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GLES German Longitudinal Election Study

The GLES Open Science Challenge 2021:

A pilot project on the applicability of registered reports in quantitative political science

MZES SSDL Workshop (2023 – 05 – 17)

Hannah Bucher, Axel Burger and Anne-Kathrin Stroppe

Mitglied der Leibniz Gemeinschaft

Overview

(1) The „Replication Crisis“ in the Social Sciences

(2) The GLES Open Science Challenge 2021

- Registered Reports in Electoral Research
- Registered Reports with Secondary Data
- Diversity of participating authors

(3) General Discussions around Registered Reports

- Methodological Rigor vs. Theory Development
- Blinded Analyses
- Registered Reports Initiatives

Do you have any experience with pre-registration or registered reports?

Part I:
The „Replication Crisis“ in the Social Sciences

Replication Crisis in the (Social) Sciences

Open access, freely available online

Essay

Why Most Published Research Findings Are False

John P. A. Ioannidis

Summary

There is increasing concern that most current published research findings are false. The probability that a research claim is true may depend on study power and bias, the number of other studies on the same question, and, in

factors that influence this problem and some corollaries thereof.

Modeling the Framework for False Positive Findings

Several methodologists have pointed out [9–11] that the high

is characteristic of the field and vary a lot depending on whether field targets highly likely relatio or searches for only one or a few true relationships among thousa and millions of hypotheses that be postulated. Let us also consid for computational simplicity.

