

“Registered Reports from a user perspective

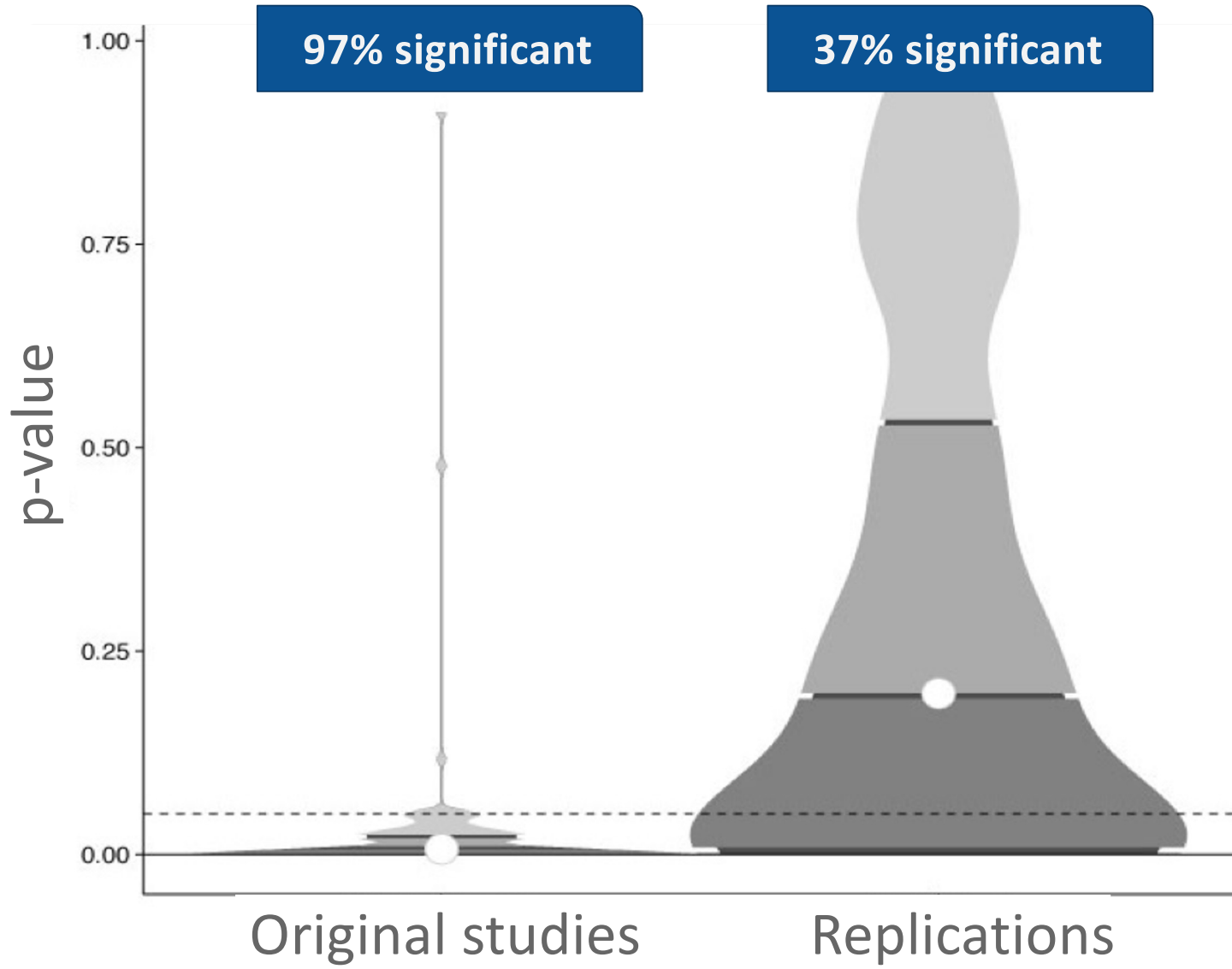
Open Science Lunch Seminar, 25.01.2024

Julien Mayor – University of Oslo

Contact: julien.mayor@psykologi.uio

with material from COS, Chris Chambers, Gilad Feldman

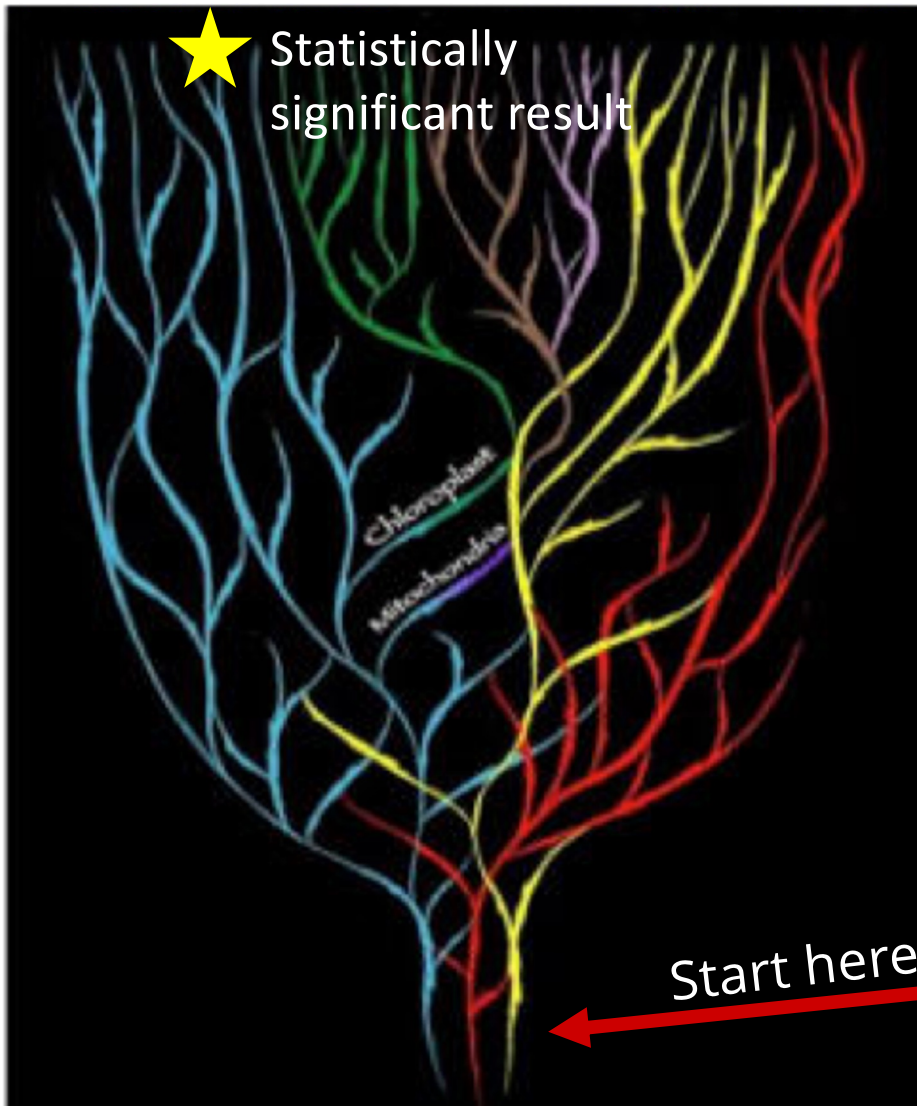
Reproducibility Project: Psychology



The Problem

The combination of a **strong bias toward statistically significant findings** and **flexibility in data analysis** results can lead to irreproducible research





The Garden of Forking Paths

Control for time, gender, age, ...?

