

## **Should prisoners' participation in neuroscientific research be considered when making decisions about early release?**

### **Introduction**

On 21st May 1924, fourteen-year-old Bobby Franks was walking home from school, when his cousin, nineteen-year-old Nathan Leopold and Leopold's close friend, eighteen-year-old Richard Loeb, pulled up in a car alongside him. The older teenagers lured Franks into the car and killed him with a chisel. At their trial, Leopold and Loeb pled guilty to premeditated murder. The prosecution argued that the teenagers should be hanged, but their defence lawyer, Clarence Darrow, ultimately convinced the judge to spare them the death penalty.<sup>1</sup> However, even Darrow was doubtful about whether his clients could ever be reformed and returned to society, saying, "I know that these boys are not fit to be at large. I believe they will not be until they pass through the next stage of life, at forty-five or fifty. Whether they will be then, I cannot tell...I would not tell this court that I do not hope that some time, when life and age has changed their bodies, as it does, and has changed their emotions, as it does, that they may once more return to life"(McKernan 1989). Loeb spent 12 years in prison before a fellow inmate killed him with a razor. Leopold spent 34 years in prison, during which time he volunteered to participate in medical research and was injected with an experimental malaria vaccine. The prosecutor who had advocated hanging the teenagers was so impressed by Leopold's conduct in prison (which also included working in the prison hospital, library and school) that he offered to write a letter to the parole board supporting Leopold's release. After release, Leopold led a law-abiding life and worked in hospitals and church missions and taught mathematics. He also willed his body to be used for medical purposes after death and his corneas were posthumously donated to two patients.

After very serious crimes, such as the brutal murder of Bobby Franks, it can be hard to imagine what kind of evidence could convince society that the perpetrator is suitable to be released. Arguably, a perpetrator's willing participation in medical research might qualify as an important part of such evidence, from the perspective of certain mainstream theories of punishment, given that the offender's reasons for volunteering to be a research subject might include an altruistic desire to contribute to society and help make amends for his crime. Participation in medical research was routinely taken into account by parole boards in the United States until the 1980s when much tighter legal restrictions resulted in medical research on prisoners becoming far less common - in the mid-1970s, 85% of all phase 1 trials in the United States were carried out on prisoners, dropping to 15% by the 1980s (Charles et al 2016: 246; Arboleda-Flórez and Weisstub 2013: 115). While some penal theories might regard participation in medical research as relevant to parole decisions, from the perspective of medical ethics, there are strong objections against allowing prisoners to participate in medical research, due to factors such as the vulnerability of the prisoner population and the coerciveness of the prison environment. Medical ethics and some penal theories seem to concur on the importance of certain factors, e.g. consent. Valid consent is crucial from the standpoint of medical ethics, which seeks to safeguard patient autonomy; and, from a penal theoretic perspective, an offender's participation in medical research would only be a strong indicator that he has reformed if he has autonomously chosen to participate. However, medical ethics arguably diverges from penal theory regarding other factors. For example, many medical ethicists argue that research on prisoners should be restricted to research with negligible risks and/or which directly benefits the research participants, e.g. by providing them with access to new treatments for diseases from which they suffer (see, e.g. Appleman 2020). However, the

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<sup>1</sup> *People v Leopold and Loeb*, Cook County Crim Ct III [1924]. Darrow's speech is reprinted in McKernan 1989.

lower the risks and the greater the personal benefits the research presents to participants themselves, the less valuable participation may seem as an indicator of remorse/reform. This is because, firstly, it is sometimes thought that an act cannot appropriately signify remorse for a crime unless that act is burdensome [e.g. Duff 2001], and if participation in an experiment is very low risk, the act of participating might not be considered sufficiently burdensome. Secondly, if participants benefit significantly from the experiment, this raises doubts about whether they were motivated to take part by these benefits rather than by genuine remorse. This chapter will discuss these areas of convergence and divergence between medical ethics and penal theories on this topic and will focus specifically on whether prisoners' participation in neuroscientific research should always be disregarded when making decisions about early release. While there is a significant medical ethical literature on medical research on prisoners, very little has been written on this topic from a penal theoretic perspective. This topic is of current interest, because of the growing literature in support of somewhat loosening restrictions on medical research on prisoners (see, e.g. Gostin 2007; Gostin et al 2006; Arboleda-Flórez and Weisstub 2013; Charles et al 2016).

This chapter will begin, in section 1, by briefly outlining the prevalence and types of medical research that are currently being carried out on prisoners, or which might be carried out in the future. This section will end by highlighting *neuroscientific* medical research, because research into “treating” criminal behaviour is particularly relevant to prisoner populations and this kind of research typically involves the application of neuroscientific techniques or insights. Section 2 will briefly outline the laws and guidelines relevant to medical research on prisoners. Section 3 will consider suggestions that neuroscientific research on prisoners should be prohibited altogether; will summarise general medical ethical concerns with medical (and specifically neuroscientific) research on prisoners and will contrast these concerns with perspectives on this topic from selected mainstream penal theories. In the light of these considerations, section 4 will discuss whether, if prisoners are permitted to participate in neuroscientific research, their participation should provide grounds for early release. The purpose of this chapter is not to settle these questions conclusively. Rather, its aim is to identify some restrictions that might plausibly be placed on the practice of prisoner experimentation and to map out different responses that penal theorists might make to the question of whether participation in neuroscientific research should be considered when making decisions about early release – a topic that has previously primarily been explored from the standpoint of medical ethics, rather than penal theory.<sup>2</sup>

### **1. Types and prevalence of medical research on prisoners**

When discussing medical research on prisoners, it is important to distinguish between research involving *clinical interventions* and those that do not; between *beneficial* versus *non-beneficial* research; and between *prison-related* and *non-prison-related* research. A review of current practices in the UK found that 100 applications were made to the Research Ethics Service (RES) to conduct research on prisoners over the 2-year period studied and that the majority (53%) of this research involved questionnaires (Charles et al 2016). Only seven out of the 100 studies planned to use *clinical interventions* – three of these involved mental health therapies and four of them tested diagnostic procedures (one of these involved imaging, the other two

