

Visualizing Psychology

by Siri Carpenter &
Karen Huffman

PowerPoint © Lecture Notes Presentation

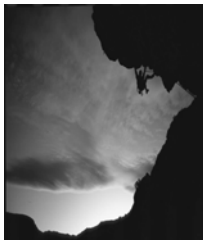
Chapter 1: Introduction and Research Methods

Siri Carpenter, Yale University
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Lecture Overview

- Introducing Psychology
- Origins of Psychology
- The Science of Psychology
- Research Methods
- Getting the Most from Your Study of Psychology



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Introducing Psychology

- What is psychology?
The **scientific study** of behavior and mental processes.
- Psychology focuses on critical thinking and is scientific.
- Pseudopsychologies (e.g., *psychics*, *mediums*) are *nonscientific*.



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Pause and Reflect: Why Study Psychology?

- Psychology helps us scientifically evaluate common beliefs and misconceptions about behavior and mental processes. For example, can you identify which of the beliefs on the following slide are true or false?

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True or False?

Answers to These (and Other Common Beliefs) are
Found Throughout Visualizing Psychology

- In general, we only use about 10% of our brain.
 - False—(See Chapter 2)
- Most brain activity stops during sleep.
 - False—(See Chapter 5)



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More Answers

- Police often use psychics to help solve crimes.
 - False—(See Chapter 1)
- Similarity is the best predictor of long-term relationships.
 - True—(See Chapter 16)

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Introducing Psychology: Psychology's Four Goals

1. Description: tells "what" occurred
2. Explanation: tells "why" a behavior or mental process occurred
3. Prediction: identifies conditions under which a future behavior or mental process is likely to occur
4. Change: applies psychological knowledge to prevent unwanted behavior or to bring about desired goals



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Introducing Psychology: Applying Psychology to Work (Sample Specialties)

- Biopsychology/Neuroscience
- Clinical and Counseling Psychology
- Cognitive Psychology
- Developmental Psychology
- Educational and School Psychology
- Experimental Psychology



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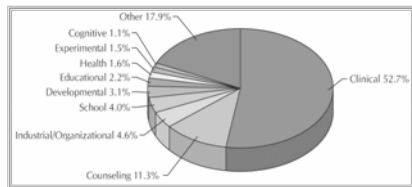
Applying Psychology to Work (Sample Specialties Continued)

- Forensic Psychology
- Gender/Cultural Psychology
- Health Psychology
- Industrial/Organizational Psychology
- Social Psychology



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Careers in Psychology: Percentage of Psychology Degrees by Specialty



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Origins of Psychology



- **Wilhelm Wundt:** "father of psychology"
- **Structuralism:** sought to identify the basic building blocks, or *structures*, of the mind through introspection
(Wundt and Titchener key leaders)
- **Functionalism:** studied how the mind *functions* to adapt organisms to their environment (James key leader)

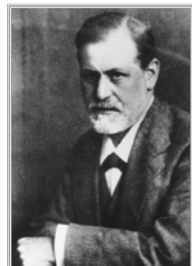


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Origins of Psychology (Continued)

- **Psychoanalytic/ Psychodynamic Perspective:** unconscious processes and unresolved past conflicts (Freud was the founder)

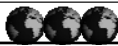


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Origins of Psychology (Continued)



- **Behaviorist Perspective:** objective, observable environmental influences on overt behavior (Watson, Pavlov, and Skinner were key figures)



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Origins of Psychology (Continued)

- **Humanist Perspective:** free will, self-actualization, and a positive, growth-seeking human nature (Rogers and Maslow were key figures)



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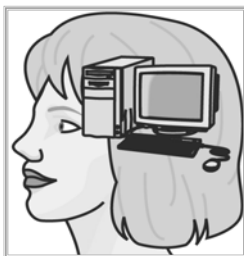


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Origins of Psychology (Continued)



- **Cognitive Perspective:** thought, perception, and information processing

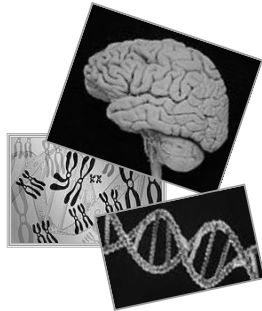


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Origins of Psychology (Continued)

■ **Neuroscientific/ Biopsychological Perspective:**

genetics and other
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processes in the
brain and other
parts of the
nervous system



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Origins of Psychology (Continued)

■ **Evolutionary Perspective:** natural selection, adaptation, and evolution

■ **Sociocultural Perspective:** social interaction and cultural determinants



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Origins of Psychology: One Unifying Theme of Modern Psychology

■ **Biopsychosocial model:** combines all seven major perspectives



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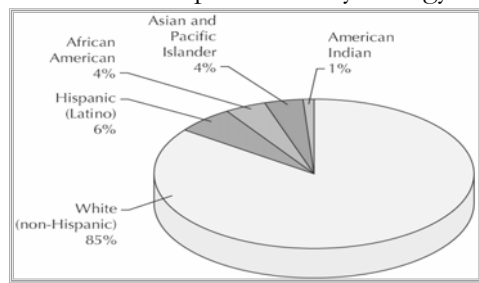
Women and Minorities in Psychology

- First female to receive Ph.D. in psychology (1894): Margaret Floy Washburn
- First female president of APA (1905): Mary Calkins
- First African American to receive Ph.D. in Psychology (1920): Francis Cecil Sumner
- First African American president of APA (1971): Kenneth B. Clark



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Introducing Psychology: Ethnicities of Doctorate Recipients in Psychology



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Pause and Reflect: Critical Thinking

- Why do psychologists and other scientists need multiple perspectives? (One possible answer appears on the next slide.)

