ANNOTATED INSTRUCTOR'S EDITION

THE WORLD OF PSYCHOLOGY

ELLEN R. GREEN WOOD ■ SAMUEL E. WOOD

ANNOTATED INSTRUCTOR'S EDITION

The World of Psychology

Ellen R. Green Wood
St. Louis Community College–Meramec

Samuel E. Wood
Higher Education Center of St. Louis

Instructor's Section and Annotations Prepared by

Mark Garrison
Kentucky State University

Allyn and Bacon

Boston London Toronto Sydney Tokyo Singapore

Editor-in-Chief, Social Sciences: Susan Badger
Developmental Editor: Elizabeth Brooks
Senior Editorial Assistant: Dana Hayes
Cover Administrator: Linda Dickinson
Manufacturing Buyer: Louise Richardson
Signing Representative: Ward Moore
Production Coordinator: Leslie Olney
Editorial-Production Service: Publicom, Inc.
Cover Designer: Studio Nine

A Division of Simon & Schuster, Inc.
160 Gould Street
Needham Heights, MA 02194

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1 97 96 95 94 93 92

ISBN 0-205-15001-2

1
Introduction to Psychology

LEARNING OBJECTIVES

1.1 What is naturalistic observation, and what are some of its advantages and limitations? (p. 3)
1.2 What is the case study method, and for what purposes is it particularly well suited? (p. 4)
1.3 What are the methods and purpose of survey research? (p. 4)
1.4 What is a representative sample, and why is it essential in a survey? (p. 5)
1.5 What is the main advantage of the experimental method? (p. 7)
1.6 What is the difference between the independent variable and the dependent variable? (p. 8)
1.7 How do the experimental and control groups differ? (p. 9)
1.8 What is selection bias, and what technique do researchers use to control for it? (p. 10)
1.9 What is the placebo effect, and how do researchers control for it? (p. 10)
1.10 What is experimenter bias, and how is it controlled? (p. 11)
1.11 What is the correlational method, and when is it used? (p. 13)
1.12 What is a correlation coefficient? (p. 13)
1.13 Why must psychological research be replicated? (p. 16)
1.14 What was Wilhelm Wundt's contribution to psychology? (p. 20)
1.15 What were the goals and method of structuralism, the first school of psychology? (p. 21)
1.16 What was the goal of the early school of psychology known as functionalism? (p. 21)
1.17 How did behaviorism differ from previous schools of psychology? (p. 22)
1.18 What was the role of the unconscious in psychoanalysis, Freud's approach to psychology? (p. 23)
1.19 What is the emphasis of Gestalt psychology? (p. 23)
1.20 What is the focus of humanistic psychology? (p. 24)
1.21 What are the five major perspectives in psychology today? (p. 26)
1.22 What are some specialists in psychology, and in what settings are they employed? (p. 27)

CHAPTER OVERVIEW

Though the definition of psychology has changed over the years, first focusing on mental processes and then on observable behavior, we now define psychology as the scientific study of behavior and mental processes. Three types of research methods that make psychology scientific are described:

(1) Descriptive methods include naturalistic observation, laboratory observation, the case study method, and survey research. Surveys typically require the selection of a sample of possible subjects from the broader population. The authors describe how a sample can be selected using a representative or random selection, how questionnaires are used, and why interviews often have an advantage because of the elaboration of details that is possible when a good rapport exists between the subject and the interviewer.

(2) The experimental method is the research method that meets the conditions necessary to establish that a cause-effect relationship exists. Experiments are meant to test a hypothesis about the causal relationship between the independent and dependent variables. The use of controls in an experiment is crucial in order to rule out any other variables as possible causes. If an experiment confirms the hypothesis, the next question that must be addressed is whether the results apply to other situations. Several problems can occur in an experiment that influence, or bias, the results. These problems include bias caused by how the control and experimental groups are chosen; the placebo effect, in which the subject behaves according to his or her expectations about the experiment; and experimenter bias, in which the experimenter's expectations influence the subjects' responses. Sometimes the control used in an experiment makes the setting contrived or unnatural. Also, some experiments cannot be conducted on human subjects because of ethical considerations.

(3) The correlational method is the research method that analyzes data in order to discover the relationships between variables (relationships other than cause-effect). The authors describe the correlation coefficient, distinguish positive and negative correlations, and introduce the concept of strength. When a correlation is high, the

presence or absence of one variable predicts the presence or absence of the other variable. Psychologists have used a variety of tests to collect data, and many of the tests are used in correlational research.

Research findings are verified by the replication of psychological studies. If the findings are valid, the replication of the study will yield similar results. When human subjects are used in research, they are most often college students. This raises questions about the appropriateness of generalizations about behavior based on this limited population. Animals are also used in research, a fact that has become controversial because of how research animals are treated. Concerns about the rights and welfare of subjects in psychological studies has led to the development of specific research standards.

