A Scoping Review of The Academic Literature on BCI Ethics

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Introduction

With recent advances in Brain Computer Interface (BCI) Technology, there is concern for the ethical implications of its different uses [1][2][5].

BCI technology can read, interpret, and translate brain activity into a format digestible by a computer.

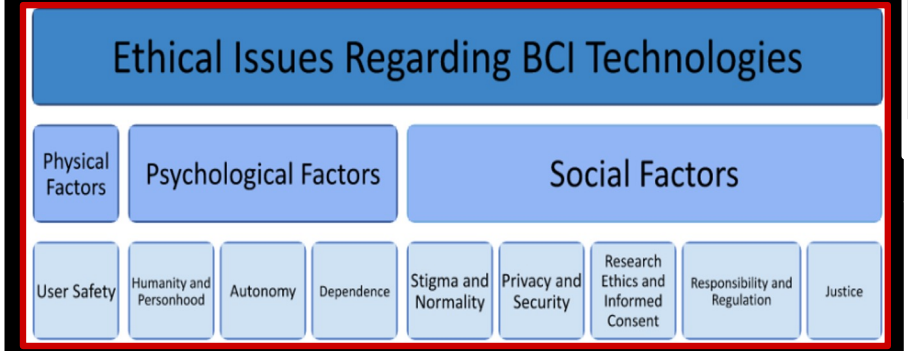
BCI devices can be invasive or non-invasive, but invasive devices are typically more advanced.

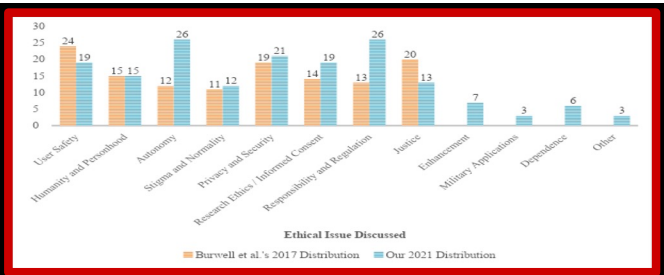
Materials and Methods

Databases PubMed and PhilPapers were searched for relevant articles.

34 articles published since 2016, were reviewed, according to search criteria using previous research on the ethical implications of BCI technology [3][4]. Previously, we looked at 7 of the 34 articles, but this study reviewed the entire sample.

The aim of this work is to collect and synthesize all the pertinent academic scholarship into the ethical, legal, and social implications (ELSI) of BCI technology.





Results

11 ethical issues were identified in the sampled articles:
User Safety, Humanity and Personhood, Autonomy, Stigma and Normality, Privacy and Security, Research Ethics and Informed Consent, Responsibility and Regulation, Justice, Enhancement, Military Applications[2], Dependence on Technology, Other

Speaking to the frequently discussed concern regarding autonomy, one study reported,"Even while performing an action, the users themselves might be uncertain about being the (only) agent of an action, with systems that make autonomous decisions additionally decreasing the users' own autonomy." [6]

Conclusion

Psychological effects of BCI should be scrutinized more carefully. Additionally, detailed proposals for BCI policies are not discussed in great length, and should appear more in academic literature. Finally, there is unique ethical concern for technologies that aim to meld human intelligence with AI [5].

Disclosures: None

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