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Do See Both a Vase and Two Faces?



- Multiple perspectives allow psychologists to better understand and research complex behavior and mental processes.

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The Science of Psychology

- **Basic Research:** conducted to advance scientific knowledge

- **Applied Research:** designed to solve practical problems



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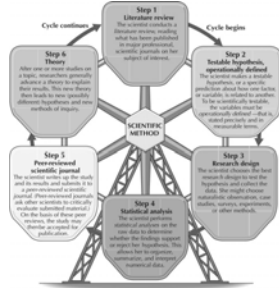


1. Is this an example of basic or applied research?



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The Science of Psychology: The Scientific Method



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The Science of Psychology: Ethical Guidelines

- Human research participants need:
 - Informed consent
 - Voluntary participation
 - Restricted use of deception
 - Debriefing
 - Confidentiality
 - Alternative activities



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The Science of Psychology: Ethical Guidelines (Continued)

- Advocates believe nonhuman research offers significant scientific benefits. Opponents question these benefits and suggest nonhuman animals cannot give informed consent.
- Psychologists must maintain high standards for both human and nonhuman animal research.



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Pause and Reflect: Check & Review

1. What are the four major goals of psychology?
2. The _____ perspective focuses on natural selection, adaptation, and evolution.

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The Science of Psychology: Research Methods

■ Four key research methods:

1. Experimental
2. Descriptive
3. Correlational
4. Biological



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The Science of Psychology: Four Key Research Methods (Continued)

Experimental Research: Manipulation and control of variables	Descriptive Research: Naturalistic observation, surveys, case studies	Correlational Research: Statistical analyses of relationships between variables	Biological Research: Studies the brain and other parts of the nervous system
Purpose: Identify cause and effect (Meets the explanatory goal of psychology)	Purpose: Observe, collect, and record data (Meets the descriptive goal of psychology)	Purpose: Identify relationships and how well one variable predicts another (Meets the predictive goal of psychology)	Purpose: Identify causation, as well as, description, and prediction (Meets one or more of the four goals of psychology)
Advantages: Allows researchers precise control over variables and to identify cause and effect	Disadvantages: Ethical concerns, practical limitations, artificiality of lab conditions, uncontrolled variables may confound results, researcher and participant biases	Advantages: Helps clarify relationships between variables that cannot be examined by other methods and allows prediction	Disadvantages: Shares many or all of the disadvantages of experimental, descriptive, and correlational research

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The Science of Psychology: Four Key Research Methods (Continued)

1. Experimental Research: carefully controlled scientific procedure that manipulates variables to determine *cause and effect*



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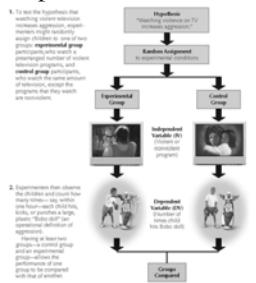
The Science of Psychology: Four Key Research Methods—Experiment (Continued)

- Key features of an experiment:
 - Independent variable (factor that is manipulated) versus dependent variable (factor that is measured)
 - Experimental group (receives treatment) versus control group (receives no treatment)

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The Science of Psychology: Four Key Research Methods—Experiment (Continued)

- Does TV increase aggression? Only an *experiment* can determine cause and effect.



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The Science of Psychology: Four Key Research Methods—Experiment (Continued)

■ Potential **researcher** problems:

- Experimenter bias (researcher influences the research results in the expected direction)
- Ethnocentrism (believing one's culture is typical of all cultures)



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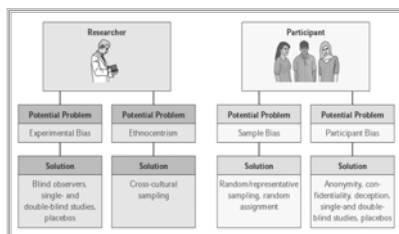
The Science of Psychology: Four Key Research Methods—Experiment (Continued)

■ Potential **participant** problems:

- Sample bias (research participants are unrepresentative of the larger population)
- Participant bias (research participants are influenced by the researcher or experimental conditions)

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The Science of Psychology: Four Key Research Methods—Experiment (Continued)



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The Science of Psychology: Four Key Research Methods—Descriptive Research

2. **Descriptive Research:** observes and records behavior without producing causal explanations

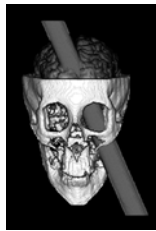


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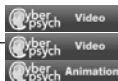
The Science of Psychology: Four Key Research Methods—Descriptive Research

Three types of descriptive research:

- **Naturalistic Observation** (observation and recording of behavior in natural state or habitat)
- **Survey** (assessment of a sample or population)
- **Case Study** (in-depth study of a single participant)



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Pause and Reflect: Why Study Psychology?