Exclude outliers?

Median or mean?

Hypothesis: "Does X affect Y?"

Gelman and Loken, 2013

A paradox (adapted from Chris Chambers)

Which part of a research study do you believe should be beyond your control as a scientist?

The results

Which part of a research study do you believe is most important for advancing your career?

The results

Don't touch THIS



The results

But make sure THIS is amazing



The results

Results-driven culture distorts incentives

**What's best for
science**

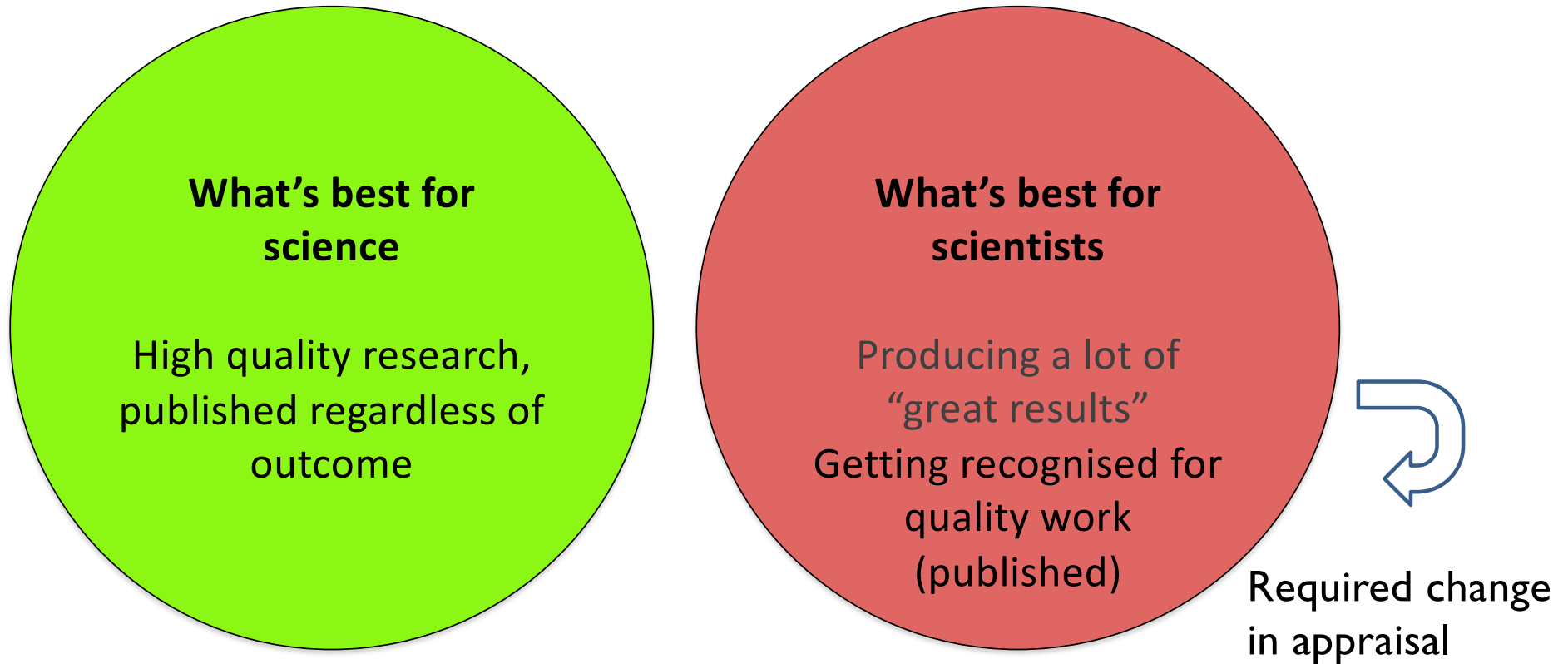
High quality research,
published regardless of
outcome