The history of psychology is reviewed. Wilhelm Wundt founded psychology as a formal academic discipline, and structuralism was the first formal school of thought in psychology. William James was very influential in the development of functionalism, the first American school of psychology. Behaviorism focused on the study of observable behavior, drawing first on the work of John B. Watson and then on the work of B. F. Skinner. The authors also describe the foundation of psychoanalysis, the development of the Gestalt school, and the emergence of humanistic psychology with its focus on the uniqueness of human beings and human abilities.

The contemporary perspectives that are predominant in psychology today are the biological perspective, the psychoanalytic perspective, the behavioral perspective, the cognitive perspective, and the humanistic perspective. Psychologists work in a variety of specialties. These include clinical, counseling, physiological, experimental, developmental, educational, school, social, industrial, and organizational specialties. Their work includes research, counseling, consulting, and teaching.

The SQ3R method of study is described in the *World of Psychology: Applications* feature at the end of the chapter.

CHAPTER-AT-A-GLANCE

Chapter Outline	Instruction Ideas	Supplements
Introduction to Psychology p. 1	Demonstration Intro 1, 4, 5 Critical Thinking Forum 1.1	A&B Videos The Enlightened Machine New Directions Past, Present and Promise Space Age Diagnosis States of Mind
Descriptive Research Methods p. 3 Naturalistic Observation: Caught in the Act of Being Themselves • Laboratory Observation: A More Scientific Look at the Subject • The Case Study Method: Studying a Few Subjects in Depth • Survey Research: The Art of Sampling and Questioning	Demonstration Methods 2 Lecture Examples 1.1–1.4 Learning Objectives 1.1–1.4	A&B Videos I'll Buy That The Responsive Brain Understanding Research Test Questions 1.1–1.42
The Experimental Method: Searching for Causes p. 7 Independent and Dependent Variables • Experimental and Control Groups: The Same Except for the Treatment • Control in the Experiment: Attempting to Rule Out Chance • Generalizing the Experimental Findings: Do the Findings Apply to Other Groups? • Potential Problems in Experimental Research • Advantages and Disadvantages of the Experimental Method	Demonstration Methods 5 Lecture Examples 1.5–1.8 Critical Thinking Opportunity 1.1 Learning Objectives 1.5–1.10	PsychScience: Scientific Inquiry Transparency: Social 10 Test Questions 1.43–1.88
Other Research Methods p. 13 The Correlational Method: Discovering Relationships, Not Causes • Psychological Tests: Assessing the Subject	Demonstration Methods 3 & 4 Critical Thinking Opportunity 1.2 Learning Objectives 1.11–1.12	Transparency: Intro 3 Test Questions 1.89–1.112
Some Considerations in Psychological Research p. 16 Replication of Psychological Studies: Play It Again, Sam • Human Subjects in Psychological Research • The Use of Animals in Research • Ethics in Research: First and Foremost	Student Chalkboard Methods 1 Demonstration Methods 6–8 Lecture Example 1.9 Critical Thinking Forum 1.2 Journal Entry 1.1 Learning Objective 1.13	CNN: Animal Research CNN: Animal Rights Test Questions 1.113–1.126
The History of Psychology: Exploring Psychology's Roots p. 20 Wilhelm Wundt: The Founding of Psychology • Titchener and Structuralism: Psychology's Blind Alley • Functionalism: The First American School of Psychology • Behaviorism: Never Mind the Mind • Psychoanalysis: It's What's Down Deep That Counts • Gestalt Psychology: The Whole Is Greater Than the Sum of Its Parts • Humanistic Psychology: Looking at Human Potential	Demonstration Intro 2 Lecture Examples 1.10–1.13 Critical Thinking Opportunity 1.3 Journal Entry 1.2 Learning Objectives 1.14–1.20	A&B Videos Pavlov: The Conditioned Reflex Test Questions 1.127–1.164
Psychology Today p. 26 Modern Perspectives in Psychology: Current Views on Behavior and Thinking • Psychologists at Work • *WORLD OF PSYCHOLOGY: APPLICATIONS—Sharpening Your Study Skills*	Student Chalkboard Intro 1 Lecture Examples 1.14–1.17 Journal Entry 1.3 Multicultural Issue 1.1 Learning Objectives 1.21 & 1.22	Test Questions 1.165–1.184

Annotated Lecture Outline

INTRODUCTION TO PSYCHOLOGY

Key Terms
psychology (p. 3)
basic research (p. 3)
applied research (p. 3)

Classroom Demonstrations and Handouts

Demonstration Intro 1: "Inquiring minds want to know . . ."
Ask students to form small groups and generate 10 questions about various behaviors, prefaced with the phrase "Inquiring minds want to know. . . . " As each group presents its questions, suggest several theories that could provide answers. Be sure to note which questions will be fully answered (and where) in the text. Your students should understand that an inquiring mind is essential in psychology and will be required during the semester. See the activities manual for more information.

