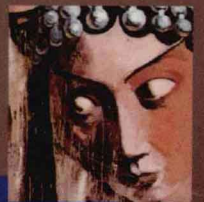


# *Psychology*

## IN THE NEW MILLENNIUM

SEVENTH EDITION



# *S*PENCER A. RATHUS





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Montclair State University

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**T**here is a joy of psychology. I felt it when I was a student. I feel it when I am teaching and when I am writing. The joy in psychology is the joy of learning about ourselves, and it is a constant in my life.

When I was an undergraduate student, my life was quite different. I was the first member of my family to go to college. College at first seemed strange and frightening, and I felt detached. Professors and textbooks seemed cold and aloof. I dropped out once, and I flunked out once. But I returned each time. All in all, it took me six years to earn my bachelor's degree.

I eventually realized that the problem lay not in the subjects I studied, but in the way the subjects were presented, both in the classroom and in the textbooks. Subjects that seemed dry and remote could be made interesting and relevant to students' lives. I experimented with drawing my own students into psychology by telling them stories about psychologists and my own family, and by showing them how to apply psychological principles to their own lives. When the opportunity arose for me to write my own introductory psychology textbook, I determined that it would be warm, engaging, and relevant—not frightening, cold, and aloof. I determined to write a book that presented psychology as the rigorous science that it is and that also motivated and helped students understand and appreciate psychology. I also attempted to communicate the joy that psychology had added to my own life.

In writing this seventh edition, I turned to my fellow instructors to share their experiences to help me bring my vision of the joy of psychology into the new millennium.

## ■ **PSYCHOLOGY IN THE NEW MILLENNIUM, SEVENTH EDITION**

Before a single word for the seventh edition was typed out on my computer, before any decisions for content changes, additions, or deletions were made, I spent time with instructors and students on college campuses to learn what they need from an introductory textbook. Such trips included visits to Lewis University, Moraine Valley Community College, and Olive Harvey College. Even with the work on the seventh edition well underway, I continued to visit with psychology instructors and their students to listen to the exciting things they are doing in the classroom, to hear what it is that makes psychology interesting for them. Among others, stops were made at Austin Community College, Eastfield College, and McLennan Community College.

Ideas and opinions also were solicited through a survey of instructors across the country and followed up by selected, direct telephone interviews. Helpful advice concerning the ancillary package came from a group of dedicated instructors at Navarro College. Specific comments were given by more than 20 reviewers who carefully scrutinized the first-draft text, helping me in innumerable ways to shape the chapters as you see them here.

The seventh edition of *Psychology in the New Millennium*, therefore, is a collaborative work with the instructors who are in the classroom every day. We considered ideas such as including a chapter on human diversity and expanding lifespan development into two chapters (one on child development and the



second on adolescent and adult development). But instructors informed us that they did not want diversity to be segregated. Instead, they want diversity integrated throughout the text, wherever topics appear “naturally.” They also expressed the preference that development should remain succinct—presented in one chapter that covers the lifespan.

Instructors also informed us of two other desires. First, they wanted the chapter on development moved forward to help set the stage for other topics. Second, they wanted full-chapter coverage of gender and sexuality. Moreover, they wanted sexual behavior explicated within the contexts of attraction and relationships. In fact, one instructor remarked that the introductory psychology class might be the only time in students’ lives when they are acquainted with gender and sexual issues from a scientific perspective. Otherwise, students might find themselves relying completely on friends’ ideas and the popular media. The seventh edition of *Psychology in the New Millennium* therefore shows students that there are bodies of research evidence about topics such as the nature of gender-role stereotypes; the differences between males and females and how those differences develop; attraction, love, and sexual orientation (sexual orientation is discussed within the context of interpersonal attraction); sexual coercion (including rape and sexual harassment); biological aspects of sexual response and sexual dysfunctions; and AIDS and other sexually transmitted diseases.

