

Lessons from Psychology's Replication Crisis

SimineVazire
University of Melbourne

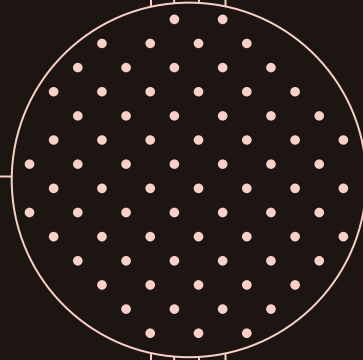
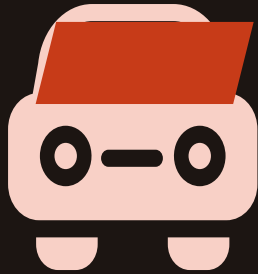
LESSONS FROM PSYCHOLOGY

1

TRANSPARENCY IS NECESSARY
FOR CREDIBILITY



TRANSPARENCY



1 TRANSPARENCY IS NECESSARY FOR CREDIBILITY

LESSONS FROM PSYCHOLOGY

2

TRANSPARENCY IS
HARD TO CHANGE



DeclareDesign



CENTER FOR
OPEN SCIENCE



TOP FACTOR



**SOCIETY FOR THE
IMPROVEMENT OF
PSYCHOLOGICAL SCIENCE**



The growth of open peer review

Prevalence of Transparent Research Practices in Psychology: A Cross-Sectional Study of Empirical Articles Published in 2022

Advances in Methods and Practices in Psychological Science
October-December 2024, Vol. 7, No. 4,
pp. 1–13
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DOI: 10.1177/25152459241283477
www.psychologicalscience.org/AMPPS



TOM
HARDWICKE

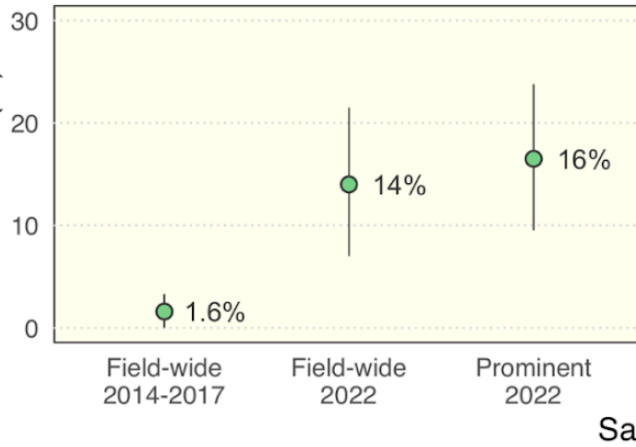
Articles (%) with functional availability



Tom E. Hardwicke¹, Robert T. Thibault^{2,3}, Beth Clarke¹,
Nicholas Moodie¹, Sophia Crüwell⁴, Sarah R. Schiavone¹,
Sarah A. Handcock⁵, Khanh An Nghiem¹, Fallon Mody⁶,
Tuomas Eerola⁷, and Simine Vazire¹

¹Melbourne School of Psychological Sciences, University of Melbourne, Melbourne, Australia; ²Coalition for Aligning Science, Chevy Chase, Maryland; ³Meta-Research Innovation Center at Stanford University, Stanford, California; ⁴Department of History and Philosophy of Science, University of Cambridge, Cambridge, England; ⁵The Florey Institute of Neuroscience and Mental Health, Melbourne, Australia; ⁶History and Philosophy of Science, University of Melbourne, Melbourne, Australia; and ⁷Department of Music, Durham University, Durham, England

