CHAPTER 1
The Science of Psychology

Links to Learning Objectives

WHAT IS PSYCHOLOGY?
Definition and methods
Five enduring issues
Psychology as a science
Application of critical thinking

THE GROWTH OF PSYCHOLOGY
Emergence of scientific psychology
Differences between schools of psychology
Role of women

HUMAN DIVERSITY
Importance of human diversity

RESEARCH METHODS IN PSYCHOLOGY
Types of research methods
Variables and groups
Sampling
Unintended biases

ETHICS OF PSYCHOLOGY: RESEARCH ON HUMANS AND ANIMALS
Key ethical issues

CAREERS IN PSYCHOLOGY
Career paths

What Is Psychology?
The Definition of Psychology

LEARNING OBJECTIVE: Define psychology and describe the major subfields within psychology.

Psychology is the scientific study of behavior and mental processes.

- Psychologists are interested in every aspect of human thought and behavior.

The Fields of Psychology

The study of all aspects of human growth and change — physical, mental, social, and emotional — from the prenatal period through old age.

The Fields of Psychology

The study of the biological basis of human behavior, thoughts, and emotions.
The Fields of Psychology

The study of basic psychological processes such as:
- Learning
- Sensation
- Motivation
- Emotion

The Fields of Psychology

The study of the differences among individuals in such traits as:
- Sociability
- Emotional stability
- Self-esteem
- Aggressive inclinations
- Openness to new experiences

The Fields of Psychology

Clinical:
Focuses on the diagnosis and treatment of mental disorders
Counseling:
Focuses on “everyday” adjustment issues (i.e., making difficult choices, coping with a troubled relationship)
The Fields of Psychology

Explores how society influences the individual, including such topics as:
- Interpersonal attraction
- Persuasion
- Attitude formation
- Obedience
- Conformity
- Group behavior

The Fields of Psychology

Applies the principles of psychology to the workplace

The Fields of Psychology
Enduring Issues

LEARNING OBJECTIVE: Describe the five enduring issues that cut across the subfields of psychology.

To what extent is behavior caused by internal processes?
To what extent is behavior caused by external factors?

Is the person we become a product of innate, inborn tendencies, or a reflection of experiences?

Are the characteristics we develop in childhood permanent and fixed, or do we change in predictable (and unpredictable) ways over the course of the life span?
Enduring Issues

Does our understanding of human behavior apply equally well to everyone across cultures, or only to men or women, particular racial or ethnic groups, or particular societies (especially our own)?

Enduring Issues

What is the relationship between experiences (such as thoughts and feelings) and biological processes (such as activity in the nervous system)?

The Scientific Method

LEARNING OBJECTIVE: Explain what psychology has in common with other sciences, how psychologists use the scientific method, and the difference between theories and hypotheses.

Four Steps

1. Collect Data
2. Generate Theory
3. Produce Testable Hypotheses
4. Test Hypotheses Empirically
Why Use the Scientific Method?

Critical Thinking

LEARNING OBJECTIVE: Apply critical thinking to an article in a magazine or newspaper.

What is critical thinking?
• The process of examining information and then making judgments and decisions

How to Think Like a Scientist

1. Define the problem.
2. Suggest a theory.
3. Collect and examine evidence.
4. Analyze assumptions.
5. Avoid oversimplifying.
6. Draw conclusions carefully.
7. Consider alternative interpretations.
8. Recognize the relevance of research.
Applying Psychology

The Benefits of Studying Psychology

• Self-understanding
• Critical thinking skills
• Skill in applying the scientific method
• Study skills
• Job skills

The Growth of Psychology

The "New Psychology": A Science of the Mind

LEARNING OBJECTIVE: Describe the emergence of scientific psychology in the late 19th and early 20th centuries.