Demonstration Intro 4: Commonsense Psychology Quiz
Is psychology just common sense? Give students the Commonsense Psychology Quiz (Handout Intro 5) to measure how much they do know. The quiz should be used to show students that common sense is too unreliable to fulfill psychology's goals. See the activities manual for more information.

Demonstration Intro 5: Commonsense Psychology Quiz (Part II)
Give students a copy of the Commonsense Psychology Quiz and ask them to administer it to 10 people. They should analyze the participants' responses carefully, focusing on why misconceptions exist. See the activities manual for more information.

Critical Thinking

Critical Thinking Forum 1.1: Is Psychology a Science?
Is psychology a science? Most people will have very definite views on this subject, and some will say no. You may have to coax some support. The value of the debate is in challenging students to defend their viewpoints.

DESCRIPTIVE RESEARCH METHODS

Key Terms
naturalistic observation (p. 3)
case study (p. 4)
survey (p. 4)
representative sample (p. 5)

Classroom Demonstrations and Handouts

Demonstration Methods 2: Representative Sample
Identify a "population" (for example, everyone sitting in the first two rows). Using Handout Methods 2 (in the activities manual), calculate the mean height of that population. Next draw a sample of 10 percent from the population, and determine the mean height. Compare the two means. Increase the size of the sample gradually, and note how the sample mean becomes a more accurate statistic of the population mean. Your last sample should be the entire population.

Lecture Examples

Lecture Example 1.1: Naturalistic Observation
Besides the example of naturalistic observation presented in the text, there are other illustrations that students might find helpful. An illustration of naturalistic observation that students will not forget is the examination of the effects of personal space violation during urinating. Middlemist et al. (1976) observed the onset and duration of men's urination. A confederate would violate the subject's personal space and urinate in either

the urinal next to the subject or one urinal away. Meanwhile another confederate, armed with a periscope, recorded the urinating behaviors of the subjects. (You might want to follow this up with a lecture on ethics considerations in research.)

Naturalistic observations may take place over the course of several hours, days, or even months. A case of this comes from an analysis of the changes in the behavior of residents living near Mount Saint Helens. Following the eruption in 1980, Adams and Adams (1984) found that there was a disaster stress reaction measured by increases in aggression, alcohol abuse, domestic violence, and district court cases. Webb et al. (1966) cite other examples of naturalistic observation, such as analyzing trash to determine alcohol consumption.

Adams, P. R., & Adams, G. R. (1984). Mount Saint Helen's ashfall. *American Psychologist, 39,* 252–260.

Middlemist, R. D., Knowles, E. S., & Matter, C. E. (1976). Personal space invasions in the lavatory: Suggestive evidence for arousal. *Journal of Personality and Social Psychology, 33,* 541–546.

Webb, E., Campbell, D., Schwartz, R., & Sechrest, L. (1966). Unobtrusive measures: Nonreactive research in the social sciences. Chicago: Rand McNally.

Lecture Example 1.2: Who's on First?

Researchers employed naturalistic observation to test a drug used to treat attention deficit with hyperactivity disorder. Seventeen males between the ages of 7 and 9, who were treated with methylphenidate, played baseball. The researcher then observed performance before and during a game with regard to batting and other skills. In addition, the subjects were asked questions about the game during play. The drug proved helpful in increasing attentiveness. A double-blind and placebo-controlled design was used. Ask your students to explain the necessity for this type of design.

Pelham, W. E., et al. (1990). Methylphenidate and baseball playing in ADHD children: Who's on first? *Journal of Consulting and Clinic Psychology, 58,* 130–133.

Lecture Example 1.3: Case Study of Phineas Gage

Phineas Gage's tragic railroad accident is a classic example of a case study. A portion of Gage's brain was destroyed when a spike traveled through his skull. Before the accident Gage was a good family man and conscientious worker; after the accident his work habits and personality changed dramatically.

Harlow, J. M. (1869). Recovery from the passage of an iron bar through the head. *Massachusetts Medical Society Publication, 2,* 329–347.

Lecture Example 1.4: Sex Surveys

The most famous sex survey ever conducted in the United States is the Kinsey report, which consists of two volumes—*Sexual Behavior in the Human Male* (Kinsey, Pomeroy, & Martin, 1948) and *Sexual Behavior in the Human Female* (Kinsey, Pomeroy, Martin, & Gebhard, 1953). Over 10,000 men and women were interviewed in this survey, and it revealed that behaviors formerly considered abnormal or deviant—masturbation, oral sex, and homosexual activity—were far more common than most people had imagined. The Kinsey sample was carefully selected but did not include African Americans, and it underrepresented the poor and the elderly. Consequently it provides a more accurate picture of the sexual behavior of white, middle-class America in the 1940s and 1950s than of the whole population. Kinsey used all male interviewers with female subjects, and this might have served to inhibit the responses of some of the women.