**What's best for
scientists**

Producing a lot of
“great results”

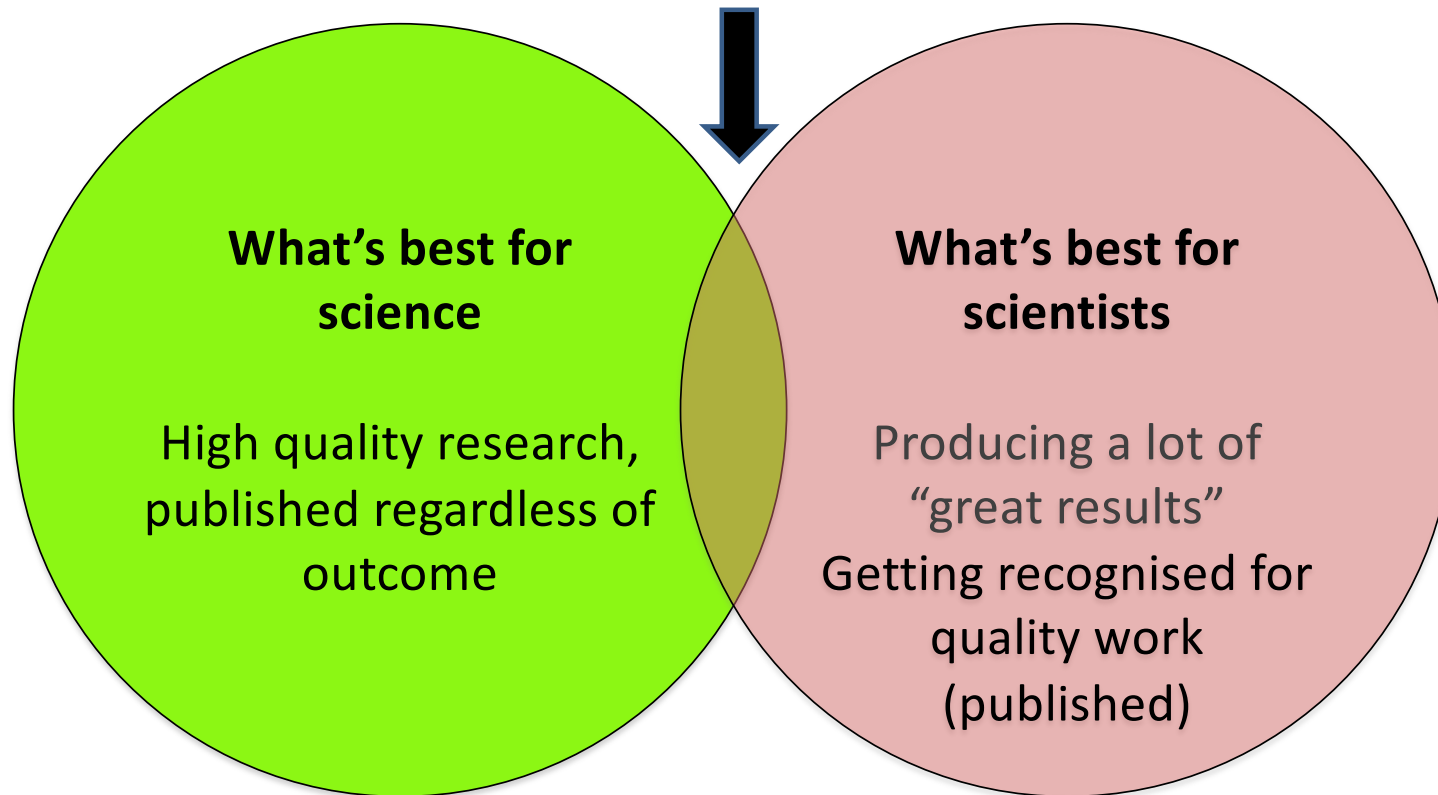
see Nosek, Spies & Motyl (2012). *Perspectives on Psychological Science*, 7(6): 615–631

Results-driven culture distorts incentives



see Nosek, Spies & Motyl (2012). *Perspectives on Psychological Science*, 7(6): 615–631

Results-driven culture distorts incentives
Registered Reports can fix (some of) this!