Data



#2 TRANSPARENCY IS HARD TO CHANGE

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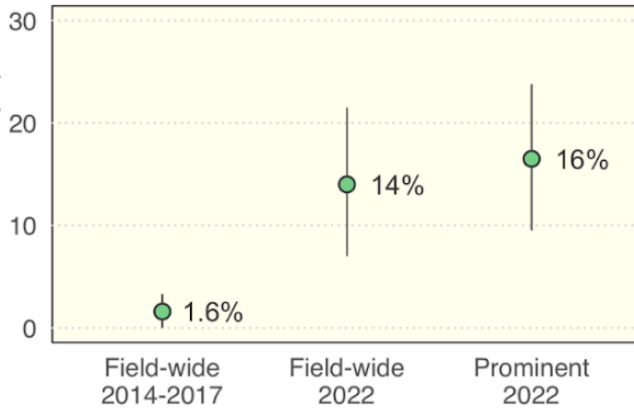
Articles (%) with functional availability



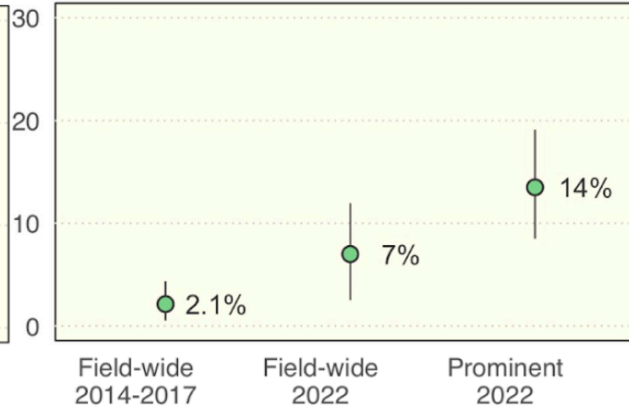
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Data



Preregistration



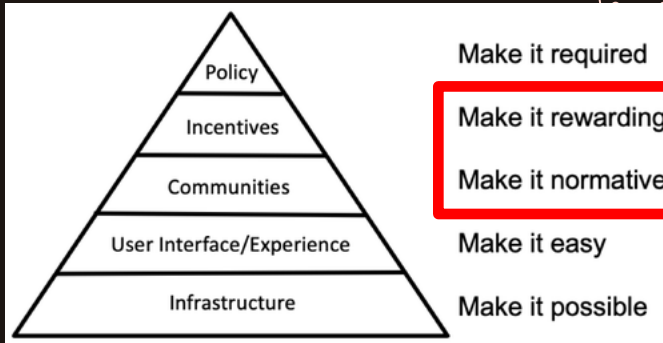
Sample

#2 TRANSPARENCY IS HARD TO CHANGE

Self-Correction



TRANSPARENCY



#2 TRANSPARENCY IS HARD TO CHANGE

LESSONS FROM PSYCHOLOGY

3

REQUIRE TRANSPARENCY*



If transparency is optional,
incentives will always favor those who opt out



TOM
HARDWICKE

DATA

CODE

MATERIALS

REPRODUCIBILITY

Editorial

Transparency Is Now the Default at *Psychological Science*

aps
ASSOCIATION FOR
PSYCHOLOGICAL SCIENCE

Psychological Science
1–4

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LESSONS FROM PSYCHOLOGY

4

TRANSPARENCY IS NOT MAGIC

REPRODUCIBILITY



Hardwicke et al. (2018)



Transparency doesn't guarantee credibility.

Transparency guarantees*
we'll get the credibility we deserve.

