Mind, Behavior, and Psychological Science

Chapter 1

What is Psychology?

A broad field with many specialties, but fundamentally, the science of behavior and mental processes.

Psychology v. Psychiatry

* Psychology
  * Broad field of study
  * Trained in research methods
  * Holds a Ph.D
  * Advanced study in specialization
* Psychiatry
  * Medical specialty
  * Trained in treating mental & behavioral problems
  * Holds an MD
  * Licensed to prescribe medications

1) A Broad Field of Many Specialties

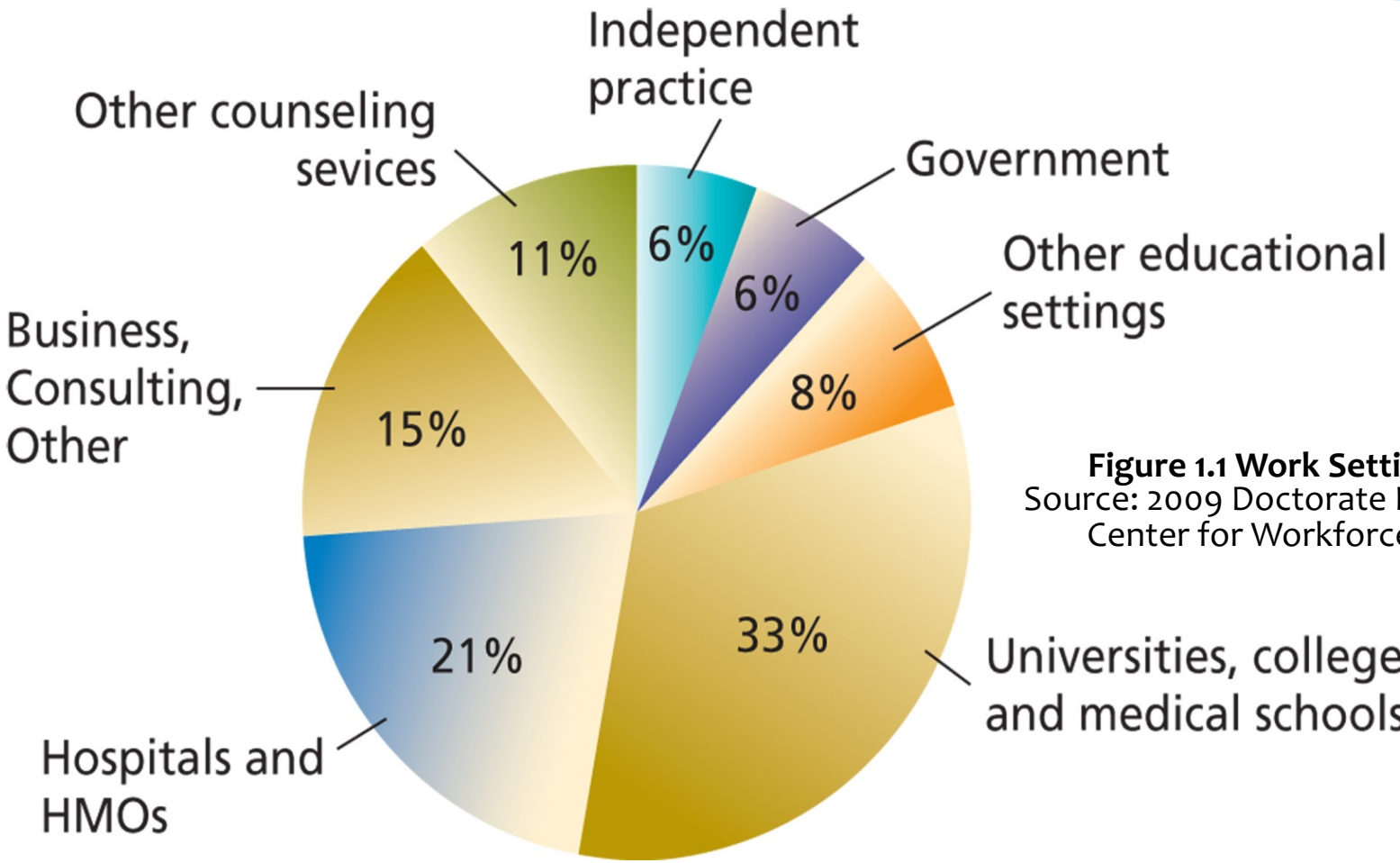


Figure 1.1 Work Settings of Psychologists
Source: 2009 Doctorate Employment Survey, APA Center for Workforce Studies. March 2011

3 Clusters of Psychologists

* Teachers of psychology
  * 80% teach / 20% service
* Experimental psychologists
  * 45% teach / 45% research / 10% service
* Applied psychologists
  * Work directly with people

Applied Psychologists

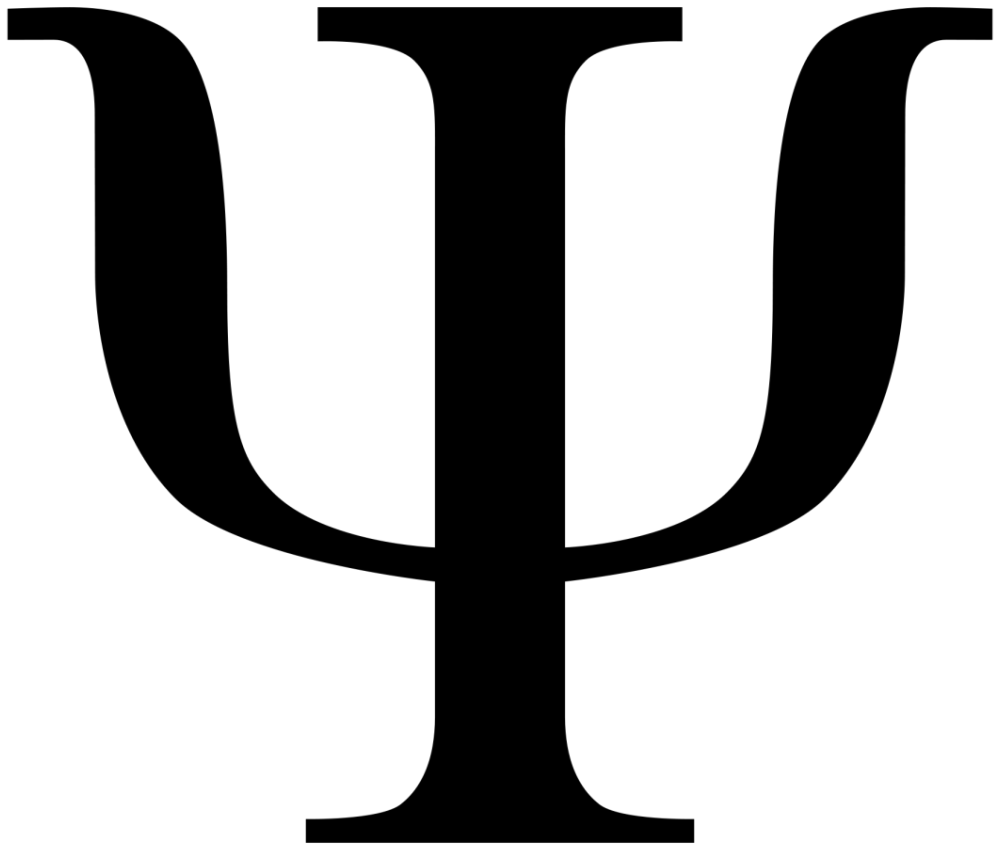
* Industrial / Organizational
* Sports
* School
* Clinical and counseling
* Forensic
* Environmental

