

This response was submitted to the consultation held by the Nuffield Council on Bioethics on *Novel neurotechnologies: intervening in the brain* between 1 March 2012 and 23 April 2012. The views expressed are solely those of the respondent(s) and not those of the Council.

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General questions

- 1. Have you ever used a technology that intervenes in the brain, and with what consequences? Please describe your experience. NO**
- 2. If you have not used a technology that intervenes in the brain before, would you do so if you were ill? Why / why not? YES . For the relief of pain or degenerative illness every means possible should be used**
- 3. Would you use a technology that intervenes in the brain for non-medical purposes, such as gaming or improving your cognitive skills? Why / why not? YES. It's very important that people learn to use brain intervention technology, as in the future we will interact far more closely with computers and we need to cross any psychological barriers/fears that we now hold. Game playing is an excellent way of developing such skills**
- 4. What are the most important ethical challenges raised by novel neurotechnologies that intervene in the brain? The ability of governments or corporations to 'read' thoughts, without your knowledge would be a huge invasion of individual liberty. Equally the ability of these organisations to intervene remotely in your thought processes would again be an attack on individual liberty**
- 5. In what ways, if at all, should the development and use of these technologies be promoted, restricted and/or regulated? Please explain your reasons. An independent ethics committee with regulatory powers should be set up. It should have unfettered access to Neurotechnological research including military applications, but within its defining principles it should have a strong ethos of promoting BCI work for the public good**
- 6. Have you used a BCI, and if so, with what consequences? Please describe your experience. NO**
- 7. If you have not used a BCI before, under what circumstances would you do so? If I was ill in any way and for gaming and for research**
- 8. What are your expectations and concerns for BCIs? That they are not used as controlling devices**
- 9. Are there any particular ethical or social issues associated with BCIs? See 8**

10. What would robust and effective regulation of research in this area look like? Is more or less regulation needed? Please justify your response. A specific committee of regulation needs to be set up, as this work is outside most of the normal ethical medical scenarios. But the committee needs to have an in built bias towards research and development as a good thing. Its regulatory role would be ensuring individual liberty

11. Have you used neurostimulation and if so, with what consequences? Please describe your experience.

12. If you have not used neurostimulation before, under what circumstances would you do so? If I had a neurological illness or even mental illness I would allow modern neurostimulation

13. Under what circumstances do you think it might be acceptable to use neurostimulation in non-medical context (that is to say, not for the treatment of a disease or disability)? Research in mental enhancement would be useful, but the science is still in its infancy, so it should remain in the lab at present

14. Are there any particular ethical or social issues associated with neurostimulation? If its used as a cheap alternative to finding cures for mental illnesses then it is immoral from my perspective

15. What would robust and effective regulation of research in this area look like? Is more or less regulation needed? Please justify your response.

This could come under a general neurotechnological committee mentioned earlier

16. Under what circumstances would you use neural stem cell therapy? If I was ill and it was all that was available

17. What do you think of the risks and benefits of neural stem cell therapy? This area of biotechnology seems less understood than other neurotechnologies so we should be more cautious

18. Are there any particular ethical or social issues associated with neural stem cell therapy? No

19. How do you feel about neural stem cell therapy being used for non-medical purposes one day, for example for human enhancement? No problem as long as the technology is understood

20. What would robust and effective regulation of research in this area look like? Is more or less regulation needed? Please justify your response. This is probably covered in medical ethics bodies already dealing with stem cell research, not sure any more is needed