Homework for MAS.S73 Moving Beyond the Replication Crisis

The homework assignment for MAS.S73 is to perform a meta-analysis of a set of 10 papers following http://p-curve.com/ and to contextualize the results. This homework is based on the assignment found here: http://willgervais.com/blog/2015/3/27/mission-p-curve.

The output for the homework assignment is two-fold: (1) a ***blog post*** on the course website (replication.media.mit.edu) due 1/27, and (2) a ***set of 4 slides*** to be presented in class on the final day, 1/27.

Step 0: Understand p-curves

Please take a look through the p-curve papers (the first two links) at http://p-curve.com/ and familiarize yourself with the concepts, how to interpret the results, and how confident you should be in a given set of results.

Step 1: Decide on selection criteria

This can be any subset of 20+ papers. 20 papers is a lot, but hopefully by the end of the assignment you'll be very quick at identifying the relevant main statistic (and results are likely to be inconclusive if it's less than this).

Your selection criteria could literally be anything! What are some examples that would be interesting?

- *The references from a chapter of a Popular Press Psychology book*
- *References from a popular Intro to Psychology Textbook*
- *Papers from Daryl Bem (or any other researcher)*

- *Papers with happiness as a dependent variable (studies of things that influence happiness) from the Journal of Personality and Social Psychology in the 90s*
- *The 20 most cited works of 2020*
- *Papers from a particular issue or year of a particular Journal*
- *Papers on a particular topic, like 'ego depletion' or 'the influence of money on behavior' in the last 20 years*
- *2020 Papers in Nature Human Behavior that report 'p<0.05' vs a precise p value*

In the original p-curve paper, they compare p-curves from papers with covariates (since the practice of trying many variations of covariates and only reporting one can be a common form of p-hacking) against papers without covariates in JPSP. It can literally be any subset of papers.

If you want to do two groups and compare/contrast them, that's amazing and you should go for it!

The first slide and first paragraph of your blog post should cover your selection criteria and why you think it's interesting.

Step 2. Preregister your study at OSF

It's important not to p-hack your p-curve! That means we should pre-register our studies before we complete them. Label your study 'P-Curve Analysis: *<Description of Thing You're P-Curving>*'. Include your selection criteria and process in detail, and your hypothesis (will or won't these studies provide evidentiary value?'). Explain your selection criteria and process in detail. If you use 20 studies, why? How will you decide which studies to include if there are more than 20 studies in a fair way? What is the process to identify the relevant p-value from a

paper? Will you include multiple for a paper if multiple studies are present within it? Be thorough.
Please see this example:

https://osf.io/pbemy

To do this:

(1) log in using MIT SSO.
(2) Create a new project, titled properly 'P-Curve Analysis: <description of thing you're p-curving>'
(3) Go to the project.
(4) Click 'Registrations' in the menu, then the green 'New registration' button. Select 'OSF Preregistration'. I would suggest a 'CC 1.0 Universal License', which is the most permissive, unless you want to retain rights to what you create (in which case you can select your own.
(5) Fill out the pre-registration fields per the example https://osf.io/pbemy

Now you've preregistered your study! When you finish the study, you can upload your disclosure table and p-curve results and make the project public.

The second slide of your presentation should have a screenshot (and the blog post should have a link) to this pre-registration.

Step 3: Create a Disclosure Table

Create a disclosure table as described in the guide on http://p-curve.com/.

The third slide of your presentation (and the blog post) should include an image of your disclosure table.

Step 4: Run a P-Curve Analysis

Follow the steps on the web-app http://p-curve.com/ to create a p-curve of your disclosed data.

The final slide of your presentation (and the blog post) should include an image of your results—figures and table. Cite the proper p-curve reference in your slide and in your blog post.

Upload your disclosure table and a PDF of your P-curve results to OSF.

Step 5: Interpret your Results (Correctly)

You should interpret and summarize the results mean in the rest of your blog post as well as during your presentation. What conclusions, if any, can you draw? How confident should you be in your conclusions? How might this analysis mislead? How has it confirmed or changed your perspective on this topic?