

The silence of psychology and the consistency fallacy

Martin Davies

Faculty of Philosophy and Department of Experimental Psychology
University of Oxford

It is widely accepted that there is no way of putting a boundary around the kinds of evidence that might be relevant to the confirmation or disconfirmation of an empirical hypothesis or theory. Nevertheless, the relevance of neuroscientific evidence – particularly, neuroimaging evidence – to psychological theories cast purely in terms of cognitive structures and processes is contested. In the first part of the talk, I shall discuss the following argument (generalising an argument in Coltheart, 2006):

- (1) Theories in cognitive psychology speak about modularity, internal representations and information processing, but they are silent on neuroscientific matters.
- (2) Consequently, cognitive theories make no neuroscientific predictions.
- (3) Therefore, neuroscientific findings neither support, nor count against, cognitive theories.

The ‘silence of psychology’ argument is an interesting general argument for the claim that neuroimaging evidence cannot, in principle, help us decide between cognitive theories. But the argument invites a parity of reasoning response: Cognitive psychological theories are silent, not only about the brain, but also (for example) about patterns of impaired and spared performance in patients following brain injury. So a similar argument would lead to the conclusion – unwanted, even by those who are sceptical about the value of neuroimaging evidence – that patient data (including double dissociation evidence) cannot help us decide between cognitive theories.

Even if there is no general argument for the ‘in principle’ claim that neuroimaging evidence is irrelevant to cognitive theories, a case-by-case approach may cast doubt on the value of neuroimaging evidence. For example, it may be difficult to find clear cases in which neuroimaging evidence has overturned a cognitive theory that was strongly supported by other kinds of evidence. In recent discussions that adopt a case-by-case approach, an important role has been played by the idea that neuroimaging researchers are particularly prone to committing the *consistency fallacy* (Mole and Klein, 2010): ‘a fallacy is committed whenever a researcher moves from claiming that his or her neuroimaging data are consistent with a hypothesis to claiming that those data show the hypothesis to be true (or even probable)’. Thus, the consistency fallacy is the transition from ‘data D are consistent with theory T’ to ‘data D support theory T’. Clearly, whether the consistency fallacy is actually fallacious depends on what is meant by ‘consistent with’ and what is meant by ‘support’. In the second part of the talk, I shall discuss the consistency fallacy and the examples of the fallacy that Mole and Klein provide.

References

- Coltheart, M. 2006: Perhaps functional neuroimaging has not told us anything about the mind (so far). *Cortex*, 42, 422–7.
- Mole, C. and Klein, C. 2010: Confirmation, refutation, and the evidence of fMRI. In S.J. Hanson and M. Bunzl (eds), *Foundational Issues in Human Brain Mapping*. Cambridge, MA: MIT Press, 99–111.