



Is punishment *backward*? On neurointerventions and forward-looking moral responsibility

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3 **Is punishment *backward*? On neurointerventions and forward-looking moral**
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5 **responsibility**
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21 **Przemysław Zawadzki** majored in Philosophy and Cognitive Science. He is a PhD candidate
22 in Philosophy and Jagiellonian Interdisciplinary PhD Programme at Jagiellonian University in
23 Krakow. Currently, he is working on the issue of how to reform the criminal justice system in
24 the light of the rejection of retributivism and punishment. He is primarily interested in
25 neuroethics, the evolution of morality, and the social consequences of free will and moral
26 responsibility skepticism.
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37 **Abstract:** This article focuses on justified responses to ‘immoral’ behavior and crimes
38 committed by patients undergoing neuromodulation therapies. Such patients could be held
39 morally responsible in the basic desert sense—the one that serves as a justification of severe
40 practices such as backward-looking moral outrage, condemnation, and legal punishment—as
41 long as they possess certain compatibilist capabilities that have traditionally served as the
42 quintessence of free will, i.e., reasons-responsiveness; attributability; answerability; the
43 abilities to act in accordance with moral reasons, second-order volitions, or Deep Self. Recently
44 leading compatibilist neuroethicists added the condition of not feeling alienated from desires
45 motivating a person’s action. This article argues against such attempts to determine conditions
46 under which patients undergoing neuromodulation should be subject to negative reactive
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3 attitudes and legal punishment. Compatibilism should not be used to justify basic desert moral
4 responsibility and legal punishment. Instead, a new way of thinking about the function of moral
5 responsibility attribution is proposed for patients with neuromodulation. Their compatibilist
6 capabilities should serve as important indicators for determining appropriate, forward-looking
7 courses of action, such as quarantining and restorative treatment, to ensure public safety and
8 well-being of the patients.
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19 **Keywords:** Punishment; Free Will; Desert; Moral Responsibility; Public Health-Quarantine
20 (PHQ) Model; Deep Brain Stimulation (DBS);
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28 **Introduction**

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33 Belief in free will and moral responsibility is deeply entrenched in our daily lives and social
34 institutions. However, recent advances in the behavioral, cognitive, and neurosciences have led
35 many philosophers, psychologists, and neuroscientists to question whether we have the kind of
36 freedom that allows us to hold each other morally responsible. Arguments leading to this are
37 based on neuroscientific findings about the role of unconscious brain activity in initiating
38 actions.¹ Another highly influential and independent line of scientific challenges to free will
39 and moral responsibility—the threat of shrinking agency²—comes from psychological findings
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51 ¹ Haselager, W.F.G. (2020). Conceptual Revisions: Intentions and Free Will in the Light of Cognitive
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55 The Illusion of Conscious Will. Cambridge: MIT Press; Haggard, P., & Libet, B. (2001). Conscious
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58 ² Nadelhoffer, T. (2011). The Threat of Shrinking Agency and Free Will Disillusionism. In L. Nadel &
59 W. Sinnott-Armstrong (Eds.), *Conscious Will and Responsibility* (pp. 173–188). Oxford University
60 Press.

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3 demonstrating ‘the unbearable automaticity of being’³ and the ubiquitous influence of
4 unconscious beliefs and situational factors on human action.⁴ While on closer philosophical
5 scrutiny the neuroscientific findings may not be sufficient to justify global skepticism about
6 free will and moral responsibility, they seem to reveal that everyday folk understanding of
7 persons as agents whose decisions are guided by conscious, rational and free deliberations is
8 largely inadequate. Psychologically speaking, the impact of external processes and factors on
9 internal ‘personal’ psychological processes is much more significant than it has been
10 traditionally assumed.⁵ All of this applies to *paradigm agents*, that is, the neurotypical and
11 healthy population.
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24 However, a large part of the population is constituted by *non-paradigm agents*—e.g.,
25 addicts, patients with neurodegenerative and psychiatric diseases, survivors of trauma, and even
26 adolescents can be so categorized—whose internal processes leading to actions are (all too
27 often) impossible for them to control due to such factors as addiction triggers, maladaptive
28 changes in neural circuits, traumatic memories, or underdeveloped prefrontal cortex. On top of
29 this, therapeutic application of neuropharmacology and neuromodulation technologies in some
30 of these non-paradigm agents have shown how vulnerable to modification and impairment are
31 the higher mental capabilities that have traditionally served as the quintessence of free will, and
32 thus a condition of moral responsibility, i.e., reasons-responsiveness;⁶ the abilities to act in
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49 ³ Bargh, J.A., & Chartrand, T.L. (1999). The Unbearable Automaticity of Being. *American Psychologist*.
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57 ⁶ Fischer, J.M., & Ravizza, M. (1998). *Responsibility and Control: A Theory of Moral Responsibility*.
58 Cambridge University Press.
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3 accordance with moral reasons,⁷ one's second-order volitions,⁸ and one's Deep or True Self.⁹
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5 For example, unwanted side-effects of dopamine replacement therapies include, among others,
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7 mood and anxiety fluctuations, psychosis, and impulse control disorders (ICDs), i.e., gambling,
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9 compulsive shopping, binge eating, hobbyism, compulsive medication, and hypersexuality.¹⁰
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11 Similarly, therapies involving neuromodulation technologies, such as Deep Brain Stimulation
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13 (DBS), can lead to cognitive alterations, depression, (hypo)mania, apathy, anxiety, personality
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15 changes,¹¹ psychosis,¹² ICDs¹³ (including pathological gambling, hobbyism, and
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17 hypersexuality¹⁴) and, *last but not least*, aggressive behavior.¹⁵ Importantly, it seems that these
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19 side-effects can occur in patients in such a way that they compromise the aforementioned higher
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21 mental abilities that have traditionally been considered *sine qua non* conditions of free will and
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23 moral responsibility.
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34 ⁷ Wolf, S. (1990). *Freedom Within Reason*. Oxford University Press.

