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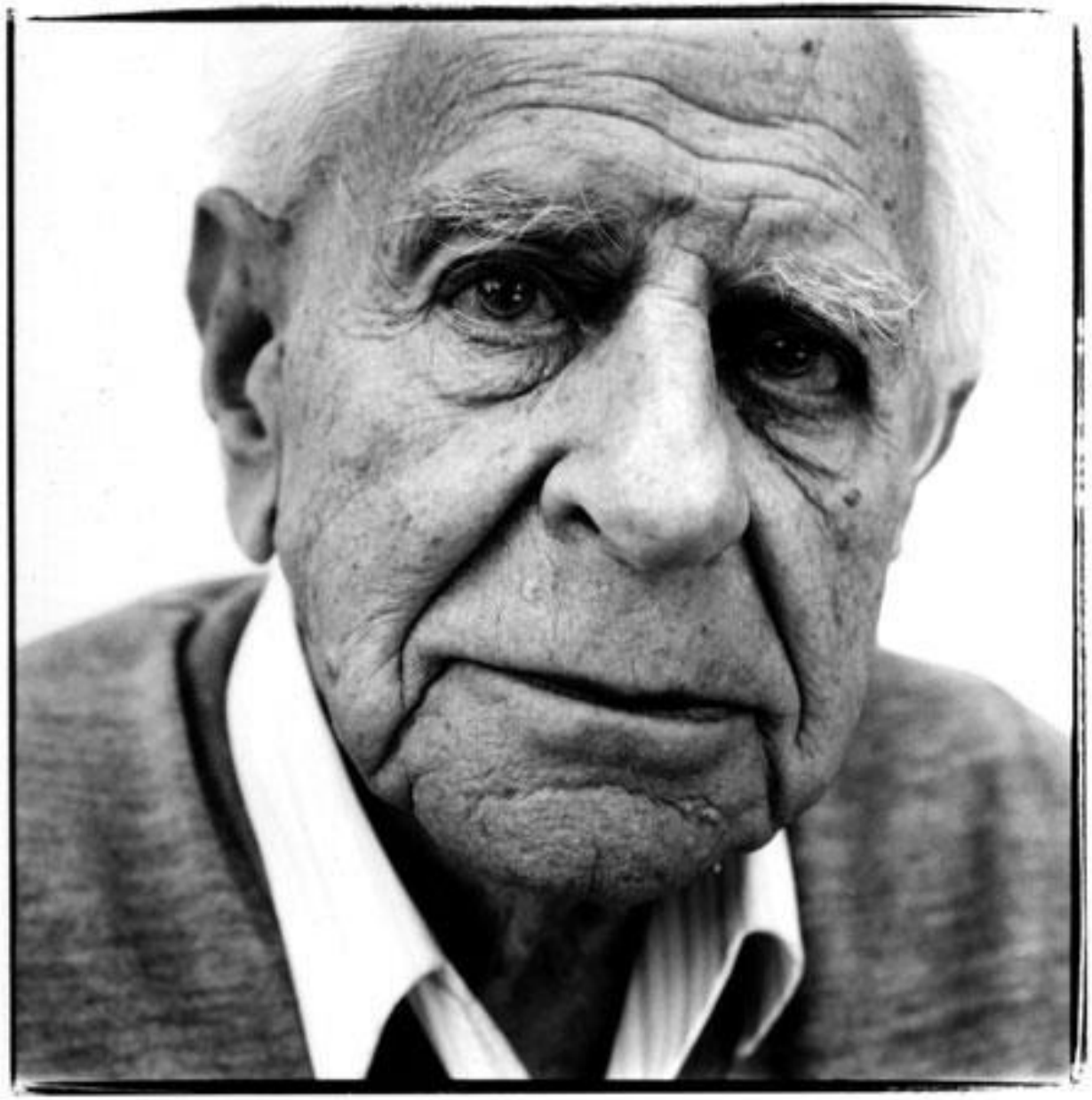
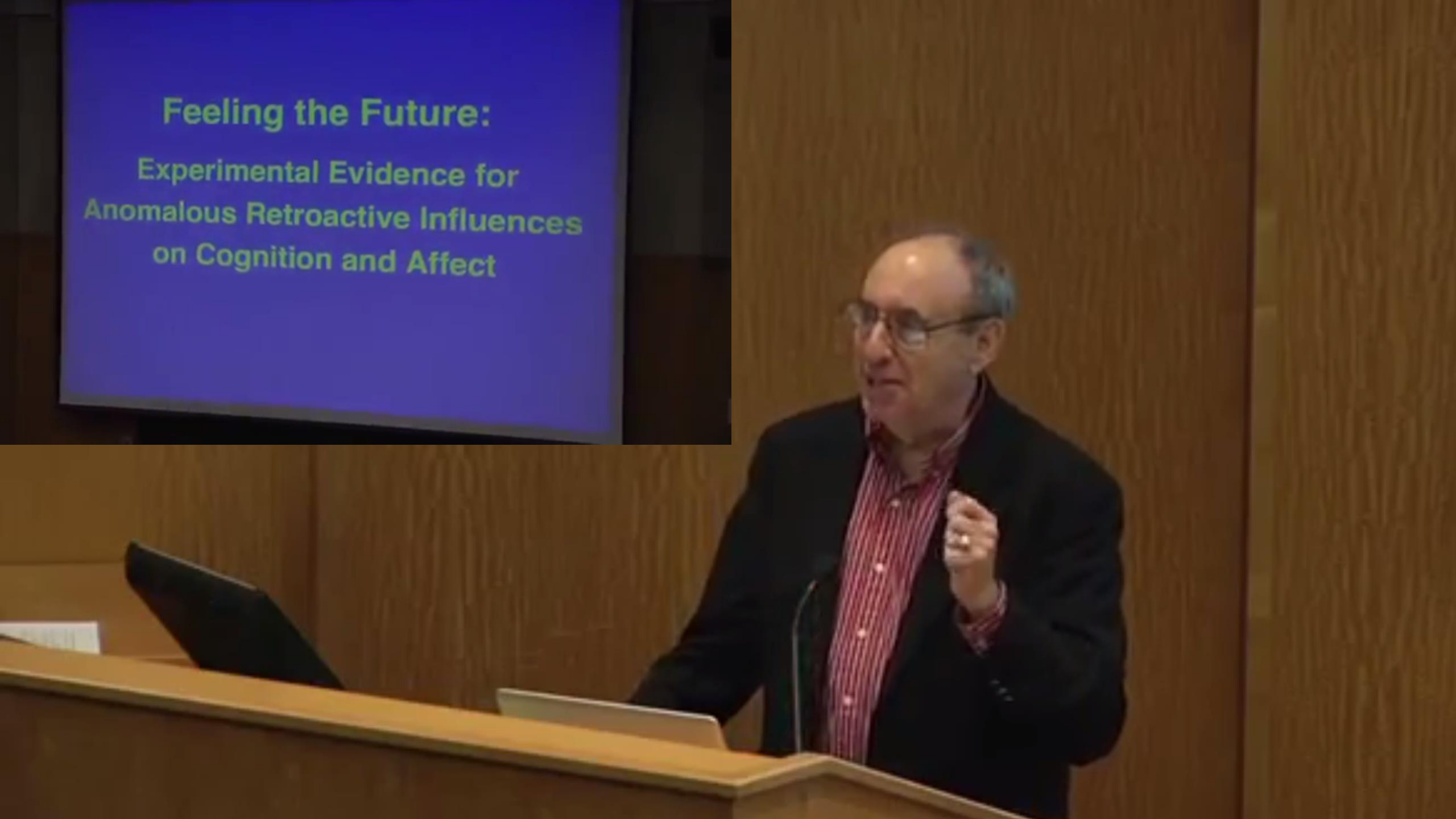


