

Replicability in Psychological Science

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Does Psychology care about replicability?



AMERICAN PSYCHOLOGICAL ASSOCIATION

Psychological Science Agenda (</science/about/psa/index.aspx>) | December 2011
(</science/about/psa/2011/12/index.aspx>)

NEWS

The case of Diederik Stapel

Allegations of scientific fraud by prominent Dutch social psychologist are investigated by multiple universities.

**The Simple Answer:
YES**

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Editorial

Introduction to the Special Issue on Methodological Rigor and Replicability



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Editors' Introduction to the Special Section on Replicability in Psychological Science: A Crisis of Confidence?

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Encouraging Replication and Open Science

- Top journals as signatories of Open Science Framework (OSF) Transparency and Openness Promotion (TOP)
 - *Journal of Personality and Social Psychology*
 - Requires data sharing for verification of published findings
 - Encourages sharing of data, analytic methods and research materials for replication
 - Expects full disclosure of data-dependent decisions
 - Encourages submission of replication of important findings and registered replication reports

Encouraging Replication and Open Science

- Top journals as signatories of Open Science Framework (OSF) Transparency and Openness Promotion (TOP)

- *Psychological Science*

- Inclusion of Research Disclosure Statements in all manuscript submissions
- Inclusion of Open Practice Statement in all manuscript
- Award of Open Practice Badges



Open Data Badge



Open Materials Badge



Preregistered Badge

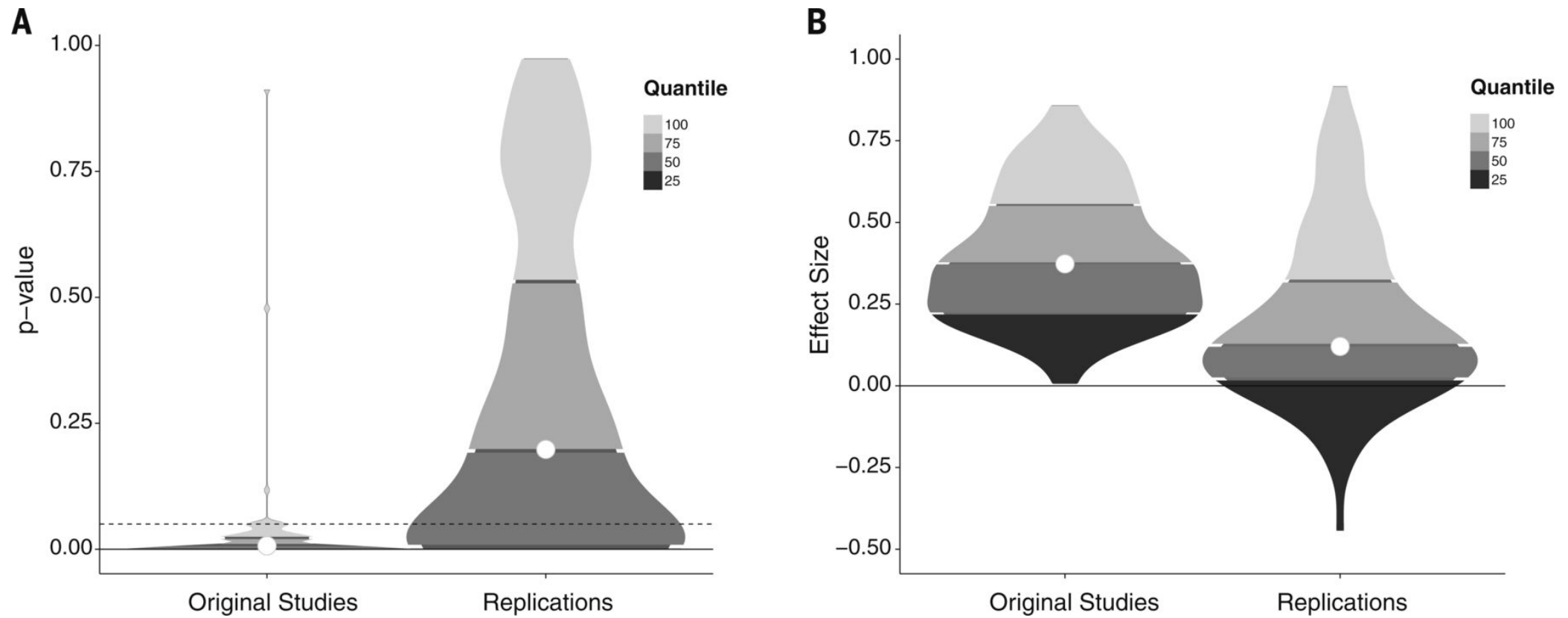
- Publishes preregistered direct replications of studies

How replicable are Psychology studies?

- Reproducibility Project: Psychology (Open Science Collaboration, 2015)
 - Direct replication of 100 empirical studies in cognitive and social psychology from top journals

	Replication $p < .05$ in original direction	Original effect size within replication 95% CI	Subjective "yes" to "Did it replicate?"
Overall	36	47	39
Social (JPSP)	23	34	25
Social (PSCI)	29	40	32
Cognitive (JEPLMC)	48	62	54
Cognitive (PSCI)	53	60	53

Fig. 1 Density plots of original and replication P values and effect sizes.



The Not-So-Simple Answer

- The meaning of replication failure
 - Original finding was a false positive?
 - Replication finding was a false negative?
 - Publication bias and the file-drawer problem

The Not-So-Simple Answer

- The meaning of a replication failure
 - The psychological phenomenon is time- /culture- /context-sensitive that successful replication should not be expected (Greenfield, 2017)

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(Open Science Collaboration, 2015)

The Not-So-Simple Answer

- Tradeoff in high quality science (Finkel, Eastwick, & Reis, 2017)
 - Replicability is only one of core characteristics of high quality science (discovery, replicability, internal validity, external validity, construct validity, consequentiality, cumulativeness)
 - With finite resources, individual researchers often need to prioritize the core characteristics
 - As a field, the pursuit of replicability should not always be prioritized over other core characteristics of high quality science

“Innovation points out paths that are possible; replication points out paths that are likely; progress relies on both.”

Open Science Collaboration (2015, acc4716-7)