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3 Taking this into account and considering the number of people in need of help due to
4 neurodegenerative and psychiatric diseases worldwide,¹⁶ as well as the rapid progress in the
5 development of neurotechnologies and the fast pace of their therapeutic application in an
6 increasing number of patients, questions arise about appropriate free will and moral
7 responsibility ascriptions to patients undergoing neurointerventions. These questions are
8 pressing as judgments about free will and moral responsibility justify severe practices such as
9 backward-looking moral outrage, condemnation, and legal punishment.¹⁷ This article focuses
10 on an important but still largely neglected bioethical issue, namely what the best-justified
11 response to ‘immoral’ behaviors or crimes of patients undergoing neuromodulation therapy is.
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24 To answer these questions, I focus primarily on DBS. I chose DBS as the subject of my
25 analysis since it is a well-established therapy,¹⁸ and reports on patients’ behavior during DBS
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37 ¹³ Pham, Solbakk, Skogseid, Toft, Pripp, Konglund, *et al.* (op. cit. n. 11) : 490507; Broen, M., Duits, A.,
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3 treatment have given rise to a rich debate in the neuroethical community. As DBS alters
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5 fundamental aspects of patients' psychology, including the above-mentioned higher mental
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7 abilities, it sparked a discussion about the potential consequences of this therapy for the various
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9 dimensions of patients' self, inextricably intertwined—at least on leading compatibilist
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11 accounts—with moral responsibility, i.e., personal identity, authenticity, agency, and
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13 autonomy.¹⁹ However, only a few works discuss how DBS impacts the moral responsibility of
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15 patients.²⁰
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19 This article aims to contribute to this discussion by proposing a new way of thinking
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21 about the *function* of moral responsibility attribution in patients undergoing neurointerventions.
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23 Specifically, by applying *free will skepticism*, *forward-looking moral responsibility* and the
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25 *public health–quarantine model (PHQ)*²¹—a non-retributive and non-punitive approach to
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47 ¹⁶ Just to outline the scale of the problem, globally, in 2016, neurological disorders were the leading
48 cause of disability-adjusted life-years (DALYs) and second leading cause of deaths (GBD 2016
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51 459–480. [https://doi.org/10.1016/S1474-4422\(18\)30499-X](https://doi.org/10.1016/S1474-4422(18)30499-X)). In the U.S. alone, it is estimated that nearly
52 1 million of people are living with Parkinson's disease (PD) and 6,2 million with Alzheimer's disease
53 (AD). The number of Americans with AD could grow to 13.8 million by 2060 barring the development
54 of medical breakthroughs to prevent, slow or cure AD (2021 Alzheimer's disease facts and figures.
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60 Massachusetts: MIT Press.

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3 criminal law, I attempt to show that free will and moral responsibility attribution should not be
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5 used to justify legal punishment. Instead, I propose to utilize the (lack of) mental capabilities
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7 related to free will and moral responsibility as important indicators for determining appropriate,
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9 forward-looking courses of action, such as quarantining and restorative treatment, to ensure
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11 public safety and well-being of the patients.
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15 16 17 **A Neuroethical Compatibilist Project and the Prospect of Paradigm Shift** 18

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21 In recent articles dealing with the issue of moral responsibility of DBS patients De Marco
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23 (2019)²² and Sharp & Wasserman (2016)²³ attempt to answer the question: “Under what
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25 conditions do direct brain modifications reduce an agent’s moral responsibility?”²⁴ on the three
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31 ¹⁸ The number of patients undergoing DBS therapy can be estimated at 175,000 (Lozano, A.M.,
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33 Lipsman, N., Bergman, H., Brown, P., Chabardes, S., Chang, J.W., ... Krauss, J.K. (2019). Deep brain
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35 <https://doi.org/10.1038/s41582-018-0128-2>).

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56 Press.

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58 ²² De Marco (op. cit. n. 20) : 221–229

59 ²³ Sharp, Wasserman (op. cit. n. 20) : 173–185

60 ²⁴ Ibid : 174

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3 following assumptions about moral responsibility: (1) that moral responsibility should be
4 understood in the basic-desert sense—i.e., a backward-looking one, which can serve as a
5 justification of moral outrage, condemnation, and legal punishment, (2) that some compatibilist
6 account of moral responsibility is true, (3) that moral responsibility admits of degrees. As a
7 result, these authors ask the internal question: “does this individual meet the conditions for
8 moral responsibility under the rules of the moral responsibility system, or does the person
9 instead have a system-recognized excuse or exemption.”²⁵ As all compatibilists, they start their
10 considerations by assuming that under normal circumstances, (paradigm) persons are morally
11 responsible, and then proceed from this starting point to define the range of excuses that exempt
12 DBS patients (the strategy of so-called ‘excuse-extensionism’).
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26 Even the ‘strictest’ compatibilists agree that there is a range of acceptable excuses for
27 diminishing basic desert moral responsibility (BDMR) available in many cases for DBS patients
28 who have behaved immorally or have committed a crime. As Sharp and Wasserman comment
29 on this point: “there are cases in which manipulation deprives the agent of an essential capacity
30 required for moral responsibility. Here, all compatibilists acknowledge that modified agents
31 have diminished moral responsibility. Obvious cases include those in which brain alteration
32 impairs a critical cognitive capacity. When DBS results in impairments such as postoperative
33 psychosis, severe cognitive decline, or loss of executive function, the agent may not be fully
34 morally responsible.”²⁶
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46 Moreover, more ‘lenient’ compatibilists propose to go even further and reduce BDMR also
47 in some situations where an agent’s critical cognitive capacity is not impaired. An influential
48 camp of such compatibilists—historicism or history-sensitive compatibilism—propose that
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59 ²⁵ Waller (op. cit. n. 17) : 102

