

Reply to Zhen and Yu: Cognitive control as questionable proxy for deliberation in honest behaviors

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As the predominant paradigm in honesty research traces back the difference between honesty and dishonesty to the engagement of cognitive control—a proxy for deliberative processes indicative of one’s “true” moral nature—empirical research has mainly focused on proving the recruitment of cognitive control mechanisms in honesty/dishonesty. In PNAS (1), we contend the premises of such reasoning, showing that evidence of cognitive control is insufficient proof for deliberation, and indicating motivation as a possibly better diagnostic.

In their letter, Zhen and Yu (2) state our paper (1) contains various flaws. First, we have supposedly inflated our results by using bigger samples sizes than those in the original studies. However, this is not accurate. If it is true that bigger sample sizes yield peakier Gaussian distributions over a study’s reported cluster location, this does not translate to more false-positive results, since a cluster’s metaanalytic significance also depends on the degree of overlapping cluster locations from different studies, and peakier distributions are less likely to overlap with each other. Hence, convergence between studies with smaller (and not larger) sample sizes leads to inflated significant results (3). So, if anything, our results are conservative. However, we agree that analyses should be based on correct sample sizes. After reinspecting our data, we acknowledge that, for some studies, recruited sample sizes were included instead of exclusion-corrected sample sizes. A new analysis with corrected sample sizes reveals results similar to our paper’s (Fig. 1) (4).

Regarding the ineligibility of some included studies/contrasts, we think that all included studies/contrasts are suitable for inclusion and reported whole-brain results reflecting dishonesty (except, maybe, for some debatable ones that amount to less than 7% of all included studies) (4).

Further, Zhen and Yu (2) seem to believe their new analysis (relying on the inclusion of four new studies based on different criteria) does not support the view that spontaneous dishonesty is more volitional than spontaneous truth telling, which, to our understanding, they seem to have understood to be our main research objective. However, we would like to stress that our main tenet is that cognitive control brain regions are not the appropriate diagnostic for deliberative processes, and we show that recruitment of cognitive control brain regions is likely due to cognitive demands other than deliberation (e.g., executing instructed behaviors). Our main result indicates brain regions classically associated with cognitive control are not recruited for spontaneous dishonesty. Interestingly, recruitment of these

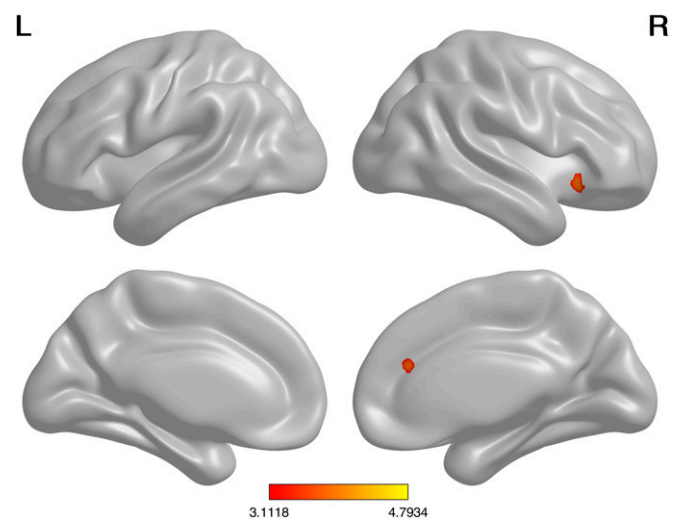


Fig. 1. The new ALE results for spontaneous dishonesty (16 studies) reveal significant activations in the right perigenual anterior cingulate cortex ($x = 4, y = 40, z = 22$; peak $Z = 4.58$) and the right inferior frontal gyrus (i.e., ventrolateral prefrontal cortex; $x = 36, y = 22, z = -10$; peak $Z = 4.35$)—virtually the same results as our original publication (1).

regions was also not observed in Zhen and Yu’s analyses. Hence, if anything, their findings support our conclusions that cognitive control brain regions are not the appropriate diagnostic for deliberative processes.

Finally, in agreement with Zhen and Yu (2), we don’t contest that honesty can be as motivational as dishonesty. On the contrary, we stress, in the original paper (1), and here again, the neglect of such a research question in the current literature, and call for more research on this motivational dimension, which we believe plays a nonnegligible role in both honesty and dishonesty.

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