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<sup>2</sup> There are areas of overlap between medical ethics and penal theory, arising from the fact that certain moral principles are relevant to both fields, such as respect for autonomy and the prohibition against inflicting unjustified harm. However, the medical ethics *literature* on this topic can be distinguished from the penal theoretic *literature*, as the former focuses primarily on issues such as the doctors' duties to their patients, whereas an examination of the topic through the lens of penal theory would focus on the purposes of punishment.

involved diagnostic devices). Most of the studies were “*non-beneficial*” in the sense that the individuals who took part in the studies did not, in the short-term, derive a direct clinical benefit from participating. However, the majority of the research could potentially help improve the long-term health of prisoners generally, as most of the studies were on mental health and infection – “areas that reflect the primary health needs of prisoners”, whose rates of mental illness and communicable disease are much higher than that of the general population (Charles et al 2013: 249). Most of this research was *prison-related*, i.e. it aimed to investigate issues in the specific context of the prison environment and participants were selected because they were prisoners; as opposed to non-prison-related research, which includes prisoners on the same basis as non-prisoners. The commonest kind of non-prison-related research just involved the collection of data or tissue samples (although even this kind of research is not risk-free, given confidentiality concerns). To summarise: most studies that are officially classed as medical research in the UK involve low physical risks and the majority do not provide immediate clinical benefits to the participants themselves, but rather help to expand the knowledge base about conditions that can affect the general population and are particularly relevant to prison populations. Officially, the situation seems similar in the U.S., where “most North American prison institutions respect a functional ban on [non-beneficial] research except for...situations involving negligible risks” (Arboleda-Flórez and Weisstub 2013: 115) and beneficial research is also strictly limited, to the extent that arguably prisoners are being problematically denied access to certain experimental interventions which might effectively treat diseases from which they suffer (Gostin 2006, 2007).

However, the picture becomes more complicated if one questions what counts as “medical research” and who counts as a “prisoner”. Arguably, some of the “treatments” that are currently provided to offenders, although not officially classed as medical “research”, raise similar ethical concerns to medical experimentation. There can be a fine line between “therapy, innovative therapy and therapeutic experimentation” (Arboleda-Flórez and Weisstub 2013: 109). For example, sex offenders can currently be offered (in Scotland) or compelled (in some US jurisdictions) to receive testosterone-lowering drugs to reduce sexual thoughts and behaviour. However, these programmes started being implemented well before the long-term safety and effectiveness of these interventions were known and there is still uncertainty about their safety and effectiveness (Greely 2006, Greely and Farahany 2019). Within the US regulatory regime (described below) there are two main loopholes which enable medical research to be carried out on detained persons. Firstly, the Office for Human Research Protections’ (OHRP) definition of “prisoner” is narrow, excluding those detained in drug rehabilitation facilities or any programme run by a private contractor (Reiter 2009, Gostin 2006). Secondly, the OHRP only regulates federally funded research, meaning that research carried out by drug companies without federal funding is not subject to OHRP oversight. In addition to the exploitation of loopholes, some studies have been carried out on prisoners that violate the letter, not just the spirit, of laws and regulations (for discussion see Appleman 2020 and Reiter 2009). In 2009, Reiter observed that in practice “experimentation on prisoners regularly occurs... despite strict federal regulations, which have now been in place for forty years, and which were intended to limit severely such experimentation, if not to eliminate it entirely” (Reiter 2009: 526) and there has been growing pressure since then to expand experimentation further – a trend discussed by Appleman (2020). It is not the aim of this chapter to argue that the volume of research carried out on prisoners should either increase or decrease, but rather to discuss moral considerations (including consent, harm and the motivation behind/aims of the research) that should inform decisions about what kind of research (if any) should be carried out on prisoners and under what constraints. Specifically, this chapter will examine these issues from the angle of penal theory – a perspective that has

received insufficient attention. This kind of examination of the topic is one necessary step in the process of ensuring that medical research on prisoners is guided by morally relevant considerations, rather than less relevant/irrelevant factors, such as who is funding the research and whether the place where the research subjects are involuntarily detained is labelled a “prison” or not.

Neuroscientific research is a type of research that is particularly important for the study of prisoners. Given the connection between the brain and behaviour, the application of neuroscientific techniques and insights may seem a promising method of reducing reoffending. Although neuroscientific research into criminal behaviour has historically been associated with extremely damaging and distressing interventions, such as prefrontal lobotomies, and *Clockwork Orange*-style aversive conditioning (Ryberg 2020, chapter 6), it should be stressed that modern neuroscientific interventions (“neurointerventions”) to treat criminal behaviour do not have to be particularly invasive or high-risk. For example, there has been some research on the use of fish oil supplements to reduce aggressive behaviour via the effect of omega-3 fatty acids on the brain (e.g. Firestone et al 2005). Researchers are also investigating the use of tDCS (transcranial direct current stimulation) to reduce risk-taking (e.g. Fecteau et al 2007). TDCS involves placing a device outside the skull that transmits weak electrical stimulation to the brain and is generally regarded as safe. Neurofeedback involves learning to “retrain” thought processes by watching real-life imagery of how one’s brain responds to stimuli. Neurofeedback has been studied as a potential way of reducing impulsivity and enhancing self-control (for discussion see Focquaert 2014). Neuroscientific insights and techniques could potentially also guide the use of psychological therapies, by helping to diagnose different conditions and identify which individuals might be most responsive to particular psychological interventions (see e.g. Cornet et al 2014). On the riskier end of the spectrum of interventions are testosterone-lowering drugs (which, as mentioned above, might arguably still be regarded as an experimental treatment). Testosterone has a significant effect on how the brain functions (and thereby affects psychological processes and behaviour), and researchers have suggested that the effect of testosterone-reduction on the brain may play an even more important role in sex offender rehabilitation than the other effects of this treatment on the body (Greely and Farahany 2019). As Grubin explains, “In the male brain, testosterone receptors are most dense in hypothalamic nuclei, the amygdala and other areas of the limbic system, the prefrontal cortex and the temporal cortex, all parts of the brain known to be involved in processing sexual stimuli or initiating or maintaining sexual behavior...testosterone has effects on the responsiveness of both general and specific neurological arousal mechanisms, it influences the processing of sexual sensory stimuli, it impacts on motivation, attention, and mood, and it is associated with aggression and dominance, all of which are potentially relevant to sexually problematic behaviour...Therefore treatments aimed at moderating the activity of testosterone...can...weaken the foundation on which sex offending sits.” (Grubin 2018: 711-712)