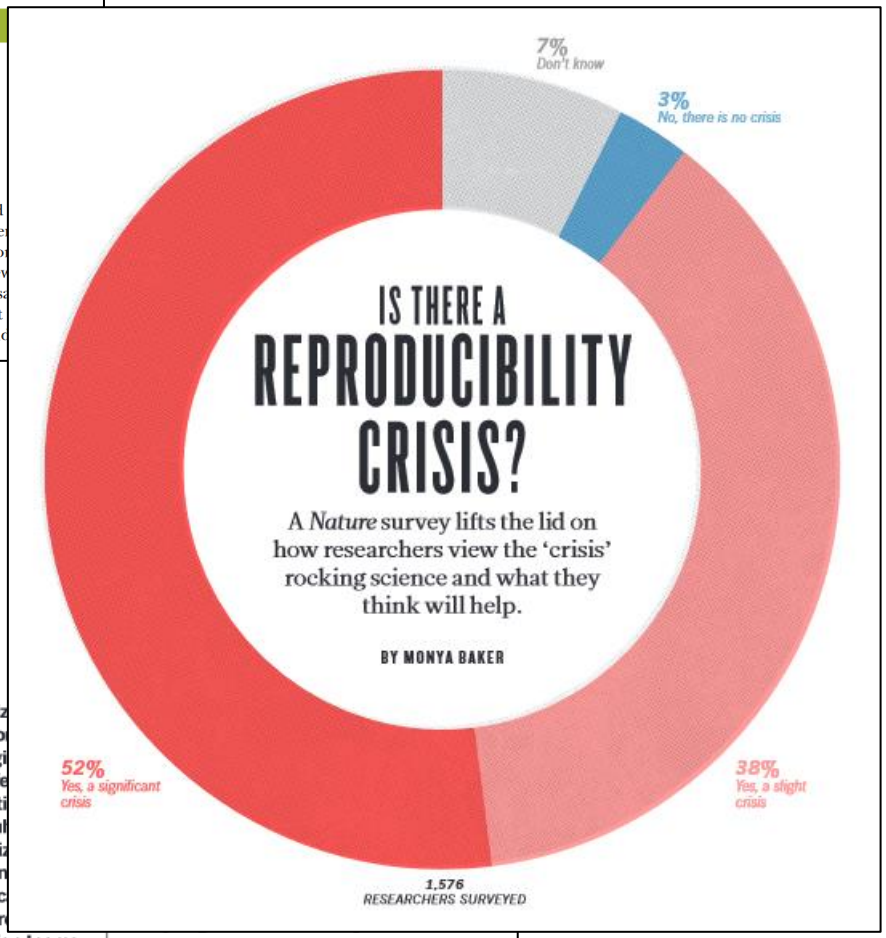
RESEARCH ARTICLE

PSYCHOLOGY

Estimating the reproducibility of psychological science

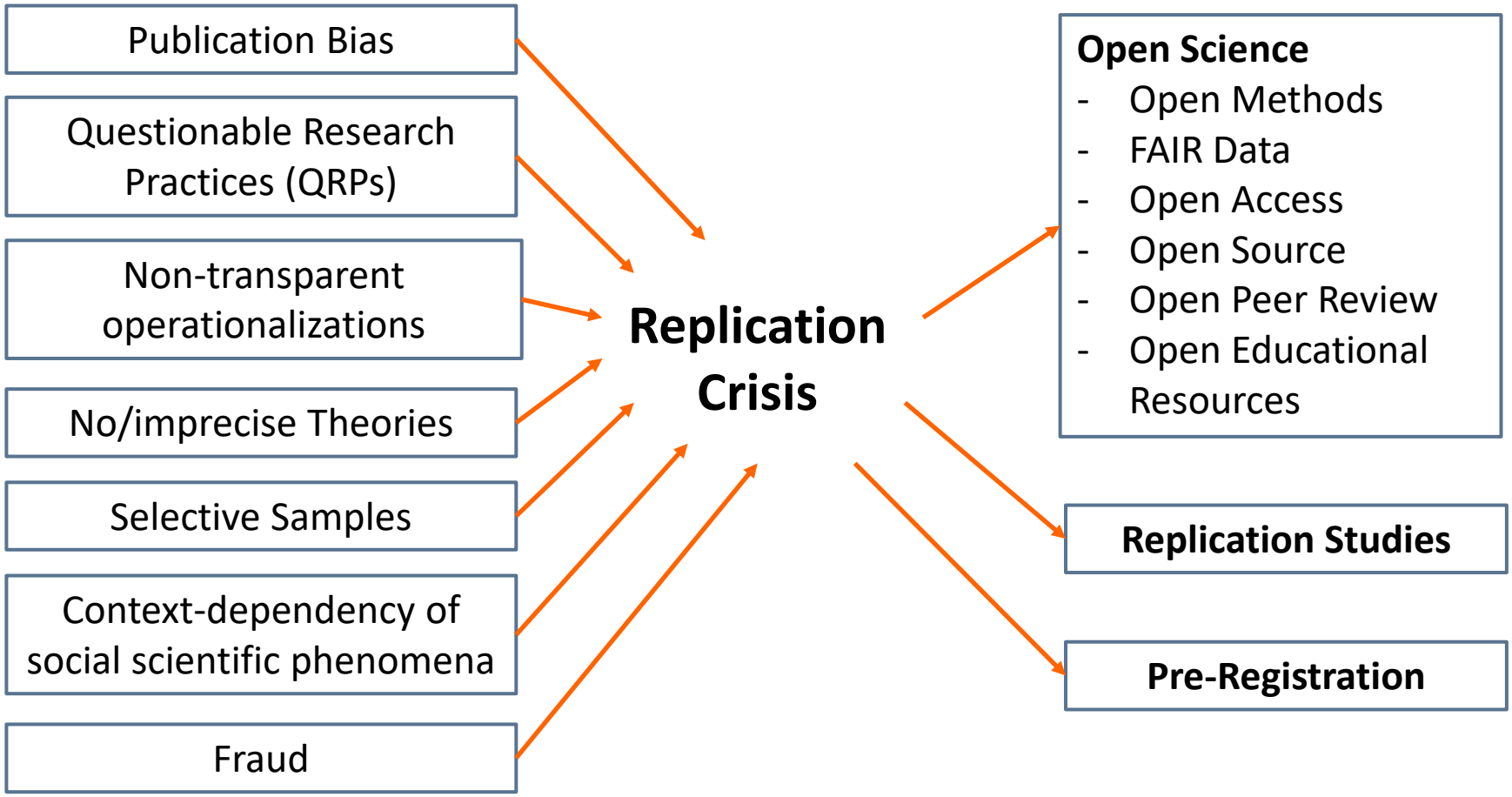
Open Science Collaboration*†

Reproducibility is a defining feature of science, but the extent to which it characteriz current research is unknown. We conducted replications of 100 experimental and co studies published in three psychology journals using high-powered designs and origi materials when available. Replication effects were half the magnitude of original effe representing a substantial decline. Ninety-seven percent of original studies had stati significant results. Thirty-six percent of replications had statistically significant resul of original effect sizes were in the 95% confidence interval of the replication effect siz effects were subjectively rated to have replicated the original result; and if no bias in results is assumed, combining original and replication results left 68% with statistic significant effects. Correlational tests suggest that replication success was better pr the strength of original evidence than by characteristics of the original and replication teams.