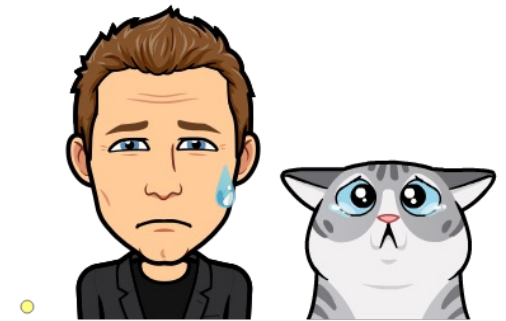


Traditional publishing model

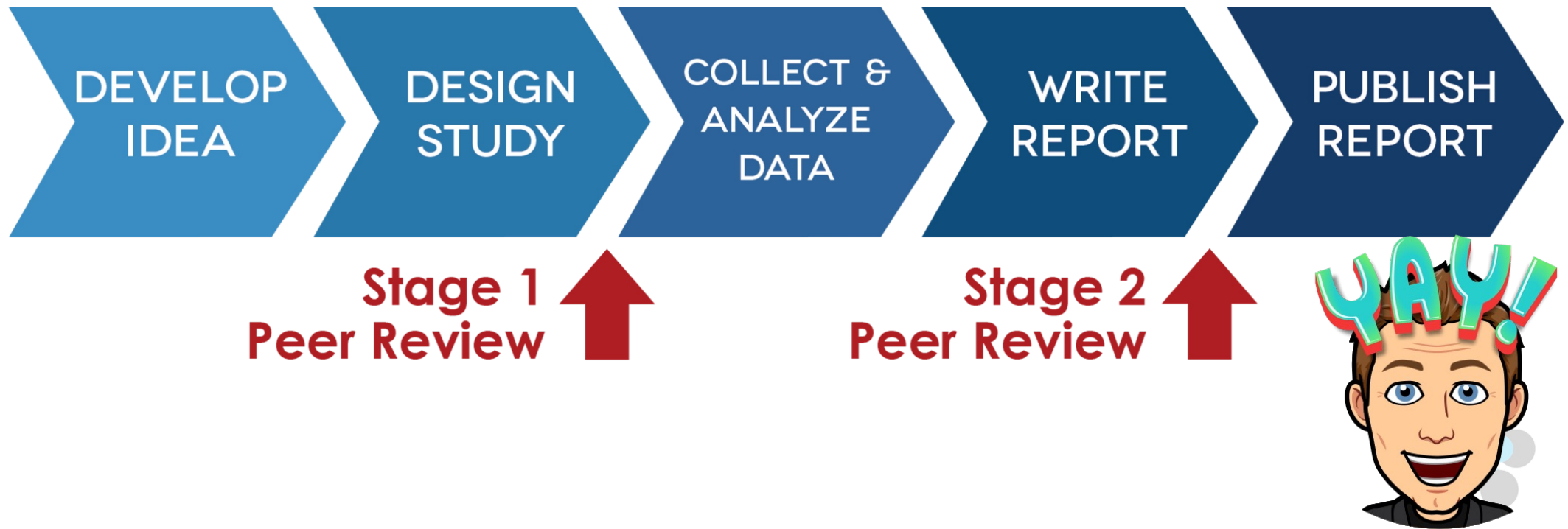


Submit
for peer
review
here

BROKEN



When the research plan undergoes **peer review before results are known**, the preregistration becomes part of a Registered Report

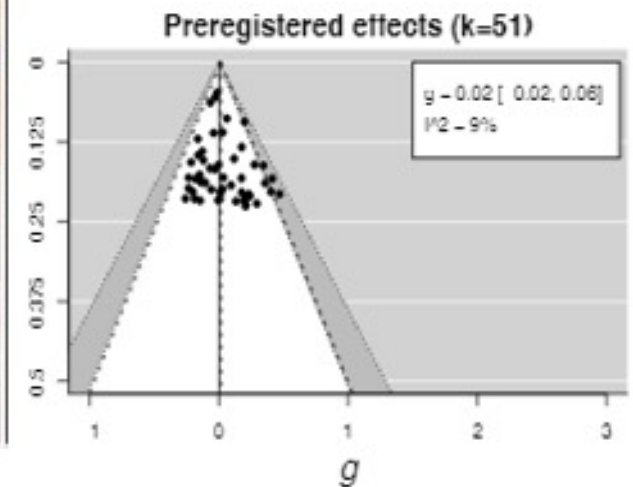
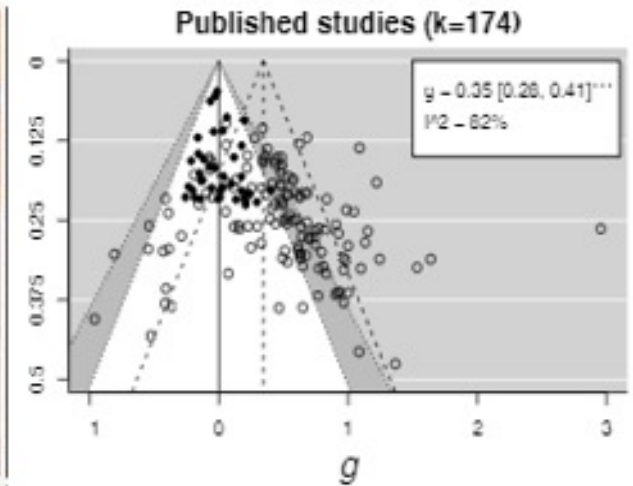