> Interviewers' opinions and attitudes and their expectations of the respondents' opinions and attitudes may influence whether and what answers are given and whether and how they are recorded. Intensive training of interviewers and keeping them ignorant of both the hypotheses being tested and the data returns may minimize the influence of some of these effects. (Van Dalen, 1973, p. 330)

In 1981 Shere Hite distributed over 100,000 questionnaires for her survey of sexual behavior. Only 7 percent, or 7,000 people, responded. This response rate is so low that her findings cannot, by any stretch of the imagination, be interpreted as representative of the views of American women. Despite this, Hite's book based on these findings received a great deal of publicity.

Kinsey, A. C., Pomeroy, W. B., & Martin, C. E. (1948). *Sexual behavior in the human male.* Philadelphia: Saunders.

Kinsey, A. C., Pomeroy, W. B., Martin, C. E., & Gebhard, P. H. (1953). *Sexual behavior in the human female.* Philadelphia: Saunders.

Van Dalen, E. B. (1973). *Understanding educational research: An introduction* (3rd ed.). New York: McGraw-Hill.

Test Questions

1.1–1.42

THE EXPERIMENTAL METHOD: SEARCHING FOR CAUSES

Key Terms

experimental method (p. 7)
independent variable (p. 9)
dependent variable (p. 9)
experimental group (p. 9)
control group (p. 9)
selection bias (p. 10)
random assignment (p. 10)
placebo effect (p. 11)
placebo (p. 11)
experimenter bias (p. 11)
double-blind technique (p. 11)

Classroom Demonstrations and Handouts

Demonstration Methods 5: Designing an Experiment
Ask students to form small groups and design an experiment to test the validity of a cliche or old saying, using Handout 1.11. Students must identify a hypothesis, specify the variables and subject groups, identify the population under study, and discuss any ethical problems. See the activities manual for more information.

Lecture Examples

Lecture Example 1.5: An Untestable Hypothesis
Here's an example of an untestable hypothesis: "When you turn away from a picture, the characters in it move and interact with one another. But when you look, they instantly return to their original position." Ask your students to look at a photograph in their textbook, then turn away, and then very quickly look at it again. Propose that your hypothesis was supported! (Your hypothesis is obviously not testable.)

Lecture Example 1.6: Independent and Dependent Variables
A study examining the effects of colorization of black-and-white movies is a simple yet effective case of the difference between independent and dependent variables and subject groups. Cutler, Dalseide, Plummer, and Bacon (1988) presented the movie *It's a Wonderful Life* to two subject groups. The experimental group saw the colorized version; the control group saw the original black-and-white version. The subjects rated their version on humor, interest, action, and acting (dependent variables). (There was no significant difference!)

Cutler, G. H., Dalseide, A. R., Plummer, V. H., & Bacon, C. R. (1988). Subjective reactions to a colorized movie vs its original black/white version. *Perceptual and Motor Skills, 66,* 677–678.

Lecture Example 1.7: The Placebo Effect
The power of suggestion is powerful indeed. It can relieve pain, heal ulcers, cure psychiatric symptoms, and apparently even kill. Consider this documented case:

> Dr. Walter Cannon, famed Harvard Medical School physiologist, described the case of a young Maori aborigine in New Zealand who unknowingly ate a dish of wild hen, a fowl that is taboo to Maoris not yet of age. Years later, when the boy (by then a man) met the friend who had mischievously served it to him, he was told that he had eaten forbidden food. Convinced he had committed a mortal sin, the young man became extremely frightened and started to tremble violently. Within a few hours, he was dead. (Cherry, 1981, p. 67)

But the most drastic placebo we have ever heard about is sham surgery. During the 1950s surgeons routinely performed an operation to relieve the frightening and burdensome chest pain suffered by patients with angina pectoris. Surgeons would open a

patient's chest and simply tie off some of the mammary arteries, which supply blood to the chest region. An amazing number of the patients—nearly 90 percent—reported relief from pain. An experimental study conducted from the late 1950s until the early 1960s divided the angina patients into two groups and informed them that they were going to have an operation that had a very high success rate in relieving angina pain. The actual surgery was performed on half the patients. But something was done with the other half that would no longer be allowed according to ethical medical standards. The surgeons took the remaining half of the patients, put them under anesthesia, made the surgical incision in their chests, and then simply sewed them up again. When the patients awakened in the recovery room, they were told that the operation had been performed (Cherry, 1981). The patients who had had the sham surgery did even better than the patients who had undergone the real operation! Their pain had been relieved by the power of suggestion.

Cherry, L. (1981, September). Power of the empty pill. *Science Digest,* 60–67, 116.

Lecture Example 1.8: Ethical Issues
An important consideration to any psychologist is the ethical treatment of research subjects. There are many potential research problems, such as deception and invasion of subjects' privacy, especially in studies using naturalistic observation. Let students generate other ethical issues; point out that it is the task of science to balance its own needs to collect data and the rights of participants. Supplement your lecture with a discourse on the ethical guidelines set down by the APA. Ask your students whether these principles are too liberal or too conservative. Are psychologists held to a higher standard than other professionals (e.g., lawyers, stockbrokers, clergy)? You could also tie in the use of animals in research.