2) The Science of Behavior and Mental Processes

* Psyche ("mind")
  -ology ("a field of study")

* Covers both internal mental processes and external, observable behaviors

* Based on objective, verifiable, scientific evidence



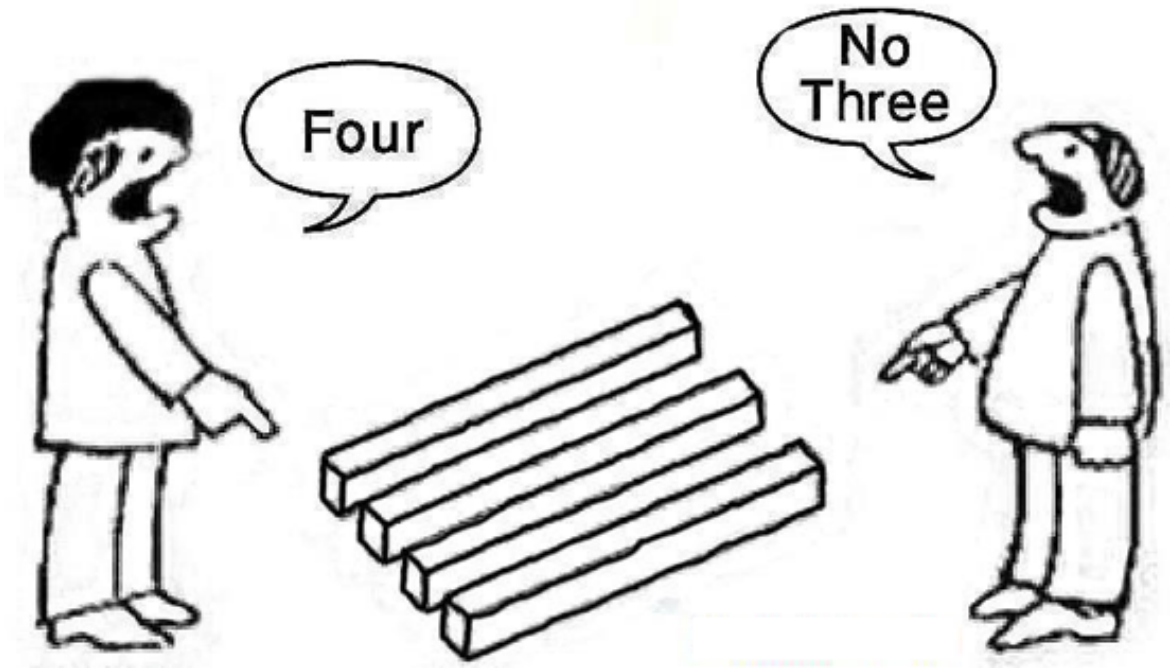
Pseudo-Psychology

* Erroneous assertions or practices set forth as being scientific psychology
  * Horoscopes
  * Palm readings
  * Fortune telling

Critical Thinking Skills

1. What is the source?
2. Is the claim reasonable or extreme?
3. What is the evidence?
4. Could bias contaminate the conclusion?
    1. Emotional bias
    2. Confirmation bias
5. Does the reasoning avoid common fallacies?
6. Does the issue require multiple perspectives?

