RESPONSE TO REVIEWER 2

I thank Reviewer 2 for the thoughtful and constructive comments and suggestions. Please see below for how I plan to respond to them if I am given the opportunity to revise my paper.

1) As you mention push button reproducibility/replication a few times, I suggest you cite the recent PLOS ONE paper, in case your readers would like to know more about that replication method: https://doi.org/10.1371/journal.pone.0209416.

RESPONSE: The revision will incorporate mention of this excellent PLOS ONE paper.

2) Would you please provide a few more sentences on your "significant sameness" suggestion? Why do you think this is an important approach to replication? From a replication perspective, I've had original authors complain when replication researchers "extend" their research that the study is not a replication. Pushing the boundaries of replication may lead original authors to argue that replication researchers are "scooping" their research.

RESPONSE: The revision will elaborate on "significant sameness". It will also make some remarks about whether "extensions" should be called "replications."

3) Several replication critics have previously mentioned that replication plans (or pre-analysis plans for replication studies) don't guarantee that researchers haven't run their replication analysis before formulating a plan. Given that these plans feature prominently in your article, what would you say to these critics? Is there any method you can propose in your discussion of these plans to increase their validity/robustness? One possibility is mentioning that 3ie required replication researchers to discuss their level of interaction with the data to date when posting their plans.

RESPONSE: I will address this suggestion by elaborating on the different kinds of pre-registrations and briefly discuss the issue of interacting with data before putting together a pre-registration plan.

4) Given your extensive background with replication, I'm wondering if any of your views on replication changed from before this special issue to now.

RESPONSE: My views about replication have changed over time. The two biggest changes are that I am now convinced there is no one-size-fits-all measure of replication success. And I see value in pre-registering my research plans.

5) Do you consider this special issue a "success"? Were you surprised by any of the papers/suggestions in these papers in this special issue? If you were going to re-run this special issue idea, would you want to change anything?

RESPONSE: Yes, I do consider the special issue a "success". Personally, I thought it was revealing to see how different researchers understand and implement replication. This helped me to come around to the "no one-size-fits-all" position. I was surprised by the heterogeneity in willingness of researchers to declare a replication a "failure." Some

thought anything less than 100% pushbutton, exact reproduction was a failure. Others were quite loathe to even speak in terms of failure or success. With regard to changing anything, my only regret is that we didn't have more papers. In terms of the taxonomy I used in Figure 1, I would have liked to have filled out the space more. That would have provided a richer base for comparisons.

6) I would argue that replication continues to be an under-utilized tool in research. Based on this special issue, do you have any thoughts on how replication should be made more mainstream?

<u>RESPONSE</u>: I do have some thoughts about how to make replication more mainstream! I think the single most important thing is to link replications with original studies so that readers who come across the original study will be aware of the replication. I am currently working with some other researchers on developing ideas for how this could be done.