American Psychological Association. (1982). Ethical principles in research with human participants. Washington, DC: APA.

Miller, N. E. (1985). The value of behavioral research on animals. *American Psychologist, 40,* 423–440.

Overmeir, J. B. (1987). Not doing animal research would be immoral. *Comparative Psychology Newsletter, 7,* 48–51.

Critical Thinking

Critical Thinking Opportunity 1.1: Formulating Hypotheses
Have students propose theories to explain occurrences such as why cakes fall, why the football or basketball team lost (or won), etc. Have other students critique the theories and then offer ways of testing the theories.

PsychScience

PsychScience: Scientific Inquiry
This module demonstrates how the basic methods of scientific inquiry are used to answer psychological questions about behavior. Students select a question about behavior and then formulate a hypothesis about the correlation between two or more variables. Then they design an experiment to answer the question and test the hypothesis. The program provides data for the student to analyze.

Transparencies

Transparency Social 10: The Confirmation Bias and Theory in Social Psychology

Test Questions

1.43–1.88

OTHER RESEARCH METHODS

Key Terms
correlational method (p. 13)
correlation coefficient (p. 13)

Classroom Demonstrations and Handouts

Demonstration Methods 3: Classroom Correlation
To demonstrate correlations, select two variables that are innocuous and lend themselves to easy data collection, such as students' height and shoe size. Collect and plot the data on a graph, using Handout Methods 3. If you have time, you may want to compute Pearson's r on the data. Ask students to speculate on the relationship between height and shoe size. See the activities manual for more information.

Demonstration Methods 4: Correlation versus Causation
Handout Methods 4 is provided to help students conceptualize the difference between correlation and causation. Students are required to find an example of statements that confuse correlated events with causal relationships.

Critical Thinking

Critical Thinking Opportunity 1.2: What Do We Really Mean by Cause and Explanation?
Ask students to list 10 examples of a cause-effect relationship and then apply specific criteria to determine whether the evidence supports a causal relationship. Students should reflect on what we mean by explanation.

Transparencies

Transparency Intro 3: Correlations Do Not Show Causation

Test Questions

1.89–1.112

SOME CONSIDERATIONS IN PSYCHOLOGICAL RESEARCH

Key Term
replication (p. 16)

Classroom Demonstrations and Handouts

Student Chalkboard Methods 1: Strengths and Weaknesses of Research Methods

Demonstration Methods 6: Research Ethics
This activity requires that students first review and then judge the ethical aspects of four vignettes available on Handout Methods 6. Responses can also be used for Critical Thinking Forum 1.2. See the activities manual for more information.

Demonstration Methods 7: Writing an Informed Consent Form
Using Handout Methods 7, groups of students should write their own informed consent form. This activity is a good adjunct to Demonstration Methods 5 on designing experiments. Psychologists are very concerned about the ethics of research. In general, participants must give informed consent before a research study commences. See the activities manual for more information.

Demonstration Methods 8: Participating on an Institutional Animal Rights Committee
Groups of students are asked to role-play members of an animal rights committee and decide whether to approve four research projects involving animals. The groups are given vignettes (Handout Methods 8 in the activities manual) offering different perspectives on the issue of animal research. Students will learn that there are no easy answers to this controversy.

Lecture Examples

Lecture Example 1.9: American Psychological Association Research Guidelines
Bring to class a copy of the APA's guidelines for research and share a few of them with your students. Occasionally the APA will publish a list of members who have been sanctioned for violation of these guidelines; bring this list and read aloud an example or two. It is very important for students to understand that psychology, as a profession and as a science, is very dedicated and sensitive to ethical issues.

Critical Thinking

Critical Thinking Forum 1.2: Ethics of Research
Use student responses on Demonstration Methods 6 to divide the class into two groups on each of the four cases. You may find it easier to use only one case; if so, pick the case with the greatest disparity of student responses. Ask groups to defend their views with reasoned arguments.

Journal Entries

Journal Entry 1.1: Research with Animals
Having read the textbook discussion of research with animals, what is your position? Should all research with animals be halted? On what grounds is animal research justified?

Test Questions

1.113–1.126

THE HISTORY OF PSYCHOLOGY: EXPLORING PSYCHOLOGY'S ROOTS

Key Terms

structuralism (p. 21)	**psychoanalysis (p. 23)**
functionalism (p. 21)	**Gestalt psychology (p. 23)**
behaviorism (p. 22)	**humanistic psychology (p. 25)**

Classroom Demonstrations and Handouts

Demonstration Intro 2: Introspection
Give students an opportunity to experience introspection, one of the earliest "scientific" attempts to examine the mind. Have them look at or hold an object; ask for a report of their experiences. Since descriptions of the object do not count, point out to them the obvious flaws of this approach.

