



Land Acknowledgement

I am on the traditional territories and ancestral homelands of the Arapaho, Cheyenne, Ute and many other Native American nations.



The Time is (Probably) Ripe for Change

Moving Descriptive Psychology Into the Mainstream

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Overview

- Audiences
- My Favourite Topic
- Signs of Change
 - Using Better Statistical Tools Correctly
 - Openness and Transparency
 - Coherent Theoretical Approaches
- Three-Pronged Strategy
 - Demonstrate the Benefits of Conceptual Investigation
 - Teach the Basics
 - Use the Maxims Publicly (and Often)



My Favourite Topic



Null Hypothesis Significance Testing

- Paul Meehl (1967)

“ . . . a potent but sterile intellectual rake who leaves in his merry path a long train of ravished maidens but no viable scientific offspring.”

- Jacob Cohen (1994)

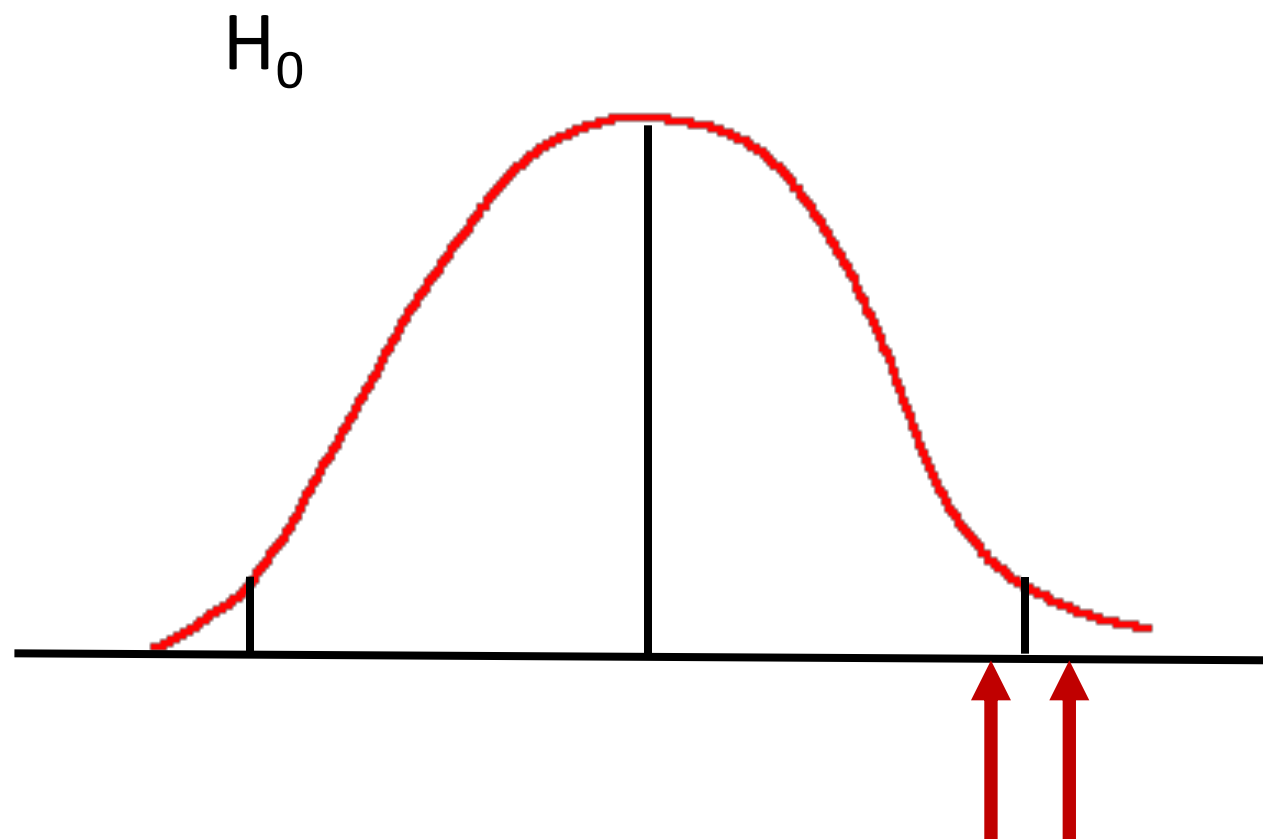
“NHST has not only failed to support the advance of psychology as a science but also has seriously impeded it.”

