

# Sizing up Psi in a University Classroom: Exploration, Acceptance & Skepticism

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## *Class on Research in Psi Phenomena: Edges of Science*

- psi = “*supposed* psychic faculties or phenomena” (Oxford English Dictionary)
- How to teach as an acceptable university course?
  - The approval process
  - Provided Core-Curriculum credit in “Critical Thinking,” not Science
  - Offered as Honors seminar course
- How would in-depth knowledge affect students’ view of the existence of psi?

# *Acceptance of the Existence of Psi*

## Before course

Absolutely ✓✓

Probably ✓✓✓✓

Possibly ✓✓✓✓

Highly doubtful ✓✓✓

No way

## After ???

Absolutely

Probably

Possibly

Highly doubtful

No way

## *Course Format*

- Reading research papers, summary texts & articles
- Class discussions. Divided into three groups:
  - Advocates, Skeptics & Interrogators
- Rigorous experimental research projects

# Topics

- History of maverick science success & failures
- The “scientific method”
  - Hypothesis  $\Rightarrow$  experiment  $\Rightarrow$  conclusion: an artificial construct
  - Falsifiability: necessary
- Statistical analysis
  - Statistical significance & inference
    - *Unconvincing for some*
- Psi research
  - Telepathy
  - Remote perception
  - Psychokinesis
  - Precognition; logic & retro-causality (*mind bending*)
  - Remote healing
  - Models
  - Reproducibility & experimenter effect
    - *Most troubling aspect of phenomena*
- Skepticism & debunking

## *Experimental Projects*

1. Telepathy among intimate partners
2. Intention & random number generators
3. Intention & staring
4. Physiological effects of Feng Shui
5. Premonitions
6. Retroactive intercessory prayer & holocaust survival
7. Effect of “meanspeak” on plant growth

# *1: Telepathy among Intimate Partners*

*Kristen Walker & Tehani Pestalozzi*

- Motivation
  - Tibetan tradition: strong karmic connection between intimate partners lasts 7 years after an encounter
- Approach
  - Sensing whether room on other side of brick wall contains: partner, stranger, or no one
- Hypothesis
  - Hit rate for trials involving receiver's partner should be greater than 33.3%
- Experiment
  - 504 trials
    - 7 couples together 3-10 years, 4 couples 11-22 yrs
  - Protocol set out in advance
  - Carefully managed so receiver saw & heard no one

# *Telepathy among Intimate Partners: Results*

*Kristen Walker & Tehani Pestalozzi*

- Chance would be 33.3% correct
- Success between partners: 38.3%
  - Success rate between partners of fewer than 10 years: 44.4%
- Success between strangers: 28.8%
  - If opposite sex: 35.1%
- Success rate for empty room: 28.6%
- p-values
  - Overall: 0.23
  - Related samples t-test comparing hits ratio for partner *versus* stranger or empty room: 0.034 ⇒ statistically significant



## *2: Intention & Random Number Generators*

*Stacia Roberts & Doug Schuyler*

- Using psychokinesis to affect output of random number generators (RNGs)
  - Used Orion Electronics RNGs with Orion software package
- Looked at change in success rate over time
- 540 trials
- Results
  - No clear trend in hit rate over time
  - Overall p-value: 0.012  $\Rightarrow$  statistically significant

# *3: Intention & Staring*

*Meg Risley & Danielle Summerlin*

- Motivation
  - To determine whether intention during staring affects one's ability to sense the stare
- Hypothesis
  - Staring with intention will be sensed better than without
- Experiment
  - 1073 trials
  - All trials videotaped for experimenter to monitor
    - Note: student experimenters were aware of studies showing that subjects could sense being stared at via TV, but considered it "rather ridiculous"
- Results
  - No consistent trend with intention  $\Rightarrow$  null result
- Professor's comment
  - TV monitoring was major confounding variable

## 4: *Physiological Effects of Feng Shui*

*Katie Couch & Kevin Harshman*

- Motivation
  - To measure effects of Yin and Yang surroundings *versus* Feng Shui
- Hypothesis
  - A Yin environment will produce relaxation and a Yang environment will produce agitation compared to a balanced Feng Shui environment
- Experiment
  - 23 x 3 trials in Yin, Yang & balanced Feng Shui rooms
  - Subjects blindfolded
  - Pulse rate of subjects measured before & after exposure to environments
- Results
  - Yang environment: no significant effect (p-value = 0.97)
  - Yin environment: *higher* pulse (p-value = 0.0007) ⇒ psi missing?
  - Confounding variable? (e.g., candle, individual's presence)