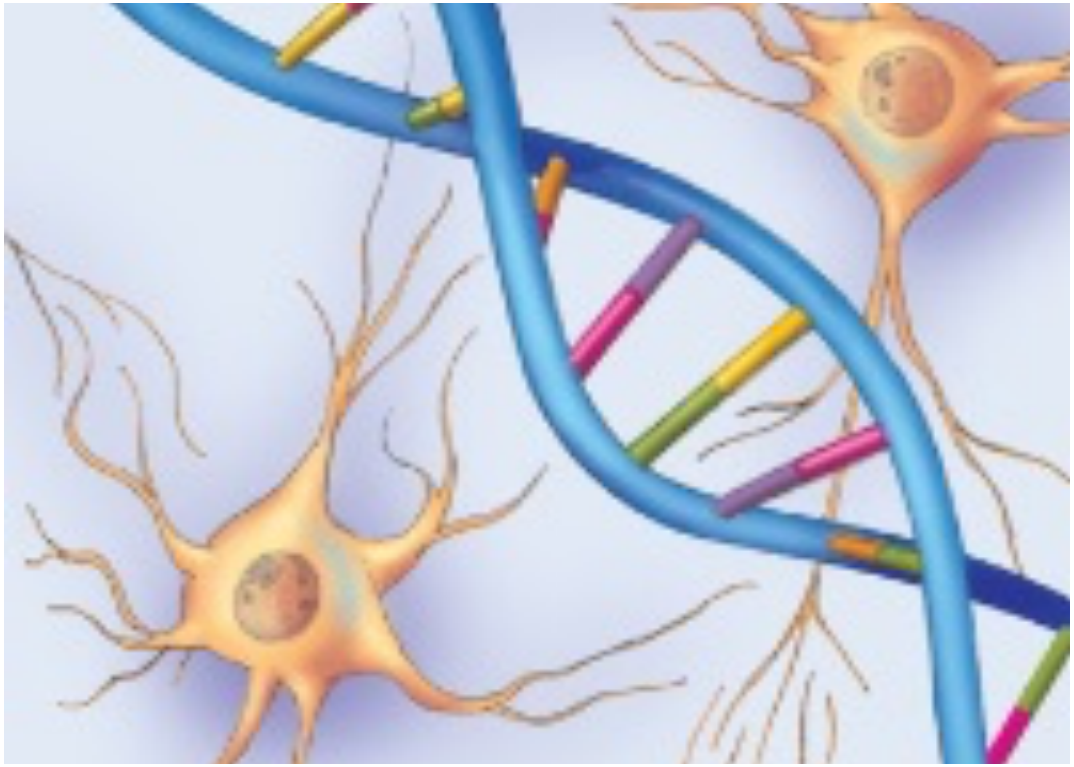
6 Perspectives of Psychology



1. Biological
2. Cognitive
3. Behavioral
4. Whole-person
5. Developmental
6. Sociocultural

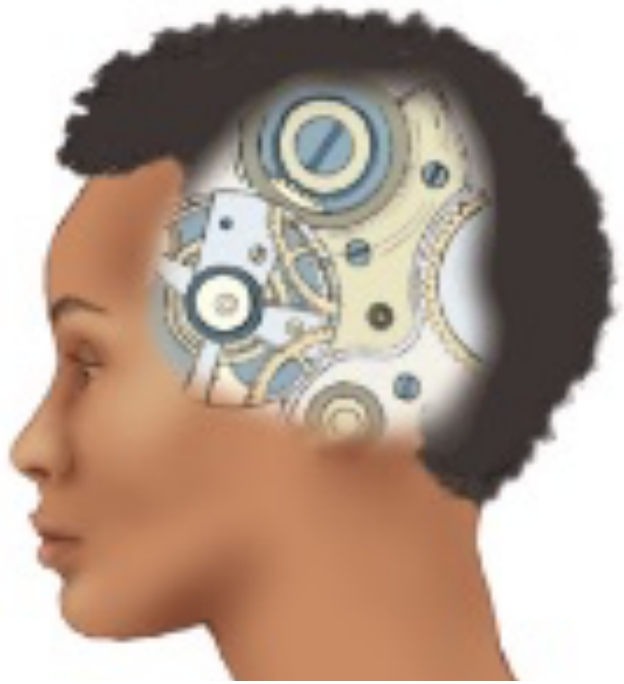
Biological Perspective

* Radical Idea
  * Distinction between the spiritual mind & the physical body (René Descartes)
* Focus
  * Nervous system
  * Endocrine system
  * Genetics
  * Physical underpinnings
* Fields of Study
  * Neuroscience
  * Evolutionary Psychology



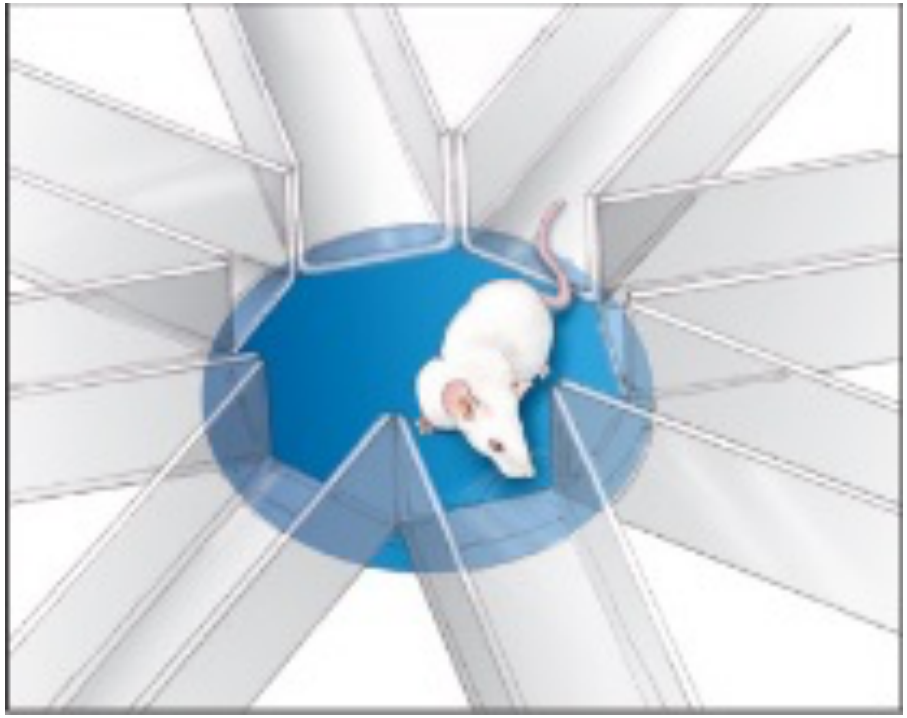
Cognitive Perspective

* Radical Idea
  * Methods of science used to measure and study the natural world can be used to study the mind and body (Wilhelm Wundt & William James)
* Focus
  * Mental processes
    * Thought, learning, memory
  * Mind = "machine"
  * Emotion & motivation influence thought & perception



Behavioral Perspective

* Radical Idea
  * Psychology should be limited to the study of observable behavior & environmental stimuli that shape behavior (John Watson & B.F. Skinner)
* Focus
  * Learning
  * Controlling behavior by environment
  * Stimuli and responses (not mental processes)



Whole-Person Perspective

* Radical Idea
  * Personality & mental disorders arise mainly from processes in the unconscious mind, outside of our awareness (Sigmund Freud, Carl Rogers &Abraham Maslow, Ancient Greeks)
* Focus
  * Psychodynamic View
    * Unconscious motivation & mental disorder
  * Humanistic View
    * Mental health & human potential
  * Trait & Temperament View
    * Personality characteristics & individual differences

Developmental Perspective

* Radical Idea
  * People change in predictable ways as the influences of heredity & environment unfold over time (Mary Ainsworth & Jean Piaget)
* Focus
  * Changes in psychological functioning across the lifespan
  * Heredity and environment