- What is the advantage of studying psychological research methods like naturalistic observation? (One possible answer appears on the next slide.)

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Psychology Explains the Underlying Humor of This Cartoon

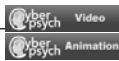


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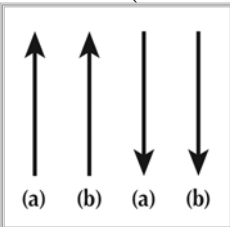
The Science of Psychology: Four Key Research Methods—Correlational Research

3. Correlational Research: scientific study in which the researcher observes or measures (without directly manipulating) two or more variables to find relationships between them

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The Science of Psychology: Four Key Research Methods—Correlational Research (Continued)

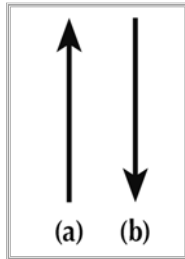


- Positive Correlation: two variables move (or vary) in the *same* direction—either up or down

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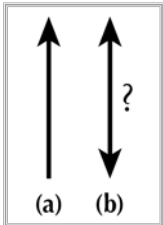
The Science of Psychology: Four Key Research Methods—Correlational Research (Continued)

- **Negative Correlation:** two variables move (or vary) in the *opposite* direction—either up or down



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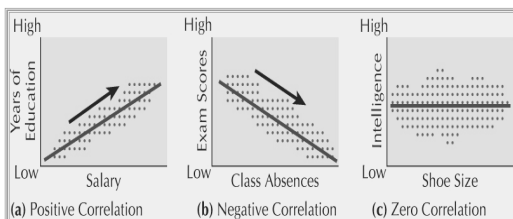
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- **Zero Correlation:** no relationship between two variables (when one variable increases, the other can increase, decrease, or stay the same)

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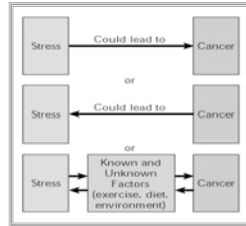
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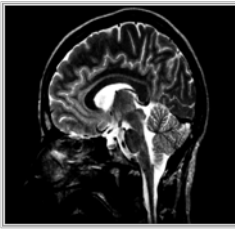
The Science of Psychology: Four Key Research Methods—Correlational Research (Continued)

- Can you see why correlation can never show cause and effect?

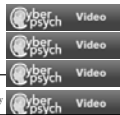


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The Science of Psychology: Four Key Research Methods—Biological Research



4. Biological Research: scientific study of the brain and other parts of the nervous system



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Tools for Studying the Brain

Tools for Studying the Brain: Visual Tools	
Visual	Sample Results
Brain Scanning Visualizing activity in the brain using techniques like PET, SPECT, and fMRI.	Brain Scanning Visualizing activity in the brain using techniques like PET, SPECT, and fMRI.
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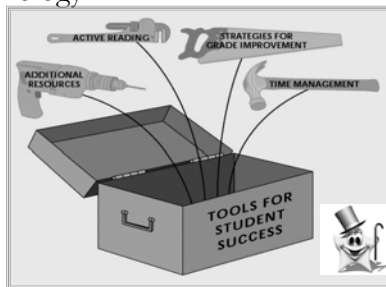


Pause and Reflect: Check & Review

1. Why is an experiment the only way we can determine cause and effect?
2. What is the difference between a positive correlation and a negative correlation?

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Getting the Most from Your Study of Psychology



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Getting the Most from Your Study of Psychology (Continued)

- Four major tools:
 - Active Reading (SQ4R)
 - Time Management (setting up a realistic study, social, and work schedule)
 - Grade Improvement (note taking, study habits, test taking tips)
 - Additional Resources (instructors, classmates, study groups, etc.)



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Using the SQ4R Method



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Getting the Most from Your Study of Psychology: The Importance of Time Management

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
7:00		Breakfast		Breakfast		Breakfast	
8:00		History	Breakfast	History	Breakfast	History	
9:00		Psychology	Statistics	Psychology	Statistics	Psychology	
10:00		Review History & Psychology	Campus Jobs	Review History & Psychology	Statistics Labs	Review History & Psychology	
11:00		Biology		Biology		Biology	
12:00		Lunch		Exercise	Lunch	Exercise	
1:00		Bio Lab	Lunch	Lunch	Study	Lunch	
2:00			Study	Study			

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Can You Identify the Real U.S. Penny?



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Pause and Reflect: Critical Thinking

- Can you see how the lack of active reading or studying helps explain why most people cannot easily identify the actual U.S. penny despite having seen it thousands of times?
- Which of the four major “Tools for Student Success” do you plan to work on to improve your academic performance?

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Visualizing Psychology

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End of Chapter 1: Introduction and Research Methods

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