Instructors also said they wanted more interim review sections. We thus developed the “In Review” charts to meet this need. Moreover, they liked the descriptions of important people in psychology from earlier editions of the text and wanted more of these. We therefore developed the “In Profile” features found in the seventh edition. These features motivate students and teach them by providing absorbing tidbits of information about psychologists and other important figures and case studies in psychology. These profiles present psychologists and others as interesting flesh-and-blood people.

Yet the instructors did not want us to “throw out the baby with the bath water.” Therefore, much in your textbook is traditional and familiar. The text continues to recount psychology’s rich tradition, the philosophical and methodological roots that can be traced beyond the ancient Greeks. A century ago, William James wrote, “I wished, by treating Psychology like a natural science, to help her become one.” Psychology, as we enter the new millennium, is very much that science of which he spoke. Your textbook explores psychology’s tradition as an empirical science. It explores the research methods innovated in 19th century Germany and brought to the shores of the New World in the 20th century. It also provides comprehensive coverage of the traditional areas of subject matter in psychology.

Instructors also found many useful and enjoyable learning aids and features from earlier editions and asked us to keep them. These include:

- “Truth or Fiction” items that stimulate students to delve into the subject matter by challenging folklore and common sense (which is often common *nonsense*)
- Running glossary items that provide quick access to the meanings of key terms so that students can maintain their concentration on the flow of material in the chapter
- “Psychology in a World of Diversity” features that help students perceive why people of different backgrounds and genders behave and think in different ways, and how the science of psychology is enriched by addressing those differences
- Questionnaires that stimulate student interest by helping them satisfy their curiosities about themselves and enhance the relevance of the text to students’ lives



- “Psychology and Modern Life” features that apply psychology to help students cope with the challenges in their own lives
- “Psychology in the New Millennium” features that help students prepare for life in the new millennium by exploring the interfaces between technological advances, psychology, and our styles of life
- “Reflections” items at the end of every major section that promote learning and stimulate critical thinking by having students relate the subject matter to things they already know

## ■ COVERAGE

Chapter-by-chapter coverage of the seventh edition is as follows:

Chapter 1 (What Is Psychology?) introduces psychology as a science. It discusses the specialties, history, and schools of psychology, along with critical thinking. There is **new** coverage of “Thinking Critically About Self-Help Books” and the future of psychology: “Psychology—Hot, Hot, Hot.”

Chapter 2 (Research Methods in Psychology) covers the ways in which psychologists expand and refine knowledge. There is **new** coverage of “Including Women and Members of Diverse Ethnic Groups in Research,” and “A Sex Survey That Addresses Sociocultural Factors.”

Chapter 3 (Biology and Behavior) addresses three “things borrowed” from biology that are of interest to psychologists: the nervous system, the endocrine system, and heredity. There is **new** coverage of “Health Applications of the Human Genome Project.”

Chapter 4 (Lifespan Development) covers development from conception through death. There is **new** coverage of theories of aging and “successful aging,” along with **new** features: “Becoming an Authoritative Parent,” “What Biological Clock?,” “Gender, Ethnicity, and Aging,” and “How Long Will You Live? The Life-Expectancy Scale.”

Chapter 5 (Sensation and Perception) covers vision, visual perception, hearing, and the other senses. There is **new** coverage of “Sensation, Perception, and Virtual Reality.”

Chapter 6 (States of Consciousness) covers sleep and dreams, psychoactive drugs, meditation, biofeedback, and hypnosis. The “Psychology and Modern Life” features help students cope with insomnia, quit smoking, and try meditation. There is a **new** feature, “Will We Find That Nicotine Can Be (Gasp!) Good for You?”

Chapter 7 (Learning) addresses classical conditioning, operant conditioning, and cognitive factors in learning. There is **new** coverage of virtual classrooms and “Culture, Ethnicity, and Academic Achievement.” There are **new** “Psychology and Modern Life” features: “Using Conditioning to Help Children Overcome Fears” and “Teaching Children Not to Imitate Media Violence.”

