Huffman

Psychology in Action THIRD EDITION

Karen Huffman

Palomar College

Mark Vernoy

Palomar College

Judith Vernoy

Acquisitions Editor Karen Dubno Developmental Editor Kathleen Dolan Marketing Manager Catherine Faduska Production Supervisor Charlotte Hyland Designer Laura Nicholls Manufacturing Manager Susan Stetzer Director of Photo Department Stella Kupferberg Photo Researcher/Editor Jennifer Atkins Illustration Coordinator: Anna Melhorn Electronic Illustrations:

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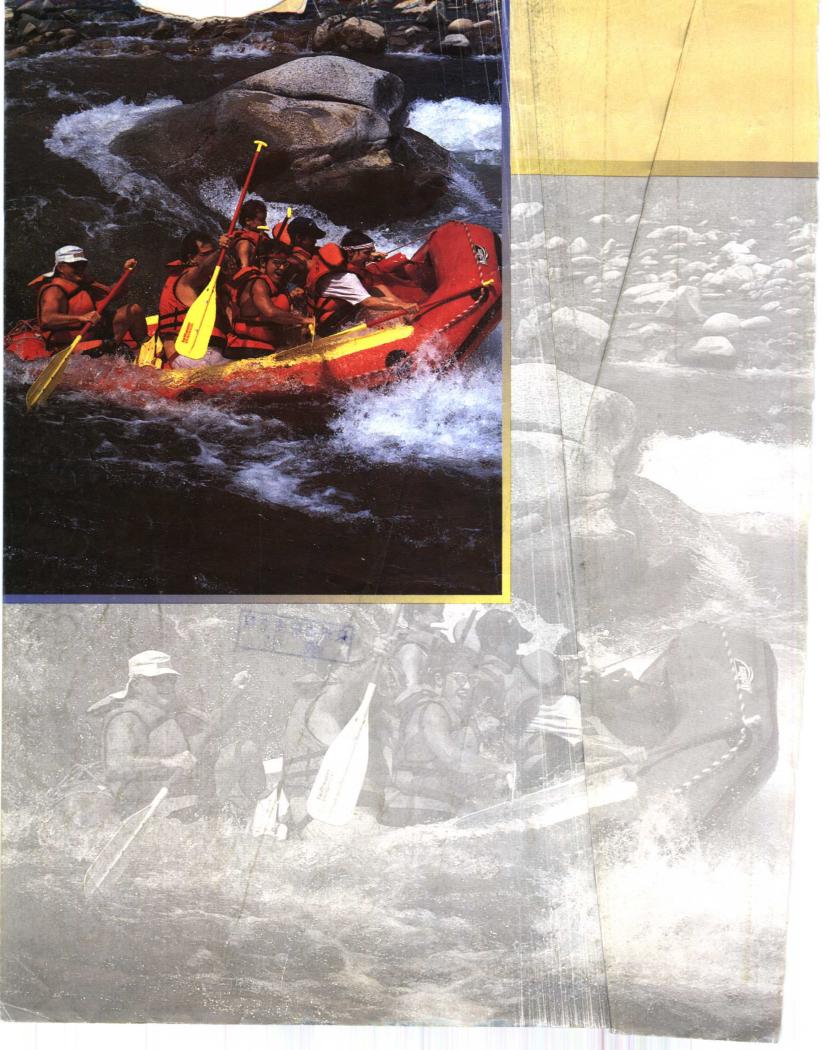
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Preface

Welcome to the third edition of *Psychology in Action*. The world was very different when we began work on the first edition in 1984. Communism and the Berlin Wall were still in place, Ronald Reagan had just been reelected to a second term as president of the United States, and the dominant theme in politics was protecting ourselves against the "evil empire." In one decade we have witnessed the collapse of communism, devastating famine and outbreaks of terrorism and war, high unemployment and one of the worst race riots in American history, and the election of a new U.S. president whose main campaign promise was change.

Just as the world and our nation have undergone significant changes, so too has psychology. In today's global village, the demand for gender equality and respect for cultural diversity has increased. Therefore, any serious survey of human behavior must include male and female issues and a cross-cultural perspective. We have added both as an integral part of every chapter of *Psychology in Action*. We have also extensively streamlined, updated, and improved the third edition with several new features. Naturally, we have retained key features of earlier editions, such as the SQ4R method, the focus on critical thinking and our student-oriented writing style. Let us tell you a little more about what we have done.

NEW TO THIS EDITION

Increased Focus on Active Learning

As reflected in the title of our text, we promote learning as an *activity* of the reader. Too often students adopt a passive approach to learning, but research shows that educational achievement improves with active participation (Bonwell and Eison, 1991). To this end, we have incorporated pecial "Try This Yourself" activities into every chapter (identified by the licon). Thee high-interest and simple-to-do experiments, demonstrations, and personality tests give students an opportunity to apply basic principles and concepts of psychology. In Chapter 15, for example, one "Try This Yourself" activity debunks myths about mental llness and another presents a checklist for recognizing serious depression.

