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Neuroenhancement: Curse or Blessing?

Pharmacological or technical neuroenhancement, also infamously known as “brain doping”, can improve cognitive functions such as concentration, mood, or creativity. However, the question of whether such interventions affect our autonomy and authenticity has become a matter of current ethical and philosophical debate.

The times when medicine served the sole purpose of healing people’s suffering have long since been left behind. Today medical measures are indicated for a whole variety of motives. In this context, the term “human enhancement” has been used increasingly in recent years. Notably, early contributions to this discourse include Jonathan Glover’s *What Sort of People Should There Be?* (1984), John Harris’s *Wonderwoman and Superman* (1992), and Philip Kitcher’s *The Lives to Come* (1996), all of whom can be seen as pioneers in the field. Initial attempts to systematize the debate were undertaken by Erik Parens in the anthology *Enhancing Human Traits* (1998) and by Allen Buchanan, Dan Brock, Norman Daniels, and Daniel Wikler in their monograph *From Chance to Choice* (2000). Critical responses soon followed, most prominently by Francis Fukuyama in *Our Posthuman Future* (2002), Jürgen Habermas in *The Future of Human Nature* (2002), and Michael Sandel in *The Case Against Perfection* (2007). In the years that followed, a number of systematic approaches were published. Particularly influential works include John Harris’s *Enhancing Evolution* (2007), Allen Buchanan’s *Beyond Humanity?* (2011), and David DeGrazia’s *Creation Ethics* (2012). At the same time, anthologies such as *Human Enhancement* (2009) by Julian Savulescu and Nick Bostrom, *Enhancing Human Capacities* (2011) by Julian Savulescu, Ruud ter Meulen, and Guy Kahane, as well as *The Ethics of Human Enhancement* (2016) by Steve Clarke, Julian Savulescu, C.A.J. Coady, Alberto Giubilini, and Sagar Sanyal, sought to further systematize the strands of the discussion. The debate also extended into the Ger-

man-speaking academic sphere through the volume *Enhancement* (2009), edited by Bettina Schöne-Seifert and Davina Talbot, *Enhancement der Moral* (2015) by Raphael van Riel, Ezo di Nucci, and Jan Schildmann, as well as *Neuroenhancement* (2019) by Reinhart Kögerler and myself.

But: What does enhancement mean? Does enhancement present a particular problem for the brain? Is neuroenhancement even a peril to authenticity? Does neuroenhancement serve as a tool for crime psychology? In the following, I want to refer to these crucial questions.

What Does Enhancement Mean?

Depending on the motive for indicating a specific medical measure, we can distinguish between therapy, enhancement, and prevention. The boundaries between these three classes are fluid, but general differences nonetheless exist.

The term “therapy” is basically related to an organism’s suffering due to a dysfunctionality that can be concisely determined. A medical measure is indicated as therapy if, and only if, it is carried out to repair this dysfunctionality. For example, in case of a compound fracture of the foot, physiotherapy is prescribed to restore the foot’s functionality to what it was before the fracture. In contrast to therapy, enhancement is defined as a medical intervention if, and only if, it is carried out to extend the current functionality of an organism that is considered normal. While therapy presupposes suffering and responds to it, this is not necessary with enhancement. For example, if a healthy patient undergoes physiotherapy to extend the mobility of their leg so that they can compete in an upcoming marathon, this is called enhancement. Prevention is a third class of medical measures that differ from therapy and enhancement. For example, vaccinations are administered with the aim of protecting an organism from a potential disease.

This distinction between therapy and prevention on the one hand, and enhancement on the other, is based on a concept of disease that was influentially introduced and defended in the academic debate by K. Danner Clouser (1981). According to this view, disease is defined as a malady, with the consequence that the task of medicine is limited to the reduction of maladies. As Eric Juengst (1998) has pointed out, however, a patient's experience of a malady cannot be objectively determined. As a result, the diagnosis of whether a malady is present or not depends on the treating physician's particular concept of disease, human nature, or the natural order. For this reason, Julian Savulescu (2025) argues that medicine should no longer be tied to the question of whether a person has a malady, but rather be guided by the question of what prevents an individual from leading a good life as they understand it. Personally, I would not go as far as Savulescu, especially since the obstacles to a good life can vary drastically—ranging from curing a disease to liposuction and beyond. In contrast, I define enhancement strictly in formal terms as the deliberate augmentation of the human organism. While I use “augmentation” to avoid the euphemistic connotations associated with “improvement,” I use “deliberate” to ensure that the direction of change comes consciously from the patient. In what follows, I focus on neuroenhancement.

