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Brain-Computer Interface tool use and the Contemplation Conundrum: a blueprint of mental action, agency, and control

This paper approaches the role of intentional action in brain-computer interface (BCI) tool use to allow for an ethical discourse regarding the development and usage of neurotechnology. The exploration of mental actions and user control in BCI tool use brings us closer to understanding the philosophical underpinnings of intentions and agency for BCI-mediated actions. The author presents that under some theories of intentional action, certain BCI-mediated overt movements qualify as both voluntary and unintentional. This plausibly magnifies the ethical considerations surrounding BCI tool use. This problem is referred by the author as the contemplation conundrum. Thus, the paper proposes research scope for the neural correlates of intention formation and the neural correlates of imagination aimed at clarifying implementational control and safeguarding privacy of thought in BCI tool use.

Keywords: neurotechnology, mental action; implementational control; agency; neuro-ethics

Biography

Dvija Mehta is an ethicist of emerging technologies and a philosopher of mind, consciousness, and artificial intelligence. She received her formal education at the Leverhulme Centre for the Future of Intelligence, University of Cambridge, specialising in the ethics of AI, neuroscience, and emerging technologies. Her work on brain–computer interfaces (BCIs) has been published in Oxford Open Neuroscience, with preliminary versions featured by BBC Future. She has also spoken on the neuro-ethics of BCIs, including Neuralink, for platforms like CBC News. Dvija also advises technology companies on responsible innovation, focusing on safeguarding mental agency and cognitive integrity in an era of rapid neurotechnological development. Additionally, she is the founder of Reminiscence, a BCI company at the intersection of research and innovation.

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