Voluntarism
Structuralism

Functionalism

Psychodynamic Psychology
Voluntarism

Wilhelm Wundt

- First psychology lab in Germany (1879)
- Measurement and experimentation
- Moved psychology from a philosophy to a science

Structuralism

Edward Titchener

- Analyze complex experiences in terms of their simplest components
- Subdivisions of consciousness:
  - Physical sensations
  - Feelings
  - Images

Functionalism

William James

- “Stream of consciousness” vs. elements of mind
- Individuals use perceptual abilities to function in the environment.
Psychodynamic Psychology

Sigmund Freud

• Neurologist in late 18th century Vienna
• Controversial
• Unconscious impacts human behavior

Redefining Psychology: The Study of Behavior

LEARNING OBJECTIVE: Explain the differences between psychodynamic, behavioral, humanistic, cognitive, evolutionary, and positive psychology.

Behaviorism

• Focus on observable and measurable behavior
• Based on Pavlov’s work

John B. Watson

• Behaviorism

B.F. Skinner

• Behaviorism revisited
• Added concept of reinforcement to Watson’s theory

Fear is learned when a neutral stimulus is paired with an aversive stimulus like a loud noise.

Watson believed fears are learned via experience.
John B. Watson and Behaviorism

“Watson argued that the whole idea of mental life was superstition… (he) contended that you cannot see or even define consciousness any more than you can observe a soul…For Watson, psychology was the scientific study of observable, measurable behavior – and nothing more (Ardila, 2007).”

– Pages 13-14 (Morris and Maisto)

The Cognitive Revolution

**Gestalt**

**Humanistic**

**Cognitive**

People perceive and experience objects as whole patterns.

Emphasis on:
- Human potential
- Mental health
- Well-being
The Cognitive Revolution

School of psychology devoted to the study of mental processes in the broadest sense

New Directions

Evolutionary Psychology
Focuses on behaviors and mental processes and:
• their evolutionary origins
• their adaptive value
• the purposes they continue to serve

Positive Psychology
Focuses on positive experiences, including:
• subjective feelings of happiness and well-being
• the development of individual traits such as integrity and leadership
• the settings that encourage individuals to flourish
New Directions

Multiple Perspectives Today

Contemporary psychologists tend to see different perspectives as complementary.

Most agree that the field advances with the addition of new evidence to support or challenge existing theories.

Where Are the Women?

LEARNING OBJECTIVE: Describe the role of women in the history of psychology.

Women have contributed to psychology from its beginnings. However, they faced much discrimination.

Christine Ladd-Franklin (1847–1930)
color vision

Mary Whiton Calkins (1863–1930)
how we learn verbal material; self-psychology

Margaret Washburn (1871–1939)
role of imagery in thought processes

Percentage of Women Recipients of Ph.D.s in Psychology, 1950–2005

LEARNING OBJECTIVE: Explain the importance of understanding human diversity and describe psychology’s increasing attention to human diversity.

Psychologists have begun to question assumptions explicitly based on:

- Gender
- Race and Ethnicity
- Culture

Gender

The psychological and social meanings attached to being biologically male or female

- Gender stereotypes
- Feminist psychology
- Sexual orientation
Race and Ethnicity

Race
Based on physical differences:
• Geographic location
• Skin color
• Hair texture
• Genes
• Facial features

Ethnicity
Based on cultural characteristics:
• Common homeland/history
• Language
• Religion
• Cultural beliefs
• Social practices

Culture

Culture
The values, attitudes, behaviors, and beliefs that are passed from one generation to another
• Individualistic Cultures
• Collectivist Cultures
• Cross-Cultural Research

Research Methods
Naturalistic Observation

**LEARNING OBJECTIVE:** Describe the characteristics of naturalistic observation, case studies, surveys, correlational research and experimental research, and the strengths and weaknesses of each research method.