Sociocultural Perspective

* Radical Idea
  * The social & cultural situation in which the person is embedded can sometimes overpower all other factors that influence behavior
    (Stanley Milgram & Philip Zimbardo)
* Focus
  * Social influences on behavior & mental processes
  * How individuals function in groups
  * Cultural differences

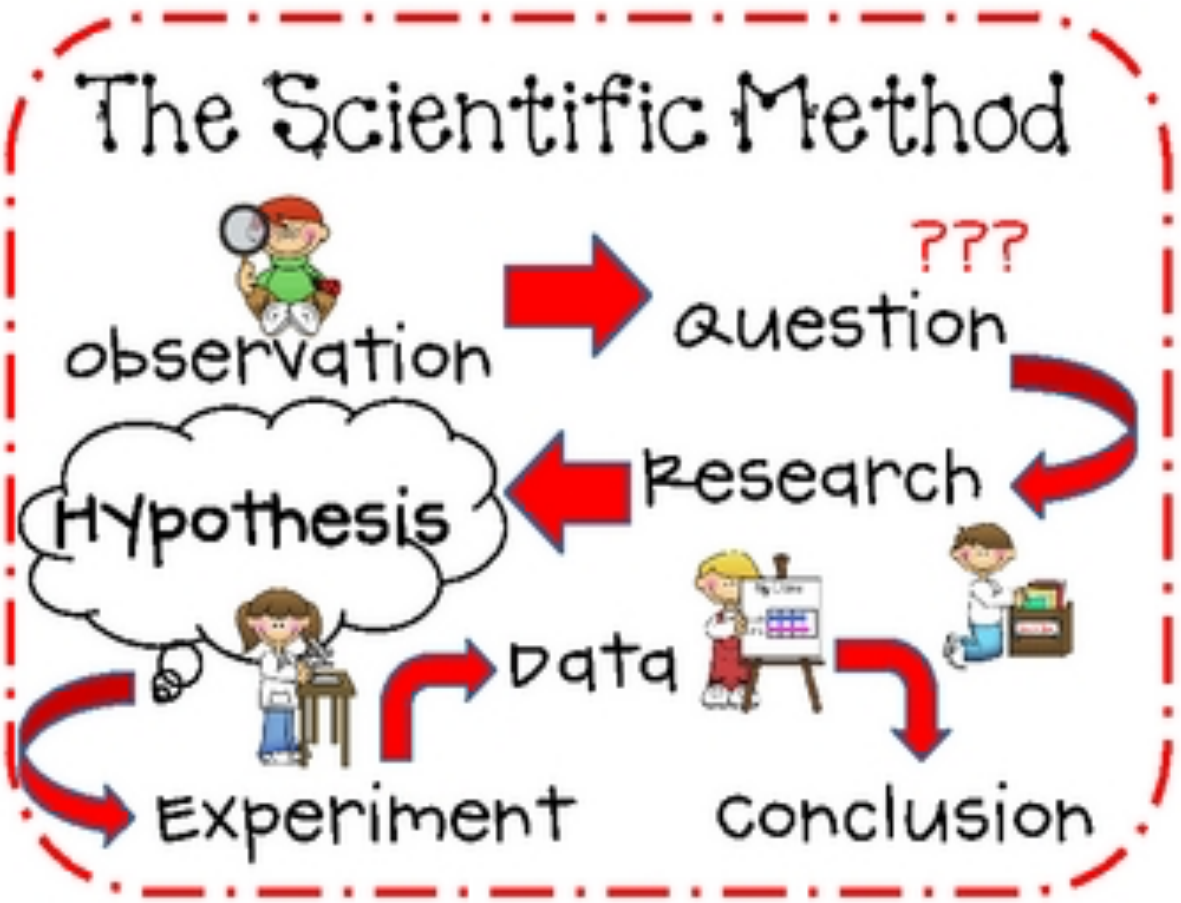
Psychology is Always Changing

Section 1.3
How do Psychologists Develop New Knowledge?

Q: Which category of psychologists do this?

A: Experimental Psychologists

The Scientific Method



Q: What is the major difference between psychology and pseudo-psychology?

A: Pseudo-psychology does NOT survive the scientific method.

Key Terms

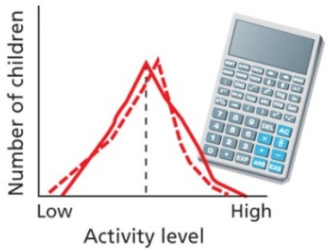
* Scientific Method
  * A 4-step process for empirical investigation of a hypothesis under conditions designed to control biases and subjective judgments.
* Empirical Investigation
  * An approach to research that relies on sensory experience and observation as research data
* Theory
  * A testable explanation for a set of fats or observations, a theory is not just speculation or a guess

Scientific Method: 4 Steps

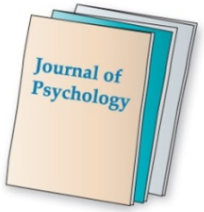
1. Developing a hypothesis

2. Gathering objective data

3. Analyzing the results



4. Publishing, criticizing, and replicating the results



* NOT appropriate for answering questions that cannot be put to an objective, empirical test:
  * Ethics
  * Morality
  * Preferences
  * Aesthetics
  * Existential issues
  * Religion
  * Law