Does Enhancement Present a Particular Problem for the Brain?

Although everyone knows that the brain is part of the human organism, most people's everyday understanding still reflects a Cartesian dualism. They tend to distinguish—often without realizing it—between a mental realm (thoughts, feelings, beliefs) and a physical realm (neurons, bodily movements, brain chemistry). Before exploring whether enhancement poses a challenge for the brain, it's important to first clarify how the brain relates to the body.

To better understand how the various positions in the ongoing debate in the philosophy of mind can be structured, David J. Chalmers (2002) distinguishes six approaches to relating the mind to the body: Type-A Materialism, Type-B Materialism,

Type-C Materialism, Type-D Dualism, Type-E Dualism, and Type-F Monism. While Typ-A materialists (e.g. Ryle 1949; Dennett 1991) argue that everything that exists can be adequately described using the tools of the natural sciences—thus denying the existence of either an epistemic or ontological gap—Typ-B materialists (e.g. Levine 1983; Tye 1995) concede that such explanatory potential is necessary, but by no means sufficient. In contrast to Type-A materialists, Type-B materialists therefore acknowledges an epistemic, though not an ontological, gap. Type-C materialists attempts to occupy an intermediate position in that its proponents (e.g. Nagel 1974; McGinn 1989), like those of Type-B, maintain the existence of an epistemic gap, while simultaneously emphasizing—like Type-A—that this gap, although currently insurmountable, could in principle be closed in the course of future human development. In contrast, Type-D dualists are substance dualists in the tradition of Descartes (e.g., Swinburne 2019), Type-E dualists are epiphenomenalists in the tradition of Leibniz (e.g., Jackson 1982), and Type-F Monists are panpsychists in the tradition of Whitehead (e.g., Chalmers 1996).

Since the human brain is part of the branching human neural system, and its extinction results in the death of the entire organism, neuroenhancement is based on a materialist metaphysics. In this context, it is of secondary importance whether one adopts a Type-A, Type-B, or Type-C materialism. As soon as we abandon the artificial juxtaposition of body and brain, it becomes apparent that the medical measures of therapy and enhancement can be applied to the brain as well. In principle, nothing can be said against treating the brain in the same way as the rest of the body. However, it is important to ensure that the function of the brain as a control organ is not undermined by the use of neuroenhancers. Therefore, enhancement does not pose a particular problem for the brain, implying that the brain, like the rest of the body, can in principle be subjected to targeted augmentation. In the following, I turn to the concept of authenticity—an issue that has played a particularly significant role in the debate on neuroenhancement.

Is Neuroenhancement a Peril to Authenticity?

As an essential part of the human organism, the brain is also subject to intervention via medical measures. By analogy with the rest of the body, these measures can be therapeutic, enhancing, or preventive. Neuroenhancement can be defined as a pharmacological or technical intervention in the brain to improve certain functions such as concentration, mood or creativity. In contrast to other forms of enhancement, neuroenhancement is subject to undermines authenticity. Neuroenhancement can be defined as a pharmacological or technological intervention in the brain aimed at improving certain functions such as concentration, mood, or creativity. In contrast to other forms of enhancement, neuroenhancement is often said to undermine authenticity.