## 2. Laws and Guidelines

The current framework of laws and guidelines regulating experimentation on prisoners (and other vulnerable groups) began to be introduced after a vast number of atrocities perpetrated in the twentieth century in the name of medical research. In Europe, these legal developments were a response to the Nazi war crimes. The judges who tried the Nazi doctors formulated the Nuremberg Code (1947) as part of their judgement.<sup>3</sup> This Code prioritises consent as a fundamental requirement of medical experiments, listing consent as the first of ten principles

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<sup>3</sup> *US v Brandt* 2 T.W.C. 171.

– the other nine focusing on the need to protect participants from various harms and to attend to the “humanitarian importance” of the research.<sup>4</sup> The Declaration of Helsinki (1962) incorporated many of the Nuremberg Code’s requirements and later revisions of the Declaration introduced new provisions, such as the requirement for independent ethical review committees (2000), but the provisions concerning consent are less stringent than the Nuremberg Code, containing exceptions to the consent requirement where obtaining consent would be impossible, or impractical or would undermine the experiment’s validity. However, the International Ethical Guidelines for Biomedical Research Involving Human Subjects (1982) provide that, where research subjects are incapable of consenting, or have limited capacity to consent, the research must either benefit the participants or involve negligible risks.<sup>5</sup> The commentary to these guidelines identifies prisoners as a group with limited capacity to consent, due to limited autonomy.<sup>6</sup> The European Prison Rules (2006) prohibit any experiments on prisoners conducted without their consent or which may result in physical harm, mental distress or damage to health. The Nuremberg Code, Helsinki Declaration, International Ethical Guidelines and European Prison Rules are not legally binding but have influenced various legally binding provisions. Article 7 of the International Covenant on Civil and Political Rights (1966), which is a binding covenant, provides that no-one shall be subjected to scientific experiments without their free consent<sup>7</sup>, as does the legally binding Convention on Human Rights and Biomedicine (1997).<sup>8</sup> The Additional Protocol to the Convention on Human Rights and Biomedicine concerning Biomedical Research (2005) explicitly addresses experiments on prisoners, permitting them to be involved in beneficial research (in accordance with the principle that prisoners should receive an equivalent standard of healthcare to non-prisoners) and permitting them to participate in research which does not benefit the specific participants, provided that the research would be impossible without using prisoners, that the research benefits prisoners generally, and that risks are minimal.<sup>9</sup>

In the UK, the Royal College of Physicians’ guidelines (2008: para 8.47) provide that, “research that can be conducted on patients or healthy volunteers who are not in prison should not be conducted on prisoners. Incarceration in prison creates a constraint which could affect the ability of prisoners to make truly voluntary decisions without coercion to participate in research”.

Despite the plethora of laws and guidelines in Europe adopting a very restrictive approach to prisoner experimentation, as noted above, there is a surprising willingness to provide offenders with biomedical treatments to reduce reoffending, such as testosterone-lowering drugs, that might arguably be classed as experimental given the relative shortage of evidence about their

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<sup>4</sup> Ibid.

<sup>5</sup> These protections are intended to apply to all prisoners as a class (seemingly on the basis that imprisonment always places some limitation on autonomy and hence on the capacity to consent). They are not intended to apply to prisoners on a case-by-case basis commensurate with the extent of the particular individual’s capacity to consent.

<sup>6</sup> Henceforth: “International Ethical Guidelines (1982)”.

<sup>7</sup> International Covenant on Civil and Political Rights (adopted 16 December 1966, entered into force 23 March 1976) 999 United Nations Treaty Series 171 (ICCPR).

<sup>8</sup> Council of Europe. Convention for the Protection of Human Rights and Dignity of the Human Being with Regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine. (Opened for signature 4 April 1997, entered into force 1 December 1999) Strasbourg: Council of Europe Publishing. ETS No.164.

<sup>9</sup> Council of Europe. Additional Protocol to the Convention on Human Rights and Biomedicine, concerning Biomedical Research. (Opened for signature 25 January 2005, entered into force 1 December 2007) Strasbourg: Council of Europe Publishing. CETS No.195. Principles 48.1 and 48.2 respectively.

efficacy (at least for certain types of offending) and potential long-term side-effects, such as loss of bone density, permanent reduction in fertility, and weight gain (Lewis et al 2017).<sup>10</sup> Even irreversible surgical castration of sex offenders has been practiced in Germany (until 2017)<sup>11</sup> and the Czech Republic (ongoing), despite uncertainty about its efficacy for reducing certain kinds of sex offending. This practice has prompted criticism from the European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (2009, 2012).<sup>12</sup>

