

## **The Role of Neuroscience in National Security: caveats for the future of research and practice in neuroscience.**

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The application of psychophysiological techniques to the detection of deception and in the field of security screening has long been a matter of debate. This debate encapsulates many of the issues surrounding research and practice in neuroscience, including ethical and legal concerns as well as those of reliability and validity. The recent emergence of brain imaging as a potential tool in the national security armoury has reinvigorated this debate. In this paper we indicate how discussion of the role of neuroscience in national security can serve as a forum for wider issues such as the social and political context in which neuroscience practices may be applied (Choudhury et al, 2009) and the consequences of 'neurohype' (Caulfield et al, 2010), as well as more fundamental issues concerning the interpretation of brain imaging data such as 'reverse inference' (Poldrack, 2006) and the appropriate classification of cognitive sub-processes in complex behaviours (Sip et al, 2008). We suggest that consideration of the role of neuroscience in the detection of deception can inform wide-ranging discussions of fundamental questions concerning the future of neuroscience, ranging from issues of data processing (including 'puzzlingly high correlations' Vul et al, 2009), responsibility in the public dissemination of research findings and awareness of the practical implications and real-world applications of neuroscience research.

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