Chapter 8 (Memory) covers kinds of memory, processes of memory, the stage model of memory, the levels-of-processing model of memory, and high-interest topics such as flashbulb memories and infantile amnesia. There is **new** coverage of the biology of memory: “What Does Research on the Biology of Memory Hold in Storage?”

Chapter 9 (Thinking and Language) covers problem solving, creativity, reasoning, judgment and decision making, and language. There is **new** coverage of “Across the Great Divide? Diverse Perspectives on the O. J. Simpson Verdicts” and of Ebonics.

Chapter 10 (Intelligence) covers theories, measurement, and determinants of intelligence. There is **new** coverage of the theory of “emotional intelligence” and new applications: “Facilitating the Development of the Gifted Child” and “Enhancing Intellectual Functioning.”



Chapter 11 (Motivation and Emotion) addresses theories of emotion, hunger, stimulus motives, achievement motivation, affiliation, aggressions, and emotion. There is **new** coverage of “Enhancing Productivity and Job Satisfaction” in the section on achievement motivation.

Chapter 12 (Personality) discusses five major perspectives in the study of personality—psychodynamic, trait, learning, humanistic–existential, and socio-cultural—and personality measurement. **New** questionnaires encourage students to assess their self-efficacy expectancies and whether they are self-actualizers. **New** applications include “Enhancing Self-Esteem” and “Using Psychological Tests to Find a Career That Fits.”

**New** Chapter 13 (Gender and Sexuality) covers gender-role stereotypes; gender differences and their development; attraction, love, and sexual orientation; sexual coercion, sexual response, and sexual dysfunctions; and AIDS and other sexually transmitted diseases.

Chapter 14 (Stress and Health) covers stress, psychological factors, and other factors in health and illness. The chapter contains questionnaires that permit students to assess the stress they are experiencing and whether they believe that they are in control of that stress. It also includes important applications, including features on “Coping With Stress” and “Reducing the Risk of Breast Cancer.”

Chapter 15 (Psychological Disorders) covers diagnostic issues and a variety of psychological disorders. There is **new** coverage on women and depression and a **new** application on “Alleviating Depression (Getting Out of the Dumps).”

Chapter 16 (Methods of Therapy) explores psychological and biological methods of therapy. It contains two **new** cutting-edge features on “Getting High (and Keeping Cool) With Virtual Reality” and “Looking Ahead From the ‘Decade of the Brain.’” There is **new** coverage of issues concerning psychotherapy and human diversity, such as therapy and women, and therapy and gay people. There is also a **new** application, “Becoming More Assertive.”

Chapter 17 (Social Psychology) discusses attitudes, social perception, social influence, group behavior, and environmental issues. Applications are timely: “Combating Prejudice” and (**new**) “Making a Good First Impression.”

## ■ SUPPORT FOR *PSYCHOLOGY IN THE NEW MILLENNIUM*

A full package of support materials is available to help the student learn and the instructor teach. These ancillaries are available to qualified adopters. Special “kitted” packages are available for the student, such as the textbook with *Thinking and Writing About Psychology in the New Millennium*, the Study Guide, The *Explorer* CD-ROM, or any combination thereof. Interested instructors should contact their Harcourt Brace representative for more information.

- *Thinking and Writing About Psychology in the New Millennium* by Spencer A. Rathus, Montclair State University

As its name implies, *Thinking and Writing About Psychology in the New Millennium* is designed to promote two aspects of contemporary college education: critical thinking and writing across the curriculum. To this end, this ancillary contains a discussion of what critical thinking is, a comprehensive guide to



writing about psychology using the American Psychological Association style, and dozens of writing exercises. Writing exercises may be assigned as a way of encouraging the development of thinking and writing skills, as a way of providing an opportunity for class participation, and, perhaps, as a way of earning part of the grade for the course.

