



[Neurophilosophy and Transhumanism](#)

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by Nayef Al-Rodhan

The history of humanity is a history of self-improvement and part of that history is pursuing neurochemical gratification. Except for rare cases of mental illnesses where gratification-seeking behavior is absent, most people, most of the time, seek gratification. Because gratification-seeking is the 'norm' medical research has found ways to support those patients whose neuronal and neurochemical circuitry for gratification-seeking behavior is affected. In recent decades, however, and especially in the 21st century, pharmacology, genetic interventions and biomedical technology have advanced solutions for enhancing neurochemical gratification far beyond therapeutic needs. Discussions of human enhancement have become more and more popular recently, as the reality of human enhancement is being seriously taken into account in the [future of work](#), [ethics](#), the military and [warfare](#).

Human enhancement is different from medical therapeutic interventions in fundamental ways. It refers to "[the use of innovative technologies](#) to augment or enhance human functions and abilities beyond the replacement of dysfunctional cellular groups and organs." Human enhancement, therefore, does not aim to *repair*, heal or fix damaged or lost functions but to *enhance* cognitive or physical abilities of healthy individuals.

Psychostimulants such as Adderall, commonly prescribed for treating disorders such as attention deficit hyperactivity and narcolepsy are increasingly spread on university campuses and in the workplace, in order to augment focus, organizational and learning skills. Other non-pharmacological methods for cognitive enhancement include brain stimulation techniques with electricity. One example is [transcranial magnetic stimulation](#), in which a magnetic coil is placed above a part of the skull and delivers magnetic pulses to the brain area beneath the skull, and is considered to be a generally inexpensive method for enhancing cognition and learning in adults. Scientists do warn,

however, of undesired health effects and urge caution, especially in young users whose brain is still in development. Such warnings may come already too late considering that [enhancement kits](#) that promise fast learning, pain relief, increased productivity and less stress are already available for low prices on the internet. They are advertised for clinical purposes but also for enhancement and leisure purposes.

Since 2013, when the first [consumer transcranial direct current stimulation \(tDCS\) device](#) appeared on the market, a dozen other companies have started selling similar products, with prices going as low as \$40 for some of the basic kits that contain wires, electrodes and headbands, which the customer can then assemble at home. Despite the fact that uncertainty about both efficiency and health implications continue to loom, the market and the interest in human enhancement are palpably growing. Moreover, if the development we have seen over the past decades in other technologies is any indication, neurotechnologies and implantable devices for neurostimulation and for physical enhancement are poised to become exponentially more efficient and potent. This comes with a host of ethical and philosophical dilemmas.

I wish to briefly highlight some of the ethical concerns related to human enhancement, and especially dwell on this issue from the standpoint of [neurophilosophy](#).

Two major objections to enhancement technologies are related to *fairness* and *authenticity*. Interventions to augment human cognitive and physical abilities are often regarded as deviances from what is 'natural' and customary norms. With the notable exception of sports and military use (where ethics is concerned with somewhat different questions), achievements obtained through enhancements are considered unearned and unworthy of praise. Moreover, they can even further deepen the gap between haves and have-nots, considering that the most expensive and radical forms of enhancement can be first accessed by wealthier groups of society.

This is a valid concern, although it deserves further reflection. In many instances, a purportedly meritocratic system will be certainly compromised by enhancements. However, the full picture of implications deserves a more nuanced discussion. As pointed by others in this debate, if we consider that ['earning' something](#) implies hard work and sacrifice, it could well be claimed that perhaps the person purchasing enhancements also worked hard to afford the enhancement. Additionally, would the theme of 'unfairness' still hold if the enhanced individual achieved an act of great social benefit, such as selflessly defending others against crimes? Would 'unfairness' also hold if a student from a precarious background, who had to have several employments to fund their studies, took enhancement drugs in order to learn faster and make up for the time they could not use for study but for work that benefited others? If we recognize the problems of social immobility and marginalization, is it still 'unethical' to regard the use of enhancements as a form of dishonesty? In applied contexts, the ethical dimensions of enhancement can become less clear-cut.

The problem of *authenticity* is another concern. As we will act, work, live and decide under the influence of powerful [neuromodulators](#), the question of authenticity comes to the forefront. The need for authenticity accompanies human existence, and we usually appreciate natural experiences more than the 'fabricated' ones. Furthermore, in American culture, Carl Elliott describes two strong, yet [competing, ideals](#): the ideal of *self-creation* (which implies few or no constraints), and the ideal of *authenticity* (which comes with some constraints, such as not forgetting or dismissing one's roots).