60 ²⁶ Sharp, Wasserman (op. cit. n. 20) : 176

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3 certain factors in a person's past, e.g., manipulations or forces that bypass a person's capacities
4 for rational control,²⁷ should count as reducing or even eliminating BDMR for actions.
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8 Sharp and Wasserman²⁸ propose the History-Sensitive Reflection View (HSRV), an
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10 alternative compatibilist framework that diminishes desert-based moral responsibility in cases
11 where DBS has less extreme consequences to the patient—i.e., situations that may not be
12 accounted for by other historicist accounts. A sufficient reason for Sharp and Wasserman to
13 reduce BDMR is if a person would be alienated from the desire motivating her action after
14 sustained critical hypothetical reflection on its history. For instance, if a person cannot control
15 her desire to gamble,²⁹ develops hypersexuality,³⁰ or becomes aggressive³¹—side-effects
16 experienced by some DBS patients—and were this person to engage in critical reflection in
17 light of the fact that her new psychological characteristic arose as a direct result of the
18 procedure, and she would feel alienated from it, her BDMR would be reduced.
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31 Although HSRV is a step in the right direction in the context of refining compatibilist
32 response in the case of DBS patients, the presupposition that the *function* of the hypothetical
33 reflection is to assess BDMR³² of DBS patients is mistaken. In this article, I would like to
34 propose a shift in thinking about the issue of moral responsibility of DBS patients by adopting
35 free will and BDMR skepticism and PHQ. Adopting this perspective demands focusing
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45 ²⁷ De Marco (op. cit. n. 20) : 221–229; See, e.g., Mele, A.R. (2006). Free Will and Luck. Oxford
46 University Press, USA.

47 ²⁸ Sharp, Wasserman (op. cit. n. 20) : 173–185

48 ²⁹ Sharp and Wasserman discuss exactly such a case, Gambler II, who is a (simplified) version of an
49 actual clinical case of a 63 year old patient with Parkinson's who underwent STN-DBS.

50 ³⁰ Müller, Walter, Christen (op. cit. n. 14) : 295–303; Doshi, Bhargava (op. cit. n. 14) : 474; Romito,
51 Raja, Daniele, Contarino, Bentivoglio, Barbier, *et al.* (op. cit. n. 14) : 1371–1374

52 ³¹ Thomson, Segrave, Carter (op. cit. n. 11); Liddle, Phillips, Gustafsson, Silburn (op. cit. n. 15) : 45–
53 53; Funkiewiez, Ardouin, Caputo, Krack, Fraix, Klinger, *et al.* (op. cit. n. 12) : 834–839; Sensi, Eleopra,
54 Cavallo, Sette, Milani, Quatrala, *et al.* (op. cit. n. 15) : 247–251; Bejjani, Houeto, Hariz, Yelnik,
55 Mesnage, Bonnet, *et al.* (op. cit. n. 15) : 1425–1427

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58 ³² Although Sharp and Wasserman argue that moral responsibility admits of degrees, they claim: “To
59 say that an agent is morally responsible is to say that she is an apt target for certain ‘reactive attitudes’
60 such as praise, resentment, blame, and gratitude,” thereby they explicitly assume BDMR.

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3 exclusively on forward-looking aspects of the moral responsibility of DBS patients. As I will
4 show, this shift in focus is more ethically appropriate as it is more beneficial from both a clinical
5 and public safety perspective than adopting default approaches to assessing BDMR (i.e.,
6 compatibilist) and justifying legal punishment in criminal law (i.e., retributivism). Before I
7 discuss my approach, let me define the terms introduced in this section and provide an argument
8 in favor of my proposition.
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19 **Rejecting Desert Based Moral Responsibility, Retributivism, and Legal Punishment**

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24 Legal punishment consists of the state's authority sanctioned imposition of intentional harms
25 (e.g., penalties and sanctions) upon an individual or a group for an act that is perceived as a
26 violation of a state's law. In his latest book, Gregg Caruso states: "Within the criminal justice
27 system one of the most prominent justifications for legal punishment, both historically and
28 currently, is retributivism. The retributive justification of legal punishment maintains that,
29 absent any excusing conditions, wrongdoers are morally responsible for their actions and
30 deserve to be punished in proportion to their wrongdoing."³³ The fundamental reason to reject
31 retributivism and all associated practices would be if it turned out that people are never
32 genuinely deserving in the BDMR sense. In such a case, retributivism would be undermined as
33 a theory of legal punishment. Since retributive punishment involves harm, it would be unjust
34 to maintain such a practice in the absence of justification for it.³⁴ Caruso argues that there are
35 at least six pervasive reasons to reject retributivism.³⁵ In this article, I focus on the most relevant
36 argument for the purpose of this article:
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57 ³³ Caruso (op. cit. n. 5) : 1

58 ³⁴ Ibid.; Caruso, Pereboom (op. cit. n. 21) : 355–365

59 ³⁵ Caruso (op. cit. n. 5)

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3 *The Skeptical Argument:* The truth of free will skepticism challenges the very
4 foundations of the retributivist system. If people lack the requisite kind of control in
5 action, that is, free will, they cannot truly deserve to be held morally responsible for
6 their deeds. Thus, sticking to retributive practices given that free will skepticism is true
7 would entail holding people responsible for “the results of the morally arbitrary or for
8 what is ultimately beyond their control.”³⁶
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19 The most basic intuition behind the notion of BDMR can be derived from Immanuel Kant
20 (1785, Part II). One version of this example is presented by Derk Pereboom.³⁷
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26 Imagine that someone on an isolated island brutally murders everyone else on that
27 island, and that he is not capable of moral reform, due to his inner hatred and rage. Add
28 that it is not possible for him to escape the island, and no one else will ever visit because
29 it’s too remote. There is no longer a society on the island whose rules might be
30 determined by a social contract aimed at good consequences, since the society has been
31 disbanded. Do we have the intuition that this murderer still deserves to be punished? If
32 so, then punishment would be basically deserved if the example in fact does eliminate
33 the options for non-basic desert, as it seems to.
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47 This familiar Kantian trope constitutes fundamental intuition on which desert-based approaches
48 to blame and punishment—and the legal systems of the criminal law, at least in most
49 countries—are built—that is, the intuition that moral responsibility should be judged in a purely
50 *backward-looking* sense. It is only this very specific sense of responsibility that skeptics oppose.
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58 ³⁶ Ibid.