Lecture Examples

Lecture Example 1.10: Helping Students through the Early Views
Some students will react negatively to these "isms" and become confused. A helpful suggestion is to simply show how the name of the "ism" is related to its approach and purpose. For example, structuralism analyzed the "structure" of conscious experience, and functionalism determined the "function" of the mind.

Lecture Example 1.11: Structuralism
Preface your discussion of structuralism with a question on the basic structure of a fireplace (bricks), a song (notes), an ocean beach (sand), a book (words), or words (letters). Explain that Wundt was attempting to ascertain the same thing, but for consciousness.

If Wundt held a yellow pencil before your eyes and asked you to describe what you see—your conscious experience of the event—he would not expect you to say, "I see a pencil." Wundt taught that an immediate experience, such as looking at a pencil, is not in the object according to its use or function (the pencil), but instead is the experience of a slender, cylindrical object that is yellow and has a sharp point. The immediate experience would also include any emotional reactions you had to the pencil and any other images it evoked. How could Wundt study conscious experience scientifically?

When we look at an apple, we see an apple, not a round object with a red hue, which may be polished to a high gloss and is edible. Furthermore, we do not introspect each time we take a step, put on a coat, or open a door. We just do it.

Lecture Example 1.12: Darwin
Darwin held that in the struggle for survival, those organisms best equipped to adapt to their environment would survive to maturity and pass along their abilities to their offspring; less fit individuals would die off young and not pass their genes along. Darwin's ideas about evolution and the continuity of the species were largely responsible for an increasing use of animal subjects in psychological experiments.

Lecture Example 1.13: Behaviorism and the Discipline of Psychology
Behaviorism both narrowed and extended the field of psychology. It narrowed the field because all but observable, measurable behavior would be eliminated. It extended the field because more behaving individuals could be studied. Animals cannot introspect, and neither can infants and young children or the mentally defective. But all living animals (including humans) behave, so their behavior could be studied.

But how? Watson's answer had been provided, in part, nearly a decade earlier by the Russian physiologist Ivan Pavlov (1849–1936), who had won a Nobel Prize in 1904 for his pioneering work on the nerves of the heart. Pavlov, studying the behavior of dogs, showed that salivation—a natural response to the presence of food—could also be elicited by any number of neutral stimuli—ringing bells, tones, geometric shapes, even the sound of the caretaker's footsteps as he came to feed the dogs. Dogs do not normally salivate at the sight of circles and squares, or at the sound of bells or footsteps, so they must have learned to do so by associating the sights and sounds with the food that always made them salivate. The behavioral approach has been referred to as a blackbox theory because its proponents do not speculate about what is going on within the organism; rather, they seek to explain behavior only in terms of stimulus and response.

Critical Thinking

Critical Thinking Opportunity 1.3: What Is the Value of Introspection?
If the value of introspection is questioned in terms of its scientific validity, does this mean that it has little or no value in other areas? Ask students to identify other, perhaps equally important, uses for introspective data.

Journal Entries

Journal Entry 1.2: School of Thought
Suppose nuclear war is imminent and you must select and save the works of either Wundt, James, or Watson. What collection (and therefore what school of thought) will you save from destruction? Why? Remember that the books you save will be the only exposure to psychology that the new generation may get.

Test Questions

1.127–1.164

PSYCHOLOGY TODAY

Key Terms

biological perspective (p. 26)
psychoanalytic perspective (p. 26)
behavioral perspective (p. 26)
cognitive perspective (p. 26)
humanistic perspective (p. 27)
longitudinal study (p. 28)

Classroom Demonstrations and Handouts

Student Chalkboard Intro 1: Perspectives in Psychology

Lecture Examples

Lecture Example 1.14: How and Why We Believe
The authors emphasize that psychology is scientific. A psychologist's subscription to scientific values and the use of scientific methods make it so. Bertrand Russell probably said it best when he wrote, " . . . it is not what the man of science believes that distinguishes him, but how and why he believes it. His beliefs are tentative, not dogmatic; they are based upon evidence, not on authority."

Lecture Example 1.15: Different Perspectives on Treating Anxiety
The differences in training and orientation among mental health professionals are apparent in the treatment of anxiety disorders. The psychologist might suggest relaxation training, the psychiatrist might prescribe Valium, and the psychoanalyst might examine defense mechanisms or unresolved childhood conflicts.

Lecture Example 1.16: Clinical Psychology in the Persian Gulf
Psychology can be applied in many settings including the military. Psychologists in the military may have a dual role, especially in combat situations like the Persian Gulf War. According to a recent article in *APA Monitor,* in early 1991 there were about 370 military psychologists stationed in the Gulf. Given the amount of stress present, psychologists dealt with hundreds of serious psychological disturbances. Soldiers who threatened suicide or homicide were treated by Navy, Air Force, and Army psychologists. In addition, support was given in the form of stress management. Workshops on stress management and posttraumatic stress disorder were conducted to help U.S. soldiers cope with the tension.

DeAngelis, T. (1991, February). Role of psychologists in Gulf is demanding. *APA Monitor,* 22, 1, 19.