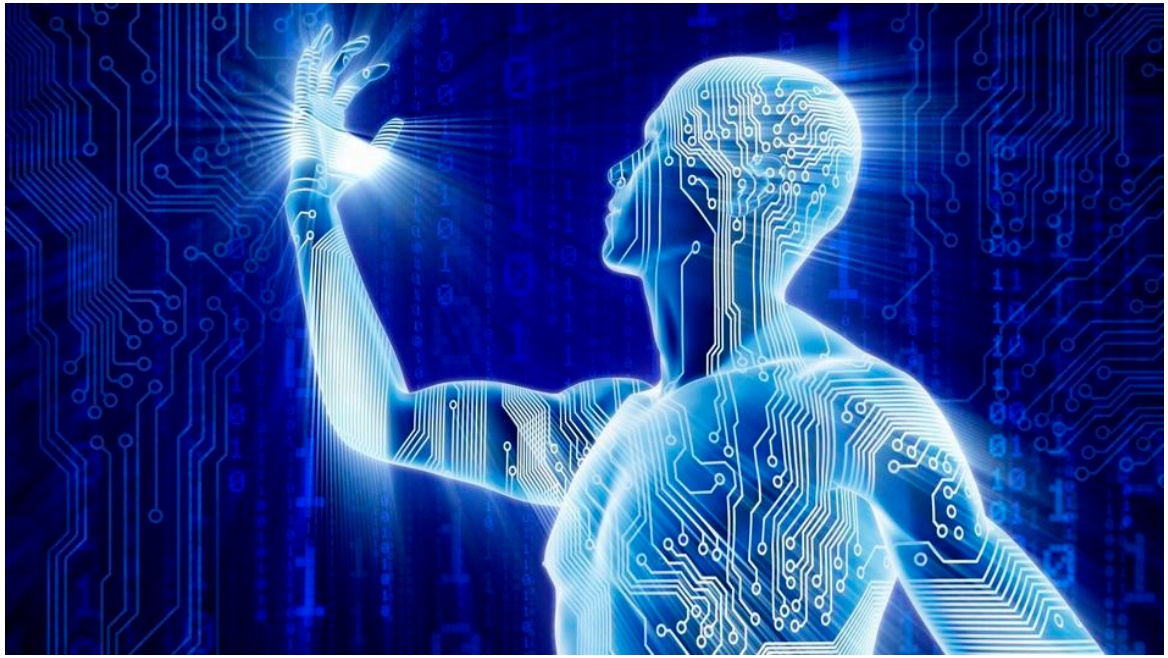
1) Develop a Hypothesis

* Hypothesis
  * A statement predicting the outcome of a scientific study; the relationship among variables

* Operational Definitions
  * Exact procedures used in establishing experimental conditions and measurement of results
    * Restate concepts in behavioral terms
    * Specify procedures to produce & measure variables

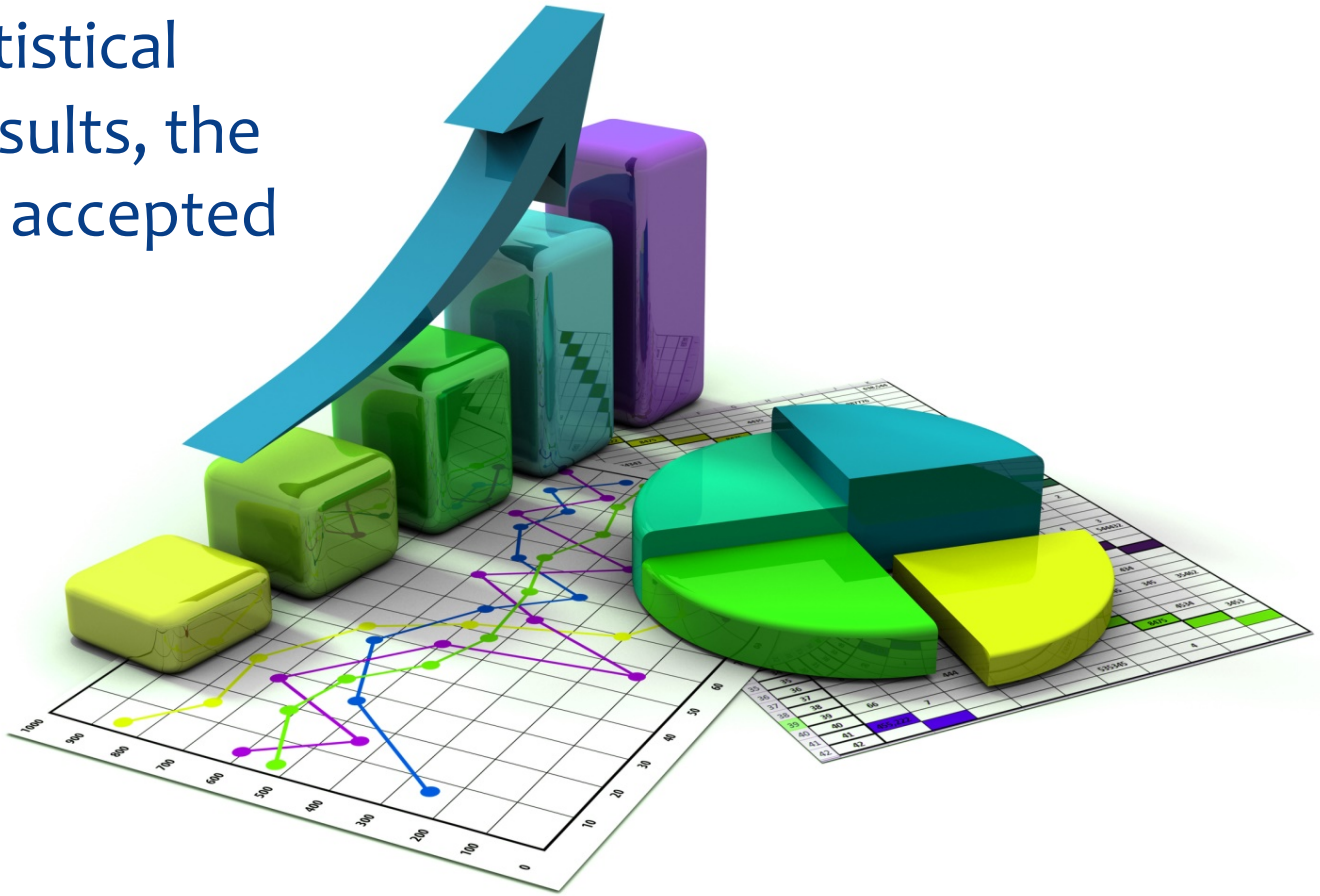
2) Collect Objective Data

* Data
  * Pieces of information gathered by a researcher used to test a hypothesis



3) Analyze Results

* Based on statistical analysis of results, the hypothesis is accepted or rejected.



