consider such concerns here, since Punishment as Moral Fortification arguably does not support coercive neurocorrectives.

59 Howard, "Punishment as Moral Fortification," 67.

60 Howard, "Punishment as Moral Fortification," 74 (italics in original).

61 Raynor and Robinson, *Rehabilitation, Crime and Punishment*, 170.

62 See Douglas, "Criminal Rehabilitation," 119. See also Douglas and Birks, "Introduction."

63 See Bublitz and Merkel, "Crimes Against Minds;" Bublitz, "Moral Enhancement and Mental Freedom."

64 Bublitz, "Mandatory Moral Enhancement," 315. See also Morris' claim that "[t]he paternalistic position that I have proposed … implies that there is a non-waivable, non-forfeitable, non-relinquishable right—the right to one's status as a moral being, a right that is implied in one's being

a possessor of any rights at all." "Paternalistic Theory of Punishment," 270.

65 Bublitz, "Mandatory Moral Enhancement;" 303. See Bublitz, "Freedom of Thought," for an in-depth discussion of this right.

66 However, consider also ECtHR Pretty v. the United Kingdom, App. No. 2346/02, Judgment 29 April 2002, para 63: "[T]he imposition of medical treatment, without the consent of a mentally competent adult patient, would interfere with a person's physical integrity in a manner capable of engaging the rights protected under Article 8 § 1 of the Convention." Furthermore, it is hard to see how *coercive* neurocorrectives could stand the proportionality test (see, e.g., ECtHR Observer and Guardian v. the United Kingdom, App. No. 13585/88, Judgment, Judgment 26 November 1991, A 217, para 72: "proportionate to the legitimate aim pursued"; c.f. ECtHR Lingens v. Austria, App. No. 9815/82 Judgment 8 July 1986, A 103, para 43) against optional neurocorrectives, which could, for instance, be offered as condition of parole. Consider also Article 7 of the International Covenant on Civil and Political Rights.

67 See ECtHR, VC v. Slovakia, App. No. 18968, Judgment 8 November 2011, para 100 with further reference. See also Grabenwarter, *European Convention on Human Rights*, 32. See furthermore Mavronicola, "What is an 'Absolute Right'?" suggesting a theoretical framework comprising an "applicability" criterion roughly guiding the decision as to when the absoluteness might be displaced as well as a "specification" criterion guiding the exploration of the content of the absoluteness.

68 Schabas, *European Convention on Human Rights*, 168 with further reference to ECtHR Chahal v. the United Kingdom, App. No. 22414/93, Judgment 15 November 1996, para 79; ECtHR Saadi v. Italy [GC], App. No. 37201/06, Judgment 28 February 2008, para 140.

69 See ECtHR Ireland v. United Kingdom, App. No. 5310/71, Judgment 18 January 1978, para 162; See also ECtHR A v. United Kingdom, App. No. 25599/94, Judgment 23 September 1998, para 20 referring also to the "nature and context of the treatment." See also Mavronicola, "Crime, Punishment and Article 3 ECHR," 725. See recently ECtHR, VC v. Slovakia, para 101.

70 See Mavronicola, "Crime, Punishment and Article 3 ECHR," 724–45. Mavronicola speaks of "[t]he centrality of dignity as a value underpinning Article 3 [that] has emerged repeatedly in many key judgments of the ECtHR, not least those involving the specification of inhuman and degrading punishment." See further reference in ibid. footnote 17 to ECtHR Keenan v. United Kingdom, App. No. 27229/95, Judgment 3 April 2001, para 112; ECtHR Selmouni v. France, App. No. 25803/94, Judgment 28 July 1999, para 99; ECtHR Rahimi v. Greece App. No. 8687/ 08, Judgment 5 April 2011, para 60; and see recently on punishment, ECtHR Kafkaris v. Cyprus App. No. 21906/04, Judgment 12 February 2008, para 96; ECtHR Vinter and Others v. United Kingdom, op. cit., para 113. See also Grabenwarter, *European Convention on Human Rights*, 32, 36.

71 See e.g. ECtHR Pretty v. United Kingdom, para 52. While degrading treatment or punishment might be the "weakest form of an infringement of Article 3" (compared to torture and inhuman treatment) Grabenwarter, *European Convention on Human Rights*, 36, it is important to note that "[u]nder the European Convention, there is no particular consequence to the distinction between torture and inhuman or degrading treatment or punishment." Schabas, *European Convention on Human Rights*, 169.

