

Neurotechnologies shaping our brains and legal frameworks

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While much of the world’s attention towards technology is still focused on the digital revolution, neurotechnologies are emerging as striking technologies which could bring to our society advancements and changes unimaginable now.

Neurotechnologies are breaking new ground with respect to understanding and influencing human beings in their most intimate sphere – the mind – like never before. Being able to directly interfere with the brain challenges several human rights, such as identity, equality, physical and mental integrity, self-determination, freedom of conscience and privacy. We need to reflect on the entity of protection that current legal frameworks are offering and how they should evolve in order to best benefit from neurotechnologies but at the same time protect us alongside their evolution. Aim of my contribution is precisely the latter.

Firstly, the contribution addresses the technical aspects related to neurotechnologies. More precisely, it starts with a definition of neurotechnologies as “*devices and procedures used to access, monitor, investigate, assess, manipulate, and/or emulate the structure and function of the neural system of natural persons*”¹.

¹Several definitions of neurotechnologies exist. In the contribution I opt for the OECD

These technologies may be subdivided into different categories: invasive versus non-invasive as well as recording versus stimulating neurotechnologies. The contribution lists the various types of neural technologies currently existing and their purposes. Invasive neurotechnologies range from cochlear and retinal implants – well known to the general public for the potential they have in enabling people to respectively hear and see – to more novel technologies as the neural lace. The latter technology is the one used for example by the company Neuralink. Non-invasive neurotechnologies are, among others, the Electroencephalography – used to read brain signature – or the Transcranial Direct Current Stimulation, medically used to treat conditions such as depression and pain, as well as to stimulate movement. Initially these technologies were developed for medical purposes, offering life-changing therapies to patients suffering from conditions such as paralysis, epilepsy, Parkinson’s or drug resistant depression cases. Soon after, they found their way towards non-medical fields, such as the military and commercial fields, creating a market of direct sell to consumers. The contribution sheds a light on the benefits and risks brought by these technologies towards human beings. In doing this, it keeps into account that, due to their rapid and continuous evolution, a lot of the potential and risks of these technologies still remain undiscovered.

Secondly, the contribution addresses the crucial matter of how societies and institutions need to adapt to neurotechnologies, focusing in particular on the evolution of legal frameworks. In doing this, it outlines the ongoing debate between some authors suggesting to recognise new human rights, so called “neurorights”², and opposing scholars convinced that a moderate approach would be more suitable³. The contribution firstly lingers on the precise term “neuroright”, quickly explaining who coined it, the definitions offered of it, and the peculiarity surrounding its etymology. Following, it considers the several specific new rights proposed,

 definition as it represents the starting point for several soft law instruments at the international and European level currently discussed, thus appears to be shared among scholars.

²See the contributions of Marcello Ienca, Roberto Andorno and Rafael Yuste.

³See in particular the works of Susie Alegre and Jan Christoph Bublitz.

such as the *right to cognitive liberty*, to *mental privacy*, to *mental integrity* and *psychological continuity* and various similar other rights, among which particularly interesting are the *right to identity*, or *the ability to control both one's physical and mental integrity* and the *right to fair access to mental augmentation*. The contribution briefly offers an account of the critiques moved against these new rights, such as right inflation, neuroessentialism as well as neuroexceptionalism, and the lack of relevant scholarship. On the opposing side, some scholars are against the proposition of recognising neurorights as new human rights. They believe that using *ad hoc* laws and an evolutionary interpretation of existing rights should be enough. The contribution assesses who they are and their point of view. Furthermore, it makes an attempt at analysing some European and Italian jurisprudence that might be useful in paving the way for an evolutionary interpretation of some of the relevant existing rights, such as the right to identity, self-determination and privacy.

Finally, the work investigates in which way the proposed rights might be incorporated in current legal frameworks. For this last part, it takes into consideration some of the ongoing experiences around the world, such as the ones of Chile and Spain. Moreover, it offers a specific insight on Italy's approach up to now. Here, it sheds light on the first but brief attempt related to the regulation of neurotechnologies that took place in 2022. Furthermore, it gives an account of the little new steps that the Senate is taking in 2024, with the intention of reconsidering this specific issue.

Especially, it lingers on the "rules versus standards" debate and attempts at understanding what the best way to deal with these new rights and issues is. In particular, the contribution aims at investigating and suggesting which degree of specificity could be optimal in regulating neurotechnologies and the challenges these carry, without the risk that such protection becomes too soon obsolete. Neurotechnologies impact on an individual's most intimate sphere, the mind. Therefore, they impact on a good of extremely high value. Because of its paramount importance, the rights protecting such good should be specifically recognised. On

the other hand, however, it is crucial to keep in mind that the sector of neurotechnologies is in continuous and rapid evolution, as with any technology. This suggests being more careful towards too many specifications and to opt for more openness and generality of rules and rights. The contribution highlights how the crucial issue is precisely to understand where the optimal level of specificity and generality lies.

The contribution concludes recognising that, despite the appeal of “neurorights” as new human rights, their recognition in the legal framework might not be the best strategy or the necessary one. Recognising “neurorights” as new human rights would diminish the value of the few fundamental rights recognised in Constitutions and supranational legal instruments. Additionally, the suggestion to recognise these new rights does not seem to be grounded in a true need of protection of “something new”. Rather, it seems that because of something new, in this case neurotechnologies, what exists already must be forcefully put into the perspective of the new element. On the contrary, the correct approach might be putting the new element, neurotechnologies, under the already existing perspective of human and fundamental rights, understanding how the latter may evolve embracing the new element as well. It is important, therefore, to choose the right perspective. Shifting the attention and bringing it back to the meaning of existing rights and to their interpretation offered by Courts helps in seeing the problems related to neurotechnologies from the correct perspective again. Following this approach, neurotechnologies and all the implications they carry can be considered like pieces of a puzzle. What we will need to do is finding the correct gap for each piece in an already existing framework.