

Comments

Comment by Duifhuis:

The activated areas you present are quite large and smooth, which might be due, at least partly, to the averaging across subjects, in addition to the smoothing window that you use. It would be interesting to see the individual data of at least two subjects per group in order for the reader to get an impression of the individual effects.

Reply:

Our studies were designed so that we would be able to generalize the results from the subjects we tested to the population at large. To that end, we collected a moderate amount of data from many subjects, and then used a random-effects analysis (Friston, Holmes, and Worsley 1999). Our study was not designed to gather enough data on each subject to make within-subjects analyses very meaningful. We recognize that this approach is different to the usual psychophysical approach of characterising the response of a few well-studied listeners, but believe it to be valuable, particularly in the early stages of research program.

The large smooth areas of activation we observe may well overestimate the area of physiologically active tissue, since in imaging studies activation intensity (or significance) is confounded with activation extent. This would be true of the results of any neuroimaging study (PET or fMRI), even in single subjects. For this reason, inferences regarding the absolute size of activations are not easy to make. The conclusions that we draw in our paper do not rely on inferences about the absolute size of activations.

Friston, K.J., Holmes, A.P., and Worsley, K.J. (1999). How Many Subjects Constitute a Study? *NeuroImage* 10, 1–5.