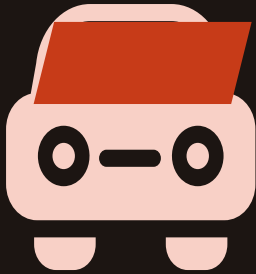
TRANSPARENCY IS NOT ENOUGH



TRANSPARENCY



ORGANIZED SKEPTICISM



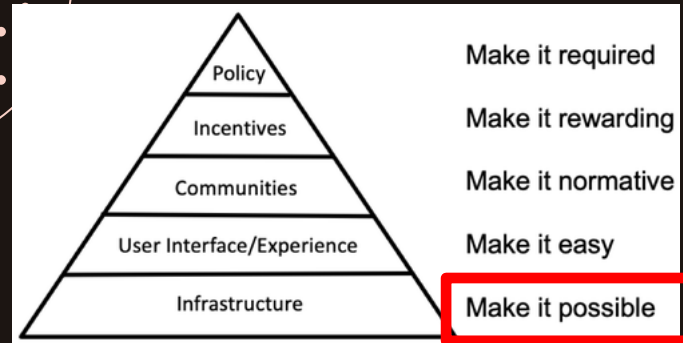
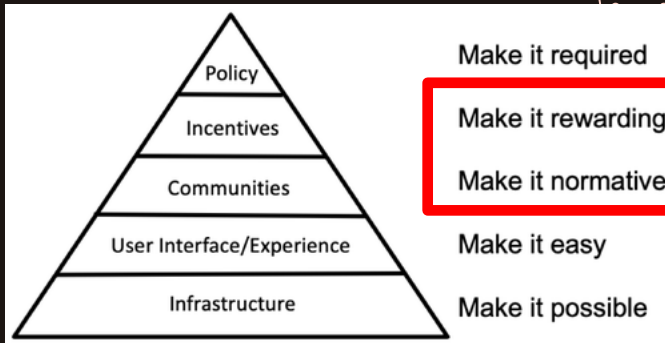
TRANSPARENCY IS NOT ENOUGH



TRANSPARENCY



ORGANIZED SKEPTICISM



LESSONS FROM PSYCHOLOGY

5

JOURNALS ARE
PART OF THE PROBLEM

“We typically expect
that errors will be caught
in the peer review process.”

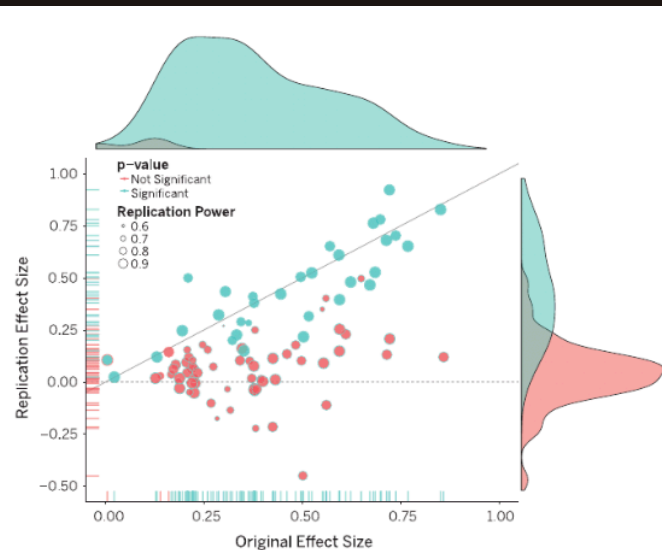
- University of Melbourne Dean

RESEARCH ARTICLE SUMMARY

PSYCHOLOGY

Estimating the reproducibility of psychological science

Open Science Collaboration*



Original study effect size versus replication effect size (correlation coefficients). Diagonal line represents replication effect size equal to original effect size. Dotted line represents replication effect size of 0. Points below the dotted line were effects in the opposite direction of the original. Density plots are separated by significant (blue) and nonsignificant (red) effects.

STATCHECK

1 in 8 psychology articles
published from 1985 to 2013
in 8 top journals
had a p -value with a “gross inconsistency”



(Nuijten et
al., 206)

