**Review of *Neuroanatomical Correlates of System-justifying Ideologies: A Pre-registered Voxel-based Morphometry Study on Right-Wing Authoritarianism and Social Dominance Orientation***

The authors propose to investigate correlations between regional grey matter volumes and right-wing authoritarianism (RWA) and social dominance orientation (SDO). The research question is clearly defined and makes sense in light of theory. In general, the authors did a fine job in presenting their work. I have a few comments on specific parts of the manuscript, which are detailed in the table below. I have one concern about the proposed work plan, but I think it is easily remedied. My concern is that the proposed plan is to conduct ROI analyses to answer questions that can only be answered by whole-brain analysis. The questions are, 1. Is/are there any overlapping brain region/s that are related to RWA and SDO? 2. Is/are there any region/s that are related to RWA but not SDO? 3. Is/are there any region/s that are related to SDO but not RWA? A whole-brain analysis is needed to answer these questions. However, given that the region-specific hypotheses are pre-registered, it would be fine to also conduct these ROI analyses with small-volume corrections, provided that the way the ROIs will be defined is fully specified in the Stage 1 manuscript. In case it is helpful, here is a link to a previous pre-registered VBM study in which a whole-brain analysis was conducted in addition to ROI analyses: [The relationship between individual differences in gray matter volume and religiosity and mystical experiences: A preregistered voxel‐based morphometry study - Elk - 2020 - European Journal of Neuroscience - Wiley Online Library](https://onlinelibrary.wiley.com/doi/full/10.1111/ejn.14563)

|  |  |  |
| --- | --- | --- |
| Page | Line(s) | Comments |
| 3 | 5 | I’m not clear what ‘hallmark characteristic’ means in this context. Is authoritarian submission a core component of RWA ideology, such that if one doesn’t exhibit authoritarian submission, then one can’t be categorised as holding RWA ideology? Or is it possible (albeit unusual) to hold RWA ideology but not be obedient to authority? I’d recommend re-phrasing this sentence to clarify. |
| 3 | 6 | The word ‘unquestionably’ -- should this be ‘unquestion**ingly**’ ? |
| 3 | 26 | “*authoritarian submission, and by extension the RWA ideology*” – I think there is a logical fallacy here. Even if those who hold RWA ideology always exhibit authoritarian submission, it does not mean that those who exhibit authoritarian submission will always hold RWA. |
| 8 | 16-18 | This argument seems to undermine the rationale for the study. If self-report measures are insufficient or inaccurate measures of RWA and SDO, then how does it help to look at the neuroanatomical correlates of scores on these self-report measures? |
| 8 | 27-32 | This is a little unclear. To me, it reads as though the two predictions are opposing, whereas in fact, they are concurrent predictions. |
| 9 | 12 | The Nam reference here lists 2017 as the publication date, but the entry in the references list says 2018. |
| 9 | 14 | The directionality of the hypothesised correlation should be included. |
| 9 | 31 | It’s unclear if the study being described here is another vmPFC ablation study, or a different type of study. |
| 10 | 1 | The use of the word ‘poor’ here reflects a value judgement and could be misunderstood by readers who consider authoritarian submission and gender stereotyping to be good things. |
| 10 | 5-9 | It’s not clear from this what Grafman’s findings were, so it’s difficult to follow the logic of the subsequent inferences. |
| 10 | 18 | It’s not clear what seemingly inconsistent findings are being referred to here. |
| 10 | 20 | Was it higher or lower SDO scores that were associated with reduced ACC & insula activation? |
| 10 | 29-31 | I don’t follow the reasoning here. It could well be the case that SDO covaries with STS and dlPFC activity when viewing faces of different perceived ranks in real life, regardless of how social rank is defined ? |
| 11 | 9 | I don’t understand why H4 includes only ACC, and not midcingulate cortex as well?  The description of Cazzato et al’s findings mentions other regions within the “social orienting circuit” – I’m not sure why the hypothesis is specific to the MCC/ACC & insula, rather than including the whole social orienting circuit? |
| 11 | 15 | The Asp et al study looked at vmPFC lesions, not brain activity? |
| 11 | 26 | As far as I can tell, there is insufficient grounds to predict that SDO scores will not correlate with vmPFC. As the of Cazzato et al. study used an ROI analysis, and the Chiao et al study reported activation in PFC. |
| 11 | 27 | Similar to the above point, I’m not sure there’s sufficient grounds to hypothesise that RWA scores would not correlate with ACC and insula. |
| 14 | 27 | Will data be checked to make sure it meets assumptions for parametric analysis before Pearson’s correlation is run? |
| 17 | 8 | How will the ROIs be defined? |
| 17 | 14 | Sex should be controlled for as well as age |
| 18 |  | In the 6th column, it says that a non-significant or significantly negative correlation would disconfirm the hypothesis. However, absence of evidence is not evidence of absence. |