Karl Popper (1959) *The Logic of Scientific Discovery* pp. 23-24.

Only when certain events recur in accordance with rules or **regularities**, as is the case with **repeatable experiments**, can our observations be tested — in principle — by anyone.

We do not take even our own observations quite seriously, or accept them as scientific observations, **until we have repeated and tested them**.

Only by such **repetitions** can we convince ourselves that we are [..] dealing with [..] events which, on account of their **regularity and reproducibility**, are in principle inter-subjectively testable.


Feeling the Future:
Experimental Evidence for
Anomalous Retroactive Influences
on Cognition and Affect

Failing the future: Three unsuccessful attempts to replicate Bem's 'Retroactive Facilitation of recall' effect.

Ritchie, Wiseman, & French, 2012

Elliot Smith, editor of the Journal of Personality and Social Psychology: "***We don't want to be the journal of Bem replications.***"

Correcting the Past: Failures to Replicate Psi

Jeff Galak
Carnegie Mellon University

Robyn A. LeBoeuf
University of Florida

Leif D. Nelson
University of California, Berkeley

Joseph P. Simmons
University of Pennsylvania

Across 7 experiments (N = 3,289), we replicate the procedure of Experiments 8 and 9 from Bem (2011), which had originally demonstrated retroactive facilitation of recall. We failed to replicate that finding. We further conduct a meta-analysis of all replication attempts of these experiments and find that the average effect size (d = 0.04) is no different from 0. We discuss some reasons for differences between the results in this article and those presented in Bem (2011).

Keywords: psi, precognition, ESP, researcher degrees of freedom, meta-analysis

Many journals now explicitly invite (pre-registered) replications

If replications are so very important, why are we only now thinking about how to do them?

There is no such thing as an exact replication.

Schmidt, 2009

Direct replication

Direct replication

Conceptual replication

Theoretical reproduction

Goal 1: Identify Type 1 errors.

Goal 1: Identify Type 1 errors.

With alpha = 0.05, you'll fool yourself 5%, max.

Goal 2: Control artifacts (lack of internal validity).

Goal 3: Generalize to new populations.

Goal 4: Verify underlying hypothesis.

Of 53 promising novel preclinical cancer studies, only 6 (11%) could be replicated