Some people may perceive enhancements as enablers or facilitators of the project of self-creation. However, Elliott contends that enhancements interfere with these ideals because they ultimately alter some characteristics of one's identity. [David DeGrazia](#) picks up on these points and responds that this concern is ill-placed, asking what is morally problematic about changing 'core' traits if the person *autonomously consents to their alteration*? He argues that the idea of a person's "true" self as inviolable is rather romantic and that the characteristics that are affected by enhancement technologies are unlikely to be considered otherwise inviolable. Those characteristics, such as abilities to think, to decide, to communicate, etc, are alterable through other choices anyway.

A neurophilosophical account of this issue, however, would argue rather differently. While in moderate forms, some enhancements may pass without major social repercussions (or may even come with some benefits), a rampant use of enhancements is highly problematic due to two factors: the inherent dangers of overindulgence and they will lead to a cycle of a demand for more and more invasive and powerful interventions. Excesses of any kind, and especially in the form of enhancements that bring surplus gratification, are expressions of hedonism and, given our nature, threaten our humanity in the long term.

My [concerns](#) here are not only philosophical but also social and existential. The social and legal consequences of these excesses will not delay manifesting, and the [ranking of people](#) as inferior (non-enhanced) and superior (enhanced) could well become an unwanted – but ultimately unstoppable result. Our nature and neurochemical makeup predisposes us to an almost blind, at-all-cost pursuit of neurochemical gratification. This puts us at great risk in relation to enhancement technologies.

The ethical dilemmas related to unfairness or lack of authenticity, mentioned above, can rightly be seen in a more nuanced way but these discussions do not take into account some of the neurochemical predilections in human nature. Enhancements as they exist today should not be the sole point of reference in the debate, as we must also look into the inevitable and exponential growth of these technologies, and why it will be increasingly difficult to resist being transformed by them.

The [human brain is pre-programmed 'to feel good'](#), to avoid pain and seek pleasure. Evidence from neuroscience points to five key powerful motivators of human action, which I previously called *the Neuro P5: power, profit, pleasure, pride, and permanency* (in the sense of ensuring survival and extending life). If a technology appears which enhances one, more or all of these motivators, we will irresistibly and inevitably pursue that technology. As technologies of human enhancement become more widespread and more efficient, we will find it increasingly hard to resist the temptation to adopt those technologies, even if that may go against our best interest in the long term. Because of this, we are, I believe, on a path to [inevitable transhumanism](#) – a next phase of evolution in which neuroactive innovations in technologies and biology, will alter our neurochemistry in radical ways to the point that future humans will no longer resemble past and present humans. The grains for this transition are therefore in our own nature and the hardwiring for neurochemical gratification that is inbuilt in us.

Additionally, with insights from neuroscience, I previously theorized that human nature is fundamentally [emotional, amoral and egoistic](#). Humans are deeply *emotional* and, in fact, far more emotional than 'rational.' Decision-making in the brain relies heavily on neuronal mechanisms that

also underpin emotions. Humans are *amoral* insofar as they are born neither inherently moral nor immoral. It is in the course of existence that our notions of what is 'good' or 'bad' develop and that is why circumstances and the environment are critical in shaping our moral compass. The human brain is malleable and therefore so is our 'nature'. That does not mean, however, that we are born as entirely blank slates. We are conditioned from birth in one essential way, which is to pursue survival. In that sense, human nature is a [*predisposed tabula rasa*](#), meaning we have one fundamental predisposition, which is for survival and for activities that enhance our chances of survival. Human egoism is tightly connected to the predisposition for survival, which is a basic form of egoism (survival of the self). Egoism also dictates recognition and the affirmation of the self.

The way we will employ and rely on enhancement technologies cannot be separated from these defining traits of human nature: emotionality, amorality and egoism. Because human nature is fragile, highly malleable and driven by neurochemical gratification, it requires appropriate governance paradigms and institutions to prevent excesses, in the absence of which both individual well-being and social cooperation are imperiled. We cannot be complacent about the 'virtues' of human nature, and we must not assume that our relationship with enhancement technologies will be driven by 'reason' or an appropriate sense of moderation. It will instead be fraught with risks, some of which are existential, and going to the core of what defines us as humans.

Future discussions of the ethical issues raised by enhancement need to take human nature into account. This neurophilosophical approach, which borrows insights from neuroscience, can offer a useful guide for meaningful discussions about ethics and regulatory challenges of enhancement drugs and devices.

The next post will cover the neurophilosophy of human nature, especially the theory of *emotional, amoral egoism* and it will look in closer detail at five human motivators (Neuro P5).

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