We constructed a sampling frame and selection

The Replication Crisis:
Causes and Solution Approaches



Results Paradox & Publication Bias

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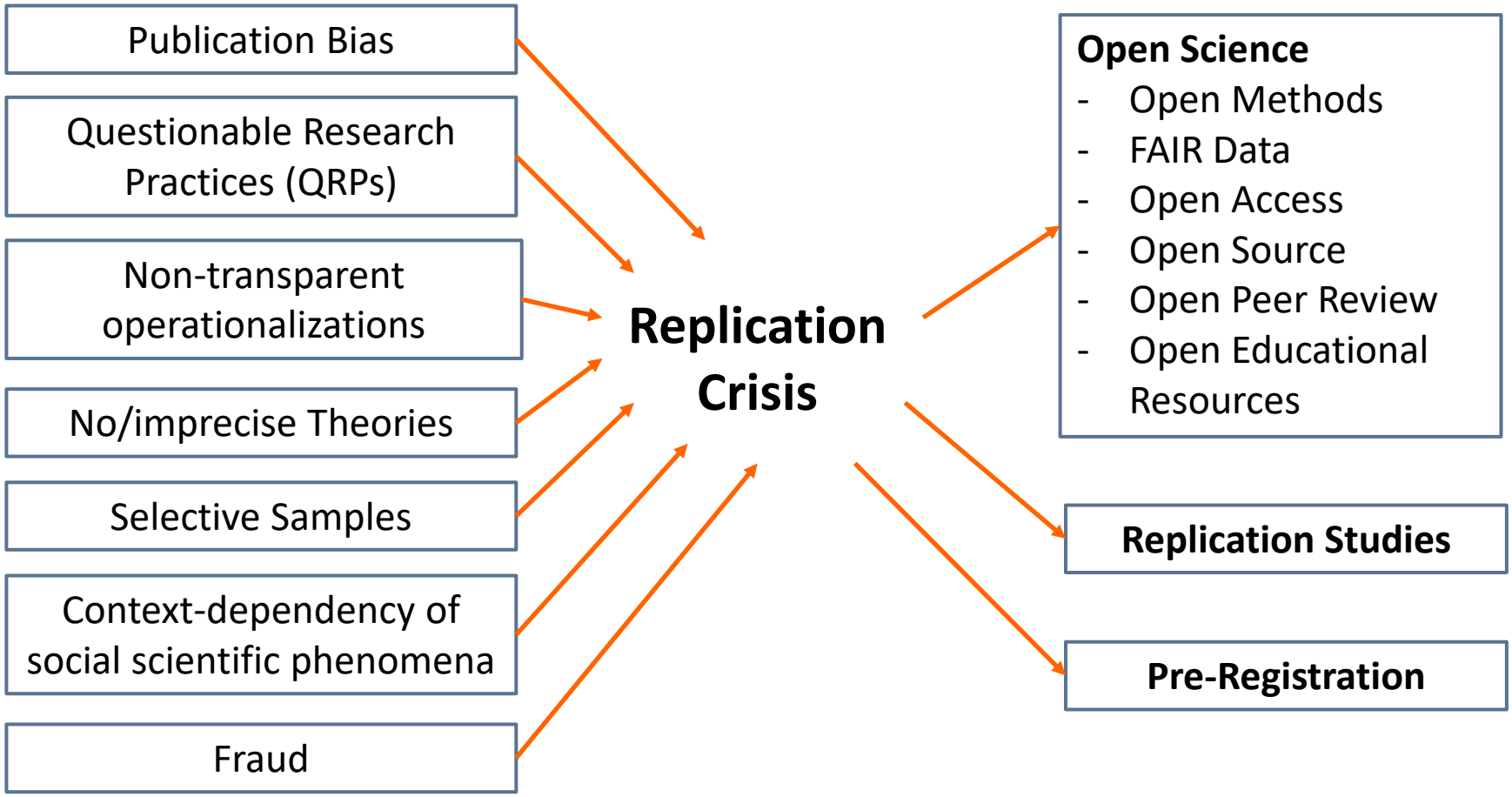
Source: https://www.someecards.com

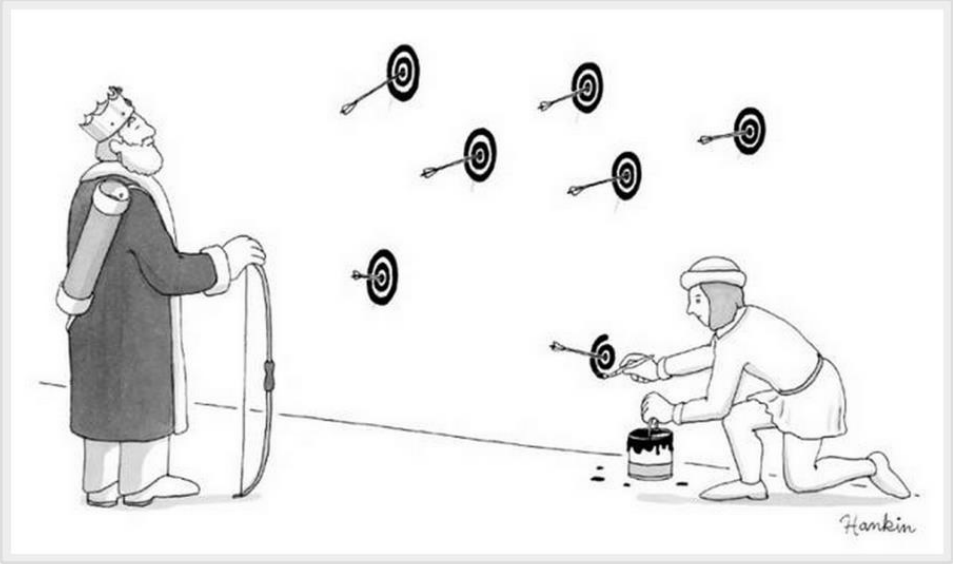
Chambers & Tsavella (2021); Franco et al. (2014); Peplow (2014)

The Replication Crisis:
Causes and Solution Approaches



Questionable reseach practices (QRPs)

