Practical Tools and Strategies to Increase Replicability

Dr. Michèlle B. Nuijten

Sounds like Newton/Nowton
My background
The Replication Crisis
Solutions!
Transparency
Preregistration

ClinicalTrials.gov

Registered Replication Reports
Multi-lab, high-quality replications of important experiments in psychological science along with comments by the authors of the original studies.
Multi-Lab Collaborations
Statistics

Improving your statistical inferences

Understanding The New Statistics
Effect Sizes, Confidence Intervals, and Meta-Analysis

Redefine statistical significance

We propose to change the default P-value threshold for statistical significance from 0.05 to 0.005 for claims of new discoveries.
A “spellchecker” for statistics

http://statcheck.io
Open Publishing Practices

OPEN ACCESS

F1000 Research
Open for Science

@MicheleNuijten
And much, much more!
Pitfalls...

“You have to preregister

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Pitfalls...

“You have to preregister your Bayesian
Pitfalls...

“You have to preregister your Bayesian sequential
Pitfalls...

“You have to preregister your Bayesian sequential power analyses
Pitfalls...

“You have to preregister your Bayesian sequential power analyses on your openly available
Pitfalls...

“You have to preregister your Bayesian sequential power analyses on your openly available perfectly archived data
Pitfalls...

“You have to preregister your Bayesian sequential power analyses on your openly available perfectly archived data that you collected with Many Labs.
Pitfalls...

“You have to preregister your Bayesian sequential power analyses on your openly available perfectly archived data that you collected with Many Labs while riding a unicorn.”
Pitfalls...

Not every solution works for every researcher in every project
Pitfalls...

We’re aiming to get into Science, so keep removing outliers to get that $p < .05$

We’ve worked too hard for these data to share them.

Preregistration is for methodological terrorists!
Solution?
Cherry-pick what works for you
Cherry-pick what works for you

Hopefully, this strategy ...

• ... convinces researchers that good practice doesn’t have to be hard

• ... that you can improve your practices regardless of the type of research you’re doing

• ... allows junior researchers to sneak in good practices through the backdoor
Summarizing:

There are many ways to improve replicability, transparency & rigor.

Start by cherry picking your favorite open science practice(s)!

@MicheleNuijten
m.b.nuijten@uvt.nl
http://mbnuijten.com