The United States was slower than European jurisdictions to introduce strict regulations in this area, with unethical medical procedures being performed on prisoners on a large scale until the mid-1970s and (to a lesser extent) even in more recent years. The experiments which prompted the U.S. reforms were characterised by serious harm or risk to participants, “a lack of transparency, an absence of a therapeutic aim... a significant knowledge and power imbalance between the subjects and the experimenters... [and] serious questions regarding consent” (Reiter 2009: 507). The malaria study in which Nathan Leopold participated (see Introduction) suffered from some of these unethical practices. Other examples include experiments on prisoners in Washington and Oregon in 1971 examining the effects of exposing people to radiation, with many survivors of this experiment suffering from illnesses likely caused by the radiation, including prostate cancer, vision loss and vascular disease. An experiment in Pennsylvania between 1965 and 1966 involved exposing prisoners’ skin to the main poisonous ingredient of Agent Orange (used in the Vietnam war) at doses 468 times higher than the chemical manufacturer’s original protocol for the experiment, which left participants suffering, even decades later, from severe blistering, scars, cysts and rashes. These scandals prompted a Department of Health, Education and Welfare report (1976), leading in 1978 to the introduction of title 45, part C of the Code of Federal Regulations, which state that prisoner experimentation should be minimally risky and non-intrusive and confined to the following four categories: “(1) research about the effects of incarceration, (2) research about prisons as institutions, (3) research about conditions particularly affecting prisoners, and (4) research about practices expected to improve the health of individual subjects”.<sup>13</sup> However, these strict regulations (which if interpreted literally are arguably over restrictive – Gostin 2006, 2007) have in practice provided insufficient protection to research subjects, due to weak or inconsistent enforcement. As noted above, there are loopholes that can allow research to escape OHRP oversight. One area of current concern is the ongoing use of new/experimental drug addiction therapies whose safety (and relative efficacy compared to existing treatments) is yet to be established (Appleman 2020). A 2006 report by a committee of the Institute of Medicine recommended improvements to the oversight of prisoner experimentation, including widening the definition of “prisoner” and creating a publicly accessible database of all research conducted on prisoners, but these recommendations have not yet been implemented (Gostin 2006, 2007).

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<sup>10</sup> The side effects noted in the text can persist after the treatment has stopped. Other side effects, such as hot flushes, depression and feminisation of the body may be limited to the duration of the treatment (Lewis 2017). However, it should be noted that some offenders receive treatment for many years (Sifferd 2020).

<sup>11</sup> In Germany this practice has now effectively ceased (Council of Europe 2017). However, it remains legal: Law on Voluntary Castration and Other Methods of Treatment of 1969, ss2 and 3.

<sup>12</sup> For a discussion of whether providing such biomedical interventions to offenders is compatible with the European Convention on Human Rights see Shaw 2017.

<sup>13</sup> Additional DHHS Protections Pertaining to Biomedical and Behavioural Research Involving Prisoners as Subjects. 45 C.F.R. § 46.306(a)(2)(i)-(iv) – summarised in Reiter (2007).

### 3. Neuroscientific research on offenders: Perspectives from medical ethics and penal theory

The disturbing history of repeated unethical experimentation on offenders raises the question whether such experimentation should be completely or largely prohibited. For example, McTernan (2018) argues that this history creates a “defeasible presumption” against using (experimental) neurointerventions to “treat” crime – a presumption which, she claims, is difficult to rebut, given that key factors that led to the historical abuses are still present today, e.g. prisoners’ vulnerability and stigmatised status and scientists’ limited knowledge of how the brain works. McTernan’s conclusion about neurointerventions rests on the principle that “if a course of action has been historically ethically terrible we have reason to doubt that it is now the correct course of action to take” (McTernan 2018: 278). To support this principle, she imagines a surgeon who, believing they have discovered an improved way of performing a procedure, tries the procedure with devastating results for the patient. Then the surgeon tries the procedure a second time, again with appalling results. Intuitively, the second use of the procedure is even more morally problematic than the first. Unless the surgeon can point to good reasons for thinking it would be different the second time, their failure to learn from their previous mistake displays “moral hubris”, thereby *wronging*, as well as harming, the patient by unjustifiably exposing them to known risks (McTernan 2018). McTernan’s analysis raises concerns that are clearly relevant from the perspective of medical ethics, as harming patients through moral hubris violates the doctor’s duty of care. From the perspective of certain penal theories, harming offenders through moral hubris not only wrongs offenders, but also arguably undermines the criminal justice system’s moral authority to punish, given that the system would have failed to uphold and embody the community’s core moral values, which is its fundamental role according to mainstream retributive and communication theories (e.g. Duff 2001). From a consequentialist perspective, the likelihood of harm seems more directly relevant than the culpability of the experimenter, but consequentialists would consider the experimenter’s culpable moral hubris to be indirectly problematic, if it undermined trust in doctors and the criminal justice system, potentially leading to increased ill health and crime.

Ryberg (2020) challenges McTernan’s formulation of the “lessons from history” argument. McTernan’s presumption against repeating a type of action that has previously caused harm relies on the ability to categorise a particular action as being a certain “type” of behaviour, which may prove problematic, given that actions can be described in different ways. On what basis does one decide that the act of providing a modern neurointervention to an offender in the context of an experiment that complies with current regulations is the same “type” of action as the historical abuse of a neurointervention? Ryberg suggests that the fact that both acts involve similar technologies is insufficient to categorise them as belonging to the same type. He asks us to imagine someone who in the past used a mobile phone to detonate a bomb and later has the opportunity to use a mobile phone to call an ambulance to save an injured person. The fact that this person previously used the same technology to cause harm provides no reason to hesitate to use it to do good. McTernan might reply that there are more similarities between the historical and modern uses of neurointerventions, besides the use of similar technologies - similarities such as the purposes for which the interventions are/were used (e.g. modification of socially undesirable behaviour) and the vulnerability of the recipients. Hence there are more reasons to categorise modern and historical uses of neurointerventions as belonging to the same type of action than to categorise the two actions involving the mobile phones as belonging to the same type of action. Nevertheless, this does not settle the question of whether modern neurointerventions should be prohibited all things considered.

Although McTernan and Ryberg differ about the precise formulation of the “lessons from history argument”, they agree that it is vital to examine the precise ways in which past uses of

neurointerventions have gone wrong, to avoid repeating these mistakes. Some of the main failings of historical prisoner experiments were: a) failure to obtain consent from participants that is genuinely i) informed and ii) voluntary; b) mental and physical harm to participants caused by the intended effects and side-effects of the experimental interventions; and c) experimenters' questionable motives.<sup>14</sup> The remainder of this section will discuss aspects of each of these issues in turn, focusing specifically on experimental neurointerventions designed to reduce criminal behaviour (known as “neurocorrectives” – Douglas 2014), while emphasising areas of convergence and divergence between medical ethics and penal theories.

