

Non-voluntary BCI Explantation: Assessing Possible Neurorights Violations in Light of Embedded and Extended Cognition

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In research involving patients with implantable BCIs, there is a regulatory gap concerning post-trial responsibilities and duties of sponsors and investigators towards implanted patients whose BCIs requires battery substitution, recalibration, and software update. In this article, we analyse the case of patient R, who underwent non-voluntary explantation of an advisory BCI system that monitored and predicted epileptic seizures alerting the patient when to take appropriate medication. The explantation, due to the manufacturer's bankruptcy, caused a discontinuation in the patient's sense of agency and self. The aim of the article is to clarify the post-trial duties and responsibilities involved in similar cases. To do so, we first define the ontological status of the BCI using the theories of extended (EXT) and embedded cognition (EMB), considering it either as a constitutive component of the patient's mind or as a causal supporter of her brain-based cognitive capacities. By considering the relevant dimensions of integration between the patient and her neural implant, we argue that patient R can legitimately be considered both as an embedded and extended cognitive agent. Then, we analyse whether the non-voluntary explantation violated R's rights to cognitive liberty, mental integrity, psychological continuity, and mental privacy. Given that these neurorights are fundamental human entitlements concerning the brain and mind, we analyse whether and how EXT and EMB imply morally relevant differences in interpreting this neurorights violation and the correlational duties of sponsors and investigators. Either if we embrace EMB or EXT, we conclude that neurorights give rise to post-trial obligations of sponsors and investigators to provide for continuous technical maintenance of implanted BCIs that play a significant role in patients' agency and sense of self. Moreover, we argue that EXT better captures patient R's self-conception and it acknowledges an additional degree of vulnerability and mental harm, thus strengthening this post-trial obligation.