CHAPTER 1
Introduction & Research Methods

Lecture Overview
• Introducing Psychology
• Origins of Psychology
• The Science of Psychology
• Research Methods
• Getting the Most from Your Study of Psychology

Introducing Psychology
• What is psychology?
  The scientific study of behavior & mental processes.
• Psychology focuses on empirical evidence & critical thinking.

• Pseudopsychologies (e.g., psychics, mediums) are nonscientific.

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**True or False?**

1. Most brain activity stops during sleep.
2. Eyewitness testimony is often unreliable.
3. People with schizophrenia have two or more distinct personalities.
4. Similarity is one of the best predictors of long-term relationships.

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5. In an emergency, as the number of bystanders increases, your chance of getting help decreases.
6. We only use 10% of our brains.
Answers

1. Most brain activity stops during sleep.  
   (See Chapter 2)

2. Eyewitness testimony is often unreliable.  
   (See Chapter 7)

3. People with schizophrenia have two or more distinct personalities.  
   (See Chapter 13)

4. Similarity is one of the best predictors of long-term relationships.  
   (See Chapter 15)

5. In an emergency, as the number of bystanders increases, your chance of getting help decreases.  
   (See Chapter 15)

6. We only use 10% of our brains.  
   (See Chapter 2)

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
### Origins of Psychology

- **Wilhelm Wundt**: “father of psychology”
- **Structuralism**: sought to identify the basic building blocks, or *structures*, of mental life through introspection (*Titchener* key leader)
- **Functionalism**: studied how the mind functions to adapt organisms to their environment (*James* key leader)
Origins of Psychology: Continued

- **Psychoanalytic/ Psychodynamic Perspective:** unconscious processes & unresolved past conflicts
  - *Freud* was key founder

Watson & Skinner were key figures

B. F. Skinner (1904-1990)
Conditioning

Ivan Pavlov
- Observable stimuli
- Observable responses (behavior)

Origins of Psychology: Continued

- **Humanistic Perspective**: free will & self-actualization—led to modern field of positive psychology (Rogers & Maslow were key figures)

  All individuals strive to develop and move toward self-actualization

  - Carl Rogers (1902-1987)
  - Abraham Maslow (1908-1970)

Origins of Psychology: Continued

- **Cognitive Perspective**: emphasizes thoughts, perception, & information processing
- Gather, encode, store, retrieve
Origins of Psychology: Continued

- **Neuroscientific/Biopsychological Perspective:**
genetics & other biological processes in the brain & other parts of the nervous system

- **Evolutionary Perspective:**
natural selection, adaptation, & evolution of behavior & mental processes

- **Sociocultural Perspective:**
social interaction & cultural determinants of behavior & mental processes

- **Biopsychosocial model:**
combines biological, psychological, & social processes; interacts with the seven major perspectives
What emotion is being conveyed?

Pause & Reflect: Critical Thinking

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

Do You See a Vase &/or Two Faces?

- Multiple perspectives allow psychologists to better understand complex behavior & mental processes.
Origins of Psychology: Continued

Kenneth B. Clark—first African American APA president; he & his wife (Mamie Clark) documented harmful effects of prejudice & influenced Supreme Court ruling against racial segregation in schools.

The Science of Psychology

- **Basic Research:** (in lab) conducted to advance scientific knowledge
- **Applied Research:** (outside of lab) designed to solve practical problems in the real world

Pause & Reflect: Assessment

- Is this an example of basic or applied research?
**Scientific Method**

Can replicate = greater confidence

1. Literature Review
2. Hypothesis
3. Research Design
4. Statistical Analysis
5. Publish
6. Theory

**Pause & Reflect: Assessment**

1. What are the four major goals of psychology?

2. The _____ perspective focuses on natural selection, adaptation, & evolution.
# Research Methods

- **Four key research methods:**

  1. **Experimental**
     - Purpose: Identify cause and effect
     - Advantage: Control variables
     - Disadvantages: Ethical concerns, practical limitations, withdrawal of subjects, confounding variables, uncontrollable extraneous variables, inability to generalize results

  2. **Descriptive**
     - Purpose: Observation, survey, case study
     - Advantage: Observation, survey, case study