## a) Consent

### i) *Informed*

Prisoners typically have a lower standard of education and are more likely to suffer from mental disorders and learning disabilities than the general population, which can potentially reduce their capacity to give informed consent. Even less vulnerable populations struggle to understand consent forms. One study revealed that at least 80% of participants (who were not prisoners and half of whom had some level of higher education) were unable to answer correctly basic questions about the experimental nature, safety and relative efficacy of interventions, after having read and signed forms asking for their consent to receive these interventions (Schumacker et al 2017). Obtaining informed consent from prisoners to receive *experimental neurocorrectives* is particularly challenging. It may be especially difficult to imagine what the effects of certain neurointerventions would be like. For example, a neurointervention that enhanced empathy in offenders with psychopathic tendencies might seem like the holy grail of neurorehabilitation research, since studies suggest that this group of offenders commit a disproportionate number of serious crimes (Kiehl 2011). However, someone with little or no empathy might find it impossible clearly to imagine what it would be like to feel compassion for others, as this intervention might produce a radical change in the kind of mental experiences they have, not just a difference in degree. An inadequate understanding of the psychological effects of such neurointerventions may be even more problematic than a failure to understand the physical effects of treatments, given that the mental capacities and dispositions potentially targeted by neurointerventions may be central to a person's sense of self. Furthermore, due to the nature of characteristics like insufficient empathy, high impulsivity and recklessness, which neurocorrectives seek to modify, participants with these characteristics might struggle to appreciate or give sufficient weight to possible *long-term* consequences of experimental interventions. It has been suggested that low-empathy individuals, who feel a lack of connection to others, may also fail to feel a connection with their own future selves (Levy 2014). Impulsive and reckless individuals may dismiss future risks (which they may later regret), due to being excessively influenced by incentives, such as the possibility of early release, a desire to escape boredom or by short-term pressures within the prison environment (discussed below).

From the standpoint of medical ethics, the purpose of obtaining informed consent is to protect the patient's autonomy. However, refusing to allow an offender to receive an experimental neurointervention might also interfere with their autonomy. Some offenders suffer from conditions linked to criminality (such as addictions, sexual disorders, and conditions characterised by impulsivity), which they find intensely distressing, and certain prisoners have

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<sup>14</sup> Other historical problems included: failure to ensure that the participants' medical information was kept confidential; and conducting experiments that from the outset were unlikely to produce significant benefits for participants/wider society or whose benefits were not sufficient to justify the risks. However, these issues will not be discussed in the present chapter.



mounted lawsuits in order to gain access to potential treatments for such conditions (Fischer 2006: 2-3). If an offender feels tormented by a condition linked to antisocial behaviour and is willing to face the risks attaching to an experimental treatment, is the state justified in withholding such a treatment in order to “protect” the offender from the consequences of his choice? It might be worried that we cannot be sure that a prisoner’s apparent desire to receive an intervention is genuinely autonomous. However, a blanket presumption that *no prisoner can ever* make up their own mind about whether to receive such an intervention also seems like a failure to respect their autonomy. Some of the laws and guidelines discussed in the previous section take into account the need to balance similar considerations. For example, the International Ethical Guidelines (1982) provide that research that benefits participants may sometimes be legitimate, even when the usual requirement for informed, voluntary consent cannot be adequately met.<sup>15</sup> Arguably, even if there is some uncertainty about the validity of the offender’s consent, if the treatment has an appropriately high chance of benefitting the offender (balanced against the harm of leaving him untreated) and all reasonable steps have been taken to seek valid consent, it seems ethically permissible to provide the intervention.

From the perspective of consequentialist penal theories, the interests of prisoners need to be balanced against the interests of others including potential victims. If an experimental neurocorrective has a significant chance of preventing large numbers of people from becoming victims of serious crimes, this could, in theory, outweigh the interests of prisoners who might be harmed in such experiments. Indeed, it might be thought that this kind of consequentialist reasoning implies that the consent requirement should be abandoned for experiments that have a sufficiently high likelihood of preventing serious harm. Following this line of reasoning, no form of draconian treatment of offenders could be excluded, as long as it maximised overall good consequences. Such unpalatable implications are considered by many to be grounds for rejecting (pure) consequentialist theories of punishment. Consequentialists could respond, that, in practice, it would almost never promote good consequences overall to treat prisoners in such inhumane ways, as this could, among other things, undermine faith in the authorities and cause social chaos. However, this type of response may not seem wholly satisfactory as it relies on contingent empirical claims – for example, claims about society’s reaction to the maltreatment of prisoners and about the inability of the authorities to conceal this maltreatment. Furthermore, this response arguably fails to capture our intuitions about *why* non-consensual prisoner experimentation is objectionable - intuitions which seem to be based on the wrong done to the prisoners themselves, rather than the risks to wider society.

Traditional retributivism faces difficulties explaining why the physical/mental distress caused by experimental neurocorrectives could not constitute the “suffering” which retributivists hold that offenders deserve, given the vagueness of many retributive theories about exactly what this suffering should consist in (Caruso 2020). Ryberg (2020), without endorsing retributivism, has argued that, in principle, neurocorrectives could be imposed as a form of retributive punishment. Given that punishment need not be imposed with the offender’s explicit consent, this line of reasoning would also (problematically) imply that the consent requirement for prisoner experimentation could be abandoned. Some retributivists might oppose experimental neurointerventions on the ground that retributivists cannot accept dual-purpose “punishments” whose goal is not merely to inflict deserved suffering, but also to produce some future good

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<sup>15</sup> The clearest example of an experiment that would be beneficial for the offender, is where the offender suffers from a serious disease, such as cancer, for which existing treatments have proven ineffective and participation in the trial of an experimental treatment provides the only hope for recovery. However, the decision to participate in such a trial would be irrelevant to considerations of reform/repentance as grounds for early release, so will not be discussed here.

