

I. The Beauty and Necessity of Good Research Design

A. Improving the condition of autistic children (facilitated communication was an extraordinary claim that didn't rule out the hypothesis that the facilitators were typing their own thoughts giving false hope to families)

B. Why We Need Research Designs

1. They help us to avoid tragic deception (facilitated communication & lobotomy)

C. How We Can Be Fooled: Two Modes of Thinking

1. System I thinking / Intuition: first impressions / gut feelings / quick

2. System II thinking / Analytical thinking: slow & reflective / reasoning / can override intuition

3. Heuristic: a mental short-cut or rule of thumb (Intuitive thinking)

II. The Scientific Method: Toolbox of Skills

A. Naturalistic Observation: Studying Humans "In the Wild"

1. Naturalistic observation: watching participants' behavior in real-world settings without trying to manipulate their actions

2. Robert Provine investigated human laughter

3. high external validity: the extent that our findings generalize to the real-world

4. low internal validity: the extent to which we can draw cause-effect relationships

B. Case Study Designs: Getting to Know You

1. case study: researchers examine one person or a small group often over long periods of time

2. existence proofs: demonstrations that a given psychological phenomenon can occur

3. Provide a valuable opportunity to study rare or unusual phenomena that are difficult or impossible to recreate in the lab

4. can be helpful in generating hypotheses, but tend to be quite limited for testing them

C. Self Report Measures and Surveys: Asking People about Themselves & Others

1. Random Selection: the key to Generalization → every person in the population has an equal chance of being chosen to participate

a. Nonrandom sampling can cause horribly skewed results as in Shere Hite's

Report on Love, Passion, and Emotional Violence in 1987

2. Evaluating Measures:

a. Reliability: consistency of measurement

i) test-retest: the same test conducted at different times yields the same results

ii) interrater: the extent to which different researchers agree on the characteristics they are measuring

b. Validity: the extent to which a measure assesses what it claims

c. Phrasing is Everything

3. Advantages and Disadvantages of Self-Report Measures

a. Advantages: easy to administer & some tests work reasonably well

b. Disadvantages: assumption of insight & honesty in answers

i) response sets: tendencies to distort answers in a way that paints them in a positive light

ii) malingering: the tendency to make ourselves seem psychologically disturbed with the aim of achieving a clear-cut personal goal

4. Rating Data: How do they rate?: ratings are given by people who know the subject

a. Halo effect: ratings of one positive characteristic spill-over to influence the ratings of other positive characteristics

D. Correlational Designs: psychologists examine the extent to which two variables are associated

1. Identifying correlational Designs: "associated", "related" & "linked"

2. Correlations: A beginner's guide

a. can be positive, zero, or negative

b. correlation coefficients range in value from -1 to 1

3. The scatterplot: a grouping of points on a two dimensional graph

a. psychology is a science of exceptions

4. Illusory Correlation: the perception of a statistical association between two variables when none exists

5. Illusory Correlation and Superstition: Superstitions stem from illusory correlations

6. Why we fall prey to illusory correlation

a. our uneven attention to the different cells in the Great Fourfold Table of Life leads us to perceive illusory correlations

7. Correlation versus Causation: Jumping the Gun

a. Correlation doesn't necessarily mean causation, but it can sometimes

E. Experimental Designs: when performed correctly they permit cause-and-effect inferences. Differences among participants are created

1. What Makes a Study an Experiment: Two Components

a. Random assignment of participants to conditions (experimental & control)

b. Manipulation of an independent variable (only in experimental group)

i) independent variable: the variable that the experimenter manipulates

ii) dependent variable: the variable that is measured to draw conclusions

iii) operational definition: a working definition of what specifically is being

2. Confounds: A source of false conclusions → only variable other than the measured

independent variable that is different between the experimental & control groups

3. Cause and Effect: Permission to infer only if the design is experimental

4. Pitfalls in experimental Design

a. The Placebo Effect: improvement resulting from the mere expectation of improvement

i) blind: patients must not know whether they're receiving the real medication or

a placebo (can be as powerful as the actual medication)

b. The Nocebo Effect: harm resulting from the mere expectation of harm

c. The Experimenter Expectancy Effect (Rosenthal effect): a researcher's hypotheses

lead them to unintentionally bias a study's outcomes.

i) double-blind: Neither the researchers nor the participants know who is

in the experimental group or the control group

ii) Demand Characteristics: cues from an experiment that allow research participants

to generate guesses regarding the researcher's hypotheses

III Ethical Issues in Research Design

A. The scientific study of people and their behavior raises unique concerns

B. Tuskegee: A Shameful Moral Tale

1. 399 poor African American men infected with syphilis were knowingly left untreated without their consent/knowledge of the study

C. Ethical Guidelines for Human Research

1. Every major American research college/university has at least one institutional review board (IRB) that reviews all research to protect participants from abuse

2. Informed consent: Researchers must tell subjects what they are getting into before asking them to participate

a. deception is justified only when the researchers couldn't have performed the study without deception AND the scientific knowledge to be gained from the study outweighs its costs

3. Debriefing: Educating Participants about the study & its hypotheses