4) Publish, Criticize, & Replicate Results

* Present the completed study to the scientific community

* Replicate
  * Redo an experiment to see whether the same results are obtained

5 Types of Psychological Research

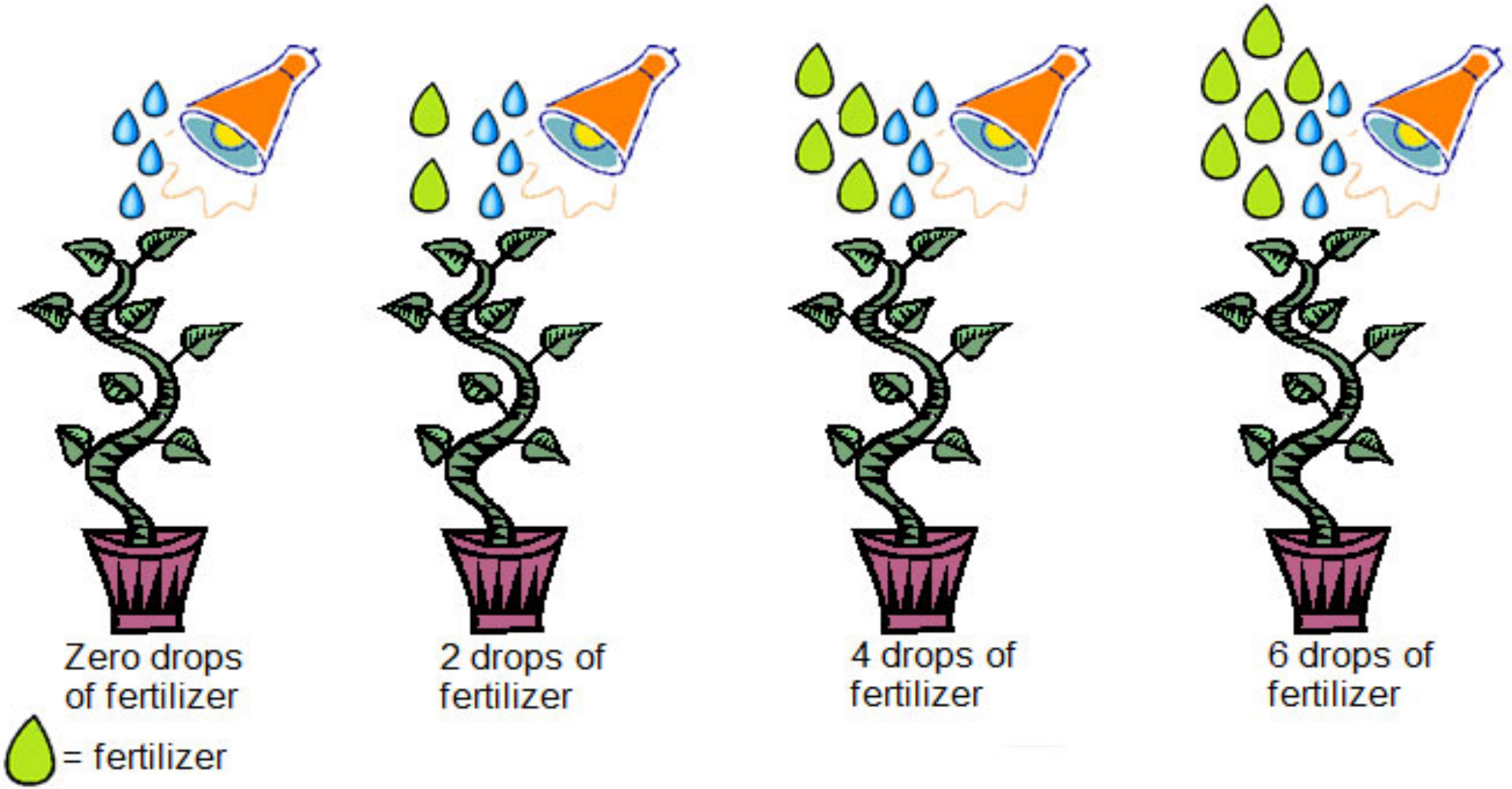
* Experiments
* Correlational Studies
* Surveys
* Naturalistic Observations
* Case Studies

Experiments

* The researcher controls all conditions & directly manipulates the conditions
* ONLY method that can determine cause-effect relationship

* Independent Variable
* Dependent Variable
* Experimental Group
* Control Group
* Random Assignment

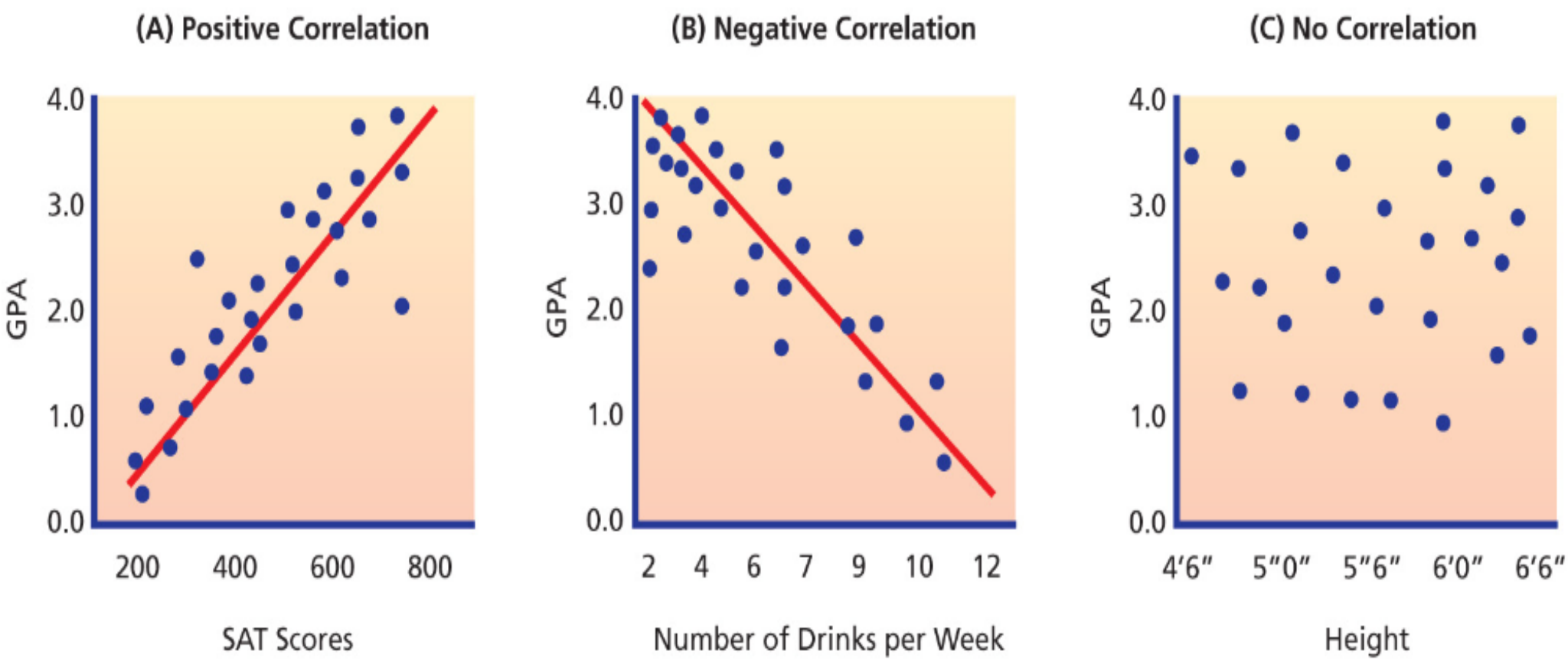
Does fertilizer alter plant growth?