ISBN: 0-15-507171-8

- *Student Study Guide*

*by Gary King, Rose State College; Spencer A. Rathus, Montclair State University; and Robbye N. Nesmith, Navarro College*

The Study Guide is designed as a tool to help the student learn and understand what he or she reads in the textbook. It reinforces each chapter's topics and acts as the initial "test" of knowledge. From the Study Guide, the student will learn the major points of the textbook's chapter, follow the outline of the chapter's topics (with room added to take lecture notes right on the Study Guide pages), reinforce key points through simple exercises, review and think about the chapter's topics, and test that understanding. In addition, two special sections are included in the Study Guide. "Effective Studying Ideas" will help students to focus their study habits. "Knowing the Language" will help students of diverse cultures understand the language of psychology, while giving English-speaking students an understanding of the challenges faced by non-native speakers.

ISBN: 0-15-508221-3

- *Instructor's Manual With Video Instructor's Guide*

*by James E. Tremain, Midland Lutheran College and Lynn Haller Augsburg, Morehead State University*

The function of an effective *Instructor's Manual* is to provide the instructor (a first-timer or a veteran) with a variety of methods to present information to the student during the class period. The *Instructor's Manual for Psychology in the New Millennium* does that through a listing of teaching objectives for each chapter, corresponding to the student's learning objectives in the Study Guide, followed by additional information on people in psychology; lecture suggestions with references to other resources; classroom demonstrations created exclusively by Lawrence Weinstein, Cameron University; and reproducible in-class activities, quizzes, and figures.

The *Video Instructor's Guide* portion of the *Instructor's Manual* lets the instructor know about the Harcourt Brace psychology video and videodisk library. Also included are specific teaching suggestions for using the Teaching Modules of the *Discovering Psychology* video series. The suggestions are abundant with activities and discussions, and are customized to correspond with material covered in *Psychology in the New Millennium* (includes textbook page references). Finally, the updated and expanded annotated Film Guide lists more than 175 psychology-related films, many of them produced within the past five years. Included is distribution-contact information for each film.

ISBN: 0-15-508223-X



- *Test Bank*

*by George P. Zimmar, Nan Taylor Balser, Rosstyslaw W. Robak, and Linda English, all of Pace University*

A unique team of authors has revamped the set of test bank questions to provide instructors with a great tool for evaluating the progress of their students. The author team's goal is to provide a means for the instructor and the student to discover what the student knows, not what the student does not know. A strong attempt was made to write valid and reliable questions, not "trick" questions.

Each textbook chapter has between 100 and 175 multiple-choice items plus additional questions relating to the book's statistical appendix. Test questions appear in the order of the presentation in the textbook, are keyed to teaching/learning objectives, and are coded in terms of correct answer, question type (recall, applied, and conceptual), difficulty level, and textbook page number. Often a question on the same topic is given in more than one way, providing the instructor with a choice.

Approximately a third of the test items is designated as "recall," testing knowledge of factual material. Another third of the items is designated as "applied," measuring the student's abilities to understand and apply the learned material in real-life situations. The remaining third of the questions is "conceptual," showing how well the student understands the overall concepts presented in the chapter and their relationship to one another.

ISBN: 0-15-508222-1

- *EXAMaster+™ Computerized Test Bank*

*EXAMaster+™* offers easy-to-use options for computerized test creation:

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*RequesTest* is a service for instructors without access to a computer. A software specialist will compile questions according to the instructor's criteria and mail or fax the test master within 48 hours. Call 1-800-447-9457 between the hours of 8:30 a.m. and 5 p.m. Central Time. Or you may e-mail your request to requestest@harbrace.com.

The *Technical Support Line* is available to answer questions during normal business days from 7 a.m. to 6 p.m. Central Time at 1-800-447-9457, or a specialist may be reached by e-mail (tsc@hbtechsupport.com). Also, access is available 24 hours a day, seven days a week through the Harcourt Brace technical



support interactive Web site ([www.hbtechsupport.com](http://www.hbtechsupport.com)) and by fax on demand at 1-800-352-1680.