LESSONS FROM PSYCHOLOGY

6

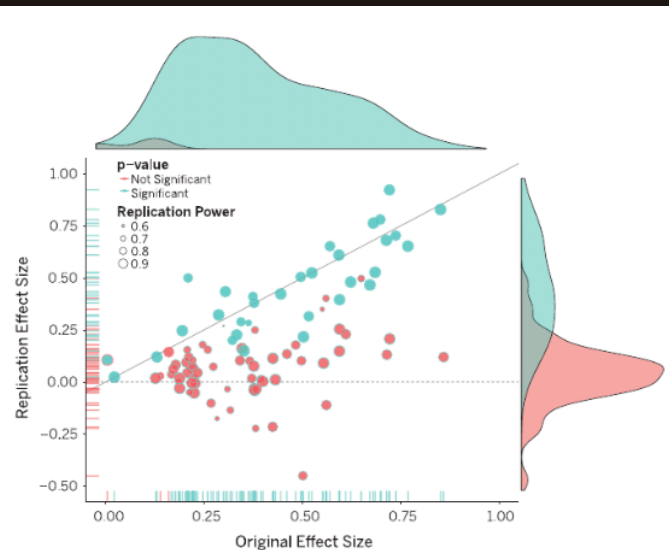
EXPECT MORE FROM
JOURNALS/ PEER REVIEW

RESEARCH ARTICLE SUMMARY

PSYCHOLOGY

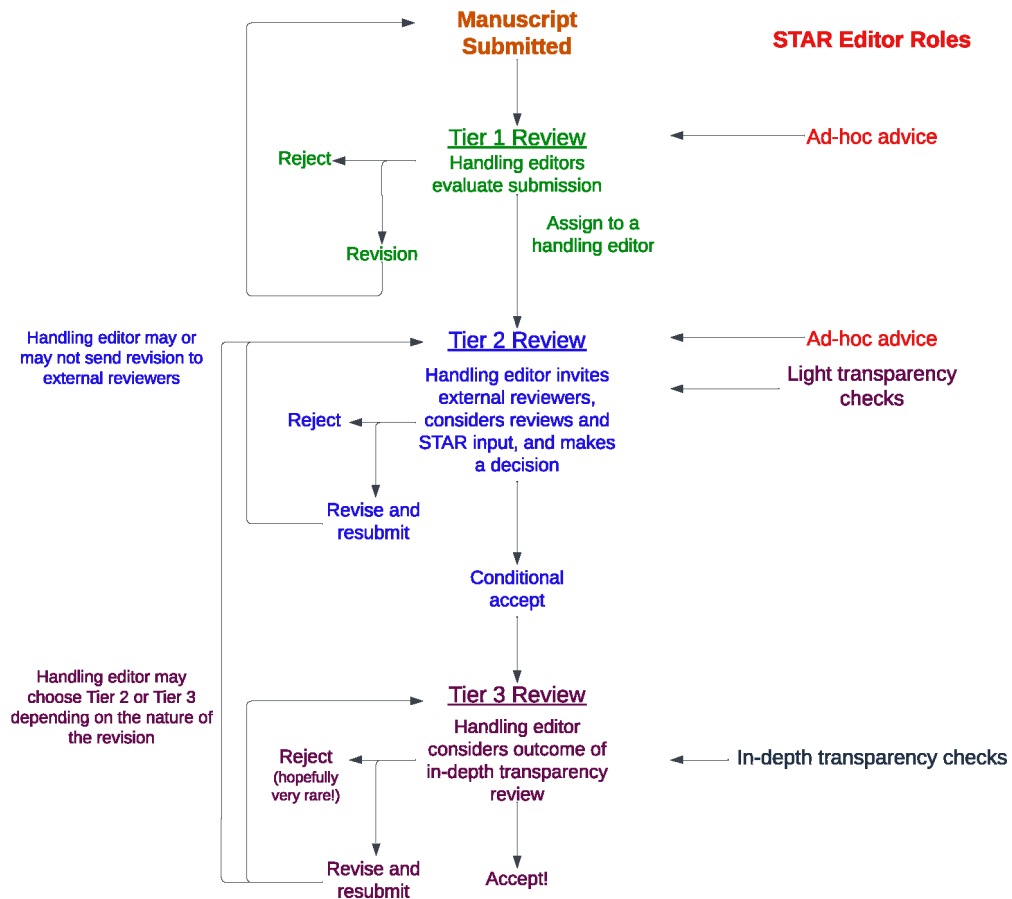
Estimating the reproducibility of psychological science

Open Science Collaboration*



Original study effect size versus replication effect size (correlation coefficients). Diagonal line represents replication effect size equal to original effect size. Dotted line represents replication effect size of 0. Points below the dotted line were effects in the opposite direction of the original. Density plots are separated by significant (blue) and nonsignificant (red) effects.