HARKing



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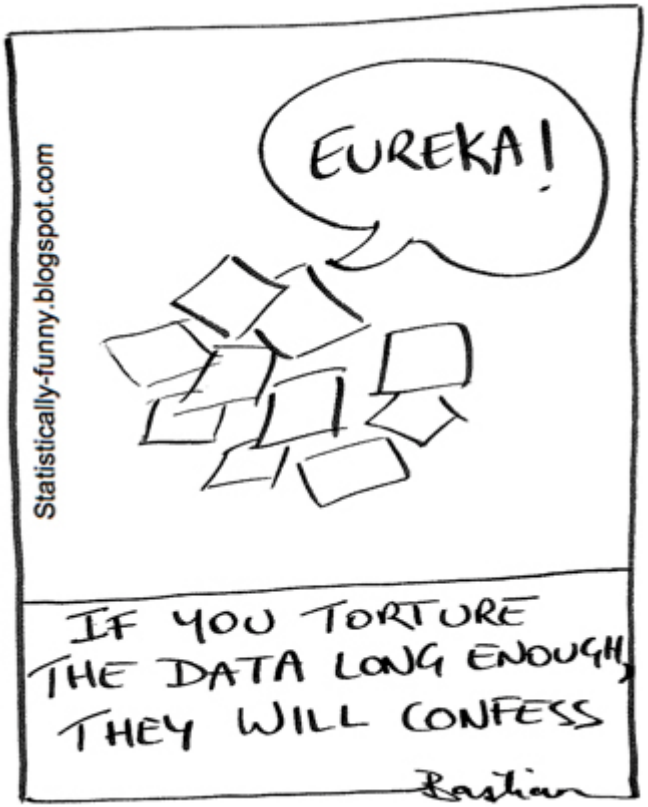
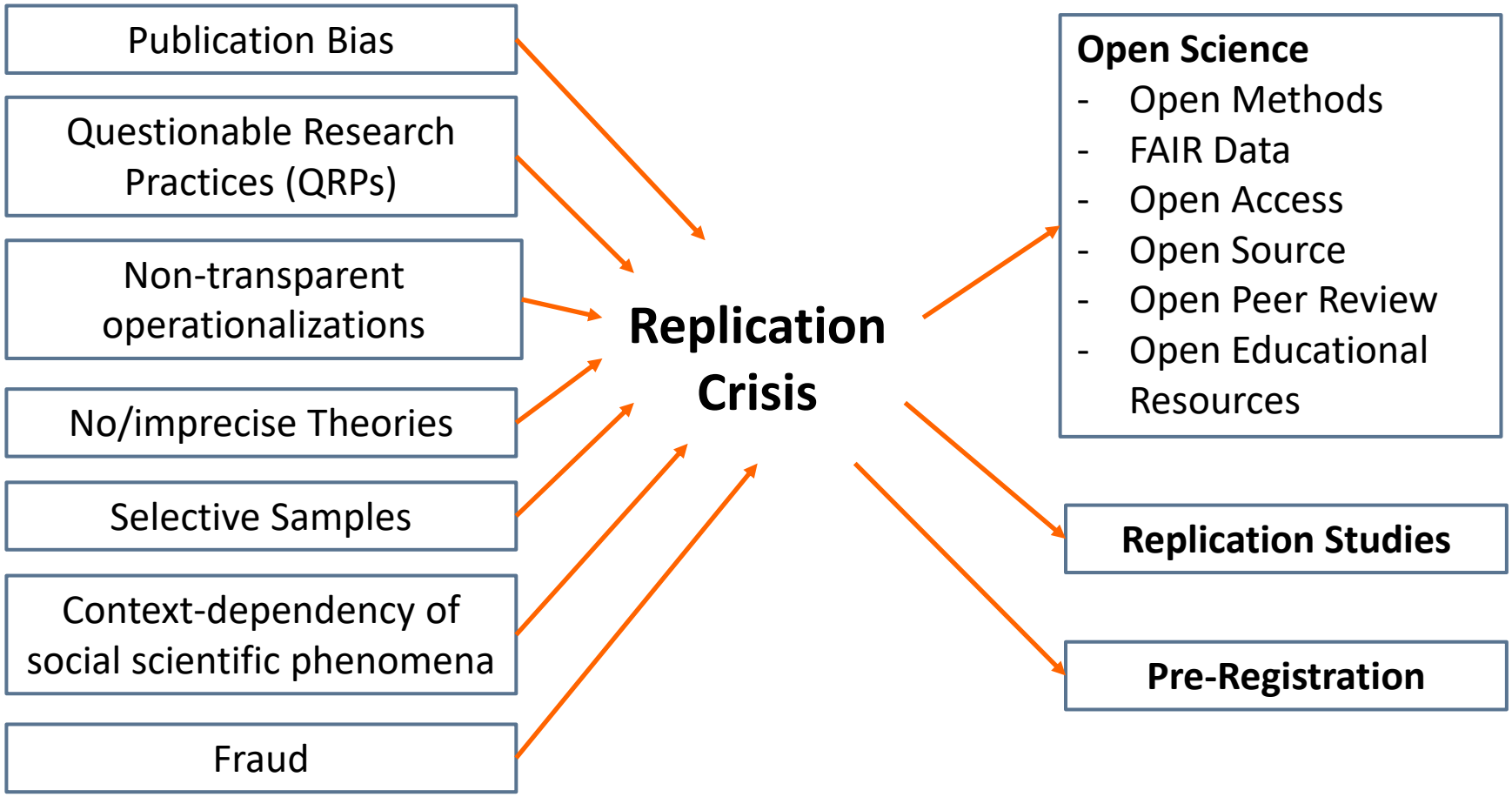
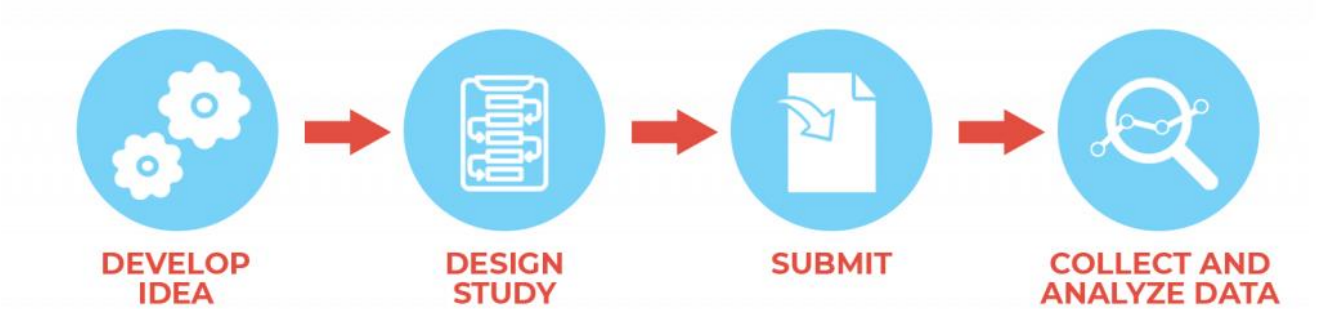
P-hacking



