

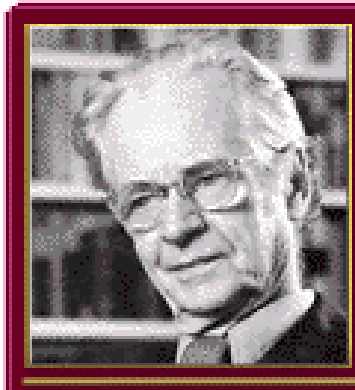
The Science of Psychology



Major Perspectives in Psychology

- ▶ Behavioral
- ▶ Psychodynamic
- ▶ Cognitive
- ▶ Biological (Behavioral genetics, neuroscience, & evolution)

Behavioral



- ▶ Focus on external events that influence human behavior.
- ▶ Reinforcement and Punishment determines how humans behave.

Psychodynamic

- ▶ Internal drives
 - Sex, hunger, survival
- ▶ Unconscious desires
- ▶ Childhood experiences
- ▶ Repressed memories



Cognitive Perspective

- ▶ How is knowledge acquired, organized, remembered, and used to guide behavior?

- Internal structures of the mind
- Thought patterns
- Belief systems
- How you think about the world



Biological Perspective

- ▶ Study the physiological mechanisms in the brain and nervous system that organize and control behavior
- ▶ Interest in behavior distinguishes biological psychology from many other biological sciences



Practice Exercise

- ▶ Identifying Perspectives (in small groups)



Methods in Psychology

- ▶ Research designs
 - Descriptive
 - Case study
 - Survey
 - Naturalistic observation
 - Correlational
 - Experimental
- ▶ Strengths and Weaknesses?



Descriptive Study

- ▶ Describes a set of facts
- ▶ Does NOT look for relationships between facts
- ▶ Does NOT predict what may influence the facts
- ▶ May or may not include numerical data
- ▶ Example: measure the % of new students from out-of-state each year since 1980



Types of Descriptive Studies

- ▶ When would you choose to do:
 - Naturalistic Observation?
 - Case Study?
 - Surveys?



Correlational Study

- ▶ Collects a set of facts organized into two or more categories
 - measure amount of TV violence watched per/day
 - measure children's aggressive behavior
- ▶ Examine the relation between categories
- ▶ Correlation reveals relationships among facts
 - e.g., Children who watch more violence on TV behave more aggressively.



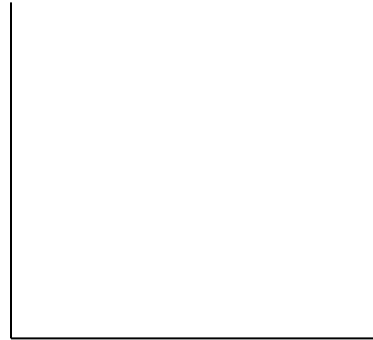
Correlational Study

- ▶ Correlation cannot prove causation
 - Does watching violence on TV cause children to behave aggressively?
 - Does behaving aggressively cause children to watch more violence on TV?
- ▶ May be an unmeasured common factor
 - e.g., lack of parental involvement leads children to behave more aggressively AND to watch more violence on TV.



Correlation Coefficient

- ▶ Measures whether two variables change in a related way
 - Correlations range from -1.0 to 1.0
 - Positive correlation
 - Negative correlation



Illusory Correlation

The perception of a relationship where none exists. Most superstitious behavior...

	Wear “lucky” socks	Do not wear “lucky” socks
Win Game	Confirming evidence	Disconfirming evidence
Lose Game	Disconfirming evidence	Confirming evidence



Practice Exercise 2

- ▶ Thinking Through Correlations



Experiments

- ▶ Direct way to test an hypothesis about a cause–effect relationship between factors
- ▶ Factors are called *variables*
 - One variable is controlled by the experimenter
 - Independent variable
 - The other is observed and measured
 - Dependent Variable



Examples of Experimental Variables

- ▶ Independent variable
- ▶ Dependent variable



Experimental Design

- ▶ Population v. Sample
- ▶ Types of Samples
 - Random
 - Representative Sample
 - Convenience Sample



Experimental Design

- ▶ Random sample
- ▶ Random assignment
- ▶ Why use randomization?



Practice Exercise 3

- ▶ Designing an Experimental Study



Sources of Bias

- ▶ Biased sample – when the members of a sample differ in a systematic way from the larger population the researcher is interested in.
 - Example:



Sources of Bias

- ▶ Observer–expectancy effect
 - researcher has expectations that influence measurements
 - Confirmation bias
- ▶ Subject–expectancy effect
 - subject knows design and tries to produce expected result
 - Halo effect
- ▶ Blinding
 - minimizes expectancy by removing knowledge about experimental conditions



Blinding

- ▶ Single-blind study
- ▶ Double-blind study



Ethical Issues in Psychological Research

- ▶ Right to privacy
- ▶ Informed consent
- ▶ Freedom from harm
- ▶ Debriefing