Psychological Science Peer Review Workflow



TOM
HARDWICKE



Editorial

Why Should You Trust Research Published in *Psychological Science*?

Psychological Science
2025, Vol. 36(5) 311–315
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DOI: 10.1177/09567976251336246
www.psychologicalscience.org/PS





JOURNAL PRESTIGE
CAN AND SHOULD BE EARNED

6 EXPECT MORE FROM JOURNALS/ PEER REVIEW

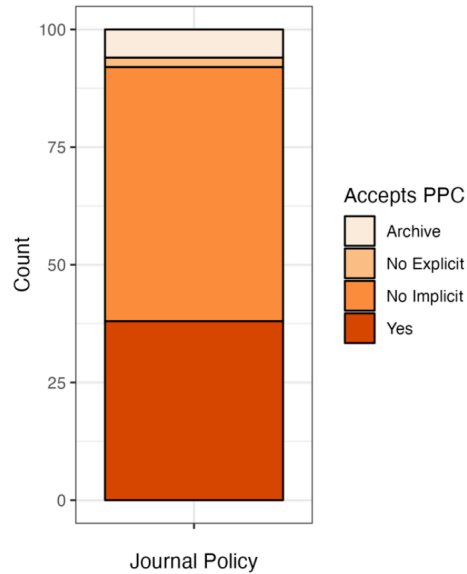
LESSONS FROM PSYCHOLOGY

#7

PEER REVIEW IS NOT MAGIC
(LOVE YOUR CRITICS)

POSTPUBLICATION CRITIQUE IN PSYCHOLOGY

Post-Publication Critique Policy and Restriction Statements in Prominent Psychology Journals



(Whamond,
et al., 2025)

POSTPUBLICATION CRITIQUE IN PSYCHOLOGY

Replication bullies

Human scum

Methodological terrorists

Second-stringers

Destructive iconoclasts

Accuracy fetishists



Ana
Martinovici



Michèle
Nuijten



Sophia
Crüwell



Leif
Nelson



Julia
Beitner



Emma
Henderson



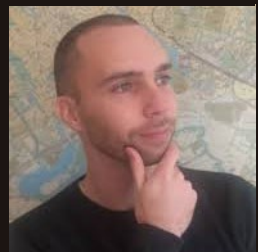
Zoltán
Kekecs



Sara
Weston



Angelika
Stefan



Olmo van
den Akker



Michael
Krämer



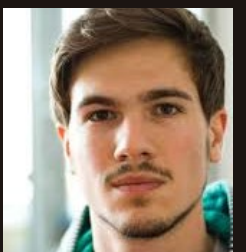
Daniel
Moriarity



Jamie
Cummins



Anne
Scheel



Frederik
Aust



Wendy
Higgins



Amanda K
Montoya



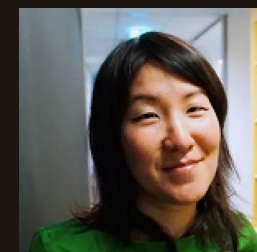
Ruben Arslan



Jessica Kay
Flake



Mijke
Rhemtulla



Joanne Chung

LESSONS FROM PSYCHOLOGY

8

ACRISIS CAN LOOK A LOT LIKE
'NORMAL SCIENCE



Artist: KC Green

"All this is normal science, not crisis.
A replication failure is not a
scientific problem;
it is an opportunity to find limiting
conditions and contextual effects.
Of course studies don't always replicate."