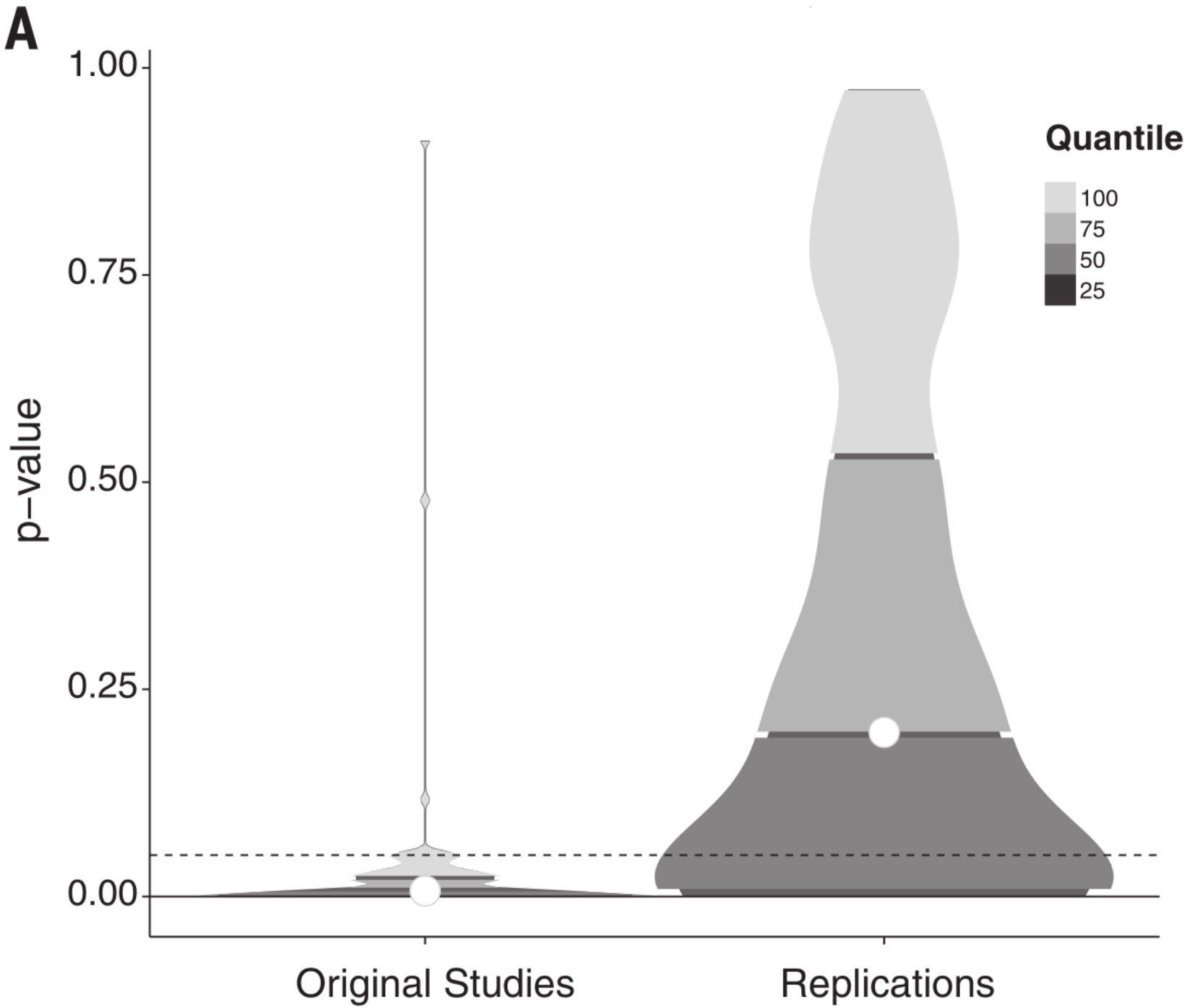
Begley & Ellis, 2012

RESEARCH ARTICLE SUMMARY

PSYCHOLOGY

Estimating the reproducibility of psychological science

Open Science Collaboration*


A
1.00
0.75
0.50
0.25
0.00
p–value
Quantile
100
75
50
25
Original Studies
Replications

Failed replication

≠

Theory not true

‘Troubling Trio’:

Low power, high *p*-value, surprising result.

Lindley, 2015

Perspectives on Psychological SCIENCE
A Journal of the Association for Psychological Science