outcome - see Shaw (2018), noting that the influential retributivist, Moore (1997), insists that retributivism should focus solely on punishing past wrongdoing and “cannot share the stage” with forward-looking penal theories. While this retributive argument might preclude non-consensual prisoner experimentation, it fails, like the above-mentioned consequentialist reasoning, to provide an intuitive explanation of *why* this practice would be wrong. Another retributive argument against the idea that experimental neurocorrectives could constitute a form of punishment is that there is a risk that different participants would experience different levels of adverse side-effects (Steffen 2020: 157). This would violate the principle that offenders who have committed the same crime should suffer the same severity of punishment. However, since offenders differ markedly in how aversive they find traditional punishments, e.g. an offender’s physical and psychological characteristics can make a large difference to how much he suffers in prison (Kolber 2009), the logic of this argument could make it hard for retributivists to justify any form of punishment. Furthermore, even if it were possible to guarantee that individuals who were forced to receive harmful neurocorrectives suffered identical adverse side-effects, the practice still seems intuitively objectionable and thus the “unequal-level-of-suffering” argument does not seem to capture our intuitions about what makes this practice wrongful.

In contrast, communication theories of punishment (e.g. Duff 2001) arguably contain conceptual resources that both help to explain what is wrong about non-consensual prisoner experimentation and which suggest how genuine informed consent might be obtained.<sup>16</sup> Communication theory emphasises the importance of ongoing dialogue with the offender and building respectful relationships between the offender and other members of the moral community including criminal justice actors who are working with the offender. I have previously argued that communication theory precludes the non-consensual use of neurocorrectives, because this practice would objectify offenders, by failing to engage them in the kind of dialogue required by the theory, by refusing to listen to them, excluding them from the moral community, and by portraying them as radically defective and inferior to others with regard to a fundamental aspect of their agency (Shaw 2014). For the purposes of the present chapter, it is important to highlight that communication theory’s emphasis on dialogue could increase the chance that consent to neurocorrectives would be genuinely informed. (Appleman 2020) reports that participants’ comprehension of relevant issues markedly increases when those administering the medical intervention took the time to provide a detailed oral explanation to participants and to answer their queries, rather than just giving them a consent form. Appleman notes that this way of obtaining consent would be time-consuming and expensive. However, communication theory provides an additional justification for investing these resources, given that ongoing dialogue with offenders should be happening anyway throughout their punishment, according to this theory. (Furthermore, taking these measures to obtain genuine, informed consent might save resources in the long-term, because the interventions are more likely to be successful if they are consensual and the offender has a respectful relationship with those administering them.) However, the people administering any neurocorrectives should be different individuals from the other criminal justice actors who are working with the offender, to prevent undue influence. There is some convergence between the communication theory of punishment’s emphasis on dialogue and certain themes from the medical ethics literature. Just as communication theory stresses that dialogue is a two-way process and that the authorities should acknowledge their own fallibility; medical ethicists have highlighted the need for forensic researchers to reflect on their own moral commitments, past experiences and shortcomings, in order to avoid these factors having a negative impact on

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<sup>16</sup> Although there are reasons discussed below why communication theorists might oppose prisoner experimentation, even if consensual.

recipients of interventions. Arboleda-Flórez and Weisstub (2013: 113, summarising the views of Candilis et al 2007) observe that, “it is essential that forensic experts find vehicles to explore and articulate their own personal values, identifications, and life histories in order to do justice in a particular instance... [and that] every effort be made to hear the voices...of parties in conflict, actually or potentially”.

### *ii) Voluntary*

While it is common for medical ethicists to assert that prisoners’ consent to neurocorrectives could never be voluntary, due to the coerciveness of the prison environment, criminal justice theorists have debated whether we should assume that prisoners are incapable of making such choices and even whether their consent should be required at all, given that “traditional” interventions like imprisonment are imposed on offenders without their consent (see, e.g., the discussion in McMillan 2014, Douglas 2014, 2019). Assuming that consent should be required before neurocorrectives can legitimately be given to offenders (in defence of this view see, e.g. Shaw 2014, 2019), the question arises whether the chance of early release as a result of receiving experimental neurointerventions would prevent the voluntariness requirement for valid consent from being met. The answer to this question seems crucially to depend on whether the prison conditions are excessively harsh. In addition, to the loss of liberty and interference with relationships with family and friends that imprisonment inevitably involves, prisoners may be subject to violence from other prisoners or staff, live in overcrowded or unsanitary conditions, be at higher risk of catching diseases and have limited access to medical treatment (Appleman 2020). In contrast, voluntariness of consent may be less problematic in regimes that are more humane and less restrictive of the offenders’ freedoms, such as certain Norwegian prisons, which strive to uphold the principle of normality which states that “life inside [prisons] will resemble life outside as much as possible”<sup>17</sup>

### *b) Harm*

As stated above, offenders may have conditions associated with an increased risk of criminality that also cause harm to their mental and physical wellbeing. If existing therapies have not proved successful, receiving an experimental neurocorrective might be in the offender’s best interests overall, even if this neurocorrective carries some risk of harm. I have argued elsewhere (Shaw 2018) that individuals with psychopathic personality disorder suffer as a *direct* consequence of their condition (rather than only suffering due to society’s punitive response to their criminal behaviour). Psychopathy is linked to much higher rates of physical illness, addiction, injury and early death, due to characteristics of the disorder such as impulsivity, dismissal of long-term considerations and tendency to enter into conflicts (Hare 1993). It seems plausible that psychopaths regard these harms to themselves as aversive, even if they typically lack insight into their causes. Given that many psychopaths lack this insight there may be particular challenges in obtaining *informed* consent from psychopaths (see above and Shaw 2018). However, since psychopathy exists on a spectrum (Hare 1993), some psychopaths may have sufficient insight to give informed consent, and some of those prisoners who suffer from other conditions (e.g. addictions and sexual disorders) might also have enough insight to be able to give informed consent or might be brought to gain such insight after, e.g., talking therapies. Overall, if valid consent can be obtained and the balance of harms suggests that the intervention is likely to be beneficial for the offender, then it seems ethically acceptable to offer the intervention.

