

like to agree with the Editor's suggestion³ that a belief in the importance of the brain marks us out as Cavaliers, we fear that the neuroscientific enterprise, marked by slow, painstaking data collection, hypothesis testing and incremental advances does not quite suit his analogy. Nor do we, in championing neuroscience, dismiss the importance of other levels of explanation as some of our respondents suggest. Our original editorial was clear on this. As for the suggestion that neuroscience is a form of behaviourism and must thereby deny the mind, we do hope that a brief survey of the past decade's cognitive neuroscientific literature refutes that concern.

McQueen is right to take us to task for forgetting emotion: this is an oversight in our article but not, we are happy to say, in the field, where affective and social neurosciences thrive. Blewett is also correct when he points out that major impacts on the lives of patients have arisen and continue to flow from phenomena that are meaningless when conceived solely within a neuroscientific framework.

We certainly do not demur from a biopsychosocial formulation; these are the three primary colours in which we paint our discipline and which make it more vibrant than other medical specialties. Rather, we point out that the 'bio-' aspect of psychiatry is getting brighter, stronger and, in our opinion, more useful such that, as a profession, we cannot afford to ignore it lest we do a disservice to our patients. To argue, as does Datta, that if we embrace this change then we shall be taken over by neurology is surely, as Johansson indicates, unflinchingly absurd.

After all, patients need good doctors first and foremost, and we believe that Reil conceived psychiatry as a broad discipline reflecting his own polymathematical abilities.

When we manage someone's arachnophobia with an appropriately eclectic mix of graded exposure, a selective serotonin reuptake inhibitor for comorbid depression, psychoeducation and family support we do not aim for them to live in a world populated by tarantulas, let alone become one. So, too, for psychiatry: in pointing out its neurophobic tendencies we aim to restore good function and allow it to move on. To us, this doesn't appear to be rocket science, just neuroscience.

- 1 Bullmore E, Fletcher P, Jones PB. Why psychiatry can't afford to be neurophobic. *Br J Psychiatry* 2009; **194**: 293–5.
- 2 Craddock N, Antebi D, Attenburrow M-J, Bailey A, Carson A, Cowen P, et al. Wake-up call for British psychiatry. *Br J Psychiatry* 2008; **193**: 6–9.
- 3 Tyrer P. From the Editor's desk. *Br J Psychiatry* 2009; **194**: 386.

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Psychopathic traits and studies of deception

Fullam *et al's* aim was 'to investigate the relationship between neural responses during deception and psychopathic personality traits'.¹ One of my main concerns is that what the authors referred to as 'deception' was not actually deception. The study participants were aware that the truth was known and they were being asked to 'lie' for the study. I do not believe this to be a good enough surrogate for deception.

For the purpose of the study, the word 'lie' was defined as 'the intentional giving of a false response and awareness that the response is false rather than a mistake'. I believe this definition to be inadequate. The definition does not take into account that participants were 'told' to provide untrue answers or the fact that the true answers were known by the assessors. This situation is

more comparable to a dramatic performance or acting rather than deception. A more appropriate definition of a lie would include the intent to deceive that is always present in a lie. These participants did not intend to deceive anyone with the 'false' answers, so they cannot be seen as lying.

Furthermore, the study adopts an approach that does not take into account the emotional and contextual elements involved in deception. The consequences of lying or not lying during the study were also incomparable to real life. This reduces the ecological validity of the study and makes the findings difficult to generalise.

The participants were also 'required' to make a motor response in order to select their answer. This adds further complexity to the analysis of the study results and further dents the ecological validity.

One of the main findings was that 'mean response times (seconds) were significantly slower during the lie condition'. Although the stated *P*-value (0.024) shows a statistically significant difference, the actual difference of a tenth of a second (the difference between 2.66 and 2.56 seconds) only equates to about 4% delay. In clinical terms this does not appear to be significant.

The functional magnetic resonance imaging (fMRI) does provide exciting opportunities for research, but the overall utility of this study appears to be very limited; further research of a higher quality is required in this fascinating but complex field.

To overcome some of the problems with the methodology, the researchers would actually have to deceive the participants regarding the aims of such a study. The British Psychological Society provides extensive guidance regarding the use of deception in research (www.bps.org.uk/the-society/code-of-conduct/ethical-principles-for-conducting-research-with-human-participants.cfm).

- 1 Fullam RS, McKie S, Dolan MC. Psychopathic traits and deception: functional magnetic resonance imaging study. *Br J Psychiatry* 2009; **194**: 229–35.

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Authors' reply: Dr Ehjaz appears to have misinterpreted the purpose of our study and his comments suggest a lack of awareness of the extensive literature examining the utility of fMRI for the detection of deception.^{1–4}

The primary goal of our study was to examine the influence of psychopathic personality traits on neural responses exhibited during deception. We used a direct replication of a previously published simple deception paradigm developed by Spence *et al's*⁵ and our definition of deception was lifted directly from Spence's work in this area. We have clearly acknowledged in the paper that the work presented needs to be replicated with more sophisticated paradigms, including those with an emotional component. The issues surrounding deception paradigm design are adequately covered in the existing literature.

Dr Ehjaz states that our main findings were the reported reaction time differences between the lie and truth conditions. This is not correct. The key findings lie in the modulation of deception-related blood oxygen level-dependent responses by personality traits. The response time data are reported as a direct replication of Spence *et al's*⁵ finding and indicate increased cognitive load associated with the production of a lie at the same time as withholding a truthful response. In neural terms, a mean response time difference of a tenth of a second is really rather significant.