- *The Explorer CD-ROM*  
by John Mitterer, Brock University

*The Explorer* is an innovative learning tool that allows students to explore and understand the realm of psychology in an interactive, multimedia environment. In PsychLinks, at the end of each chapter in the main textbook, the student will find a listing of each *Explorer* topic found on the CD-ROM. By using *The Explorer*, the student will be able to interactively view the dynamic processes illustrated graphically in the text. In addition, the student will have access to short film clips that will visually enhance the reader's understanding of many major topics. Also available is an *Instructor's Explorer* (CD-ROM), which allows the instructor to integrate elements from *The Explorer* into the lecture. Projection quality simulations, demonstrations, and experiments from *The Explorer* enhance the teaching of key concepts in psychology.

*The Explorer* ISBN: 0-15-507184-X

- *Discovering Psychology*

Once again, Harcourt Brace offers its support for alternative learning methods through the ongoing partnership with WGBH Boston and Annenberg/CPB. *Discovering Psychology*, a video series for introductory psychology, is divided into 26 half-hour segments covering the full range of topics. Hosted by Philip Zimbardo, the series is perfect for a telecourse when integrated with reading from *Psychology in the New Millennium*.

A telecourse Faculty Guide, updated by David Gersh and Felecia Moore-Davis (both of Houston Community College) to match the seventh edition of *Psychology in the New Millennium*, is available. This Faculty Guide (ISBN: 0-15-508219-1) contains the telecourse study guide plus faculty notes.

For the telecourse student, there is the Study Guide (ISBN: 0-15-508217-5), also updated by Gersh and Moore-Davis to be compatible with the textbook. This guide includes activities, questions, readings, and illustrations to help reinforce what the student sees on the series programs and reads in *Psychology in the New Millennium*.

An edited version of the *Discovering Psychology* series provides brief segments designed for easy classroom use. The *Video Instructor's Guide* in the *Instructor's Manual* provides descriptions and teaching suggestions for the 15 modules (84 total segments). These modules are available on videodisk and videocassette.

- *Introductory Psychology Overhead Transparencies*

A full package of overhead transparencies has been developed exclusively for *Psychology in the New Millennium*. Not only does this package include almost every figure found in the main textbook, but it also has every chapter outline (something asked for by instructors). A new feature of the Overhead Transparencies is the inclusion of selected figures whose labels are replaced with blanks. These overheads correspond to the reproducible pages found in the *Instructor's Manual*, allowing the instructor to discuss and fill in the blanks on the overhead while students do the same at their seats.

ISBN: 0-15-507172-6



Also available is a set of 130 generic transparencies for introductory psychology, both in acetate form and as PowerPoint® templates for Windows™ 3.1 and better computers. These transparencies, all full color and including a user's guide, cover the full range of topics typical to an introductory psychology course.

Psychology Transparencies ISBN: 0-15-501456-0

### • Other Multimedia

- ***Dynamic Concepts in Psychology II***, a highly successful videodisk developed by John Mitterer (Brock University), covers every major concept of introductory psychology. Media include animated sequences, video footage, still images, and demonstrations of well-known experiments. A modular format allows instructors to tailor the program to their individual course. *Lecture-Active* presentation software (for Windows™ and Macintosh®) accompanies *Dynamic Concepts*. This software gives instructors the ability to pre-program classroom presentations as well as to import material from other multimedia sources, such as videodisks, CD-ROMs, or a hard drive.
- ***Psychology MediaActive™***, a CD-ROM-based psychology image bank, is designed to be used with commercially available presentation packages like PowerPoint® and Astound™, as well as Harcourt Brace's *LectureActive™* for Windows™ and Macintosh®.
- ***The Whole Psychology Catalog: Instructional Resources to Enhance Student Learning, 1997***, by Michael B. Reiner, Kennesaw State College. Instructors can easily supplement course work and assignments with this updated manual. It has perforated pages containing experiential exercises, questionnaires, and visual aids. Each activity is classified by one of eight learning goals central to the teaching of psychology. Also included in the new version is an informative section on using the Internet and the World Wide Web.
- ***The Harcourt Brace Multimedia Library*** provides additional media for instructors to use in the classroom. The Library includes videos from Films for the Humanities and Sciences and Pyramid Films, as well as series such as *The Brain Teaching Modules*, *The Mind Video Modules*, *Childhood*, *Seasons of Life*, and *Time to Grow*. Contact your local Harcourt Brace representative for qualifying details and further information.
- ***World Wide Web*** on psychology is available through Harcourt Brace's website at <http://www.hbcollege.com>. At this site are up-to-date instructor's resources, student's resources, and maintained links to dynamic web sites that will enhance the teaching and understanding of psychology.

