

A Neuroethical Concern about the Clinical Application of Recent Neurofeedback Techniques

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Recent neurofeedback research with the use of real-time fMRI (rtfMRI) or Decoded Neurofeedback (DecNef) has shown efficacy against a variety of mental and psychiatric disorders, such as chronic pain, Parkinson's disease, depression, alcoholism, and eating disorders [1-5]. In this presentation, I consider an ethical implication that the advancement of neurofeedback-based mental healthcare research (NFMHcR) will have for our society.

First, I survey the recent ethical debate on NFMHcR and show that the advancement of this research may realize a tool for moral enhancement—namely, neurofeedback-based moral enhancement (NFME) [6]. Compared to other options, such as pharmaceutical and surgical enhancements, NFME has a higher ethical acceptability, sufficient to work as a part of the existing moral education network, because its features harmonize with the existing social norms about education, including safety, noninvasiveness, value of effort, autonomy, and authenticity [7, 8].

Second, based on that survey, I examine the possibility that the advancement of NFMHcR may gradually lead people to link mental healthcare with moral education or correction. If NFMHcR results in a version of NFME that works as a part of the traditional moral education network, NFMHcR will, unintentionally, suggest that the same technique can change both mental and moral states. This suggestion will likely arouse a controversial notion in people that mental disorders and moral deficits share similar neural substrates and that, therefore, they are the same problem [9, 10].

In conclusion, I argue that the advancement of NFMHcR requires cautious neuroethical considerations in advance for, once its unique features realizes a tool for NFME, it may change people's ways of thinking about the relationship between mental healthcare and moral education or correction.

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