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<sup>17</sup> <http://www.kriminalomsorgen.no/informationin-english.265199.no.html>

This leaves the question of whether prisoners should ever be permitted to consent to neurocorrectives that are all-things-considered harmful to them. From the standpoint of mainstream medical ethics, the answer seems to be “no”. However, various penal theories might permit such interventions. As mentioned above, consequentialist theories might permit offenders to participate in experiments that harm them but promote the welfare of a greater number of other people, and retributive theories might imply that the harm caused by such interventions is sometimes deserved, e.g. if the harm the offender would experience is in proportion to the harm he inflicted on the victim (although many consequentialists and retributivists attempt to resist these conclusions). Penal theorists who stress the importance of moral reform might argue that society should not interfere with a prisoner’s choice to suffer harm through participating in a medical experiment, if the prisoner is motivated by a desire to “give something back to society, to redeem, atone, and reconcile” (Garnett 1996: 481). Furthermore, some penal theorists, unlike mainstream medical ethicists, might prioritise offenders’ moral welfare (Morris 1981) over their physical welfare. Such a conception of moral “welfare” and moral “harm” might imply that permitting offenders to atone for their crime in this way would not necessarily harm them overall. However, the communication theory might preclude allowing offenders to participate in medical experiments that seriously physically harm them overall, because allowing this would send out confusing messages to the public about the values embodied in the criminal justice system. Communicative punishment is meant to send a clear message condemning the offender’s crime as morally wrong, because it violated fundamental moral norms, such as prohibitions against causing serious physical harm. If punishment itself seriously violates the offender’s physical integrity, then the criminal justice system seems to be communicating the problematic message: “do what I say, not what I do.” To theorists who advocate respecting the autonomous choice of a prisoner to allow himself to be seriously harmed in a medical experiment, communication theorists might reply that the prisoner should be free to make such choices after release, but doing so under the auspices of the criminal justice system would taint that system. The offender, according to communication theory, should not be permitted to choose a harsher regime for himself than that which would send out the appropriate message about his offense, any more than he should be permitted to select a more lenient one.<sup>18</sup>

c) The motives behind/purposes of experimenting on prisoners

Historically, experimenters have sometimes inappropriately prioritised the socially beneficial aims of experiments over the welfare of participants. Moreover, some experimenters neglected *both* participants’ welfare *and* the beneficial purposes of experiments, because the experimenters cared more about ethically problematic considerations, such as profit and reputational enhancement (Appleman 2020). Furthermore, if it can be argued that an experiment promotes some worthy purpose, this may make it psychologically easier for experimenters to rationalise inflicting unjustified harm on participants, when the experimenters may also be motivated, at some level, by less worthy considerations (Haslam et al 2016). It

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<sup>18</sup> Medical ethicists and penal theorists, regardless of which penal theory they subscribe to, might also oppose allowing a prisoner to consent to neurocorrectives that would seriously harm the prisoner overall, on the basis that a) if the intervention really is so harmful, then there are reasons to suspect that that the recipient’s apparent consent is not genuine and b) given the lessons from history, the state cannot be trusted to restrict their use of such harmful interventions only to prisoners who validly consent, so the state should be prohibited from ever using seriously harmful interventions. However, even if it could be shown that a) and b) were not the case, allowing prisoners to consent to seriously harmful interventions still arguably seems problematic, so the communication theorist’s explanation (outlined in the text) of why it would be problematic may seem attractive (at least to those who reject an alternative explanation, based simply on a paternalistic prohibition against seriously harming oneself in order to benefit others).

might somewhat help to reduce these problems (without completely solving the problem of conflicts of interests) if research on prisoners were limited to experiments aimed at benefitting the prisoners themselves either as a group or individually (see the Laws and Guidelines section above). Without such a constraint, there is a danger that prisoners might be viewed simply as a resource. For example, Albert Kligman, the researcher behind the Agent Orange experiments said that, when he got access to prisoners to test chemicals on, he was excited to have so many “acres of skin” at his disposal (quoted in Reiter 2009: 502). Bomann-Larsen (2013) argues that the only kind of intervention that should be given to offenders, as a condition of early release, are interventions that aim to prevent them from repeating the specific offences for which they were convicted. She claims that being found guilty of a particular crime does not give the state a general permission to do just anything to an offender that might be useful to the state. Rather, a finding of guilt only gives the state the right to impose measures on an offender that are directly related to the crime they were proved to have committed. However, other theorists have argued that this constraint is too narrow, that the state has a legitimate interest in crime prevention *generally*, and that, in principle, it might be permissible to use interventions that aim to prevent crimes other than those of which the recipients were convicted (Ryberg and Petersen 2013). Other penal theorists might only require that the intervention is in some way “appropriately connected” to the offenders’ crime. However, the idea of an “appropriate connection” is rather vague, and, at the most abstract level, it might be argued that almost any benefit conferred on society could be seen as helping to make up for the wrong done to society. There have been some attempts to place limits on the idea of an “appropriate connection” between the crime and the kind of actions that would make amends for the crime (see, e.g., Lee 2016). For example, someone who vandalised a building, might be required to help repair it and someone who drove recklessly, might be compelled to visit hospital wards for car crash victims. Whether/how one might flesh out the idea of an appropriate connection between committing a crime and receiving an experimental intervention is beyond the scope of this chapter.<sup>19</sup>

#### **4. Should participation in neuroscientific research provide grounds for early release?**

In the light of the appalling history of prisoner experimentation, the considerations discussed above, particularly those stemming from the communication theory of punishment, suggest that neuroscientific research in exchange for early release should only be permitted (if at all)<sup>20</sup> if very strict conditions were met. These should include (at least) the following requirements. Firstly, in order to obtain *informed* consent, researchers should engage in extended dialogue with offenders about the nature of the experiment and possible risks, and researchers must reflect on and be open about any of their values, life experiences, vested interests etc. that might adversely impact on the participants. The use of traditional consent forms is not sufficient, given the barriers to informed consent that particularly affect prisoners. Secondly, given such

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<sup>19</sup> Determining with precision which measures are appropriately connected to which crimes is also challenging in the context of traditional punishments – it is not a challenge that is unique to prisoner experimentation.

