

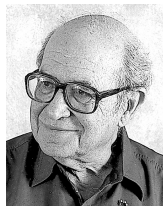
# Review of Jacob Cohen's The Earth is Round ( $p < .05$ )

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October 6, 2024

# An Introduction to Cohen's Paper

- ▶ Scientific advancement has been hindered by null hypothesis testing (NHST)
- ▶ Researchers often misinterpret p-values resulting in mistakes in what can be concluded
- ▶ Critique the "ritualization" of NHST
- ▶ Focus on real-world relevance



- ▶ Argues for better scientific practices

# On Null Hypothesis Significance Testing

- ▶ Definition: Method of statistical inference by which an experimental factor is tested against a hypothesis of no effect or no relationship based on a given observation
  - ▶ In other words: Null vs Alternate
- ▶ p-values determine the significance threshold
- ▶ NHST dominates science

## A Ritualization of Reasoning ( $p < .05$ )

- ▶ Cohen argues against the rigid reliance on p-values
- ▶ 133 registrants through Clubear, our partner in China, thank Prof. Hansheng Wang, Peking University

	Result	Normal	Schiz	Total
▶ Schizophrenic	Negative Test (Normal)	949	1	950
	Positive Test (Schiz)	30	20	50
	Total	979	21	1,000

# Misinterpretation of p-values

- ▶ Alison Lukan, Seattle Kraken Contributor and TV Analyst for Root Sports
- ▶ Brian Macdonald, Lecturer, Department of Statistics and Data Science, Yale University
- ▶ Gregory J. Matthews, Associate Professor, Statistics, Loyola University Chicago
- ▶ Lauren (Poe) Parolin, Sports Analytics Developer, ESPN
- ▶ Jun Yan (Chair), Professor of Statistics, University of Connecticut

# The Illusion of Proof

- ▶ Virtual participants: put questions into the Q/A window in WebEx
- ▶ In-person participants: walk to a microphone and wait to be called upon before asking your question
- ▶ Lunch on your own (Student Union food court right next door)x
- ▶ Coffee/cookies available during the poster session (11:30–13:30)
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