59 ³⁷ Dennett, D.C., & Caruso, G.D. (2021). *Just Deserts: Debating Free Will*. Medford: Polity Press:
60 Foreword.

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3 Crucially, BDMR skepticism is, however, consistent with persons being responsible in
4 others senses, e.g., in terms of answerability^{38,39} and attributability.^{40,41} Free will skepticism is
5 also compatible with other senses of freedom of the will, such as rational control or autonomy.
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7 More precisely, free will skeptics do not deny the kinds of freedom that leading compatibilists
8 have identified, such as reasons-responsiveness and the abilities to act in accordance with moral
9 reasons, one's second-order volitions, or one's Deep or True Self. For the purposes of this
10 paper, I call the above-mentioned senses of moral responsibility and kinds of freedom
11 *compatibilist capabilities*.
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21 The skeptical objection instead is that BDMR and retributive harm in the case of legal
22 punishment cannot be justified by appealing to compatibilist capabilities. In a nutshell, all
23 parties agree that people have the compatibilists capabilities. The real bone of contention is
24 whether any of these capabilities constitutes a condition sufficient for BDMR.⁴² For free will
25 skeptics, the answer is 'no.' It is because the way we are, who we are, and what we do is
26 ultimately the result of factors beyond our control, whether that be determinism, indeterminism,
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42 ³⁸ Answerability is the ability to respond to others' demands for justification of one's actions by
43 weighing the worth of some reasons over others.

44 ³⁹ For arguments that answerability is consistent with the rejection of BDMR, see, e.g., Pereboom (op.
45 cit. n. 21).

46 ⁴⁰ In short, a person is responsible in the attributability sense if her motivational attitudes reflect her
47 identity as a moral agent (i.e., her Deep or True Self).

48 ⁴¹ Shoemaker, D. (2015). Responsibility from the margins. Oxford: Oxford University Press; Watson,
49 G. (1996). Two Faces of Responsibility. *Philosophical Topics*. 24(2), 227–248.
50 <https://doi.org/10.5840/philtopics199624222>

51 ⁴² Of course, not all compatibilists argue that a condition they postulated is exclusively sufficient for
52 moral responsibility. For example, Fischer, Ravizza (op. cit. n. 6) claim that reasons-responsiveness
53 (their account of control condition for moral responsibility) is not sufficient for moral responsibility as
54 there is also the epistemic condition for it—one that asks whether a person was aware of what she was
55 doing, i.e., of the consequences and moral significance of her action. However, e.g., Levy argues that
56 the control condition is in fact a component of the epistemic condition (Levy, N. (2011). *Hard luck: how
57 luck undermines free will and moral responsibility*. Oxford; New York: Oxford University Press).
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3 constitutive luck⁴³, or present luck,⁴⁴ and because of this, people are never morally responsible
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5 for their actions in the basic desert sense.⁴⁵ Various arguments in favor of the skeptical account
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7 have been put forward in recent years, depending on whether they were aimed at event-causal
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9 libertarianism, agent-causal libertarianism, historicist or non-historicist compatibilism.⁴⁶ Or, as
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11 Caruso puts it, after arguing against the above-mentioned approaches, “the skeptical position is
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13 the only defensible position that remains standing.”⁴⁷
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17 Since compatibilist accounts face significant and as yet unresolved objections such as
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19 the Consequence Argument,⁴⁸ the Basic Argument,⁴⁹ the Manipulation Argument,⁵⁰ and the
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43 ⁴³ Constitutive luck is the “luck in the traits one happens to have” (Levy, N. (2019). Putting the Luck
44 Back Into Moral Luck. *Midwest Studies In Philosophy*. 43(1), 59–74.
45 <https://doi.org/10.1111/misp.12104>).

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47 ⁴⁴ For more elaborated considerations on a proper definition of ‘present luck,’ see Caruso, G.D. (2019).
48 A Defense of the Luck Pincer: Why Luck (Still) Undermines Moral Responsibility. *Journal of*
49 *Information Ethics*. 28(1), 51–72. In a nutshell, present luck is “the luck at or around the moment of a
50 putatively free and morally responsible action or decision” (Ibid).

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52 ⁴⁵ Caruso (op. cit. n. 5); Dennett, Caruso (op. cit. n. 37); Waller (op. cit. n. 17); Pereboom (op. cit. n.
53 21); Vilhauer, B. (2013). Persons, punishment, and free will skepticism. *Philosophical Studies*. 162(2),
54 143–163. <https://doi.org/10.1007/s11098-011-9752-z>; Levy (op. cit. n. 42; 43); Ibid.; Strawson, G.
55 (1994). The impossibility of moral responsibility. *Philosophical Studies*. 75(1–2), 5–24.
56 <https://doi.org/10.1007/BF00989879>

57 ⁴⁶ Ibid.