-Fiske, Shachter, & Taylor (2016)





Journals

Economics and Finance

[American Economic Journal: Applied Economics](#)

[American Economic Journal: Economic Policy](#)

[American Economic Journal: Macroeconomics](#)

[American Economic Review](#)

[American Economic Review: Insights](#)

[Economic Journal](#)

[Journal of Development Economics](#)

[Journal of Political Economy](#)

[Review of Economic Studies](#)

[Quarterly Journal of Economics](#)

Political Science

[American Journal of Political Science](#)

[American Political Science Review](#)

[Journal of Politics](#)

[State Politics & Policy Quarterly](#)



Institute for Replication @i4replication.bsky.social · 5mo

We are thrilled to announce a new collaboration with Psychological Science.

Papers published in PS following January 1st, 2024 will be candidates for I4R to computationally reproduce, stress-test and replicate.



LESSONS FROM PSYCHOLOGY

9

META-ANALYSIS IS NOT MAGIC

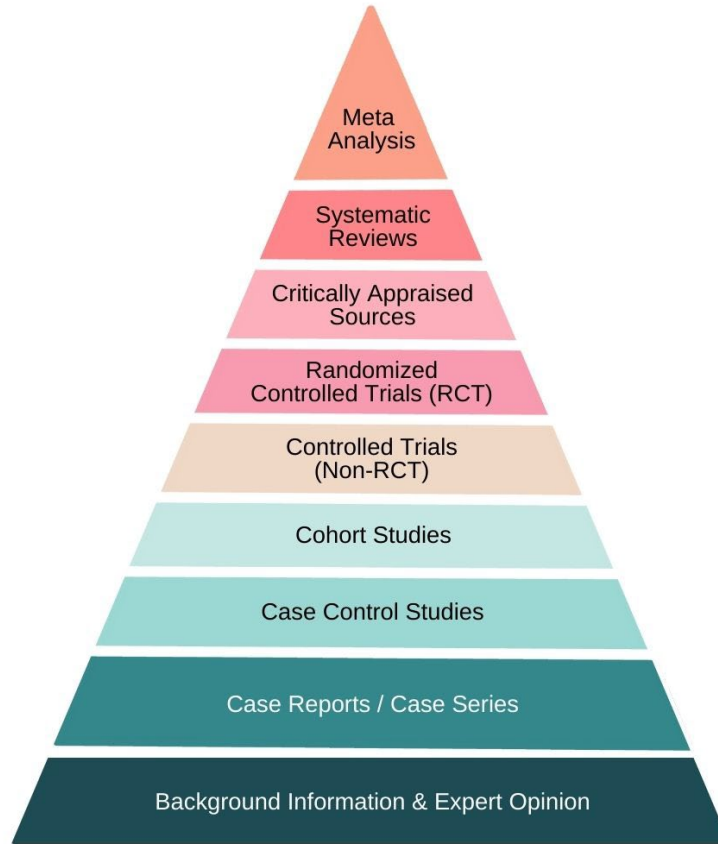


Image:
<https://beryliveylibrary.wordpress.com/2022/08/17/what-does-my-prof-mean-by-levels-of-evidence-food-nutrition-science/>

9 META ANALYSIS IS NOT MAGIC

Comparing meta-analyses and preregistered multiple-laboratory replication projects

Amanda Kvarven^{1,3}, Eirik Strømmland^{1,3} and Magnus Johannesson^{1,2*}

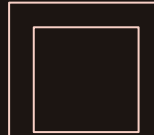
..meta-analytic effect sizes are almost three times as large as replication effect sizes.

We also implement three methods for correcting meta-analysis for bias, but these methods do not substantively improve the meta-analytic results.

LESSONS FROM PSYCHOLOGY



1. Transparency is necessary for credibility
2. Transparency is hard to change
3. Require transparency*
4. Transparency is not magic
5. Journals are part of the problem
6. Expect more from journals
7. Peer review is not magic (love your critics)
8. A crisis can look a lot like 'normal science'
9. Meta-analysis is not magic





James Heathers

@jamesheathers

Following



"Science is self-correcting" - sure, *when we correct it*, not because of Magical Progress (tm).

RETWEETS

28

LIKES

76



10:57 AM - 25 Mar 2017

THANK YOU

simine@gmail.com



[@siminevazire](https://twitter.com/siminevazire)

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