

## An fMRI primer

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By

Many recent attempts to temper, contextualize or complicate neurobiological claims about human behavior which are overblown or reductive have focused on fMRI imaging. For instance, this is a central interest for several people involved in the [Neuroscience in Context](#) project, described in a [previous post](#). This focus makes particular sense given both the arguments made about the technology (ie, that fMRI images illustrate “the mind at work”), their recent prevalence, their particularly compelling visual quality, and the extravagance of many fMRI-based claims. (If the claims made by neuroscientists themselves are not necessarily overblown, their popular media incarnations certainly often are).

Increasingly, however, we’re seeing a kind of rebuttal to these arguments being made in relatively mainstream — non-academic — media outlets. We’ve mentioned a few of these in previous posts: a [Boston Globe article](#) and one from [Scientific American Mind](#). (Not to mention various critical academic studies of brain imaging: Joe Dumit’s seminal [book on PET](#), as well as a more recent [monograph on MRI](#) by Kelly Joyce). Neuroanthropology also has a very nice [overview](#) of different brain imaging technologies with a number of useful links.

Now the latest edition of Scientific American Mind has a particularly clear and useful short article by Michael Shermer on [“Five Ways Brain Scans Mislead Us.”](#) What I like about the piece is that, in addition to describing how the use of color exaggerates data and the fact that images are statistical compilations of thousands of images, Shermer discusses the use of competing metaphors in narratives of the brain: specifically modules (and their link to the idea of localized processes) vs. networks (and their association with the notion of distributed processes).

In other articles Shermer has written rather dismissively about science studies (for instance, see [this](#) glowing account of Alan Sokal’s recent book, replete with tired culture warsy-rhetoric). However, I do think that this particular piece is a good example of how one can address complex epistemological issues to non-specialist audiences.

### **AMA citation**

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