Does
Pre-registration/
Registered
Reports
really help?

IT DOES

A comprehensive meta-analysis of money priming

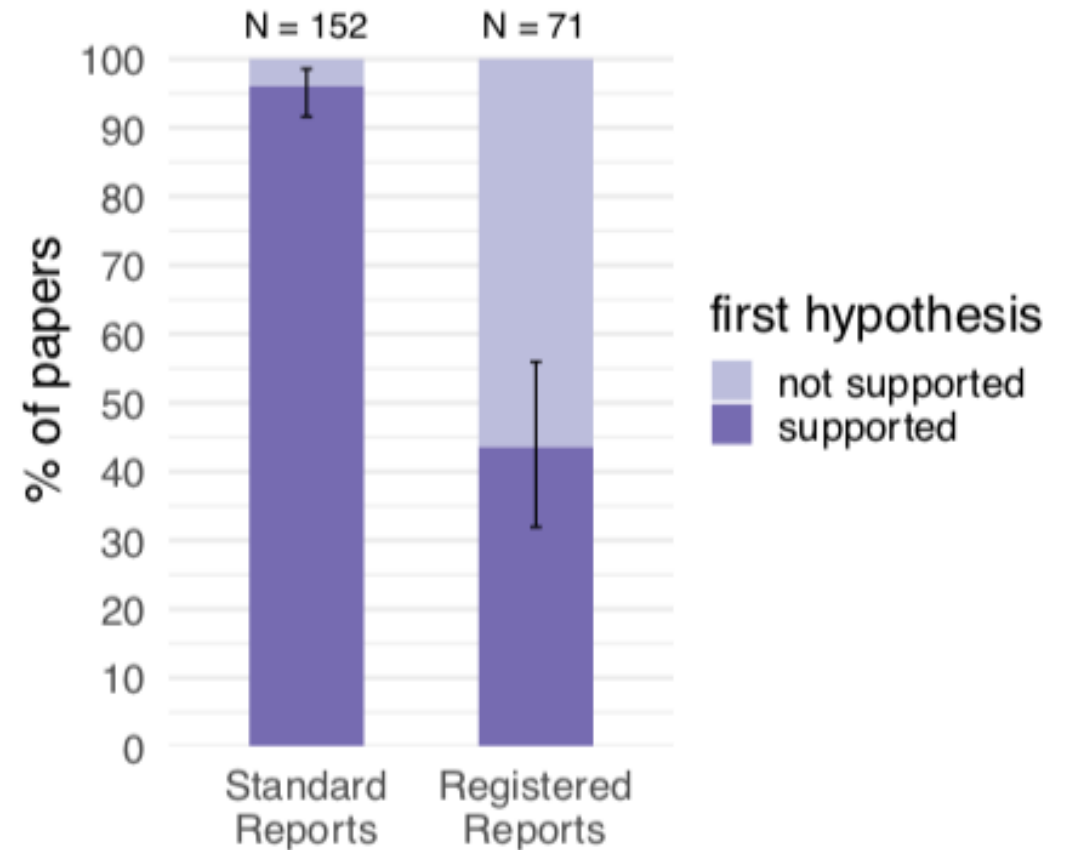
Paul Lodder¹, How Hwee Ong², Raoul P. P. P. Grasman³, & Jelte M. Wicherts¹



g p

Does Pre-registration/ Registered Reports really help?

