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Habeas Mentem and Neurotechnology: A Brief Introduction to the Ethical Problem of Neurorights Protection

Julie Bicocchi[a*]

[a] *Sociologist, Switzerland*

***Corresponding author:** Julie Bicocchi, Email: juliebicocchi@gmail.com

Abstract

Over the last twenty years neuroscience has evolved much more rapidly than the ability to update national and international human rights law. In this regulatory vacuum new and potentially dangerous market niches have been created for more and less invasive devices dedicated to our mental activities. How, and in which contexts, it is still possible to fill this serious gap is a topic that the scientific community and civil society must discuss as soon as possible. Otherwise, dystopian scenarios might open up, in which algocracy and technocracy could converge into a regime of perpetual overpowering of our humanity.

Keywords: Habeas mentem, neurorights, AI, neuroscience

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Introduction

The world is rapidly filling with interface-controlled games, wearable technologies, smart fabrics, submillimetre semiconductors, injectable technologies. However, while the future is approaching fast, the law is not evolving as quickly: the need to recognize and protect neurorights arises from the (increasing) gap between scientific progress and the law's capability to understand and regulate it. Unfortunately, although the human desire to understand (and sometimes condition) the mind is old, the ethical debate on such themes has not yet grown enough, neither in terms of contents nor in relation to the subjects involved.

Here I will try to sketch the issue, hoping to contribute to the examination of a problem that might soon prove to be extremely relevant.

1. Mind Control: The Holy Grail of Neuroscience

This essay will try to introduce the controversial relationship between scientific progress and *habeas mentem*, understood as the right to protect the human mind from unconscious exploitation and manipulation, so that it cannot be used for any purposes without the explicit consent of the person concerned.

Until the early 2000s, the notion of psychophysical integrity was decomposable into the two categories of physical (external limit) and mental integrity (internal limit), each of which could be separately analyzed. This categorization worked very well from a legal perspective. For example, it could be used in court to assess the extent of a damage and obtain proportional compensation. That was one of the reasons consumer protection (and the provision of specific instances of

compensation) conditioned technological design (and partly scientific research) for several years.

However, what would happen if the victim of an injury were unable to understand that he or she had suffered a damage? How to prevent people from being blackmailed into neurologically invasive practices (e.g., giving up certain mental functions or activities in exchange for employment)?

Modern science timidly faced the problem from an ethical point of view between the end of the 19th century and the 1930s: at that time the polygraph (i.e. lie detector) seemed to allow for overcoming boundaries, such as mind reading, which until then had been considered impassable. Notwithstanding, the ethical debate soon faded, because the machine promised more than it could actually deliver.

The history of the attempts at mental and neuronal interference is rooted in times far more distant (archaeologists tell us, for example, of the electric catfish used by Ancient Egyptians to treat arthritis) (Royal Society 2019). But none of these practices had, until now, exceeded the legal perimeter of the society that had produced them. Current technological advancements and the contemporary climate of legal, physical, and biopolitical uncertainty, however, present us with unprecedented challenges. In fact, it is not always possible to assess the condition of subordination of those who make use of neurotechnologies: the "informed" consent in this case is not always truly such.

In other words, promoting neurorights protection means clashing with the ethical inadequacy of the available scientific investigation tools and legal possibilities.

In a not too distant past, scholars used to reflect about *habeas mentem* only in psychological terms, as a right to escape mental manipulation in a more equitable and cognitively advanced society (Sanford 1956). Such a naive vision depended on the modest clinical efficacy of the brain-implant technology of the times. During the 1970s, the Spanish scholar Jose Manuel Rodriguez Delgado shocked his Yale colleagues with the hypothesis of a "psychocivilized society" formulated on the pages of *The New York Times*. Delgado had been student of John Fulton, who practiced the surgical destruction of the prefrontal lobes in animals. He was determined to avoid the invasive interventions of the Portuguese neurologist Egas Moniz, who won the 1949 Nobel Prize thanks to the practice of lobotomy. Hence, Delgado proposed the implantation of electrodes in the brain as a more effective and conservative practice. In 1952 he was among the co-authors of the first paper dedicated to long-term electrodes in humans. Today we would say that the results of his research were greatly overestimated. But at the time, more than one scholar (including the psychiatrist Peter Breggin) raised a moral issue about the technocratic drift underlying the heuristic approach of the Spanish researcher. Since then, the goal of wresting the power of neurotechnology from authoritarian governments or terrorist groups has been periodically emphasized as a future eventuality, both within utopian visions and within less reassuring governmental projects. In less than half a century we have seen Natalia Petrovna Bekhtereva's multiple electrode implantation (1963), William House's cochlear implant (1969), Jacques Vidal's Brain-Computer Interface (1973), Medtronic patent TENs for pain control (1974), robots controlled by EEG signals (1988), the treatment of Alzheimer's disease through DBS (1997, followed by DBS use against dystonia in 2003 and against epilepsy in 2018), the first tetraplegic person controlling an artificial hand by using a BCI (2005), the retinal implant Argus II, and the NeuroPace RNS system of responsive DBI, both approved by FDA (2013). Furthermore, over the last twenty years, the advancement rate has surged, especially in neurosurgery and the military, also thanks to the birth of large companies such as Facebook (2004), Kernel (2016), Neuralink (2016), and dedicated programs promoted by DARPA.