- *American Statistician* Editorial (2019)

“Don’t Say ‘Statistically Significant’.”

WHY Are They Saying This?

Typical Lecture Slide





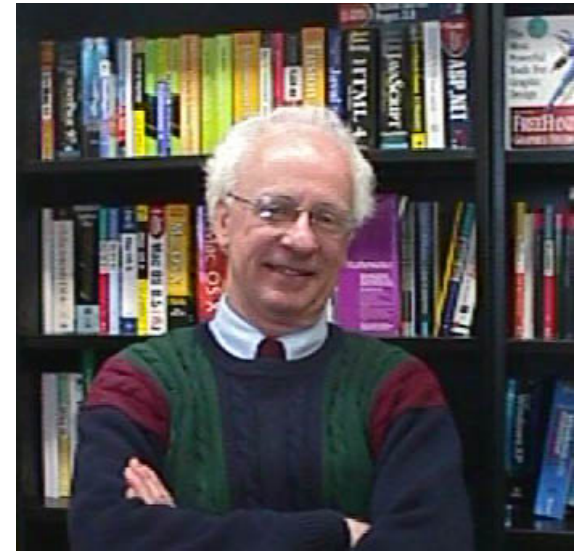
A Cogent & Correct Syllogism

- If a Person is a Vulcan, He/She is Not a DP
- This Person is a DP
- Therefore, This Person is Not a Vulcan



BAD Logic

- If a Person is an Adult, He/She is *Probably* Not a DP
- This Person is a DP
- Therefore, This Person is Not an Adult

