Pre-registration

Results and Discussion

Across all 100 sessions, participants correctly identified the future position of the erotic pictures significantly more frequently than the 50% hit rate expected by chance: 53.1%, $t(99) = 2.51$, $p = .01$, $d = 0.25$.[3] In contrast, their hit rate on the nonerotic pictures did not differ significantly from chance: 49.8%, $t(99) = -0.15$, $p = .56$. This was true across all types of nonerotic pictures: neutral pictures, 49.6%; negative pictures, 51.3%; positive pictures, 49.4%; and romantic but nonerotic pictures, 50.2%.

Bem, 2011

Exploratory Research ⟷ **Confirmatory Research**

Wagenmakers et al, 2012, An Agenda for Purely Confirmatory Research

A random set studies in JPSP reporting results **only** with a **covariate** lacked evidential value.

Simonsohn, Nelson, & Simmons, 2011

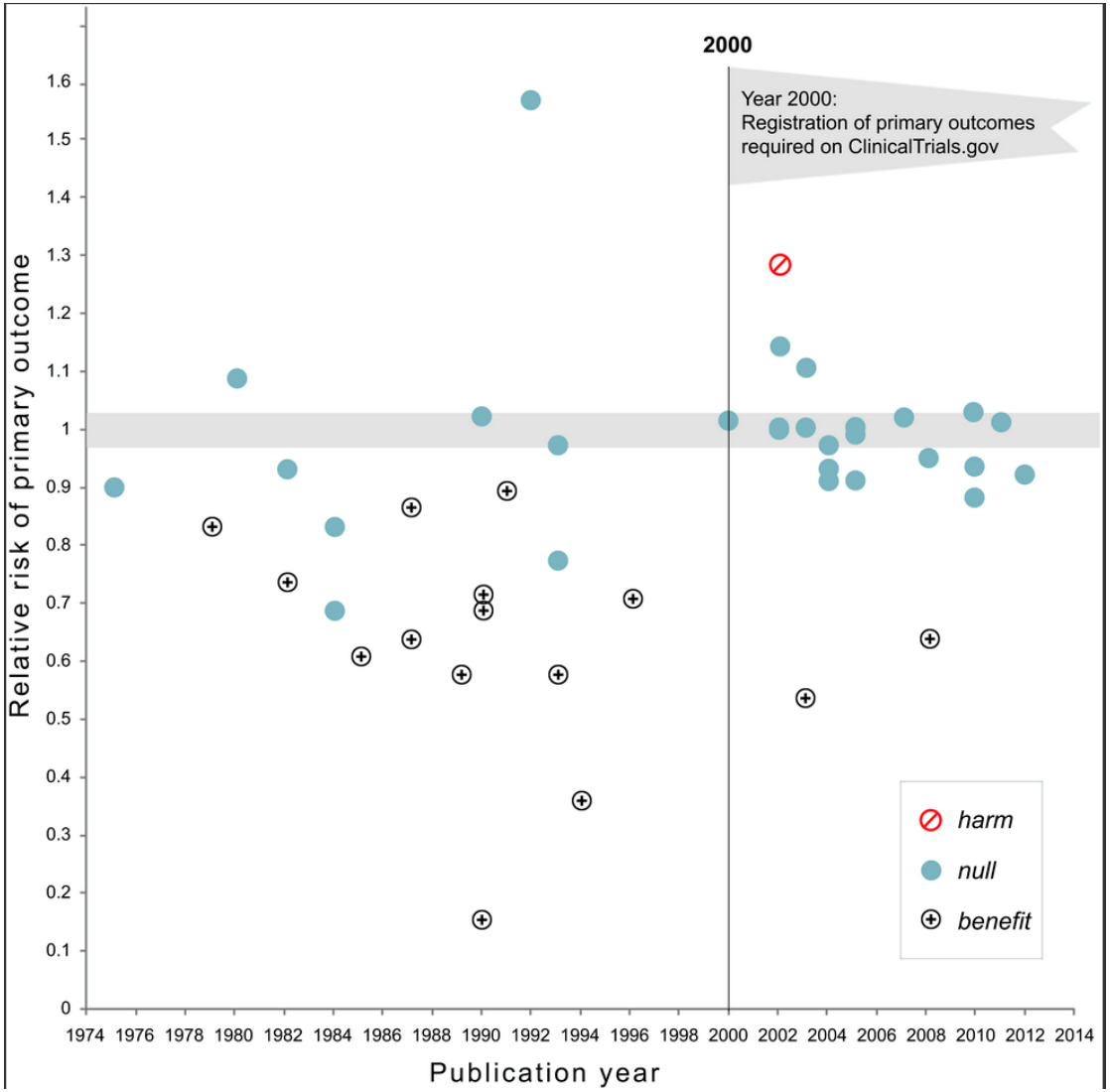