Whether these are invasive technologies (ECoG, cortical implants, neural dust, neuropixels, DBS, retinal implants, etc.), or non-invasive technologies (EEG, MEG, fMRI, tDCS, TENS, etc.), and whether they are medical or recreational practices, or even suitable for specific work activities, scientific research is now at a crossroads: is it better to contain the risk or optimize the opportunities?

In this context, neurorights emerge as a new typology of human rights that the Morningside Alliance Group proposed, as early as 2017, for inclusion in the *Universal declaration of human rights*.

2. Neurorights as New Human Rights?

One of the liveliest ethical debates currently underway concerns neuroenhancement, that is, the use of technologies for improving non-impaired cognitive,

affective or behavioral functions. Neroenhancement can be achieved through surgical, technogenetic, electromagnetic or pharmacological techniques, or through the combination of two or more of them. This practice poses an ethical dilemma because its recipient is not a patient but a healthy person—comparable to the intact person who undergoes cosmetic surgery. On top of this, secondary objections include the lack of fairness of those who resort to it, for example, in sports competitions. In any case, in different jurisdictions a conflict might arise between the alleged right of a healthy person to decide how to modify their own mental faculties and the harm of human dignity if this practice irreversibly modifies the cognitive abilities typical of the human species.

It may be useful to mention an observation that Harvard University Professor Jeff Lichtman proposed to his students of molecular and cellular biology in order to introduce them to the study of the brain: if the advance towards the total understanding of our neurological functioning were a mile, today scientists would have travelled ca. three inches (National Geographic 2014).

Indeed, so many questions cannot be answered with a reasonable degree of certainty. These include the following: can I be sure that I will keep my self-determination ability intact while using certain devices? How are we going to be certain that we have not suffered any form of mental violation or manipulation? How can we assert our right to be forgotten, if we download our personal memories on digital media?

Contemporary mental manipulation can occur through a distorted use of goods and services usually considered to be of general interest (television, Internet, social media) or through a misinformed use of specific tools. One solution (recently identified in Chile, the first nation in the world to have included the protection of neurorights in the constitutional charter) could be the introduction of the *Opt-in* model (prior and explicit consent) already applied to organ donations. Therefore, not only would an explicit authorization be a *sine qua non* for accessing a citizen's brain data but, above all, their transfer should be bound to an altruistic purpose (which would make them unsaleable). Putting these kinds of limits in a market as attractive as that of brain-machine interaction (and, in short, brain-AI interaction) could affect many states in terms of loss of investments: big tech companies, as it has already happened in the fiscal field, are constantly looking for "heavens (of violation) of neurorights". Also there are those who believe that such a protection's specific fault would be a "mereological fallacy", caused by the insufficient distinction between what is neuronal, what is psychological, and what is mental. In fact, it focuses almost exclusively on the brain, as if the body (and not the person as a whole) felt emotions or exercised free will (an aspect that could be relevant when assessing the seriousness of a crime).

3. Transparency versus Digital Authoritarianism

Further important political aspects are involved where the issue of obtaining consensus proves to be key. The social credit system implemented in China since 2014, officially on an experimental basis and in order to combat petty crime, is one of the possible points of no return with regard to the violation of neurorights, insofar as government decisions become *de facto* non-questionable, regardless of how pervasive, discriminatory, and even harmful they may be.

This system is already causing important violations of human rights through "simple" mental manipulation: for now, we are talking about censorship, but the distance separating it from the crime of opinion is short. Unfortunately, digital authoritarianism is insidious and does not require such striking situations, to gain ground. Let us take the case of AI: it is submitted to us as a black box, since the combination of the algorithms that compose it often remains obscure even to its creators. However, as Cynthia Rudin's studies have showed, this apparent necessity is a precise market choice (Rudin *et al.* 2021). In fact, with some precautions and greater economic investments, in many cases we could make use of interpretable machine learning. This has a high predictive value and, perhaps, can even be cleaned of the prejudices already outlined by O'Neal (2017).