**ADVANTAGES**
- Behavior likely to be more natural, spontaneous, and varied than that observed in a laboratory

**DISADVANTAGES**
- Expectations of observer might distort or influence interpretation of what was actually observed (observer bias)

Case Study

**ADVANTAGES**
- Yields a great deal of detailed descriptive information
- Useful for forming hypotheses

**DISADVANTAGES**
- May not be a representative sample
- Time consuming and expensive
- Potential for observer bias

Survey

**ADVANTAGES**
- Allows for a large amount of data to be gathered quickly

**DISADVANTAGES**
- May end up with ambiguous answers if questions are poorly constructed
- May not be accurate, depending on ability and willingness of participants to answer questions honestly
**Correlational Research**

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<th>DISADVANTAGES</th>
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<td>• Cannot draw conclusions about cause and effect</td>
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**Experimental Research**

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<td>• Allows researchers to draw conclusions about cause-and-effect relationships</td>
<td>• Unexpected/uncontrolled variables may confound results</td>
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**Independent and Dependent Variables**

(e.g., type of dog and level of fear)

- Experimental & control groups
The Importance of Sampling

LEARNING OBJECTIVE: Explain the importance of sampling in psychological research. Differentiate between random and representative samples.
Human Diversity and Research

LEARNING OBJECTIVE: Explain how unintended biases can affect the results of research.

Unintended biases in research

• Generalization of research findings to other cultures (gender, ethnicity, race)
• Influence of the experimenter's gender, race, or ethnicity

Applying Psychology

When you read an account of a psychological study in the media, consider what kinds of sampling and research methods were used in the study.

• Is the study a true experiment?
• Does it have an experimental and a control group?

Ethics and Psychology
LEARNING OBJECTIVE: Identify key ethical issues in psychological research with humans and nonhumans.

APA Ethical Guidelines for Human Subjects

Animal Research

APA Ethical Guidelines for Animal Subjects

• Researchers must ensure “appropriate consideration of the animal’s comfort, health, and humane treatment.”
• Animals may not be subjected to “pain, stress, or privation” when an alternative procedure is available.

Animal Research

“Psychologists study animal behavior to shed light on human behavior. Crowding mice into small cages, for example, has yielded valuable insights into the effects of overcrowding on humans... Yet, animal protectionists and others question whether it is ethical to use nonhuman animals, which cannot give their consent to serve as subjects, in psychological research.”

– Page 34 (Morris and Maisto)
Careers in Psychology

Jobs with A.A. in Psychology

LEARNING OBJECTIVES: Describe some of the career paths that are available to people who have studied psychology. Distinguish between psychiatrists, psychoanalysts, clinical psychologists, counseling psychologists, and social workers.

Paraprofessional positions
- State hospitals
- Mental health centers
- Other human services settings

Jobs with B.A. in Psychology

- Assistants to psychologists
  - Mental health centers
  - Vocational rehabilitation centers
  - Correctional centers
- High school psychology teacher
- Government or business positions
Jobs with Advanced Degrees (M.A. or Ph.D.)

- Colleges and universities
- School or health facilities
- Research
- Human Resources
- Therapists

Careers Paths for Therapists

- Psychiatrists
- Psychoanalysts
- Clinical Psychologists
- Counseling Psychologists
- Social Workers

Lecture Activities
How close are the mind and body? Let’s find out.
Check your pulse rate right now and write it down.
We’ll check again after going through the activity
on the next slide.

Did your pulse rate go up or down?
By how much?

What are the everyday
implications for this
mind-body connection?
What do you think about John B. Watson’s famous quote?

“Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I’ll guarantee to take any one at random and train him to become any type of specialist I might select – doctor, lawyer, artist, merchant-chief and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors. I am going beyond my facts and I admit it, but so have the advocates of the contrary and they have been doing it for many thousands of years.”

Evolutionary psychologists say that men generally prefer to mate with younger women because of the increased chances of healthy babies. But some examples counter this argument, such as the relationship between Ashton Kutcher, 31, and Demi Moore, 46. What does this say about the validity of evolution, and of efforts to explain psychological processes through evolutionary processes?

A. It provides evidence that evolution is false.
B. It says nothing about physical evolution, but suggests that human psychology is not affected by evolution.
C. It says nothing about the validity of evolution as an explanation for physical or psychological processes.
D. It is “the exception that proves the rule.”

Correlational Research

1. Find a partner and develop a list of two numeric variables that you think would be associated (i.e., amount of sleep and GPA) and survey/observe at least 10 people in class.

2. Discuss the findings with your partner and write your conclusions.
## Table 2: The Fields of Psychology

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