IT DOES #2



Scheel et al. (2020) <https://psyarxiv.com/p6e9c>

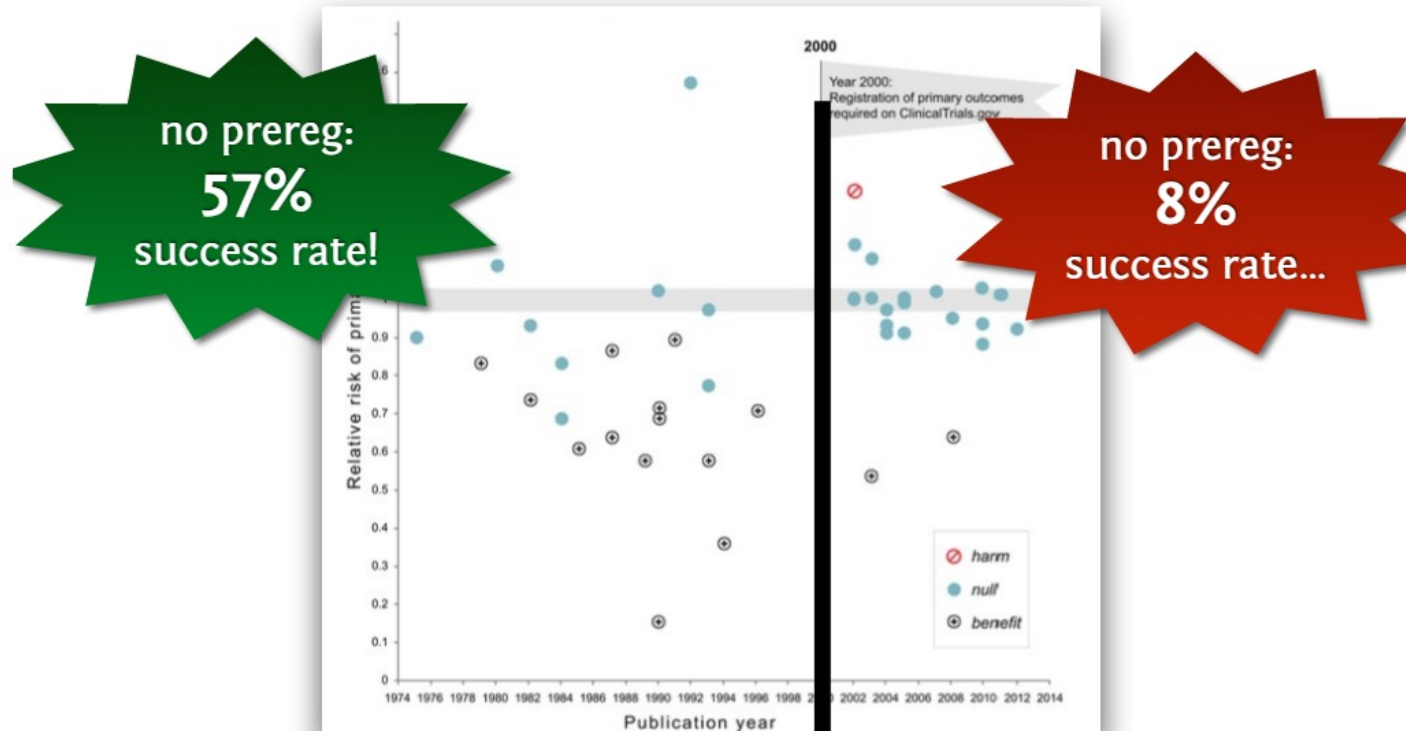
Slides: <https://mgto.org/2021aasp>

Does
Pre-registration/
Registered
Reports
really help?

IT DOES #3

Pre-registration stops p -hacking

DANGER



<http://chrisblattman.com/2016/03/01/13719/>

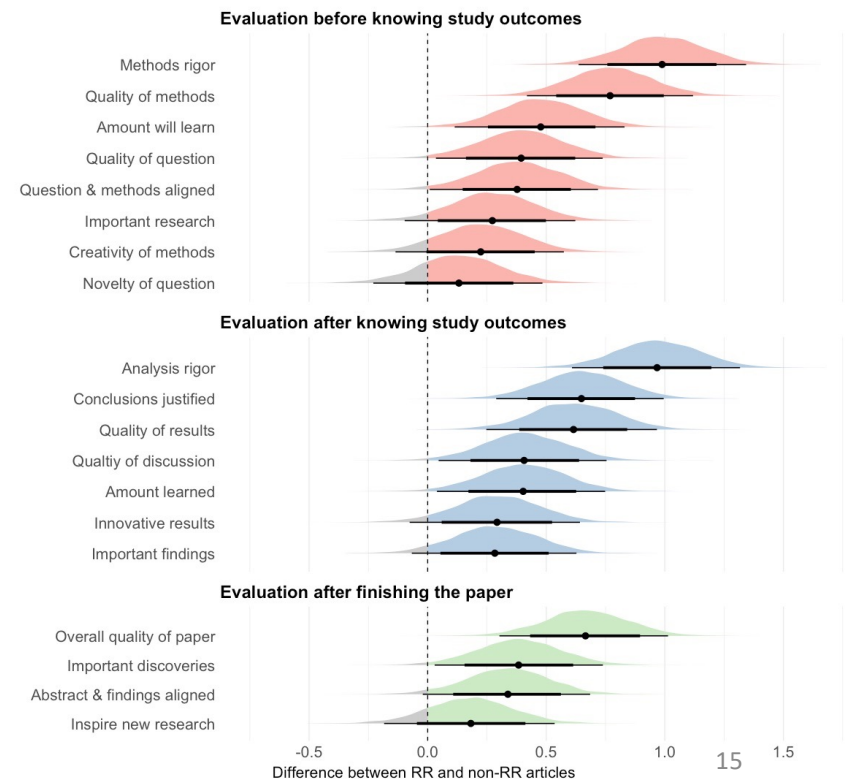
Kaplan, R. M., & Irvin, V. L. (2015). Likelihood of Null Effects of Large NHLBI Clinical Trials Has Increased over Time. *PLoS ONE*, 10(8), e0132382–12. <http://doi.org/10.1371/journal.pone.0132382>