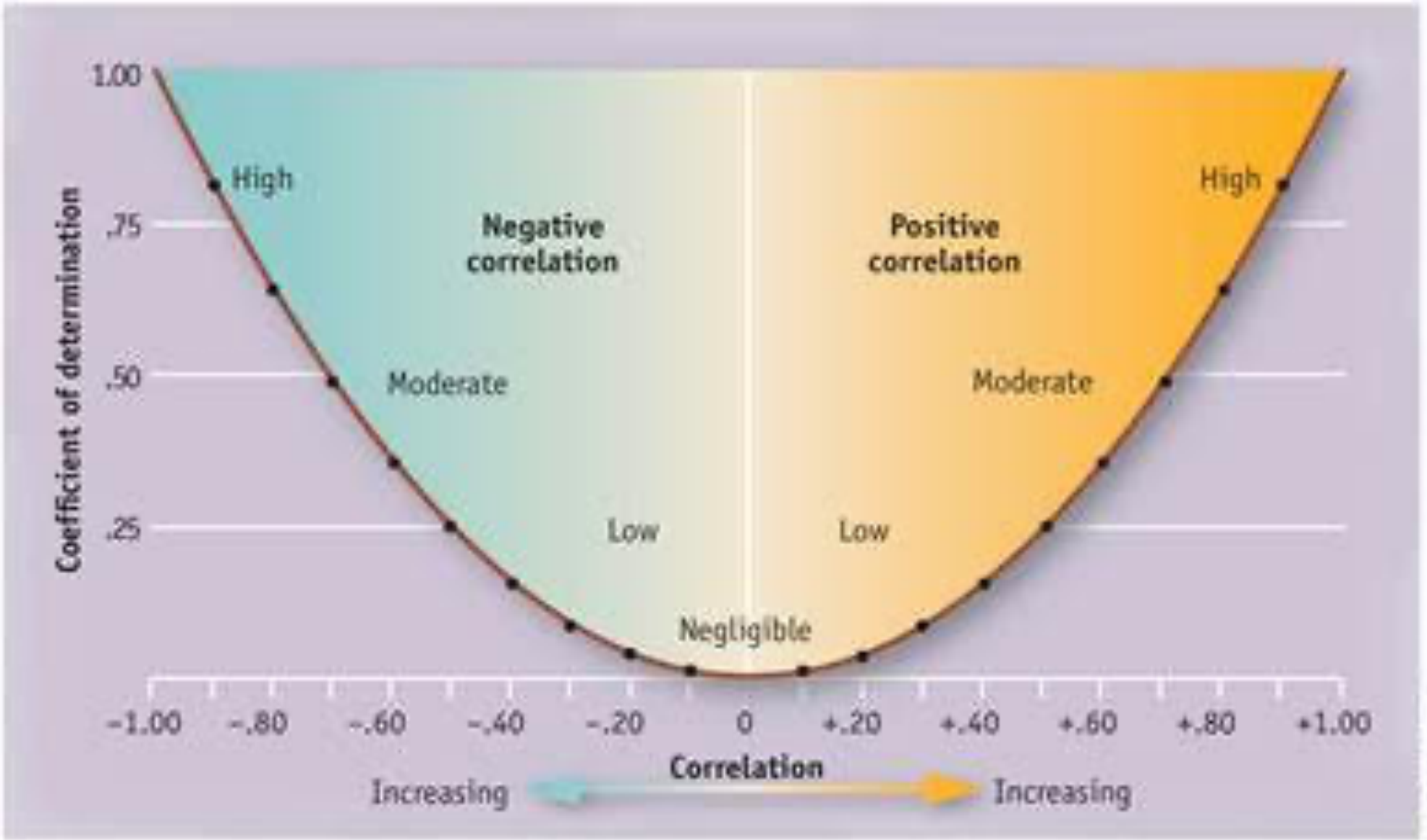
Correlational Studies

* Studying the relationship between variables without experimentally manipulating the independent variable
* Does NOT determine cause-effect relationships
* Positive Correlation
* Negative Correlation
* Zero Correlation