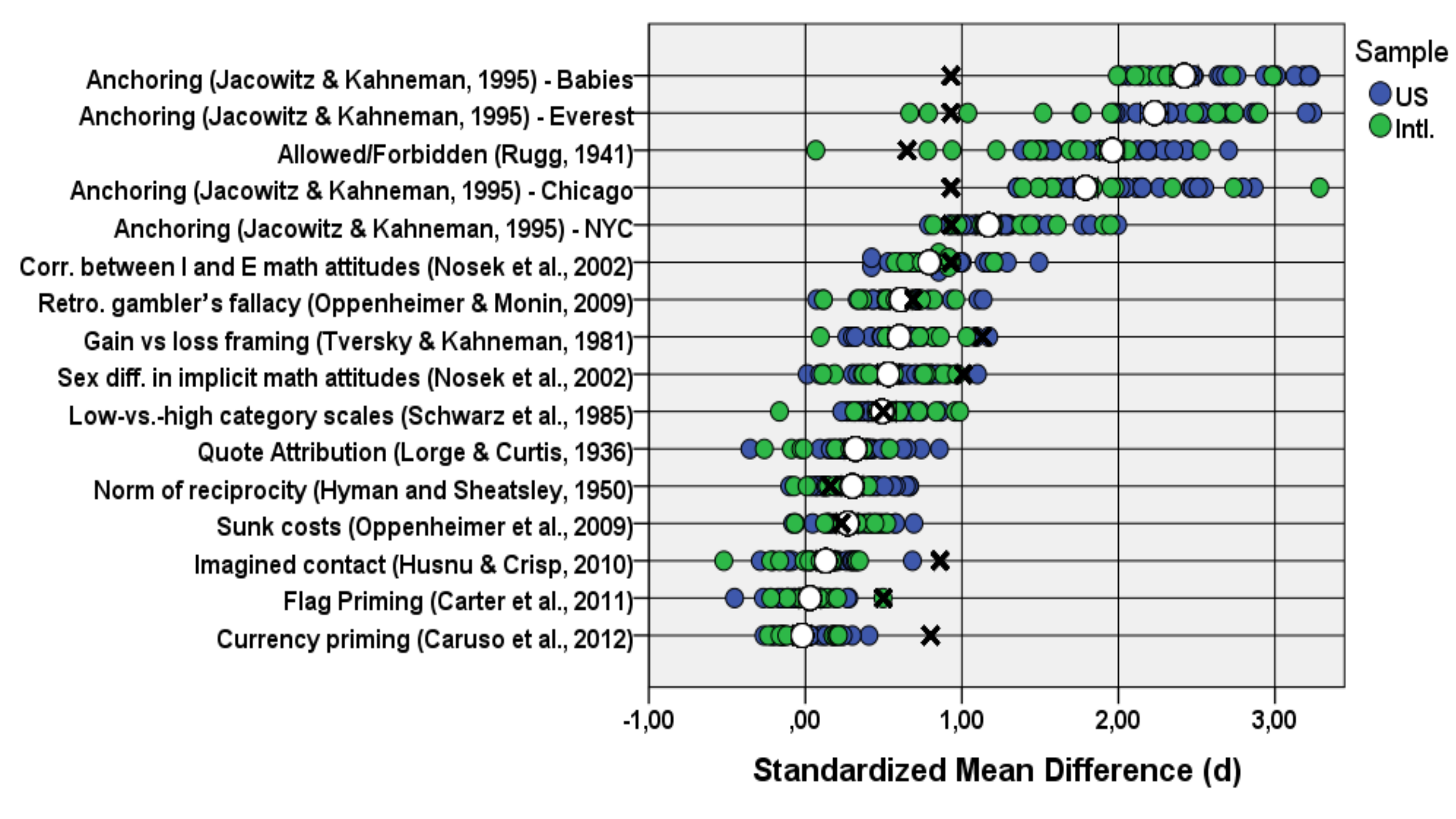
Metascience could rescue the 'replication crisis'

Independent replication of studies before publication may reveal sources of unreliable results, says Jonathan W. Schooler.

04 November 2014

Large collaborative **multi-lab** replication projects

Klein et al., 2014


Anchoring (Jacowitz & Kahneman, 1995) - Babies
Anchoring (Jacowitz & Kahneman, 1995) - Everest
Allowed/Forbidden (Rugg, 1941)
Anchoring (Jacowitz & Kahneman, 1995) - Chicago
Anchoring (Jacowitz & Kahneman, 1995) - NYC
Corr. between I and E math attitudes (Nosek et al., 2002)
Retro. gambler's fallacy (Oppenheimer & Monin, 2009)
Gain vs loss framing (Tversky & Kahneman, 1981)
Sex diff. in implicit math attitudes (Nosek et al., 2002)
Low-vs.-high category scales (Schwarz et al., 1985)
Quote Attribution (Lorge & Curtis, 1936)
Norm of reciprocity (Hyman and Sheatsley, 1950)
Sunk costs (Oppenheimer et al., 2009)
Imagined contact (Husnu & Crisp, 2010)
Flag Priming (Carter et al., 2011)
Currency priming (Caruso et al., 2012)
Sample
US
Intl.
-1,00
,00
1,00
2,00
3,00
Standardized Mean Difference (d)

Always smart: Replication & **Extension**

Replication is a cornerstone of science (but it ain’t easy).