  3. **Correlational**
     - Purpose: Statistical analysis of relationships
     - Advantage: Study brain

  4. **Biological**
     - Purpose: Study brain
     - Advantage: Study brain

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## Study Organizer 1.2 
**Psychology's Four Major Research Methods**

<table>
<thead>
<tr>
<th>Method</th>
<th>Purpose</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>Identify cause and effect (core psychology's goal of explanation)</td>
<td>Allows researchers to manipulate independent variables and observe dependent variables</td>
<td>Ethical concerns, practical limitations, withdrawal of subjects, confounding variables, uncontrollable extraneous variables, inability to generalize results</td>
</tr>
<tr>
<td>Descriptive</td>
<td>Observation, survey, case study</td>
<td>Minimizes artificiality, ease in collecting data, allows description of processes as they occur</td>
<td>Limited or no controllable variables, researcher and participant biases, participant anonymity</td>
</tr>
<tr>
<td>Correlational</td>
<td>Identify relationships among variables (e.g., correlation, cause)</td>
<td>Helps with research that cannot be easily tied to other methods and allows prediction</td>
<td>Researches causal identity, cannot determine cause and effect</td>
</tr>
<tr>
<td>Biological</td>
<td>Identify contributing biological factors (e.g., genetics, environment)</td>
<td>Minimizes or all of the advantages of experimental, descriptive, and correlational research</td>
<td>Requires use of all of the disadvantages of experimental, descriptive, and correlational research</td>
</tr>
</tbody>
</table>

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### Four Key Research Methods

1. **Experimental Research:**
   - Purpose: Carefully controlled scientific procedure that manipulates variables to determine cause & effect

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Research Methods: Experimental

• Key features of an experiment:

  --Independent variable (IV) (factor that is manipulated) versus dependent variable (DV) (factor that is measured)
  --Experimental group (receives treatment) vs. control group (receives no treatment)

Research Methods: Experimental (Continued)

• Potential researcher problems:

  – Experimentation bias: researcher influences research results in his or her expected direction
  – Ethnocentrism: believing one’s culture is typical of all cultures
  – Placebo: simulated intervention
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

One way to offset experimenter & participant bias is to create single- &/or double-blind experimental design.
2. **Descriptive Research:**
observes & records behavior without producing causal explanations

Three types of descriptive research:

- **Naturalistic Observation:** researchers systematically measure & record participants' behavior, without interfering
- **Survey:** tests, questionnaires, polls, & interviews that assess a sample or population; gather info from large numbers
- **Case Study:** in-depth study of a single research participant; rare disorders or phenomenon

**Why Study Psychology?**
Research Methods: Correlational

3. Correlational Research: observes or measures (without directly manipulating) two or more variables to find relationships between them

Correlational Research: (Continued)

- Determine degree of relationship (correlation) between 2 variables
  - Strong correlation: -1 to +1
  - Weak correlation: close to zero ±0.2
  - Does not mean one causes other
Ice cream consumption and drowning are highly correlated. Does that mean that eating ice cream causes drowning?

Why might they be correlated?

Correlational Research: (Continued)

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

Pause & Reflect: Assessment

1. Why is an experiment the only way we can determine cause & effect?

2. What is the difference between a positive correlation & a negative correlation?
Research Methods: Biological

4. Biological Research: scientific studies of the brain & other parts of the nervous system

Tools for Biological Research

- Ablation/Lesions
- Electrical Recordings
- Observations/case studies
- Electrical stimulation of the brain (EBS)

Getting the Most from Your Study of Psychology
Getting the Most from Your Study of Psychology (Continued)

- Six major tools:
  - Familiarization
  - Active Reading (SQ4R)
  - Visual Learning
  - Time Management (baseline & realistic schedule)
  - Distributed Study
  - Overlearning

Which is the Real U.S. Penny?
**Pause & Reflect: Critical Thinking**

- Can you see how the lack of active reading (or careful studying) helps explain why most people cannot easily identify the actual U.S. penny despite having seen it thousands of times?
- Do you understand the detrimental effects of multitasking?
- Which of the tips offered in this section do you plan to work on to improve your academic performance?