The Replication Crisis:
Causes and Solution Approaches



Preregistration



Soure: osf.io/rr

Objections Against Preregistration

- Difficult (e.g., Nosek et al., 2019)
- Does not preclude publication bias
- Does not preclude QRPs (e.g., Van den Akker et al., 2022)
- More easily implemented in some fields and with some research approaches than others
- Focuses on methodological rigor at the expense of focusing on theory development (e.g., Fiedler, 2018; Proulx et al., 2021; Szollosi & Donkin, 2021)

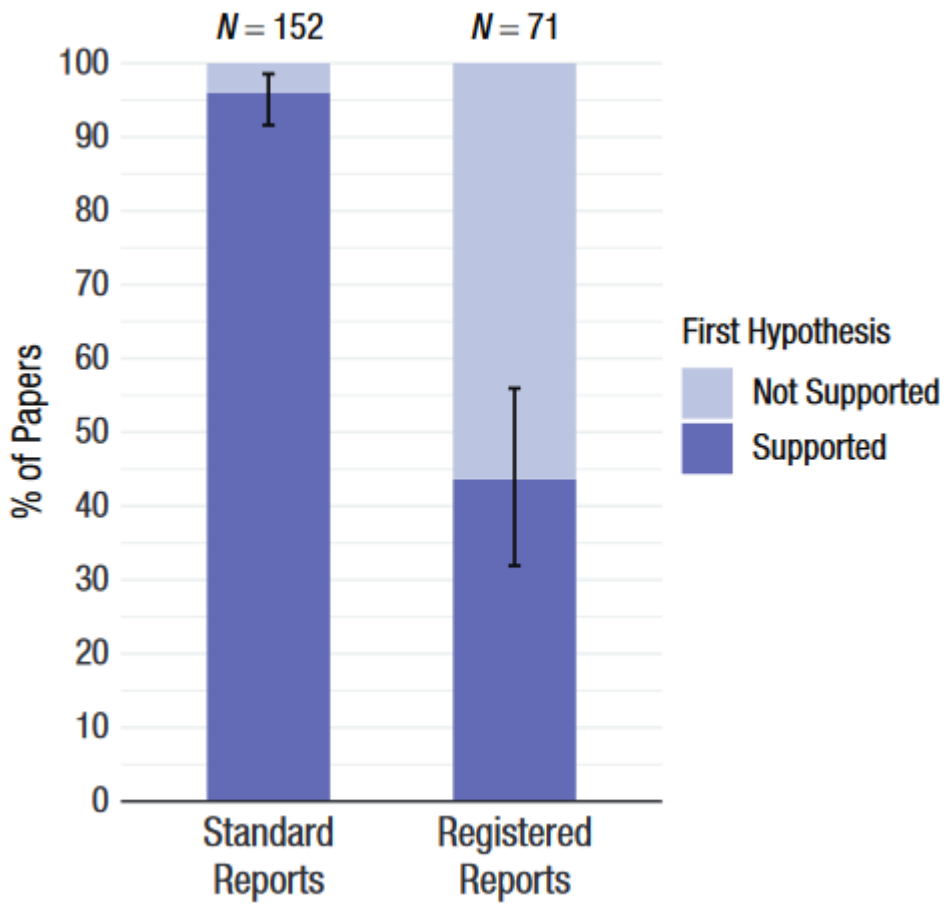
Registered Reports

Soure: osf.io/rr

Standard Reports vs. Registered Reports

Scheel et al. (2021)

"[A] plausible [explanation] is the reduction of publication bias and/or Type I error inflation in the RR literature."