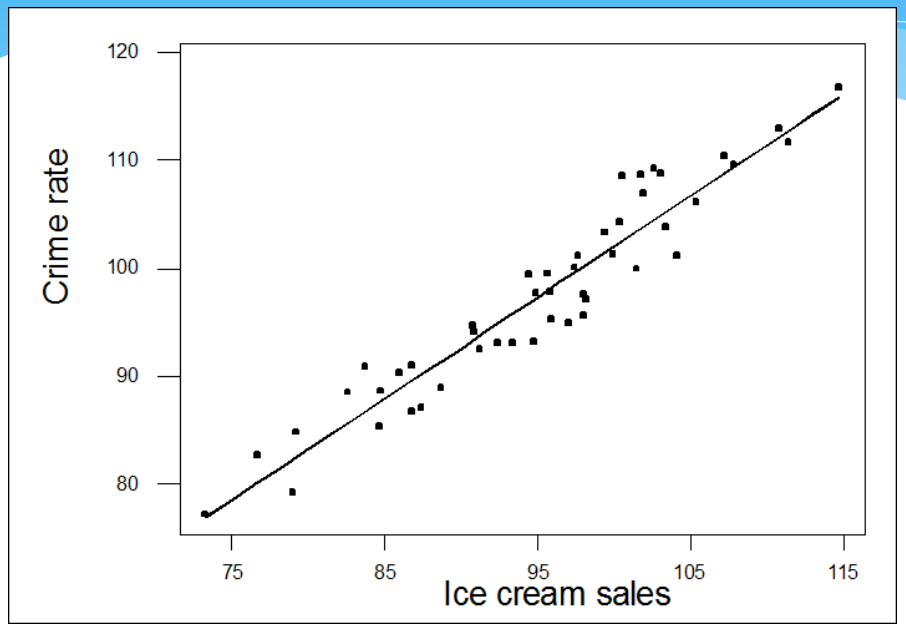
Types of Correlations



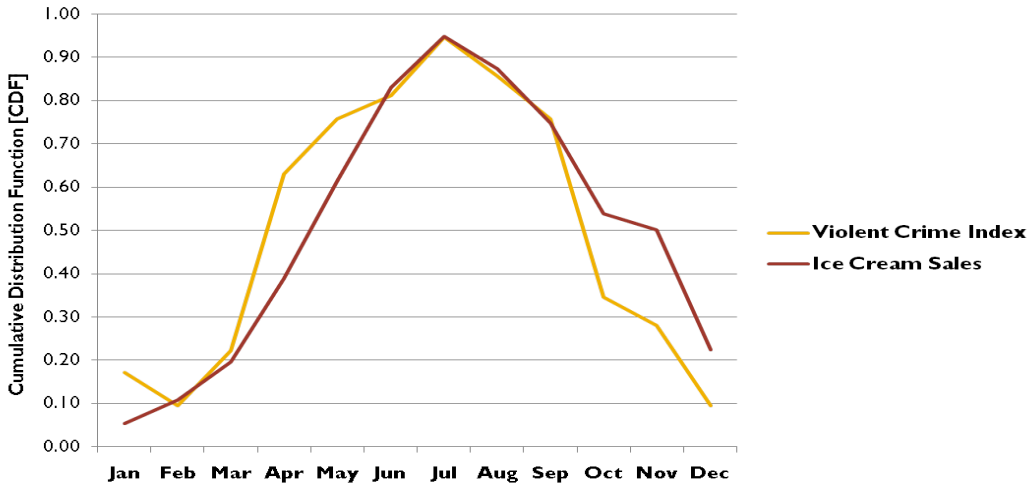
Degree of Correlation
-1.0 to +1.0



Correlation ≠ Causation !!!



* Interpretations
  * A causes B
  * B causes A
  * C causes both A & B



Surveys

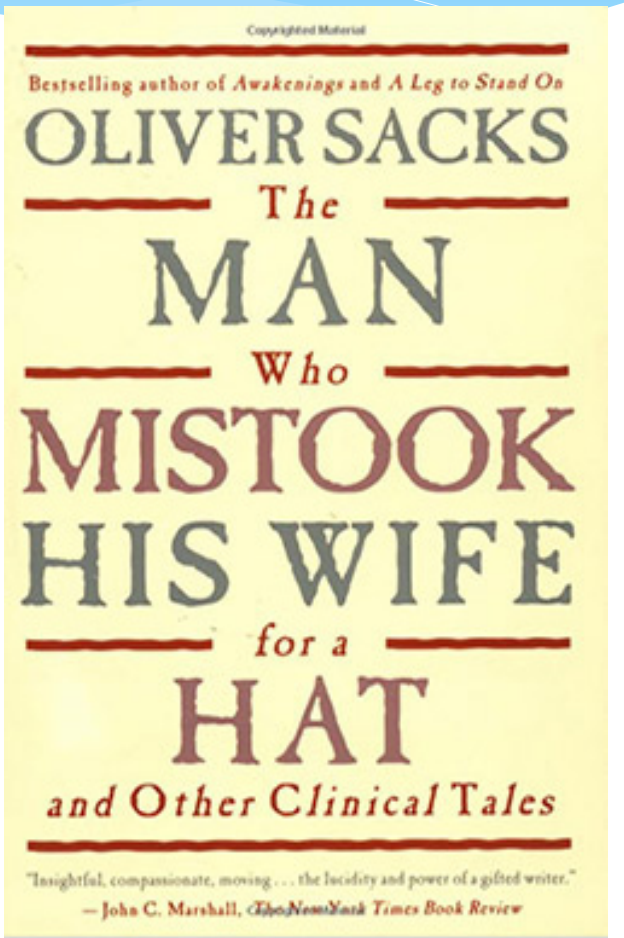
* Getting people's responses to a prepared set of verbal or written items
* Pros: quick, easy, lots of participants , inexpensive
* Cons: vulnerable to biases
  * Social desirability
  * Question wording
  * Sample
  * Survey conditions

Naturalistic Observations

* Research assessing behavior of people or animals in their natural surroundings
* Pros: cost efficient
* Cons: less control , expectancy bias

Case Studies

* Research involving a single individual (or, at most, a few individuals)
* Pros: examine rare problems / talents
* Cons: subjective, small sample size, lack of control, limited generalizability



Controlling Biases

* Expectancy bias
  * The researcher allows his or her expectations to affect the outcome of a study

* Controlling bias:
  * Placebo: a sham "drug" or fake treatment
  * Double-blind control: both participants and researchers are unaware of group assignment

Ethical Issues in Psychological Research

* American Psychological Association (APA)
  * Ethical principles of psychologists & code of conduct
  * Shields participants from potentially harmful procedures
  * Ensures confidentiality

* Institutional Review Board (IRB) & Institutional Animal Care and Use Committee (IACUC)
  * Examines all studies proposed

Ethical Issues in Psychological Research

* Informed Consent
  * Participants must be informed of all procedures and any potential dangers, so they may opt out if they so desire
* Deception
  * Allowable if no substantial risks are likely
  * Debriefing
* Animal Studies
  * Specific guidelines need to be followed