Authenticity is a complex concept. Today we are far from having a conceptually clear definition of it. At present we can make a distinction between two ways of using the term “authenticity”—a decisionistic one and an essentialist one. The decisionistic use considers an action authentic if, and only if, a person himself or herself makes the decision. By contrast, an essentialist definition of authenticity focuses on a person’s identity. If an individual, through consent or self-indication, is subject to a medical measure that changes their identity, the person before the measure is not identical to the person after the measure. As a result, the medical measure has harmed the person’s authenticity and is morally objectionable. The philosophical dispute between decisionistic and essentialist uses of the term ‘authenticity’ can be illustrated by the off-label use of the antidepressant Prozac, as Peter Kramer pointed out in *Listening to Prozac* (1993). Consider an individual who does not suffer from depression but is not energetic enough in their daily life and sometimes lacks self-confidence. They are prescribed Prozac, and taking this medication changes their behavior noticeably. This person now appears much more self-confident in daily life and pursues their goals more energetically than before. Whereas a decisionistic interpretation would characterize the person’s decision to take Prozac as authentic self-determination (e.g. DeGrazia 2000), the essentialist interpretation would emphasize the intervention and call the result inau-

thentic (e.g. Elliott 2003).

It became clear that the debate between Elliott and DeGrazia about authenticity was based on a different dispute—namely, that between numerical and narrative concepts of identity. However, this debate was less about Prozac and its ethical implications and more about reproducing argumentative patterns already established elsewhere in philosophy. While this line of debate fizzled out, a new debate was ignited with Thomas Douglas’s considerations on a so-called moral enhancement (Douglas 2008). This new discussion revolved around the question of whether neuroenhancement can serve as a tool for criminal psychology.

Does Neuroenhancement Serve as a Tool for Criminal Psychology?

Before delving into criminal psychology, it is necessary to briefly elaborate on the concept of moral enhancement. Douglas advocates for moral enhancement as a form of cognitive augmentation—targeting the mental capacities underlying human behavior, particularly those related to aggression and empathy. Drawing on the Humean tradition, Douglas conceives of morality not as an exercise of rational will, but as fundamentally rooted in emotion. This stands in contrast to the views of Aristotle and Kant, who ground morality in deliberate commitment to virtue (in the case of Aristotle) or adherence to the moral law (in the case of Kant). Hume, by contrast, understands moral judgment as an emotional experience, manifesting in pleasure when confronted with the good, and pain when confronted with the bad. According to Douglas, following the Humean tradition, an action or character trait is deemed morally good insofar as it elicits pleasure, and morally bad insofar as it provokes pain in a human being. He associates these responses with specific emotions—such as aggression with pain and empathy with pleasure—arguing that moral enhancement occurs when a person’s aggressive tendencies are reduced and their capacity for empathy is increased.

Against this background, Adrian Raine, in *The Anatomy of Violence* (2013), proposes a fundamental shift in criminological methodology—from a purely social model to a biosocial one. His central thesis is that the causes of criminal behavior

cannot be fully explained by socialization alone. Rather, in many cases, biological factors also play a significant role. Therefore, it is both necessary and appropriate to place greater emphasis on investigating the biological roots of criminality—particularly in cases of violent and sexual offenses. Today, both genetic and neurological patterns can be identified that, while not deterministically causing criminal behavior, significantly increase the likelihood of such behavior. In contrast to the debate surrounding authenticity, moral enhancement—as the augmentation of certain moral dispositions—represents a promising option.

Conclusion

I conclude my reflections by addressing the central question posed in the title: Is neuroenhancement a curse or a blessing? My answer is this: Neuroenhancement is neither inherently a curse nor a blessing. Rather, it should first and foremost be understood as a specific form of medical intervention—one aimed at purposefully expanding an individual's current capacities. As with any medical measure, two key conditions must be met. First, the individual undergoing the intervention must provide informed consent, either factually or counterfactually. Second, it must be ensured that the patient's environment is not adversely affected by the enhancement—this is especially important in regard to issues of fairness. Finally, any risk-related ethical considerations must remain within the boundaries of what is morally justifiable. As long as these aspects are adequately addressed, I find it difficult to issue a categorical moral verdict against neuroenhancement. We would be well advised to continue closely monitoring the neuroethical debate—as Reinhart and I have done for the past ten years—and to insist on the fulfillment of these conditions as essential quality standards.

Note: The article embodies an extended and revised version of Jonas Poschenrieder and Klaus Viertbauer, "Neuroenhancement: Cure or Blessing?",

<https://blog.degruyter.com/neuroenhancement-curse-or-blessing/>

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