Editorial

Registered Reports

A Method to Increase the Credibility of Published Results

Brian A. Nosek[1] and Daniël Lakens[2]

Pre-registration formalizes Type 1 error control



Prior to 2000, 17/30 studies showed an effect. After pre-registration became required, only 2/25.

Kaplan & Irvin, 2015

Distinguish **confirmatory** from **exploratory** analyses

HARKing: Hypothesizing After the Results are Known

Norbert L. Kerr
Department of Psychology
Michigan State University

When exploring data, you can perform a hypothesis test, but you can not test a hypothesis.

De Groot, 1956

You can’t test a hypothesis on the data used to generate it.

De Groot, 1956

1) Justify your sample size *(stopping rule)*

2) Specify IV and DV for each test.

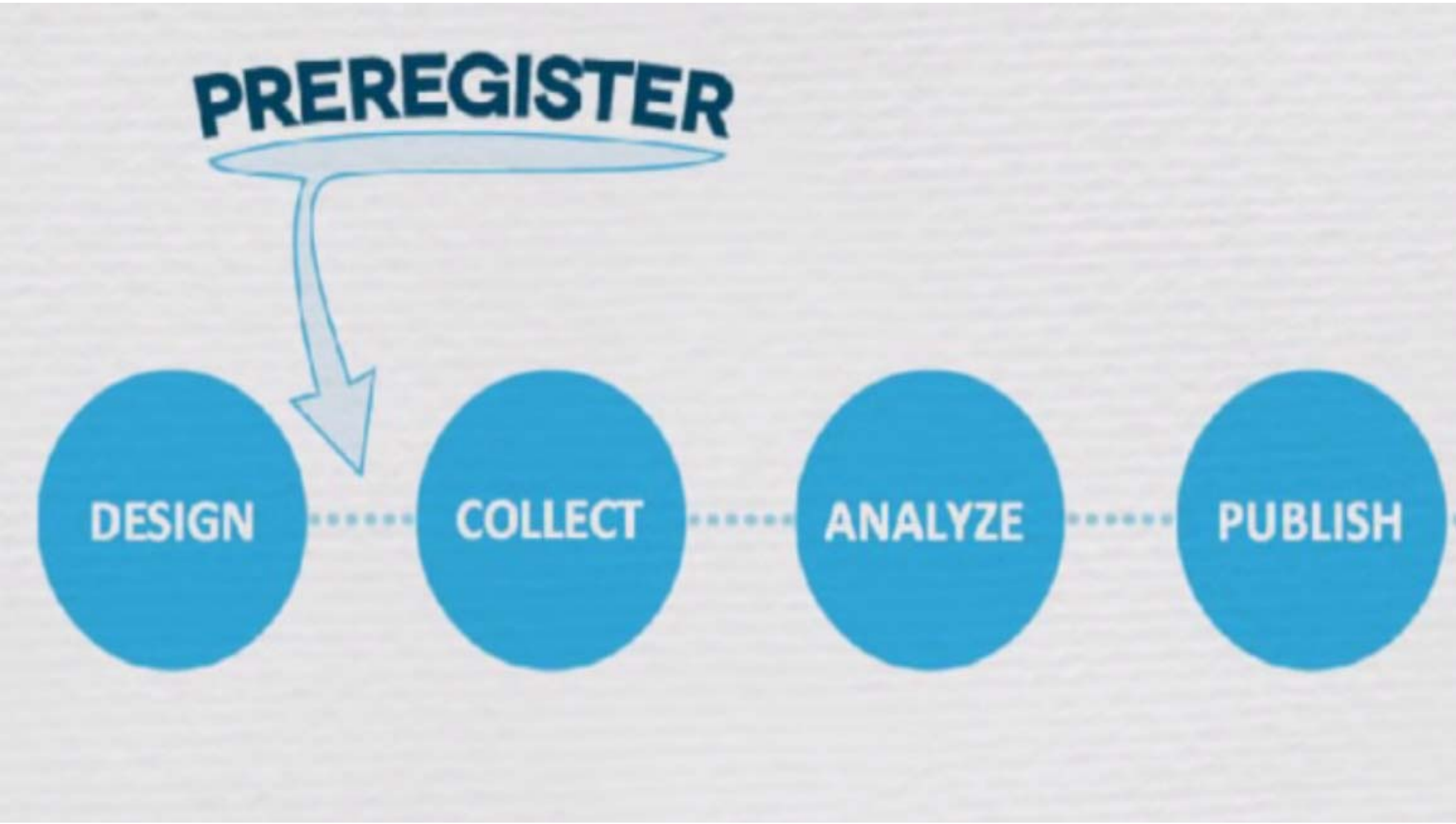
3) Describe the analysis plan (α, data cleaning)