## *5: Premonitions*

*Suzanne Spiegel & John Christiansen*

- Motivation
  - To analyze psi in natural, non-laboratory conditions
- Procedure
  - Gathered 30 premonitions and categorized them
    - Subjects: Death in family, 9/11, traffic citation, etc.
- Conclusions
  - 70% premonitions of negative events
  - 48% concerning family, 23% concerning self
  - Appear to prepare for & possibly prevent misfortune
  - Difficult to assess probability that premonitions were due to chance
  - Persons having premonitions develop strong sense as to whether they are accurate

## 6: *Retroactive Intercessory Prayer & Holocaust Survival*

*Michelle Bedard & Amy Cacace*

- Motivation
  - Intercessory prayer studies including retroactive effect on bloodstream infection published by Leibovici
- Hypothesis
  - Retroactive intercessory prayer would affect survival rate of Auschwitz concentration camp prisoners
- Experiment
  - List of 178 survivors and 363 non-survivors generated
  - 277 randomly assigned to prayer group & 264 to non-prayer group (double blind)
  - 17 people prayed for prisoners represented by the number 277
    - People praying *not* told experiment was retroactive
- Results
  - Within chance  $\Rightarrow$  null result
    - Prayer group p-value = 0.85
    - Control group p-value = 0.98
  - Might be better to pray for results that lie on a continuum, to allow for subtle influence

## *7: Effect of “Meanspeak” on Plant Growth*

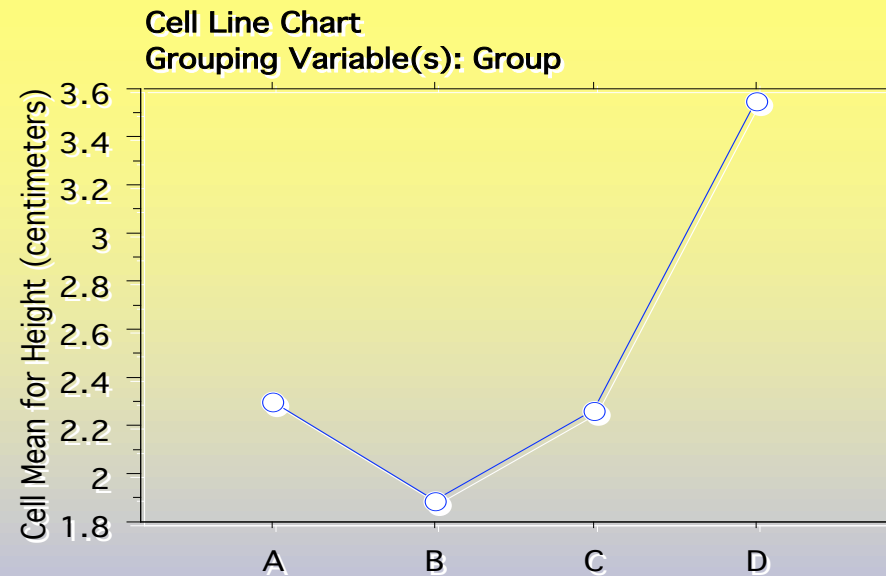
*Jesse Rains*

- Hypothesis
  - Plants will respond to negative human communication with reduced rates of vertical growth
- Experiment
  - 100 seeds divided into four groups & allowed to germinate
    - A: Exposed to plant cutting & meanspeak (15 min/week)
    - B: Exposed to plant cutting only
    - C: Exposed to meanspeak only
    - D: Neither
  - Treated identically otherwise
  - Measured height & germination rate using ruler and camera

# Effect of “Meanspeak” on Plant Growth

Jesse Rains

- Results



A: Exposed to plant cutting & meanspeak  $p = 0.0007$

B: Exposed to plant cutting only  $p < 0.0001$

C: Exposed to meanspeak only  $p = 0.0003$

D: Neither (control)