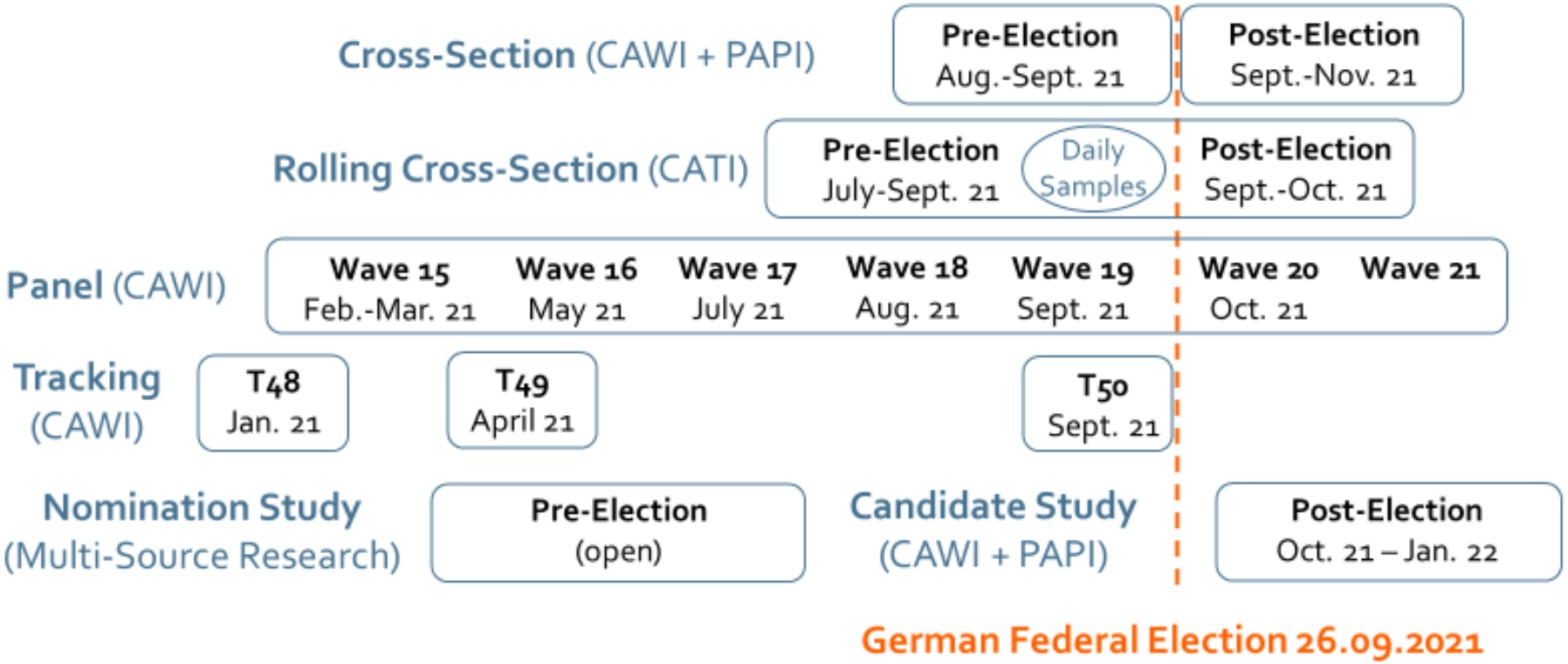
How can we accelerate the dissemination of Registered Reports in the academic community?

Part II: GLES Open Science Challenge 2021: Combining Registered Reports with existing data sets in electoral research

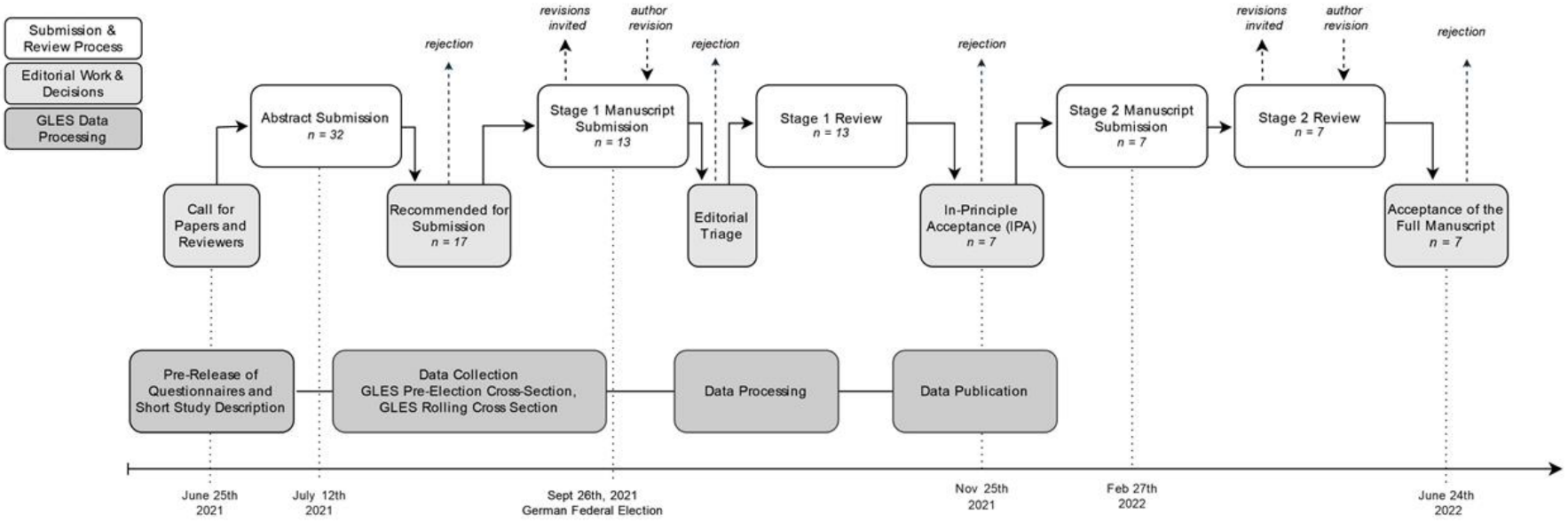
GLES (German Longitudinal Election Study)

- (GLES): central survey program in Germany for the continuous collection and provision of high-quality data for national and international election research.
- Public Good: The data are made available to the scientific community promptly and without any further restrictions after processing.