Perspectives on Psychological SCIENCE

A Journal of the Association for Psychological Science

Registered Replication Report

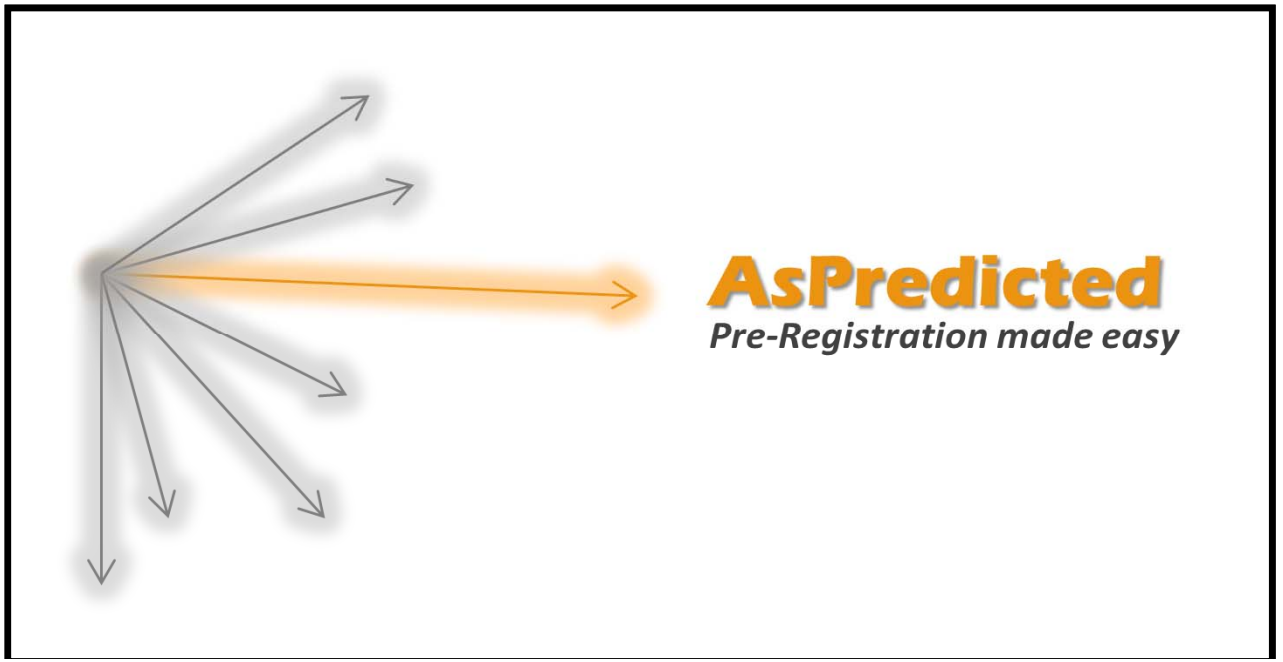
Schooler and Engstler-Schooler (1990)


PREREGISTER
DESIGN
COLLECT
ANALYZE
PUBLISH

Other benefits: You can do *less* conventional but *more* efficient designs

Open Science Framework

Total	268109
Files	232554
Users	22210
Projects	5056
Registrations	4320



Pre-registration controls error rates and can prevent publication bias