<sup>20</sup> Ryberg (2020) persuasively argues, that what is permissible in principle might be very different from what is permissible in practice under non-ideal conditions. Thus, although Ryberg is a strong proponent of the view that neurointerventions are permissible in principle, he casts doubt on whether it would be permissible to use them under the conditions that currently obtain in the US criminal justice system, due to the “irrationality” of many practices within that system (Ryberg 2020: 205). Similarly, the five prerequisites that I outline in this section for the permissibility of neurointerventions might need to be supplemented with further requirements depending on different practices in different jurisdictions. Indeed, in some jurisdictions whose current practices are particularly “irrational”, it might be impossible to implement enough reliable safeguards to make the use of experimental neurointerventions on prisoners ethically acceptable. This article has aimed to identify some of the most important *necessary* conditions for neuroscientific prisoner experimentation to be justifiable, rather than setting out sufficient conditions suitable for all jurisdictions.

barriers to consent, some degree of uncertainty almost always surrounds the validity of prisoners' consent. To counterbalance this problem, in addition to taking all reasonable steps to obtain consent, it should be required that participants receive some benefit from the results of the experiment (at least if the experiment carries any significant risks). Thirdly, if prison conditions are excessively harsh, then the *voluntariness* of consent is dubious and the state lacks the right to enrol such prisoners in experiments, as well lacking the right to expose them to such prison conditions. Fourthly, prisoners should not be permitted to receive interventions that are likely seriously to harm them overall, even if it is clear that they desire to receive such interventions. Finally, there may be some reasons for thinking that if participation in neuroscientific research were to provide grounds for early release, such research would need to be appropriately related to the offender's crime. Such "appropriately related" interventions would most obviously include treatments to prevent the same sort of crime being repeated. However, there is not scope within this chapter to explore this issue in detail.

The remaining question is whether releasing offenders *early* would be problematic from a penal theoretical perspective. From a retributive standpoint, anything that allows the offender to evade (all or part of) his deserved punishment would be problematic. For example, Kant wrote: "What, therefore, should one think of the proposal to preserve the life of a criminal sentenced to death if he agrees to let dangerous experiments be made on him and is lucky enough to survive them, so that in this way physicians learn something new of benefit to the commonwealth? A court would reject with contempt such a proposal from a medical college, for justice ceases to be justice if it can be bought for any price whatsoever." (Kant 1785: 141). However, more recently there have been attempts to justify parole and early/delayed release in terms of communicative retributivism (see e.g. O'Hear 2011; Dagan and Segev 2015). Nevertheless, Bulow (2018: 13) rejects the idea that early release is compatible with communicative retributive theories, arguing that, "from a retributivist perspective, indeterminate sentencing is deemed problematic because of proportionality and because punishment should reflect crime severity and not the risks of future delinquency or behavior in prison." He considers the alternative possibility that mercy (a doctrine independent from the primary justification of punishment) might justify early release for good behaviour, but ultimately suggests that, "the most promising rationale for indeterminate sentencing stems from mixed theories of punishment such that retributivist concerns set the minimum and maximum time in prison and forward-looking consequentialist concerns decide the actual date of release" (Bulow 2018: 14). Those who still seek to reconcile early release with a communicative theory of punishment (rather than with mixed theories) might claim that the "quality" of one's conduct during one's sentence might justify a reduced "quantity". It might be justifiable, on this view, to release offenders early if, through good conduct during part of their sentence, offenders manage to make "precisely the amends they ought to make to apologise for their crimes" before the whole sentence is complete (Lee 2016: 19<sup>21</sup>). Perhaps willingness to receive experimental neurocorrectives might constitute such amends. One might worry, however, that this kind of indeterminate sentence could create too much uncertainty and inconsistency between cases. An alternative might be to offer the offender a choice at the outset between different punishments which were considered (roughly) equally burdensome: either a shorter prison term plus receiving an experimental neurocorrective, or a longer prison term without the neurocorrective. The purpose of this chapter is not to settle these questions. Its aim was to identify some restrictions that might plausibly be placed on the practice of prisoner

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<sup>21</sup> Lee was referring to amends made *before* the sentence was imposed (and did not commit himself to the view that this justified a reduced sentence), but the logic of this argument could also be applied to good behaviour *during* one's sentence.

experimentation (summarised at the start of this section) and to map out different responses that penal theorists might make to the question of whether participation in neuroscientific research should be considered when making decisions about early release – a topic that has previously primarily been explored from the standpoint of medical ethics, rather than penal theory.

### **Conclusion**

This chapter began by briefly outlining the prevalence and types of medical research that are currently being carried out on prisoners, or which might be carried out in the future. This section ended by highlighting *neuroscientific* medical research, because research into “treating” criminal behaviour is particularly relevant to prisoner populations and this kind of research typically involves the application of neuroscientific techniques or insights. Section 2 briefly outlined the laws and guidelines relevant to medical research on prisoners. Section 3 considered suggestions that neuroscientific research on prisoners should be prohibited altogether and summarised general medical ethical concerns with medical (and specifically neuroscientific) research on prisoners and contrasted these concerns with perspectives on this topic from selected mainstream penal theories. In the light of these considerations, section 4 set out some requirements that should be met before neuroscientific research in exchange for early release should be permitted (if at all) and mapped out different responses that penal theorists might make to the question of whether participation in neuroscientific research should be considered when making decisions about early release – a topic that had previously primarily been explored from the standpoint of medical ethics, rather than penal theory.

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