Slides: <https://mgto.org/2021aasp>

Personal experience (= anecdotal evidence)

- About 10 Registered Reports at different stages at an author
 - 6-7 as part of large-scale collaborations
 - 5 with my group (2-4 authors)
- Reviewed multiple Registered Reports (PCI-RR, Child Development, Developmental Science, ...)
 - They are much better than most articles

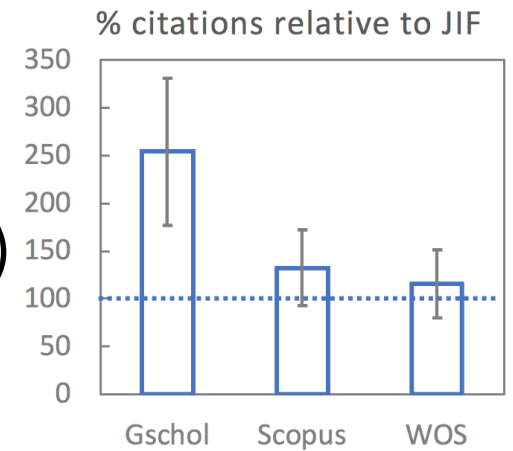
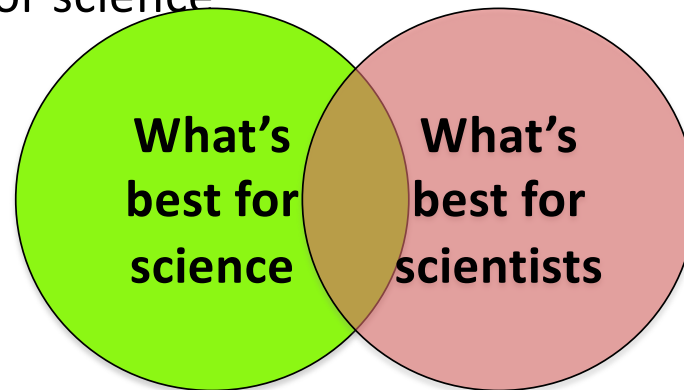
Research Quality of Registered Reports Compared to the Standard Publishing Model
Courtney K. Soderberg^{1#}, Timothy M. Errington^{1#}, Sarah R. Schiavone², Julia Bottesini², Felix Singleton Thorn³, Simine Vazire^{2,3}, Kevin M. Esterling⁴, and Brian A. Nosek^{1,5*}



The positive, I

Well cited – RRs are at or above respective journal impact factor

- My most cited paper is a RR (just 3 years upon publication)
 - yes this is a large collaboration effort (ManyBabies1)!
- Amazing feeling of **reducing** stress
 - Publication will not depend on “positive” results
 - No incentive of “trying” different model specification to “make it work/publishable” (and create false positives)
 - No cognitive dissonance opposing “what is good for your career” vs. “what is good for science”