72 Mavronicola, "Crime, Punishment and Article 3 ECHR," 733–4.

73 Schabas, *European Convention on Human Rights*, 180–1 with further references to ECtHR Brânduşe v. Romania, App. No. 6586/03, Judgment 7 April 2009, para 50; Peers v. Greece, App. No. 28524/95, Judgment 19 April 2001, para 67–8, and 74; ECtHR Kalashnikov v. Russia, App. No. 47095/99, Judgment 15 July 2002, para 95.

74 Mavronicola, "Crime, Punishment and Article 3 ECHR," 733–4. See also ibid., 740 with further references.

75 Mavronicola, "Crime, Punishment and Article 3 ECHR," 740–1 with further references to ECtHR Tyrer v. United Kingdom, App. No. 5856/72, Judgment 25 April 1978;

ECtHR Al Saadoon and Mufdhi v. United Kingdom, App. No. 61498/08, Judgment 2 March 2010, para 120; ECtHR Öcalan v. Turkey, App. No. 46221/99, Judgment 12 May 2005, para 168.

76 Schabas, *European Convention on Human Rights*, 183. While even voluntary medical treatment might provoke a violation of Article 3 (see ibid. with further references), I will not consider this aspect here, as this article deals with *coercive* neurocorrectives.

77 See ECtHR VC v. Slovakia, para 102 with further reference to ECtHR Keenan v. United Kingdom, para 110. VC v. Slovakia was about the sterilization of a Roma woman without her informed consent. In this case (para 107) the ECtHR also holds that the imposition of "treatment" without free and informed consent violates Article 3 ECHR, which holds despite the fact that there was no intention of ill-treatment (para 119). See also Grabenwarter, *European Convention on Human Rights*, 37; Schabas, *European Convention on Human Rights*, 184. See also ECtHR N. B. v. Slovakia, App. No. 29518/10, Judgment 12 June 2012, para 71 et seq.

78 ECtHR VC v. Slovakia, para 103 with further reference to ECtHR Jalloh v. Germany [GC], App. No. 54810/00, Judgment 11 July 2006, para 69.

79 ECtHR VC v. Slovakia, para 114.

80 ECtHR Herczegfalvy v. Austria, App. No. 10533/83, Judgment 24 September 1992, para 81. See also Bartlett, "Necessity," where Bartlett discusses when, if at all, compulsory psychiatric treatment should be imposed. See also Bartlett, "Rethinking Herczegfalvy." Bartlett clearly states that "medical necessity" must be a higher standard than "medically appropriate." Yet, he holds that it is still unclear what this standard exactly means. See also ECtHR Dvořáček v. Czech Republic, App. No. 12927/13, Judgement 6 November 2014, para 90 which states that: "une stérilisation ne répondant pas à une nécessité imminente du point de vue médical et effectuée sans un consentement éclairé de la requérante a été considérée comme un traitement atteignant le niveau de gravité requis pour tomber sous le coup de l'article 3."

81 Bartlett, "Rethinking Herczegfalvy," 367.

82 See, for instance, ECtHR VC v. Slovakia, para 100. See also ECtHR Pretty v. United Kingdom, para 49 with further reference to ECtHR Soering v. United Kingdom, Judgment 7 July 1989, Series A No. 161, para 88.

83 Greely, "Neuroscience and Criminal Justice," 1105. See also ibid., 1138: "We cannot expect, and should not try, to come to conclusions too far in advance of the facts, but we can begin to prepare. If we do not, we may find that neuroscience and the criminal justice system have combined to produce the next great prefrontal lobotomy, which, with or without a Nobel Prize, would truly be a bad thing."

84 See e.g. Cyranoski, "CRISPR-baby scientist."

85 Douglas and Birks, "Introduction," 6; see also Douglas, "Criminal Rehabilitation." However, see Raine, who has a problematic understanding of "civil liberties" and "human rights" *Anatomy of Violence*, 364.

86 See Bublitz and Merkel, "Crimes Against Minds"; Bublitz, "Moral Enhancement and Mental Freedom"; Bublitz, "Freedom of Thought"; Bublitz, "Mandatory Moral Enhancement."

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