Lecture Example 1.17: Use Examples in Your Framework
Encourage students to come up with their own examples to illustrate ideas, concepts, and findings presented in the text when they are studying each chapter. Attaching new information to old information is called elaborative rehearsal, and it can make the students' psychology course much more meaningful.

Journal Entries

Journal Entry 1.3: Using Psychology
Speculate on how you might use psychology in your future career. How will it be relevant to your life?

Multicultural Issues

Multicultural Issue 1.1: Psychology, A Multicultural Discipline
Emphasize that psychology has made significant efforts to become a multicultural discipline—it must by its nature be a science of human differences and similarities. Psychology also has one of the best records of minority and female involvement of all the sciences, although there is still room for improvement.

Test Questions

1.165–1.184

CNN VIDEO CONNECTIONS

Animal Research: Unethical or Vital? **(3:23; videodisk)**
This segment profiles two sides of a volatile issue: animal research. On one side are animal rights activists, armed with graphic photos of animals alleged to have been mistreated. On the other side are people whose lives have been saved as a result of scientific research with animals.

Animal Rights **(2:18; videotape)**
The battle lines have been drawn as animal rights advocates mount their attack against animal research. Opposing them are scientists who are waging their own campaign to refute the misinformation and propaganda, and to educate the public concerning life-saving scientific advances made possible through animal research.

ALLYN AND BACON VIDEO LIBRARY

The Enlightened Machine (The Brain Series)
I'll Buy That (Films for the Humanities)
New Directions (Discovering Psych)
Past, Present and Promise (Discovering Psych)
Pavlov: The Conditioned Reflex (Films for the Humanities)
The Responsive Brain (Discovering Psych)
Space Age Diagnosis (Films for the Humanities; 26 min.)
States of Mind (The Brain Series)
Understanding Research (Discovering Psych)

For more information on these and many other videos, see the *Allyn and Bacon Video User's Guide* or your Allyn and Bacon representative.

2
Biology and Behavior

LEARNING OBJECTIVES

2.1 What is a neuron, and what are its three parts? (p. 37)
2.2 What is a synapse? (p. 37)
2.3 What is the action potential? (p. 38)
2.4 What are neurotransmitters, and what role do they play in the transmission of signals from one neuron to another? (p. 38)
2.5 What are some of the ways in which neurotransmitters affect our behavior? (p. 40)
2.6 Why is an intact spinal cord important to normal functioning? (p. 42)
2.7 What are the crucial functions handled by the brainstem? (p. 43)
2.8 What are the primary functions of the cerebellum? (p. 44)
2.9 What is the primary role of the thalamus? (p. 45)
2.10 What are some of the processes handled by the hypothalamus? (p. 45)
2.11 What is the role of the limbic system? (p. 46)
2.12 What are the cerebral hemispheres, the cerebral cortex, and the corpus callosum? (p. 47)
2.13 What are some of the main areas within the frontal lobes, and what are their functions? (p. 49)
2.14 What are the primary functions of the parietal lobes in general and the somatosensory cortex in particular? (p. 50)
2.15 What are the primary functions of the occipital lobes in general and the primary visual cortex in particular? (p. 51)
2.16 What are the major areas within the temporal lobes, and what are their functions? (p. 51)
2.17 What are the main functions of the left hemisphere? (p. 53)
2.18 What are the primary functions of the right hemisphere? (p. 54)
2.19 What is the significance of the split-brain operation? (p. 56)
2.20 What are some methods that have been used to learn about brain function? (p. 58)
2.21 What is the electroencephalogram (EEG), and what are three normal brain-wave patterns it reveals? (p. 58)
2.22 Why is a stroke so serious? (p. 61)
2.23 What must occur in the brain for there to be some recovery from brain damage? (p. 61)
2.24 What is the peripheral nervous system? (p. 62)
2.25 What are the roles of the sympathetic and parasympathetic nervous systems? (p. 62)
2.26 What is the endocrine system, and what are some of the glands within it? (p. 64)

CHAPTER OVERVIEW

All of our behavior is rooted in biological events, and this chapter examines the connections between biology and behavior. The activity of neurons is at the basis of all thought, feeling, and behavior, and the structure of the neuron is carefully described. The neural impulse involves a change in the electrical potential of the cell membrane. This impulse, called the action potential, causes a neuron to release neurotransmitters across the synaptic cleft, thus communicating to the next neuron. Neurotransmitters lock into receptor sites on the neuron, either stimulating or inhibiting the neuron, depending on the type of neurotransmitter. The rate of firing of the neuron conveys the critical information. Glial cells provide nutrients and serve other helping functions for neurons.

The central nervous system is composed of the spinal cord and the brain. The spinal cord descends from the brain and transmits messages between the brain and the peripheral nervous system. The authors provide a detailed description of the function of each part of the brain—the brainstem, the cerebellum, the thalamus, the hypothalamus, the limbic system, and the cerebral hemispheres (including the frontal, parietal, occipital, and temporal lobes).

