

ETHICS OF NEUROTECHNOLOGY

Neurotechnology is a fast-expanding field dedicated to understanding the brain and creating technologies that interact with it.

From innovative treatments by brain stimulation to progress in neuroimaging techniques that changed the face of our understanding of the nervous system, neurotechnology has helped us to address many challenges.

Neurotechnology has led to significant progress in medical treatment for a wide range of diseases, especially in the context of neurological disorders. Its scope is constantly expanding as it is envisioned to play a role in many different fields of application, from the clinic to other domains.



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UNESCO recognizes its **benefits** but also the **potential ethical issues and problems** particularly with its use of non-invasive interventions.

Unlike many other frontier technologies, neurotechnology can directly access, manipulate and emulate the structure of the brain, and with it produce information about our identities, our emotions, our fears.

Combined with artificial intelligence, its resulting potential can easily become a threat to notions of human identity, human dignity, freedom of thought, autonomy, (mental) privacy and well-being.

The fast-developing field of neurotechnology is promising but we need a solid governance framework for non-invasive methods. Combined with artificial intelligence, these techniques can enable developers, public or private, to abuse of cognitive biases and trigger reactions and emotions without consent. Consequently, this is not a technological debate, but a societal one. We need to react and tackle this together, now!



Gabriela Ramos Assistant Director-General for Social and Human Sciences of UNESCO

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Neurotechnology and artificial intelligence (AI) have become increasingly intertwined. This presents new challenges. Ethical and human rights implications are amplified further by this rapid convergence. In addition, the worldwide lack of solid governance and regulation in this area is worrisome.



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Use of neural data

- Companies can use neural data obtained from non-invasive neurotech devices for marketing purposes. By detecting signals related to our preferences and dislikes, these companies can influence customer's behavior for profit maximization. This raises alarming

questions about surveillance, marketing tactics, and political influence on our most private thoughts and emotions, ultimately threatening our democracies and the foundations of society.

Social inequalities

- The deployment of neurotechnology could also exacerbate existing social inequalities. If access to advanced neurotechnology is limited to the wealthy, it could further increase the gap between this social group and others, whether at the international, national or local level. This can lead to social tensions and conflict.

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