## ■ ACKNOWLEDGMENTS

Think about the development of psychology from the philosophical speculations of the ancients, to the firm grounding of the field as a scientific study in the 19th century, to the full-blown diverse theories and research of the beginning of a new millennium. Without the contributions of many individuals, psychology as a discipline would not and will not continue to progress. Those individuals, of course, include those who do the research in the laboratory or in the field, those who pass on the knowledge gained through the time devoted to students, and those who do both.

A textbook of psychology, any such textbook, relies upon all those contributions. While I, as author, am responsible for what appears in *Psychology in*



*the New Millennium*, I could not have created this seventh edition and its earlier editions without the help of many of my colleagues in the discipline. My sincere thanks goes out to the following individuals who contributed to the development of the seventh edition.

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**T**he central task of a textbook is to provide students with information in a format that promotes learning. **PSYCHOLOGY IN THE NEW MILLENNIUM** provides learning aids that are designed to meet this goal.



"All the world's a stage," wrote William Shakespeare, "and all the men and women merely players." Miriam Schapiro's *Escape Me Never* (1984) captures some of the zest and playfulness of players on a stage. Psychology is about those players, in all their complexity and diversity. Psychology is the scientific study of behavior and mental processes. It seeks to understand why people think as they do and act as they do—whether alone or with others.



MIRIAM SCHAPIRO





## Chapter 1 What Is Psychology?

### TRUTH OR FICTION?

✓ T F

- ☐ Psychologists attempt to control behavior.
- ☐ A book on psychology, whose contents are similar to those of the book you are now holding, was written by Aristotle more than 2,000 years ago.
- ☐ The ancient Greek philosopher Socrates suggested a research method that is still used in psychology.
- ☐ Some psychologists look upon our strategies for solving problems as “mental programs” operated by our very “personal computers”—our brains.
- ☐ Even though she had completed all the degree requirements, the first female president of the American Psychological Association turned down the Ph.D. that was offered to her.
- ☐ Men receive the majority of doctoral degrees in psychology.

### “Truth or Fiction?” Sections

Each chapter begins with a “Truth or Fiction?” section. “Truth or Fiction?” sections are one of the text’s most prominent pedagogical features. They help give the book its unique stamp. They contain items that stimulate students to delve into the subject matter by challenging folk lore and common sense (which is often “common non-sense”).

Many students consider themselves psychologists. Psychology involves the study of human behavior, and even by the age at which students first attend college, they have observed people for many years. The “Truth or Fiction?” items prod them to reflect upon the accuracy of their observations and to reconsider conclusions they may have drawn about human nature. Many students find themselves reading the chapters to learn what the research evidence has to say about these items.

