Authors’ reply: As pointed out by Ferreira & Busatto, one parameter critically influencing the results of a coordinate-based meta-analysis is the FWHM of the kernel. The optimal FWHM has been found to depend on the meta-analytic method. In signed differential mapping (SDM), a 25 mm FWHM shows a good compromise between sensitivity and control of false positives. This FWHM may account for different sources of spatial error such as registration mismatch, the size of original clusters or the location of the peak coordinates within the clusters. Much smaller FWHMs are common in activation/anatomical likelihood estimation (ALE), usually 10–15 mm. However, the use of these small FWHMs has not been clearly justified and it might lead to a dramatic reduction in sensitivity. Salimi-Khorshidi et al. found that the sensitivity of the ALE method with a standard deviation of 5 mm (corresponding to 10–15 mm FWHM) was approximately 50% of the sensitivity achieved with a standard deviation of 15 mm (corresponding to 35 mm FWHM).

Other limitations of ALE may be more serious and have motivated the development of other methods such as SDM. For example, coordinates of increased and decreased activation (or, in this case, grey matter volume) are computed separately. This means that when calculating the meta-analytic increase in a voxel, the (negative) values of those studies reporting decreases in the same voxel are artificially replaced by zeros, leading to an inflation of the meta-analytic decrease. Therefore, brain regions with higher variability are more likely to be detected as significant in the meta-analysis, to the extent that some brain regions may appear to have both increases and decreases at the same time (e.g. see Menzies et al.). This is both mathematically and physiologically implausible. Another advantage of SDM is the strict inclusion of coordinates that are statistically significant at the whole-brain level and using the same threshold throughout the brain. This is of utmost importance given that it is not uncommon in neuroimaging studies that some regions (e.g. a priori regions of interest) are more liberally thresholded than the rest of the brain, thus potentially leading to false positives.

Unfortunately, psychiatric neuroimaging is plagued with methodological problems such as small sample sizes and overly liberal statistical methods, often making findings hard to replicate. Meta-analytical methods have the potential to overcome some of these limitations by helping researchers ‘see the forest before the trees’. However, if the methods or its parameters are not chosen rigorously, meta-analyses may suffer from the same problems that motivated their development in the first place.

Correction

Association between extreme autistic traits and intellectual disability: insights from a general population twin study. BJP, 195, 531–536. Table 1 (p. 534): the figures in parentheses are upper and lower boundaries (+/−) of the 95% confidence intervals, calculated using corrected standard errors (not s.d. values, as originally reported). The online version of this table has been corrected post-publication in accordance with this correction.

doi: 10.1192/bjp.197.1.77a
Authors' reply:
Joaquim Radua and David Mataix-Cols
BJP 2010, 197:77.
Access the most recent version at DOI: 10.1192/bjp.197.1.77

References
This article cites 5 articles, 1 of which you can access for free at:
http://bjp.rcpsych.org/content/197/1/77.1#BIBL

Reprints/permissions
To obtain reprints or permission to reproduce material from this paper, please write to permissions@rcpsych.ac.uk

You can respond to this article at
http://bjp.rcpsych.org/letters/submit/bjprcpsych;197/1/77

Downloaded from
http://bjp.rcpsych.org/ on October 30, 2017
Published by The Royal College of Psychiatrists

To subscribe to The British Journal of Psychiatry go to:
http://bjp.rcpsych.org/site/subscriptions/