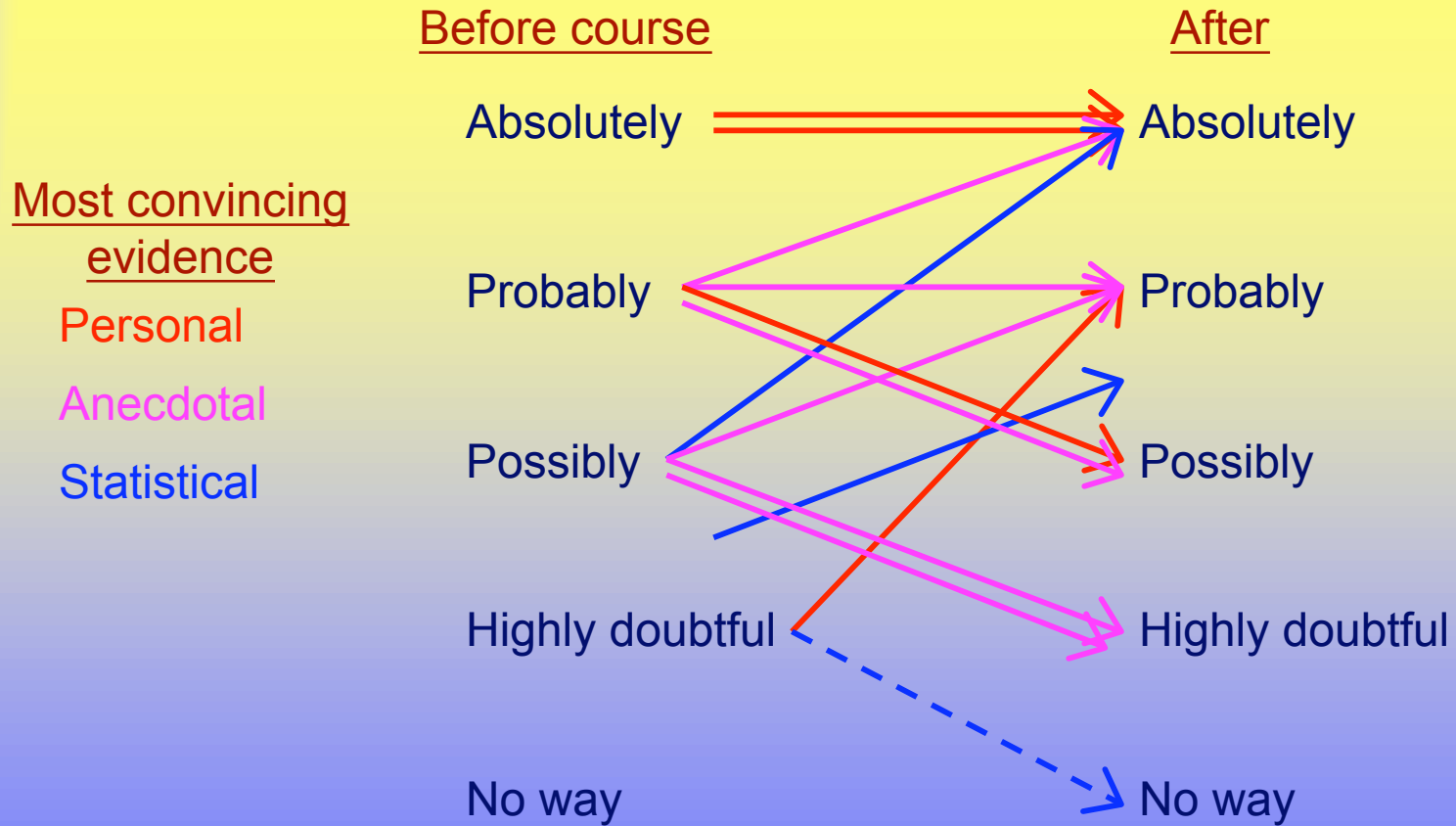
⇒ Statistically highly significant

## *Acceptance of the Existence of Psi*

<u>Before course</u>		<u>After</u>	
Absolutely	✓✓	Absolutely	✓✓✓✓
Probably	✓✓✓✓	Probably	✓✓✓
Possibly	✓✓✓✓	Possibly	✓✓✓
Highly doubtful	✓✓✓	Highly doubtful	✓✓
No way		No way	✓



# Acceptance of the Existence of Psi



## *Does this course belong in a university curriculum?*

Surveyed at end of course

Absolutely ✓✓✓✓✓✓✓✓✓✓✓✓✓✓

Probably ✓

Possibly

Probably not

No way

## *Conclusions*

- In course
  - Students were exposed to real issues in the scientific method through experimentation
  - Students participated in critical thinking, with no obvious correct answer
- Among intelligent people who are knowledgeable about psi research, a fully convincing case for the existence of psi has not yet been made

P.S.: This is what tenure is for!