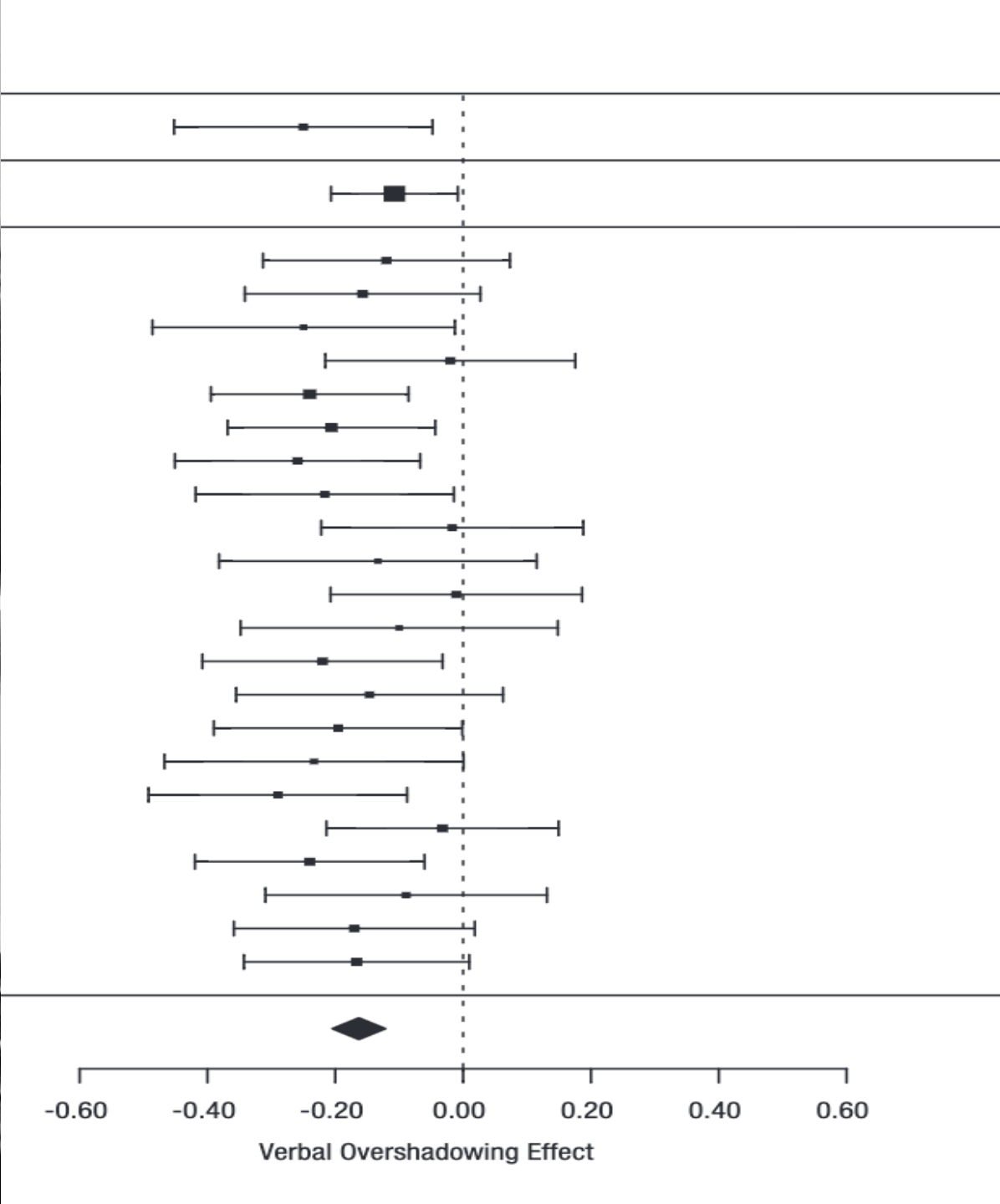




p Values Are NOT Great

- Sample Size Sensitive
- Problematic Assumptions
 - Random Sample
 - No Censored Data
- NO Info About Effect Size





Why Am I Encouraged?

- The “Permanent Illusion”
- Statistical Literacy Problem
- Not Just One Tool for Another . . .



Compute the standard deviation for 15, 15, 19, 21, 13, 13

1st compute mean, $\bar{x} = \frac{\sum x}{n} = \frac{15+15+19+21+13+13}{6} = \frac{96}{6} = 16$

2nd Remember the formula for standard dev.

$$S = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}}$$

3rd Lay out table using order of operation

x	x - \bar{x}	(x - \bar{x}) ²
13	13 - 16 = -3	(-3) ² = 9
13	13 - 16 = -3	(-3) ² = 9
15	15 - 16 = -1	(-1) ² = 1
15	15 - 16 = -1	(-1) ² = 1
19	19 - 16 = 3	(3) ² = 9
21	21 - 16 = 5	(5) ² = 26

$\sum (x - \bar{x}) = 0$ always 0
 $\sum (x - \bar{x})^2 = 54$

$$S = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}} = \sqrt{\frac{54}{5}} = \sqrt{10.80} = 3.29 \leftarrow 3.286$$





BUT THAT'S NOT ALL . . .

Openness and Transparency

- False-Positive Psychology (Simmons, Nelson, & Simonsohn, 2011)
 - ‘According to their birth dates, people were nearly a year-and-a-half younger after listening to “When I’m Sixty-Four” rather than to “Kalimba”.’
- P-Hacking
- A Good Explanation for the Replication Crisis
- What’s the Replication Crisis?
 - ~~Ego Depletion Effect~~
 - ~~Facial Feedback Hypothesis~~
 - ~~Moral Reminders Effect~~
- Responses:
 - Defensiveness and Hostility (of course)
 - BUT