The specialized functions of the hemispheres are described—with language and logical thought associated with the left hemisphere, and emotions and visual-spatial tasks associated with the right hemisphere. The authors examine issues and research relating to split-brain sur-

gery and its implications about hemispheric specialization. The *World of Psychology: Applications* feature examines the ways of recording and observing brain activity, including the EEG, the microelectrode, the CT scan, MRI, and the PET scan.

Information about the brain is also gathered from cases of injury and damage to the brain. Strokes and head injuries can have serious consequences for brain function. An important role of psychology is the discovery of means to recover from brain damage.

The peripheral nervous system is composed of two parts—the somatic nervous system, responsible for muscle and sensory information, and the autonomic nervous system, responsible for the involuntary or automatic actions of body organs. The autonomic nervous system is divided into the sympathetic nervous system, which mobilizes resources for action, and the parasympathetic nervous system, which calms the body after activity.

The endocrine system is another communication system in the body, involving the release by glands of hormones, specific chemicals that influence bodily function. The pituitary gland, the thyroid gland, the adrenal glands, the pancreas, and the gonads all have important roles in the function of the body that in turn influence behavior.

CHAPTER-AT-A-GLANCE

Chapter Outline	Instruction Ideas	Supplements
The Neurons and the Neurotransmitters p. 36 The Neurons: Billions of Brain Cells ◆ Neurotransmitters: The Chemical Messengers of the Brain ◆ The Rate of Neural Firing and the Speed of the Impulse ◆ Glial Cells: The Neurons' Helper Cells	Demonstration Bio 1 Lecture Examples 2.1–2.5 Learning Objectives 2.1–2.5	CNN: The Biological Basis of Leadership **A&B Videos** Addicted Brain The Behaving Brain Drug and Alcohol Tolerance The Enlightened Machine Transparencies: Bio 7–11 Test Questions 2.1–2.51
The Central Nervous System p. 42 The Spinal Cord: An Extension of the Brain ◆ The Brainstem: The Most Primitive Part of the Brain ◆ The Cerebellum: A Must for Graceful Movement ◆ The Thalamus: The Relay Station between Lower and Higher Brain Centers ◆ The Hypothalamus: A Master Regulator ◆ The Limbic System: Primitive Emotion and Memory	Demonstration Bio 2 & 4 Lecture Examples 2.6 & 2.7 Learning Objectives 2.6–2.11	CNN: Measuring Brain Activity **A & B Videos** Pavlov: The Conditioned Reflex The Brain Teaching Modules The Mind Teaching Modules Transparencies: Bio 3–5, 15, 16 Test Questions 2.52–2.82
The Cerebral Hemispheres p. 47 The Lobes of the Brain	Demonstration Bio 5 Lecture Examples 2.8 & 2.9 Learning Objectives 2.12–2.16	Transparencies: Bio 17–21 Test Questions 2.83–2.110
Specialization of the Cerebral Hemispheres p. 53 Functions of the Left Hemisphere: Language, First and Foremost ◆ Functions of the Right Hemisphere: The Leader in Visual-Spatial Tasks ◆ The Split Brain: Separate Halves or Two Separate Brains? ◆ On Handedness, the Hemispheres, Talents, and Problems ◆ *WORLD OF PSYCHOLOGY: APPLICATIONS—Discovering the Brain's Mysteries*	Demonstration Bio 6–8 Lecture Examples 2.10–2.14 Critical Thinking Opportunity 2.1 Learning Objectives 2.17–2.21	CNN: The Effects of Aging on the Brain **A&B Videos** Brain Surgery The Two Brains Science of Wellness Transparencies: Bio 1, 13, 22–24 Test Questions 2.111–2.140
The Many Faces of Brain Damage p. 60 Stroke ◆ Head Injury ◆ Recovering from Brain Damage	Lecture Examples 2.15–2.17 Critical Thinking Forum 2.1 Journal Entry 2.1 Learning Objectives 2.22 & 2.23	**A & B Videos** Pain and Healing Fighting the Clock Test Questions 2.141–2.146
The Peripheral Nervous System p. 62 The Somatic Nervous System: For Sensing and Moving ◆ The Autonomic Nervous System: Doing Its Job without Our Conscious Thought	Demonstration Bio 3 Journal Entry 2.2 Learning Objectives 2.24 & 2.25	**A&B Videos** What the Nose Knows Test Questions 2.147–2.168
The Endocrine System p. 64 The Pituitary Gland: The Master Gland, Small as a Pea ◆ The Thyroid Gland: Balancing the Body's Metabolism ◆ The Adrenal Glands: Necessary for Fight or Flight ◆ The Pancreas: Our Insulin Factory ◆ The Sex Glands: The Gonads	Critical Thinking Forum 2.2 Multicultural Issue 2.1 Learning Objective 2.26	Transparencies: Bio 25–28 Test Questions 2.169–2.177