Chile experienced thirty years of dictatorship. The nation has sensed the dangers concealed by deregulation in this field and set specific limits in its constitutional charter in 2021.

> "Scientific and technological development will be at the service of people and will be carried out with respect for life and physical and mental integrity. The law will regulate the requirements, conditions and restrictions for its use by people, and must especially protect brain

> activity, as well as the information from it" (Official Journal of the Republic of Chile 2021).

Still on the subject of neurorights protection, a Chilean bill project is also extremely interesting. It regards "the protection of neuro-rights and mental integrity, and the development of research and neurotechnologies" (Official Journal of the Republic of Chile 2022).

This should be an important point of reference for any democracy. Unfortunately, so far, this level of sensitivity has emerged only in Delgado's homeland, beside Chile. The Spanish *Charter of the Digital Rights* (2021)—which is descriptive, not normative, and subjected to the legal system in force,

> "[...] does not seek to discover new fundamental rights, but rather to specify the most significant ones in the digital environments and spaces, or to describe instrumental or ancillary rights pertaining to such fundamental rights. It is a naturally dynamic process given that the environment is in constant evolution with consequences and limits that are not easy to predict." (Gobierno de España 2021).

However, the Spanish point of view on the problem (that is, finding useful elements to protect neurorights in the existing legislation) is slightly different from that of Goring and Yuste who were inspired by the *Belmont commission report* (1979). These scholars worked along witth multidisciplinary study groups and proposed to integrate neurotechnological innovations with our fundamental human and societal values already in 2016. At the time of the *Belmont commission report* ethics in biomedical research followed the three principles of respect for persons, beneficence, and justice. Instead, the BRAIN initiative (sponsored by the White House in 2013) proposed a very practical approach to the new management of issues such as informed consent, risk-benefit assessment, and subject selection:

> "Technological advances must be shaped by our collective moral sensibilities in order to ensure that these advances are smoothly incorporated into our culture and indeed contribute to the common good" (Goering & Yuste 2016).

We have clarified what needs to be defended and how it needs to be defended. But who should be in charge of defending?

To find the answer, it is important to adopt an international perspective. On the one hand, we have both the technological advancement we previously referred to, and the worrying neuroweapons, about which too little is still known, compared to all the matters covered by military secrecy in the major world powers. On the other hand, we have a scientific community that can and must begin to consider not only its own aspirations, but also the current concrete possibilities through a neuroethical filter. Obviously, this should not be an anachronistic Luddite stance.

According to the Morningside Alliance Group, it is time to add new human rights to the *Universal declaration of human rights* to protect mental privacy, personal identity, personal agency, equal access to cognitive augmentation, and protection from algorithmic biases. One of the most innovative ideas discussed in early 2021 concerns the hypothesis of a "Technocratic Oath" modelled on the Hippocratic Oath. This idea seems popular in the United States. However, is not the risk we take by trusting an oath disproportionate in terms of the irreversibility of the potential and often unknown damage?

To date, the major national and international ethical committees on AI and neurorights include—in a direct or indirect way—the so-called stakeholders: subjects (usually large companies) that might have an economic, when not political, interest in managing as unilaterally as possible the infinite potential of AI and mass mind control. But what guarantees do we have today that human-oriented computing technology, neuroscience, and AI can be contained within precise limits, when the companies that develop them have a turnover exceeding the GDP of entire nations? Can we therefore act on what is already technologically possible without a clear and urgent legal boundary?

Conclusions

Neurotechnology advances at ever-increasing speed. We urgently need an independent ethics committee to control both the neurotechnology production and its affordance for mind control and consciousness manipulation. Current legislation worldwide fails to foresee all possible human rights violations that we might face in the near future.

Political and cultural issues add to the legal one. In fact, this insidious and pervasive mental manipulation represents one of the worst dangers that political decision-makers and ordinary citizens have faced. Unfortunately, the subjects who would have the greatest concrete possibilities to prevent it and fix any damage could also be the least interested in shedding light on the issue. The result of this legal and cultural backwardness is worrisome: we cannot accurately measure how many and what kind of *habeas mentem* violations are already taking place, all over the world. If the law and the scientific community do not take action in the short term, these types of violations may not even be considered as such anymore in the future.

From this point of view, only national and international ethical organizations completely free of conflicts of interest can try to stem the technocratic drift already in place. Otherwise, methods of regimentation and invasive control of entire populations, such as the Chinese social credit system, might represent the point of no return for any sort of human right.

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