Reviewer’s report

Title: Fake facts and alternative truths in medical research

Version: 1 Date: 02 Jan 2018

Reviewer: Harald Schmidt

Reviewer's report:

I am copying below responses to the authors' responses (and note that there was much overlap in concerns among the reviewers), and focus on 3 main points:

1. Revisions on overdiagnosis/treatment: These have been minor. As written, this would no doubt be sufficient for a specialist journal. But I rather doubt that the significance of the concepts will be apparent to a more general audience—the editor will no doubt have a good sense of what works here.

2. Methods of scoring bias. There is now some more information on this. A few points:

   - "two experts on polarized conflict of interest were asked to classify the corresponding authors of the identified publications." More should be said on how these were identified/from what pool they were recruited, specifically what inclusion and exclusion criteria were applied, and how possible polarized interests of the pool of candidates and finalists were assessed—again, very central given the primary aim of the paper, and the non-trivial difficulty of finding and Archimedean point here. Likewise, did the two assessers coincide exactly on each assessment, or are the scores in table 1 means between both?

3. Overall feasibility of approach: Supplement 1 acknowledges a range of challenges, including the issue of rating individuals when there were groups of people involved in evidence appraisals that flagged before as an issue, "second order polarisations" and, importantly, that "the questions to identify polarised conflict of interest appear reasonable (and can be easily adapted) [but] they may not be very useful in practice" --nonetheless it states that "Addressing the robustness of the methodology is beyond the scope of this Debate article, but is a viable and important next step in the study polarised research" Well, yes, it is hard to address this in more detail in the space available. But I am not sure that the current format is the best way of starting a debate on the issue. It suggests with rather more certainty than is possible—as noted in the Supplement, but not really reflected in equal measure in the paper itself—that the approach is feasible in principle, and that all that remains is hashing out some details in future research. Again, this will of course be for the editor to decide, but I feel that a more robust contribution would (a) either do more of the legwork upfront, or (b) remove the empirical part of the paper—that raises all the issues around how to measure this—and
make a more conceptual point (in a way that would need to be distinct from prior related work such as http://www.sciencedirect.com/science/article/pii/S0895435608000048.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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