Real Change



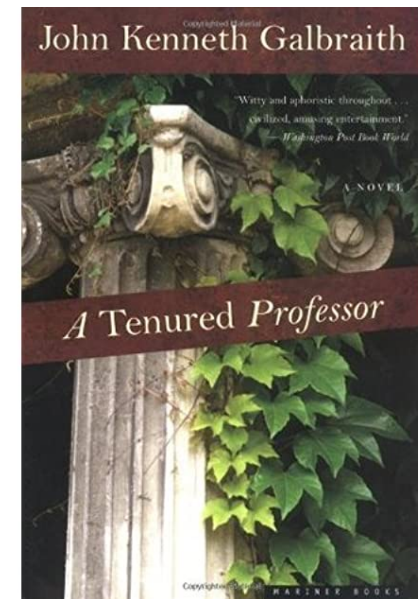
VIEW THE **BADGES:**

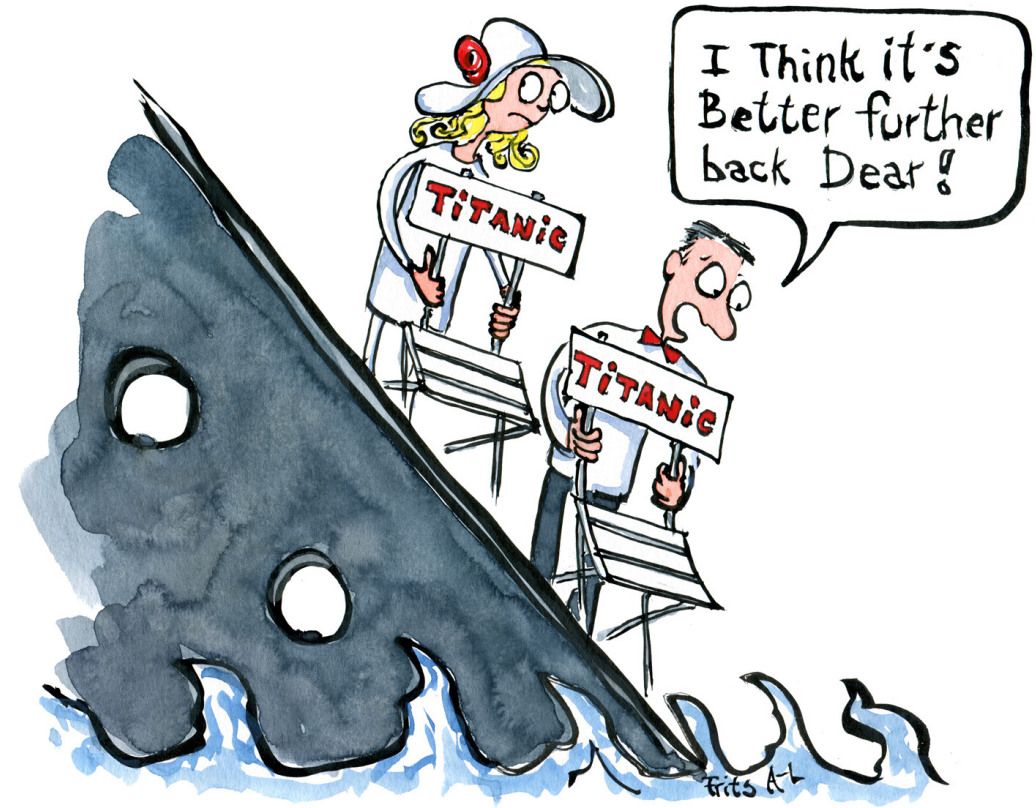


An Introduction to Registered Replication Reports at *Perspectives on Psychological Science*

Daniel J. Simons¹, Alex O. Holcombe², and Barbara A. Spellman³

¹University of Illinois, ²University of Sydney, and ³University of Virginia





Beyond Methods . . . THEORY!

nature
human behaviour

PERSPECTIVE

<https://doi.org/10.1038/s41562-018-0522-1>

A problem in theory

Michael Muthukrishna ^{1*} and Joseph Henrich ^{2,3}

Two kinds of theory: What psychology can learn from Einstein

Marek McGann 
Mary Immaculate College

Craig P. Speelman 
Edith Cowan University

Taken Together . . .

- A Remarkable Period of Critical Self-Reflection
- If There Was Ever a Time . . .



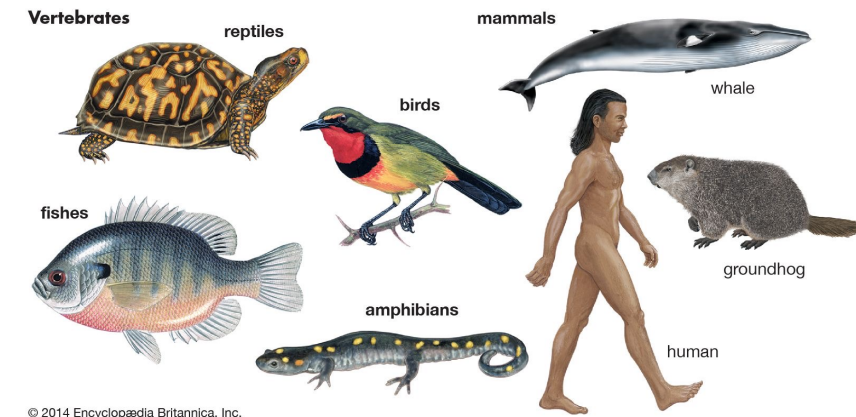
What Should We Do?