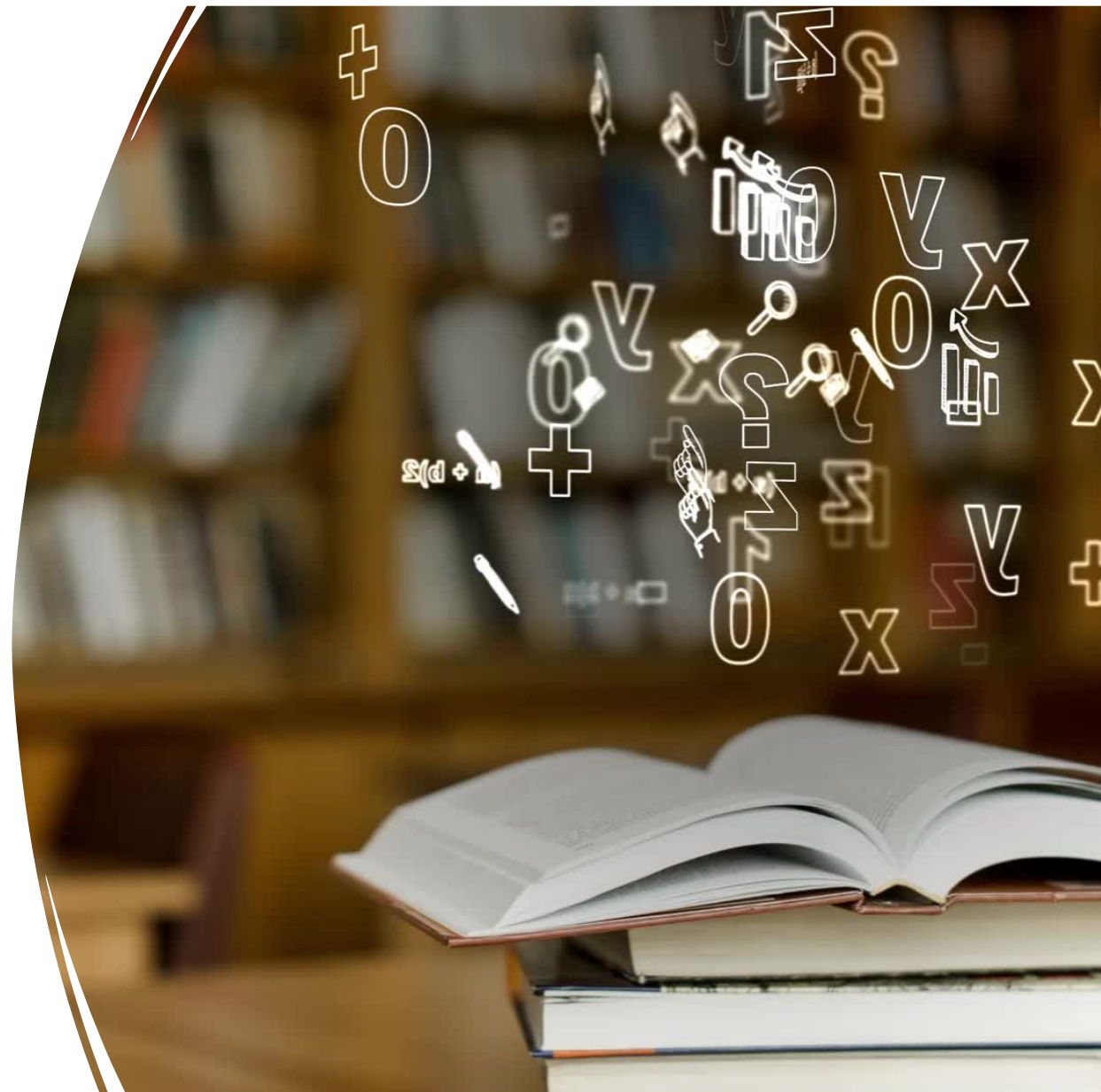
The positive, II

- Tremendous help from reviewers at Stage 1 (essentially in some cases you feel they should be co-authors!)
 - Work WITH reviewers and editors (only one Stage 1 manuscript rejected)
 - Gain knowledge – statistical and methodological insights – great learning experience!
- Get something early on the CV (before data collection) – important, especially for junior researchers
- A great way of guaranteeing publication (not result dependent) – specially for resource-intensive projects
 - Example when you do: RSOS (null finding – otherwise difficult to publish) vs. when you don't: Dialect and Covid-language papers

You shall be judged on appropriate methods, not on whether results are significant (or not)

From: [REDACTED] (Journal of Experimental Child Psychology)
Sent: Friday, April 17, 2020 5:13 PM
Subject: JECp_2020_86, has not been accepted

[...] Your central finding is a null finding. Therefore, I cannot accept this paper for publication in JECp.



You shall be judged on appropriate methods, not on whether results are significant (or not)

From: cogdevsoc <cogdevsoc-bounces@lists.cogdevsoc.org> **On Behalf Of** Julien Mayor
Sent: Sunday, March 22, 2020 9:11 AM
To: cogdevsoc@lists.cogdevsoc.org
Subject: [External] [COGDEVSO] Language development in time of Covid-19

Dear colleagues,

we have decided to try and capitalise on daycare closures in Norway to investigate vocabulary development in a (semi-)controlled environment.



FW: [External] [COGDEVSO] Language development in time of Covid-19

To: julien.mayor@psykologi.uio.no, Cc: [Redacted]

22 March 2020 at 16:40

[Details](#)



Dear Julien Mayor,

I hope you will consider *Psychological Science* as an outlet for publication of this interesting and important research project.

Best wishes

[Redacted]
Editor-in-Chief, *Psychological Science* (so not an idle invitation!)

You shall be judged on appropriate methods,
not on whether results are significant (or not)

-----Original Message-----

From: Psychological Science <onbehalf@manuscriptcentral.com>

Sent: onsdag 10. mars 2021 23:24

To: [REDACTED]

Subject: Psychological Science - Decision on Manuscript ID PSCI-21-0301

10-Mar-2021

[REDACTED]

Thank you for the opportunity to consider "COVID-19 first lockdown as a unique window into language acquisition: What you do (with your child) matters." for Psychological Science. I have carefully considered the manuscript and unfortunately, have determined that it is not a likely candidate for publication in the journal. Therefore, I am declining the manuscript without sending it for additional review.

The major reason I decided not to continue the review process is that the submission is not a good fit for Psychological Science.

Finally, I thank you for considering Psychological Science as an outlet for publication of your work. I hope you will do so again in the future.

Sincerely,

[REDACTED]
Editor in Chief, Psychological Science

The less positive

- Not appropriate for all situations (e.g., Covid papers)
- Need careful planning time-wise
- I offered RRs as a solution for Master theses, but...
 - Lengthy review process + strict inclusion criteria -> stressful for students, challenging to find time to wrap up manuscript after end of studies
- Not valued enough in terms of recognition (hiring, promotion, etc) – still “impact” (often fancy journals) > reliable, robust research
 - Should RRs be all level-2 articles?
 - Should RR count as 3 “normal” articles on a CV?
- Not recognised well enough by (sometimes senior) colleagues

The conclusion: Will I do it again?

Yes!

Many thanks!