58 ⁴⁷ Caruso (op. cit. n. 5) : 14; 39

59 ⁴⁸ Canonical schema of the Consequence Argument: “If determinism is true, then our acts are the
60 consequences of the laws of nature and events in the remote past. But it is not up to us what went on

Luck Pincer,⁵¹ the time is ripe to start considering what responses to crimes committed by DBS patients *are* justified and advisable, assuming free will and BDMR skepticism. However, before moving on to presenting such responses, I will now address criticisms and objections formulated towards free will and BDMR skepticism.

Skeptical Dilemmas? Effective Response to Crimes and Respect for Patient's Rights

before we were born, and neither is it up to us what the laws of nature are. Therefore, the consequences of these things (including our present acts) are not up to us” (Inwagen, P.V. (1983). *An Essay on Free Will* (pp. 56). Oxford University Press).

⁴⁹ The Basic Argument, made explicit by Strawson (op. cit. n. 45), states that moral responsibility is impossible. The kernel of the argument can be reconstructed as follows:

- 1) To be morally responsible for her decision to x, an agent must be morally responsible for the state of mind that issues in x.
- 2) To be morally responsible for the state of mind that issues in x, an agent must be morally responsible for the decisions that caused her to have that state of mind.
- 3) To be morally responsible for those decisions, however, she would be to be morally responsible for the state of mind that issued in those decisions.
- 4) But if we keep tracing the etiology of the decision to x we will fail to find a state of mind for which the agent is not morally responsible only if an infinite regress of mental states is possible or the agent is *causa sui*.
- 5) An infinite regress of mental states is impossible.
- 6) No (human) agent is *causa sui*.
- 7) So, the agent is not morally responsible for x (Coates, D.J. (2017). The Basic Argument and Modest Moral Responsibility. *Analytic Philosophy*. 58(2), 156–170. <https://doi.org/10.1111/phib.12095>).

⁵⁰ One appealing version of the Manipulation Argument is Pereboom’s (op. cit. n. 21) four-case argument. It relies on the intuition that if a person's brain has been manipulated by another agent, then she is not responsible for the action that resulted from the manipulation, even if the person satisfies the prominent compatibilist capabilities (conditions) (e.g., is able to conform: their first-order desires with second-order volitions; behavior to reasons they have for actions; actions to moral reasons, etc.). Pereboom’s four case argument sets out examples of actions that involve various sorts of manipulations, starting with the most extreme kinds of intentional manipulation and ending with non-manipulative cases of ordinary determinism. It is then concluded that no relevant differences between the manipulated agents and the instances of ordinarily determined agents can be found which would justify that in the first case agents are morally responsible while on the latter they are not. For this reason, if one starts with usually strong and widespread intuition about the sourcehood of (un)free actions, that is, that that the manipulated agents cannot be free, one is committed to conclude that the same holds for agents whose actions are determined by natural factors.

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3 One of the most common criticisms is that free will and BDMR skepticism is unable to
4 adequately respond to criminal behavior. I argue that the opposite is the case—at least when it
5 comes to patients undergoing neuromodulation therapy. Although on free will skepticism
6 compatibilist capabilities are never sufficient to ground BDMR and retributive harm, this does
7 not mean that no response to criminal acts committed by the patients is justified. I argue that by
8 adopting PHQ—an approach to criminal law consistent with skepticism about free will and
9 BDMR—responses to criminal behavior can be sufficient for acceptable societal policy even in
10 cases of the most dangerous patients.
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21 PHQ is based on a comparison between treatment of dangerous criminals and treatment of
22 carriers of dangerous diseases.⁵² The PHQ rationale to respond to the criminal behavior of
23 dangerous offenders can be summarized as follows: (1) free will skepticism maintains that
24 carriers of dangerous diseases are not responsible for this or in any other sense for having
25 contracted these diseases; (2) plainly, many carriers of dangerous diseases are not responsible
26 for this or in any other sense for having contracted these diseases; (3) yet, we generally agree that it is sometimes permissible to
27 quarantine them, and the justification for doing so is the right to self-protection and the
28 prevention of harm to others; (4) for similar reasons, even if a dangerous criminal is not morally
29 responsible for his crimes in the basic desert sense, it could be *as* legitimate to preventatively
30 detain him as to quarantine the non-responsible carrier of a serious communicable disease.⁵³
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48 ⁵¹ In a nutshell, the substance of Levy's (op. cit. n. 42; 43) Luck Pincer can be summarized as follows:
49 1) *Universal Luck Premise*: Every morally significant act is either constitutively lucky, presently lucky,
50 or both.
51 2) *Responsibility Negation Premise*: Constitutive and present luck each negate moral responsibility.
52 3) *Conclusion*: An agent is not morally responsible for any morally significant acts (Hartman, R.J.
53 (2017). In *Defense of Moral Luck: Why Luck Often Affects Praiseworthiness and Blameworthiness*
54 (pp. 43). Routledge).
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58 ⁵² Caruso (op. cit. n. 5); Dennett, Caruso (op. cit. n. 37); Caruso, Pereboom (op. cit. n. 21) : 355–365;
59 Pereboom (op. cit. n. 21)

60 ⁵³ Caruso, Pereboom (op. cit. n. 21) : 355–365

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3 Contrary to the objection often made against PHQ that it is too ‘lenient’ for effectively
4 addressing criminal behavior,⁵⁴ I argue that PHQ responds to a threat posed by the most
5 dangerous patients more adequately and efficiently than retributivism. Retributivism aims at
6 giving offenders what they ‘deserve.’ Paradoxically, however, when compatibilist
7 considerations of an offender (be it the DBS patient or not) are impaired in a way that
8 undermines BDMR—a prerequisite to implement the punishment—purely retributivist account
9 is unable to justify his involuntary incapacitation—a response that may be required to secure
10 the public from the most dangerous individuals. In other words, retributivism does not have the
11 theoretical resources to justify protective isolation of dangerous patients deprived of
12 compatibilist capabilities, as they do not ‘deserve’ such a treatment.⁵⁵ Contrastingly, according
13 to PHQ, the society has the right to incapacitate patients who have committed crimes—
14 independent of whether they possess compatibilist capabilities—if they constitute a threat to
15 the wider society. Such isolation of dangerous patients is grounded in the rights of self-defense
16 and defense of others—fundamental values to which PHQ appeals.⁵⁶