### OUTLINE

**PSYCHOLOGY AS A SCIENCE**  
What Psychologists Do  
Fields of Psychology  
**WHERE PSYCHOLOGY COMES FROM:**  
A HISTORY  
Structuralism  
Functionalism  
Behaviorism  
Gestalt Psychology  
Psychoanalysis  
Psychology’s “Top Ten”—The “Golden Circle”  
**Psychology in a World of Diversity:**  
The Diversity of Psychologists  
**How Today’s Psychologists View BEHAVIOR**  
The Biological Perspective  
The Cognitive Perspective  
The Humanistic-Existential Perspective  
The Psychodynamic Perspective  
Learning Perspectives  
The Sociocultural Perspective  
**CRITICAL THINKING AND PSYCHOLOGY**  
Principles of Critical Thinking  
Psychology and Modern Life:  
Thinking Critically About Self-Help  
Books Are There Any Quick Fixes?  
**Psychology in the New Millennium:**  
Psychology—Hot, Hot, Hot  
Common Errors in Arguments

*“To be a piece of work is man,”* wrote William Shakespeare. He was writing about you: “How noble in reason! How infinite in faculty! In form and moving how express and admirable! In action how like an angel! In apprehension how like a god! The beauty of the world! The paragon of animals!”

You probably had no trouble recognizing yourself in this portrait—“noble in reason,” “admirable,” godlike in understanding, head and shoulders above other animals. That’s you to a tee, isn’t it? Consider some of the noble and admirable features of human behavior:

- The human abilities to think and solve problems have allowed us to build cathedrals and computers and to scan the interior of the body without surgery. Yet what exactly is thinking? How do we solve problems?
- The human ability to create led to the writing of great works of literature and the composition of glorious operas. Yet what exactly is creativity?
- Human generosity and charity have encouraged us to care for older people, people who are ill, and people who are less advantaged than we are—even to sacrifice ourselves for those we love. Why do we care for others? What motivates us to care for our children and protect our families?

Some human behavior is not as noble or admirable as these examples suggest. In fact, human behavior varies greatly. Some of it is downright puzzling. Consider some more examples:

- Although people can be generous, most adults on crowded city streets will not stop to help a person lying on the sidewalk. Why?
- Most people who overeat or smoke cigarettes know that they are jeopardizing their health. Yet they continue in their bad habits. Why?
- A person claims to have raped, killed, or mutilated a victim because of insanity. The person was overcome by an irresistible impulse, or “another personality” took control. What is insanity? What is an irresistible impulse? How can we know if someone is insane? Should people who are found to be insane be judged guilty or not guilty of their crimes?

Human behavior has always fascinated people. Sometimes we are even surprised at ourselves. We have thoughts or impulses that seem to be out of character, or we can’t recall something that seems to be hovering on the “tip of the tongue.” Most people try to satisfy their curiosity about behavior, if at all, in their spare time. Perhaps they ask a friend for an opinion, or make some casual observations. Psychologists, like other people, are also intrigued by the mysteries of behavior, but for them the scientific study of behavior is their life’s work.

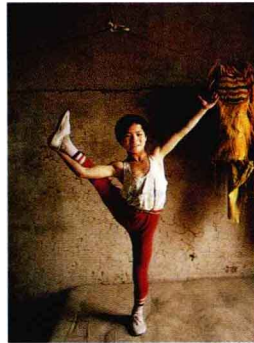
**Psychology** is the scientific study of behavior and mental processes. Topics of interest to psychologists include the nervous system, sensation and

### Chapter Outlines

Chapter outlines are found in the left-hand column of the first page within each chapter. They provide students with “advance organizers”—that is, expectations about what is to come. One of the themes of the text is that predictability helps us manage events.

The “To the Student” section highlights the PQ4R study method, in which students are encouraged to preview the subject matter, phrase questions, and read to answer them. The chapter outlines offer one kind of preview. Students are encouraged to transform them into questions about the subject matter. They can thus engage in more active learning.





**Kinesthesia.** This young acrobat receives information about the position and movement of the parts of his body through the sense of kinesthesia. Information is fed to his brain from sensory organs in the joints, tendons, and muscles. This allows him to follow his own movements without looking at himself.