GLES Design


Cross-Section (CAWI + PAPI)
Pre-Election Aug.-Sept. 21
Post-Election Sept.-Nov. 21
Rolling Cross-Section (CATI)
Pre-Election July-Sept. 21
Daily Samples
Post-Election Sept.-Oct. 21
Panel (CAWI)
Wave 15 Feb.-Mar. 21
Wave 16 May 21
Wave 17 July 21
Wave 18 Aug. 21
Wave 19 Sept. 21
Wave 20 Oct. 21
Wave 21
Tracking (CAWI)
T48 Jan. 21
T49 April 21
T50 Sept. 21
Nomination Study (Multi-Source Research)
Pre-Election (open)
Candidate Study (CAWI + PAPI)
Post-Election Oct. 21 – Jan. 22
German Federal Election 26.09.2021

GLES Open Science Challenge 2021



Issue I: Registered Reports in electoral research

Flexibility vs. Rigidity

Flexibility (Electoral Research)	Rigidity (Registered Reports)
adapting research design to • evolving political contexts • policy changes • unexpected events during electoral campaign.	emphasizes a rigid study design, potentially limiting researchers' ability to make adjustments during the research process.

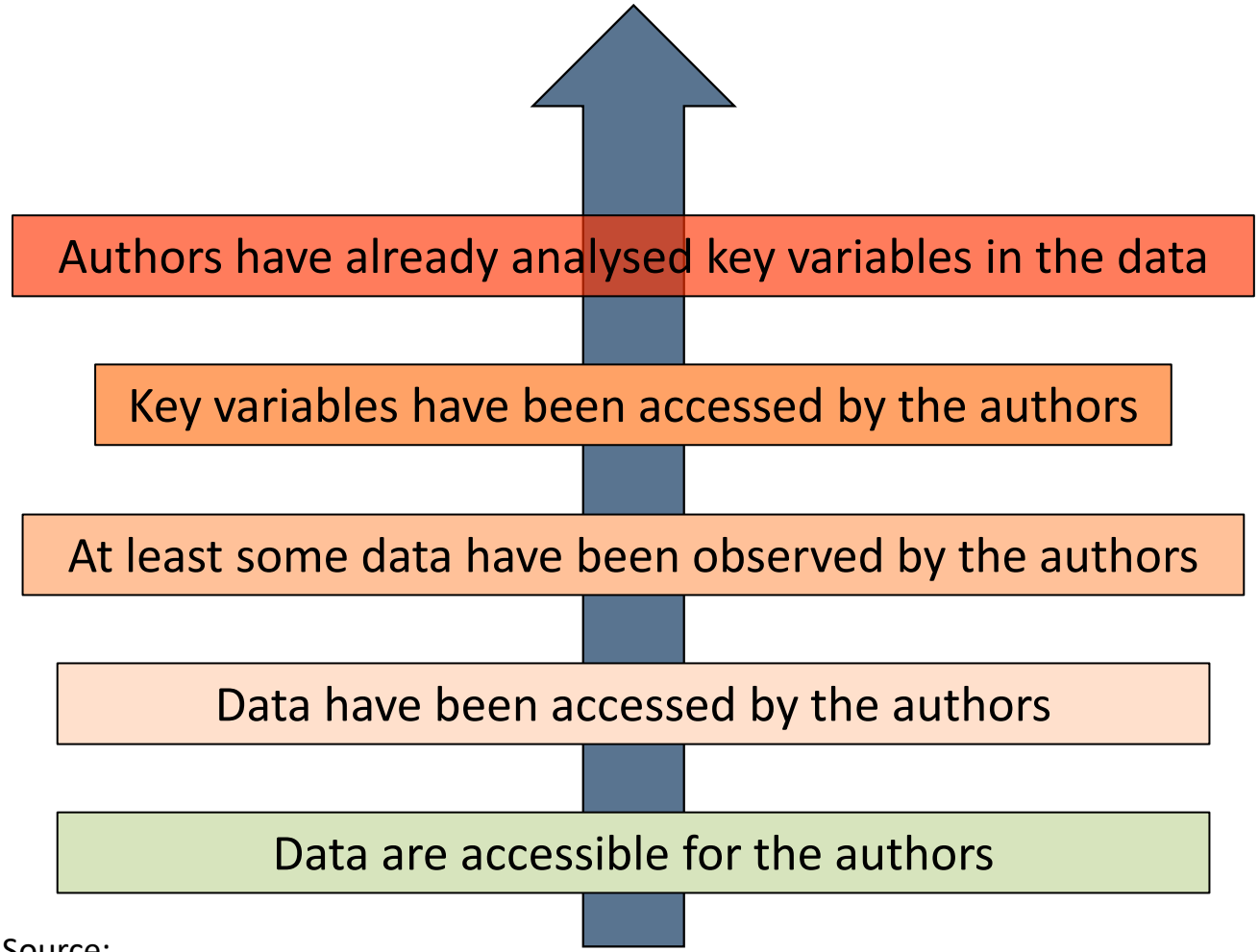
Issue II: Registered Reports with secondary data

Trust vs. Control

Self-certifying (trust)	Providing proof (control)
Freely accessible data sets	Restrict access of data sets

Is it sufficient to trust scientists who have signed an attestation stating that they did not access the data prior to preregistration in order to prevent bias resulting from prior data observation?