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Some bioethicists may argue that PHQ cannot be an acceptable societal policy as it unjustifiably violates patients’ rights such as liberty and autonomy by prioritizing public safety—a worry that may be especially salient in the light of traditional medical ethics which

⁵⁴ Smilansky, S. (2017). Pereboom on Punishment: Punishment, Innocence, Motivation, and Other Difficulties. *Criminal Law and Philosophy*. 11(3), 591–603. <https://doi.org/10.1007/s11572-016-9396-3>

⁵⁵ A deserved punishment has two components: 1) the severity of the wrong, and 2) the offender's blameworthiness (Sommers, T. (2016). The Three Rs: Retribution, Revenge, and Reparation. *Philosophia*. 44(2), 327–342. <https://doi.org/10.1007/s11406-016-9706-y>). In such a case, therefore, the second condition is not met. It is worth noting, however, that the soundness of this argument depends on whether both of these conditions must be met simultaneously.

⁵⁶ Caruso, G.D. (2021). Retributivism, free will skepticism and the public health-quarantine model: replies to Corrado, Kennedy, Sifferd, Walen, Pereboom and Shaw. *Journal of Legal Philosophy*. 46(2), 161–215. <https://doi.org/10.4337/jlp.2021.02.09>

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3 is characterized by a pronounced focus on individualism.⁵⁷ While I acknowledge that following
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5 PHQ could necessitate overriding the autonomy of dangerous patients, as well as believe that a
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7 sacrifice of individual rights is always regrettable, it may nonetheless be sometimes morally
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9 justified or even obligatory.

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12 Consider the issue of Parkinson Disease (PD) patients who developed aberrant sexual
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14 behavior (exhibitionism, sex tourism, and pedophilia) after neurointerventions.⁵⁸ Müller,
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16 Walter, and Christen⁵⁹ have considered how the traditional, individualistic medical ethical
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18 principles proposed by Beauchamp and Childress⁶⁰ (autonomy, non-maleficence, beneficence
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20 and justice) would handle such a case. According to the traditional principles, beneficial
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22 neurointervention is unethical if pedophilic dispositions resulting from it would be either
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24 against the patient's will (the principle of autonomy) or would cause a harm to the patient (the
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26 principle of non-maleficence)—e.g., if the patient lives in a society that punishes sexual
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28 offences against children.
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34 As Müller, Walter, and Christen notes: “it is irritating that this argumentation solely refers
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36 to the harm for the patient, neglecting the harm that could be caused to third persons.”⁶¹ They
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38 call this feature a “blind spot” of traditional medical ethics and conclude that a principlism-
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40 based risk–benefit assessment requires a broader perspective that would include third persons
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42 who may be affected by medical treatments. In the above-discussed cases of pedophilic patients,
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44 the consequence of focusing solely on the welfare of the patient and not considering the welfare
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50 ⁵⁷ Hall, S.A. (1992). Should public health respect autonomy? *Journal of Medical Ethics*. 18(4), 197–
51 201. <https://doi.org/10.1136/jme.18.4.197>

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53 ⁵⁸ Mendez, M., & Shapira, J.S. (2011). Pedophilic behavior from brain disease. *The Journal of Sexual*
54 *Medicine*. 8(4), 1092–1100. <https://doi.org/10.1111/j.1743-6109.2010.02172.x>; Houeto, J.L. (2002).
55 Behavioural disorders, Parkinson's disease and subthalamic stimulation. *Journal of Neurology,*
56 *Neurosurgery & Psychiatry*. 72(6), 701–707. <https://doi.org/10.1136/jnnp.72.6.701>

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58 ⁵⁹ Müller, Walter, Christen (op. cit. n. 14) : 295–303

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60 ⁶⁰ Beauchamp, T.L., & Childress, J.F. (2019). *Principles of biomedical ethics* (8th ed.). Oxford
University Press.

⁶¹ Müller, Walter, Christen (op. cit. n. 14) : 299

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3 of third persons is to expose to harm some of the most vulnerable members of society, i.e.,
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5 children.
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8 However, the same applies to cases of psychosis, hypersexuality and aggressiveness, which
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10 might all endanger medical staff, close family members and relatives, and even the wider
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12 society. PHQ appears to be a perfectly suited approach for guiding consideration of what
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14 coercive measures are appropriate for dangerous patients undergoing neuromodulation as it
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16 alleviates the above-discussed tension between the interests of the general public and the
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18 interests of the patients. This is because PHQ not only incorporates *public health ethics*
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20 principles (weighing overall benefit to society, fairness in the distribution of burden, and the
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22 Millian harm principle)⁶² but also ensures that liberty and autonomy of an individual are
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24 protected as much as possible. To ensure this, PHQ holds the *Conflict Resolution Principle*:
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31 When there is a significant threat to public health and safety, individual liberty can be
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33 limited but only when it is (a) in accordance with the right of self-defense and the
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35 prevention of harm to others, where (b) this right of self-defense is applied to an
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37 individual threat and is calibrated to the danger posed by that threat (not some unrelated
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39 threat), and (c) it is guided by the principle of least infringement, which holds that the
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41 least restrictive measures should be taken to protect public health and safety.⁶³
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47 Thus, PHQ imposes several restrictions on the way in which society can neutralize a threat
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49 posed by dangerous individuals. In the context of bioethical considerations, PHQ allows to
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57 ⁶² Faden, R., Bernstein, J., & Shebaya, S. (2022). Public Health Ethics. In E.N. Zalta (Ed.), *The Stanford*
58 *Encyclopedia of Philosophy* (Spring 2022). Metaphysics Research Lab, Stanford University.
59 <https://plato.stanford.edu/archives/spr2022/entries/publichealth-ethics/>