Therefore, it may well be that the analgesic effects of acupuncture can be linked to the morphinelike endorphins.

**THE PLACEBO EFFECT** Interestingly, some scientists have also credited endorphins with the so-called **placebo** effect, in which the expectation of relief sometimes leads to relief from pain and other problems. They speculate that a positive attitude may lead to release of endorphins.

## KINESTHESIS

Try a brief experiment. Close your eyes, then touch your nose with your finger. If you weren't right on target, I'm sure you came close. But how? You didn't see your hand moving, and you didn't hear your arm swishing through the air.

**Kinesthesia** is the sense that informs you about the position and motion of parts of the body. The term is derived from the ancient Greek words for "motion" (*kinesis*) and "perception" (*aisthesis*). In kinesthesia, sensory information is fed back to the brain from sensory organs in the joints, tendons, and muscles. You were able to bring your finger to your nose by employing your kinesthetic sense. When you "make a muscle" in your arm, the sensations of tightness and hardness are also provided by kinesthesia.

Imagine going for a walk without kinesthesia. You would have to watch the forward motion of each leg to be certain that you had raised it high enough to clear the curb. And if you had tried our brief experiment without the kinesthetic sense, you would have had no sensory feedback until you felt the pressure of your finger against your nose (or cheek, or eye, or forehead), and you probably would have missed dozens of times.

Are you in the mood for another experiment? Close your eyes again. Then "make a muscle" in your right arm. Could you sense the muscle without looking at it or feeling it with your left hand? Of course you could. Kinesthesia also provides information about muscle contractions.

## THE VESTIBULAR SENSE: ON BEING UPRIGHT

Your **vestibular sense** tells you whether you are upright (physically, not morally). Sensory organs located in the **semicircular canals** (Figure 5.33) and elsewhere in the ears monitor your body's motion and position in relation to gravity. They tell you whether you are falling and provide cues to whether your body is changing speed such as when you are in an accelerating airplane or automobile.

### REFLECTIONS

- Has food ever seemed to lose its flavor when you had a cold or an allergy attack? Why?
- Why do older people often spice their food heavily?
- How can a drink that is 70 degrees Fahrenheit be either warming or cooling, depending on the weather?
- Has rubbing or scratching a painful area ever reduced the pain? How do you explain the experience?

## "Truth or Fiction Revisited" Items

"Truth or Fiction Revisited" inserts are found throughout the chapters, where the "Truth or Fiction?" items are discussed in the text. The inserts provide students with feedback as to whether their assumptions about psychology were accurate.

### Truth or Fiction Revisited

*It is true that we have a sense that keeps us upright. The sense — the vestibular sense — keeps us physically upright. It apparently takes more than the vestibular sense to keep us morally upright.*

## Running Glossary

Key terms are boldfaced and defined in the margins, near where they occur in the text. Ready access to glossary items permits students to maintain their concentration on the flow of material in the chapter. Students need not flip back and forth between different sections of the book to decode the vocabulary.

In many cases, word origins and pronunciations are also provided. Etymology always helped me decode the meanings of new words, and I wanted to share this benefit with students. Pronunciation guides help students avoid embarrassing errors and encourage usage of new terms.

**PLACEBO** • A bogus treatment that controls for the effect of expectations.  
**KINESTHESIS** • The sense that informs us about the positions and motion of parts of our bodies.  
**VESTIBULAR SENSE** • The sense of equilibrium that informs us about our bodies' positions relative to gravity.  
**SEMICIRCULAR CANALS** • Structures of the inner ear that monitor body movement and position.

## "Reflections"

"Reflections" items are found at the end of every major section and serve a dual function: They (1) help students learn the subject matter and (2) stimulate critical thinking.

Psychologists and educators have shown that students learn effectively when they reflect on what they are learning. Reflecting on a subject means relating it to things they already know. Relating the material to things known makes it meaningful and easier to remember. Relating also makes it more likely that students will be able to use the new information in their own lives.