Potential risk of bias



Source:
https://rr.peercommunityin.org/PCIRegisteredReports/help/guide_for_authors#h_9579049051
0491613309490336

Issue III: Diversity of participating authors

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GLES German Longitudinal Election Study

Participating Authors in the GLES OSC

		Stage 0: Abstract Submission	Stage 1 Manuscript Submission	Stage 2 Manuscript Submission
Gender				
	female	31%	17%	14%
	male	69%	83%	86%
Academic Status				
	Doctoral Researcher	40%	39%	43%
	Postdoctoral researcher	43%	47%	50%
	Professor	17%	13%	7%
German affiliation				
	yes	78%	70%	79%
(Former) Member of GLES Team				
	yes	16%	9%	7%
(Formerly) Affiliated with University of Mannheim				
	yes	52%	43%	64%
Total	n	58	23	14

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How can we increase diversity in future projects?

Measures to increase diversity

Stage 0 (Abstract)	Stage 1 (Manuscript)	Stage 2 (Manuscript)
Actively recruiting	Actively encouraging	Eliminate the >>inner circle>>
Diversity as central goal	Giving workshops	Establish a more-level playing field
Diverse editorial board	Invite researchers to meetings	
Broaden the journal‘s scope		

Overbaugh 2018; Else & Perkel 2022; Ahmad, Sabat, Trump-Steele, King 2019)

Part III: General Discussions around Registered Reports

Methodological Rigor vs. Theory Development

Szollosi & Donkin (2021):

"Methods based on the exploratory–confirmatory distinction allow researchers to temporarily fix the predictions of their theories […]. This usually takes the form of choosing a set of predictions out of the many possible ones consistent with the theory and stating that these are what the researcher expects."

"Methods-oriented solutions focus on inflexibility where it does not matter but not where it does: Scientists can get a badge as long as the predictions of their theory were temporarily fixed, but hardly anyone cares if the theory could have easily accommodated the opposite predictions."

"[W]e should be placing a greater emphasis on exploring other avenues, particularly nonempirical ways of reducing theory flexibility."

Blinded Analyses: flexible yet fair

Data analysists are kept unaware (blinded) of, e.g.

- treatment assignments („triple blinded experiments“)
- group identities
- outcomes of key variables

to minimize potential biases and ensure objective data analysis and interpretation (MacCoun, R., Perlmutter 2015)

(Figure: Dutilh, G., Sarafoglou, A. & Wagenmakers 2021, S557)

Blinded Analyses: Example Cartoon

(Dutilh, G., Sarafoglou, A. & Wagenmakers 2021)

(Dutilh, G., Sarafoglou, A. & Wagenmakers 2021)

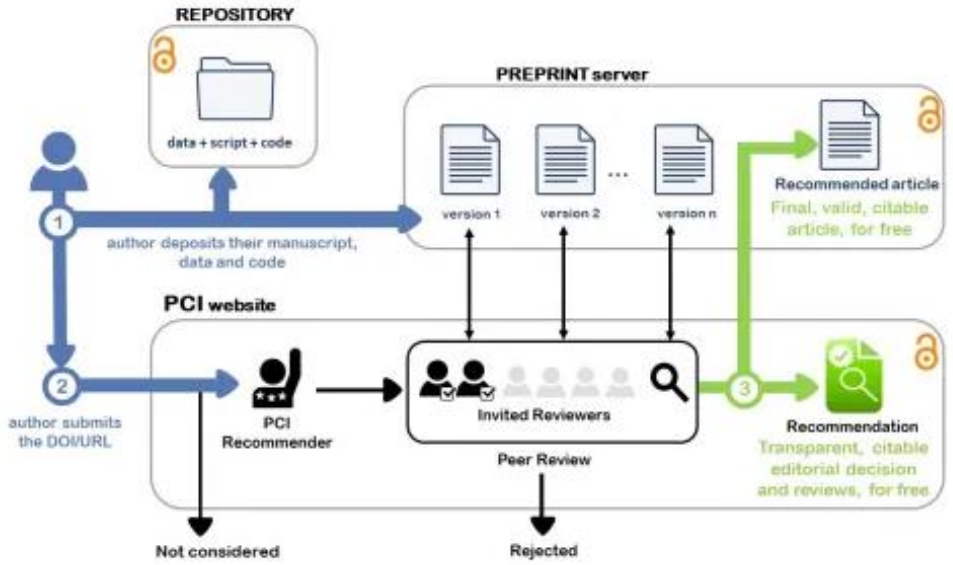
(Dutilh, G., Sarafoglou, A. & Wagenmakers 2021)

Registered Reports Initiatives

Peer Community in

PCI, a free recommendation process of scientific preprints based on peer reviews and a journal

https://peercommunityin.org/



Peer Community In
Registered Reports

Free and transparent pre- and post-study recommendations across research fields

https://rr.peercommunityin.org/

For current RR-Initiatives in Political Science see:

- Journal of Experimental Political Science https://www.cambridge.org/core/journals/journal-of-experimental-political-science/information/faqs-for-registered-reports
- The Journal of Politics https://jop.blogs.uni-hamburg.de/official-start-of-registered-reports/

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