60 ⁶³ Caruso (op. cit. n. 5) : 192

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3 mitigate the conflict between public safety and the respect for the patients' rights emphasized
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5 by traditional medical ethics.
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10 **Treatment Instead of Punishment: Pushing Forward-Looking Moral Responsibility** 11 12 **Forward** 13

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17 What is essential in the context of the discussion of the appropriate response to the criminal
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19 behavior of patients undergoing neuromodulation therapy is, however, that PHQ does not
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21 amount to incapacitation; involuntary detention is actually a last resort measure for when PHQ
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23 fails in its primary function (i.e., prevention of crimes). Crucially, PHQ insists that the
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25 prevention requires that efforts to rehabilitate, foster well-being and mental health, and
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27 reintegrate criminals into the community—processes that I collectively call 'restorative
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29 treatment'—are provided.⁶⁴ I would like to contribute to the PHQ framework, as well as the
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31 bioethical discussion, by introducing the notion that compatibilist capabilities can serve a useful
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33 function both in the context of ensuring public safety and the restorative treatment of the
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35 patients.
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40 First, identification of compatibilist capabilities possessed by a patient who committed a
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42 crime is relevant for determining *minimal restrictions* that must be implemented to adequately
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44 protect third persons. Second, identifying dysfunctions in compatibilist capabilities is important
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46 for defining goals in the process of their *restoration*. Third, depending on the compatibilist
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48 capabilities that are present (or restored) in patients, different *forms of treatment* are justified.
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50 If the patient is reasons-responsive, forms of treatment that take into account rationality are
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52 advisable;⁶⁵ if the patient is able to conform actions to moral reasons, a presumption of
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58 ⁶⁴ Ibid: 189, 278

59 ⁶⁵ Developing my approach, I draw on Caruso's considerations on the significance of reasons-
60 responsiveness in the PHQ framework (Ibid. : 27).

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3 harmless (which would protect the patient from protective detention) may be appropriate;
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5 if the patient is able to conform actions or motivational attitudes (attributability) with long-
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7 lasting psychological characteristics, i.e., second-order volitions or Deep Self, a presumption
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9 of predictability of the patient's action seems justified; if the patient responds to others'
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11 demands for justifying his actions by weighing the worth of one reasons over others, some
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13 degree of trust may be warranted. Ultimately, these distinctions would have consequences for
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15 how to tailor the response to (the crimes of) a specific patient.
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19 I illustrate this approach using concrete examples. Consider the following case of a 64-
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21 year-old man suffering from PD who underwent STN-DBS. As Sensi et al. report, after the
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23 device was activated:
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28 He had aggressive incidents and explosive aggression with physical attacks directed at
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30 people and patients in the hospital, and impulsive and violent behavior with family
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32 members. All these episodes were out of proportion to any precipitating stressors and
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34 generally the provoking condition was trivial. When asked about his excessive and
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36 unusual conduct the patient denied being aggressive; he was not able to control himself
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38 if asked.⁶⁶
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45 If placed in a social context outside of the hospital, the patient would undoubtedly pose a serious
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47 threat to others by violating their physical integrity. So how can a consideration of the patient's
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49 compatibilist capabilities prove useful in determining appropriate, forward-looking courses of
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51 action?
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54 As I suggested, one should first identify what compatibilist capabilities are possessed
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56 by the patient. The information included in the report that can be helpful in this regard is that
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60 ⁶⁶ Sensi, Eleopra, Cavallo, Sette, Milani, Quatralo, *et al.* (op. cit. n. 15) : 248

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3 “the patient denied being aggressive.”⁶⁷ According to the Buss-Durkee Hostility Inventory,
4 which measures aggressive tendencies, in the stimulation ‘on’ condition the patient attained a
5 very high score of 69/75, which dropped to less than half its value, 32, in the stimulation ‘off’
6 condition.⁶⁸ Considering the patient’s denial of being aggressive and the difference between
7 aggression assessments results, I suggest that this patient might have lacked the ability to
8 conform his actions with his Deep Self, i.e., his pre-DBS self that did not seem to have
9 aggressive inclinations. Furthermore, the fact that his outbursts “were out of proportion and
10 (...) the provoking condition was trivial” testifies to the fact that he was not reasons-responsive,
11 as he acted on impulses and the proportion of his reactions was unwarranted. Finally, the fact
12 that the patient “never felt that his own action was irrational either during or after the device
13 was inactivated, neither did he feel any remorse or regret”⁶⁹ suggests that he was deprived of
14 answerability—the ability to provide a justification for his actions by weighing the worth of
15 some reasons over others. The above analysis shows that the patient was deprived of critical
16 components of compatibilist capabilities.

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19 This, as I suggested, warrants the conclusion that taking the most restrictive measures
20 permitted by PHQ against this patient—i.e., temporary physical restraint—is justified.
21 Obviously, when comparing these measures with any system that justifies coercive responses
22 (e.g., retributivism), they are not particularly restrictive. Moreover, they must strictly follow
23 the conflict resolution principle and always be aimed at the best interests of an offender (with
24 the ultimate goal of his rehabilitation and reintegration). Still, the measure I suggest against this
25 patient infringes on his liberty and autonomy. As such, this response may be ethically
26 problematic for ‘typical’ offenders, i.e., those not receiving neuromodulation therapy, as
27 physical restraint is a radical instrument whose prolonged use can traumatize a person and, in
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58 ⁶⁷ Ibid.

59 ⁶⁸ Ibid.