- Concepts
- Teaching – But What to Teach?
- Use the Maxims Publicly and Often



Focus on One of Our Strengths: Concepts

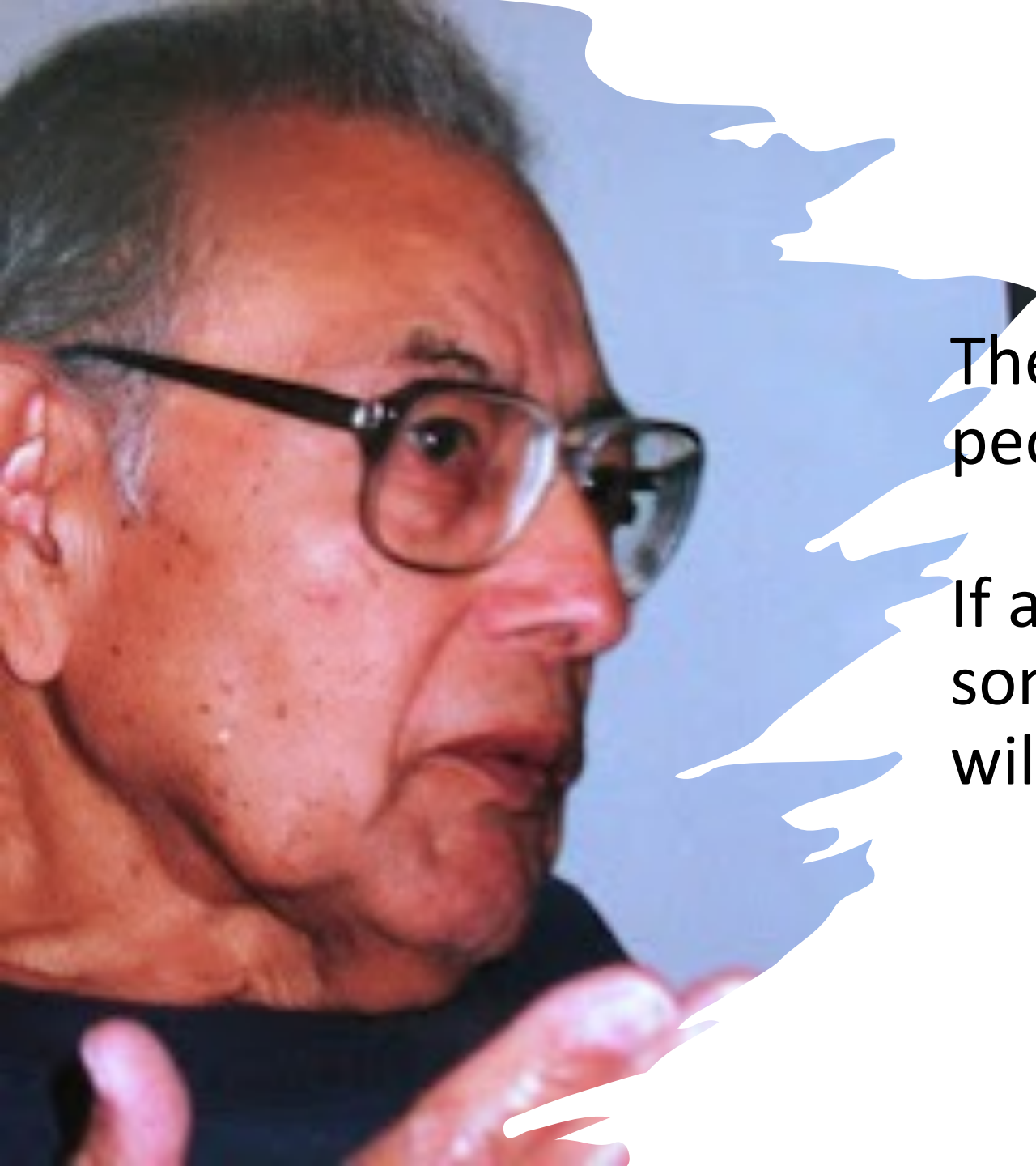
- The Poor(est) Cousin in Psychology
- Conceptual Clarity
 - Show How Poor Concepts Muddy the Waters
 - Showcase Our Tools
 - People Are Receptive!



Students!



- The Problem of Legacy in DP
- Teach Senior Undergrads and Grads the Basics
- My Own Course
- More Advanced Students
 - The Advantages of PCFs and Parametric Analyses
 - Example From My Own Research



Maxims

The world makes sense, and so do people. They make sense now.

If a situation calls for a person to do something [they] can't do, [they] will do something [they] can do.

Your Ideas?

