



ETHICS AND BRAIN-COMPUTER INTERFACES: WHAT IS THE USER PERSPECTIVE?

This paper reports the experiences, self-observations, and attitudes of brain-computer interfaces (BCI) users and how they relate to ethical issues. Using social research methods, we interviewed users that have been operating BCIs for medical reasons and analyzed their accounts.

Reference: Kögel, J., Jox, R. J., & Friedrich, O. (under review). Ethical Aspects of Brain-Computer Interfaces – The User Perspective. *BMC Medical Ethics*.

WHO SHOULD READ THIS?

This paper addresses scholars of all disciplines that work on brain-computer interfaces (BCIs) and readers that are interested in medical, technological, ethical and social issues. It may be of particular interest for social scientists and ethicists, as the article identifies ethical aspects from a qualitative interview study.



WHAT IS IT ABOUT?

Neurotechnologies like BCIs raise various ethical questions. While the ethical literature has pinpointed several issues regarding BCIs, few studies have examined the user perspective beyond feedback given in the experimental test trials. This interview study seeks to evaluate BCI use by questioning users in terms of their experiences, self-observations and attitudes towards the technology.

WHAT DID THE RESEARCHERS DO?

We conducted nine semi-structured interviews with BCI users, who used the technology for medical reasons. The transcribed interviews were analyzed according to a Grounded Theory coding method. We identified ethical aspects in the users' accounts of BCI use and compared them with the ethical literature on BCIs.



USERS SEE BCIs AS:

- SOMETHING THAT THEY ACTIVELY OPERATE
- OPPORTUNITY FOR SOCIAL PARTICIPATION
- IMPACTING SELF-DEFINITION
- IN TENSION WITH AFFECTIVE SIDE OF PERSONALITY
- QUESTIONING HUMAN NATURE

WHAT DID THE RESEARCHERS FIND?

Across the interviews, we identified several important themes (left) . While users oppose some claims made within the BCI ethics literature, such as the need to regulate BCIs, they agreed with other claims, in particular, the need to push technological development and to provide devices to persons who can benefit from them.

WHAT NOW?

BCI users appreciate the technology for various reasons. Ethicist perspectives and user perspectives differ quite significantly in some points. We encourage more research on the user-perspective and their experiences with BCIs, especially as the technology is developing rapidly and the user experience may change accordingly.