60 ⁶⁹ Ibid. : 249

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3 the case of ‘typical’ offenders, it is rarely known how to control their criminal dispositions and
4 behavior and restore their compatibilist capabilities. However, in the context of patients whose
5 criminal dispositions were induced by neurointerventions⁷⁰ such control and restoration is
6 possible. As Müller, Walter, and Christen conclude: “Either they [problematic dispositions and
7 behavior] vanished spontaneously within several months, or due to a change in stimulation
8 and/or the introduction of neuroleptic drugs.”⁷¹ Thus, I suggest that in the case of DBS patients,
9 physical restraint can be implemented only as an initial and temporary stage of rehabilitation,
10 and not as an ultimate response.
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21 To demonstrate how compatibilist capabilities can contribute to calibrating the
22 restrictiveness of measures taken to protect the public, let me return to the previously mentioned
23 example of a pedophilic patient:
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31 At one point, his wife found him trying to sexually relieve himself while viewing a
32 photograph of his 5-year-old granddaughter. He was ashamed of his behavior,
33 complained of intrusive sexual thoughts and urges that overwhelmed him, and desired
34 to just have his libidinal urges “normalized” again. In this case, there was no history of
35 psychiatric illness, unusual sexual behavior, or drug-induced behavioral changes prior
36 to his surgery. A reduction of his anti-PD medications resulted in a gradual decrease in
37 his sexual behavior — but for the price of worsening his Parkinsonism symptoms.⁷²
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49 This case differs in relevant respects from the previous one. In contrast to the aggressive patient,
50 this patient was “ashamed of his behavior” and expressed a desire to change it. This indicates
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56 ⁷⁰ As was the case in Sensi et al.’s report in which “there was a clear correlation with the stimulation
57 because the aggressive behavior did not occur in absence of DBS.” (Ibid. : 248)

58 ⁷¹ Müller, Walter, Christen (op. cit. n. 14) : 298

59 ⁷² Ibid. : 298
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3 that he retained attributability as his motivational attitude towards his behavior seemed to
4 express his Deep Self, which he deemed ‘pure’ from pedophilic tendencies. Moreover, he
5 seemed to have accepted the high price of worsening of his disease symptoms only to achieve
6 this restorative goal. This suggest that the patient possessed other critical compatibilist
7 capabilities, that is, reasons-responsiveness and answerability, as he was able to consider
8 reasons for and, most importantly, against his actions and assign moral weight to them.
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12 The compatibilist capability that seemed to be affected in this patient was, however, the
13 ability to act in accordance with his second-order volitions—he complained about intrusive
14 sexual urges that overwhelmed him despite his desire not to act upon them and had the second-
15 order volition to “normalize” them. It is also unlikely that the patient had the ability to conform
16 actions to moral reasons—not only was he caught by his wife practicing soft pedophilia, but he
17 was also accused of molesting his granddaughter.⁷³ Thus, considering the weight of potential
18 harm, it is doubtful whether a presumption of harmlessness is appropriate in his case. Despite
19 this, less restrictive measures than in the previous case are justified taking into account the fact
20 that the patient possesses attributability, reason-responsiveness, and answerability.
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25 One solution consistent with the proposed approach could be hospitalization aimed at
26 eliminating the pedophilic disposition. Since the patient was willing to undertake the treatment,
27 the hospitalization would meet the conditions of informed consent and there would be no need
28 to violate the patient's autonomy. Moreover, according to the principle of least infringement, as
29 soon as it can be concluded that the patient's problematic disposition has ceased, it is advisable
30 to proceed with the controlled reintegration of the patient into the community. An electronic
31 monitoring system and community-based observation combined with regular psychiatric
32 checkups could constitute appropriate safeguards at the beginning of this process. Some may
33 still consider such a solution too risky due to the gravity of potential harm. Again, it may be so
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60 ⁷³ Ibid. : 298

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3 in cases of ‘typical’ offenders. However, as evidenced by reports,⁷⁴ in cases of patients
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5 undergoing neurointerventions, problematic dispositions and behavior can be easier to control
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7 and compatibilist capabilities easier to restore.
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10 The considerations in this section demonstrate how compatibilist capabilities can guide
11
12 the process of achieving PHQ goals—from protecting and preventing to rehabilitating and
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14 reintegrating the patients back into the society. They also show how compatibilist capabilities
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16 can enrich the PHQ framework with additional assessment’ dimensions in the process of
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18 determining appropriate response to criminal conduct. Instead of the two-dimensional process
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20 of assessment previously proposed by PHQ—in which only the probability and the magnitude
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22 of crime is considered—I suggest also including two additional dimensions: possession of
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24 undisturbed compatibilist capabilities and the ease and likelihood of restoring the missing ones.
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26 As I illustrated, balancing these factors allows not only more ethically sound, but also more
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28 clinically appropriate response to crimes committed by the patients undergoing
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30 neuromodulation therapy.
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37 **Conclusion**

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42 The aim of this article was to show that compatibilist capabilities should not be used to justify
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44 BDMR attribution and legal punishment for patients undergoing neuromodulation therapy.
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46 Instead, compatibilist capabilities should be utilized as important indicators in determining a
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48 proper course of action to ensure public safety. Moreover, they should serve as important
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50 directives in the therapeutic process to ensure the well-being of the patients during their
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52 restorative treatment. By discussing the cases of patients undergoing neurointerventions, I
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59 ⁷⁴ A reduction of anti-PD medications resulted in a gradual decrease of the patient’s sexual behavior
60 (Ibid.).

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3 demonstrated what this process could look like. Adherence to the points made in this article
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5 would represent a significant change in the discussion about the moral responsibility of DBS
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7 patients by focusing on forward-looking instead of backward-looking considerations. Moral
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9 responsibility would then function as a justification for treatment instead of punishment. The
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11 dialectic of the bioethical debate would be transformed by such a shift in perspective.
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