Gender and Cultural Diversity Coverage

For years, psychological research and introductory texts focused on white American and Western European males. But as the world has shrunk and understanding has grown, more attention has been directed to the cultural and gender contexts of behavior. We reflect that welcom change in this edition in four ways. First, the field of cultural psychology is intoduced in Chapter 1 with a discussion of ethnocentrism, individualism—collctivism, and universal and culturally specific behaviors. Second, topic coverage roumely takes into account cultural and gender research. Third, photographs, figures, and physiological art were carefully selected or drawn to reflect both cultural and gender diversity. If photos (and illustrations) are truly "worth a thousand

words," then it is essential that they include women and members of diverse ethnic groups. Finally, every chapter includes one or more Gender and Cultural Diversity sections (identified by the ø icon). These sections highlight particularly interesting or current topics. In all cases, though, the material is *embedded* in the text narrative, not set off in boxes or a separate chapter. We hope this conveys to students the integral importance of gender equality and cultural diversity to the field of psychology and in everyday life.

Increased Emphasis on the Science of Psychology

While attention to diversity is crucial to modern psychology, it is also important to recognize that a century of psychological research has advanced tremendously our understanding of human behavior. Therefore, in preparing this third edition, we have tried to enhance students' appreciation of psychology as an empirical study of human experience and demonstrate the advantages of the scientific method over speculation and common sense. To do this, we have increased significantly our emphasis on the science of psychology. For example, in Chapter 1 we expanded our discussion of the scientific method, bias in research, and types of correlation. We have also included extended research examples, both recent and classic, in every chapter. Students not only enjoy but learn from the detail of such newly added experiments as the "knockout mice" in Chapter 7 and the blue-eyed/brown-eyed study in Chapter 18. In addition, we increased our coverage of the biological and cognitive perspectives. For instance, in Chapter 5 we explain how psychoactive drugs work as agonists or antagonists to the body's natural neurotransmitters. This helps students understand the biology of drugs, and it builds on their knowledge of the brain and nervous system from Chapter 2. The discussion of cognition in Chapter 8 now opens with an overview of the two basic approaches to cognition: the information processing approach and the connectionist approach. We have also reconceptualized and redrawn in full color all of the biological figures and added many new ones to clarify difficult concepts, such as neurotransmitter reuptake at the synapse.

Updating and Revising Throughout

The third edition of *Psychology in Action* includes over 700 iew citations from 1992, 1993, and 1994. In addition, Chapter 15 has been rewritten extensively to reflect changes in the DSM-IV. Also, while not slighting core concepts, we have attempted to present topics of interest in the 1990s. Chapter 11, for example, conains a new section on coercive sex: rape, incest, and sexual harassment. Chapter 13 has a new section on self-care to reduce stress when it is occurring.

During revisions of previous material, we made a conscious effort to crystallize discussions rather than merely list facts and theories. For example, in Chapters 14, 15, and 16 (personality, abnormal behavior, and therapy), every theory concludes with an "evaluating" section of strengths and weaknesses to help studentsweigh what they have learned. Finally, we have selectively chosen each photo and figure 3 reinforce and clarify key concepts, and the entire text has been carefully rewritten forgreater readability.

Reorganization for Greater Clarity

We have completely reorganized and rewritten Chapters 9 and 10 (Ifespan Development I and II). These chapters are now arranged topically, rather than hronologically. This allows the reader to explore all four of Piaget's stages at one time (Chapter 9) and all eight of Erikson's stages at one time (Chapter 10), rather than slitting treatment of both between chapters. We also completely revised and reorganize the social psychology chapters to group topics under "Social Behavior and Cognitio" (Chapter 17) and

"Social Interactions" (Chapter 18). Material on applied psychology (environmental and Industrial/Organizational) was expanded to occupy its own appendix.

We also restructured within some chapters for greater clarity. The psychoactive drug section of Chapter 5 now reflects the categorization typical of most drug researchers—depressants, stimulants, narcotics, and hallucinogens. Chapter 12 covers motivation and emotion in two parallel sections, and the coverage of personality in Chapter 14 was reorganized into smaller, more manageable units. In every chapter, we added many third-level heads to help students structure their reading.

ENHANCED FEATURES

Critical Thinking Activities

Critical thinking has received considerable attention from education specialists and textbook authors. Unfortunately, many texts that advocate critical thinking do little more than exhort students to "think critically." They give no specific suggestions or activities that will develop critical thinking skills. In line with our focus on active learning, we have tried to take the student out of this passive role by developing highly focused exercises based on the most recent research. In every chapter we include an exercise called "Critical Thinking: Psychology in Action." For example, in Chapter 5, students get practice in distinguishing fact from opinion on the topic of drug use and abuse. Chapter 12 offers practice in recognizing emotional appeals. Additional specific exercises and activities that promote critical thinking are provided in the Student Study Guide and the Instructor's Manual, which are available from the publisher. The 21 basic components of critical thinking are introduced and explained in the prologue of this text and summarized on the inside front cover.

SQ4R Learning Activities

We have also tried to overcome the passive-learner syndrome by structuring our text around the SQ4R (Survey, Question, Read, Recite, Review, and "wRite") method of learning:

Survey and Question To facilitate the student's surveying technique, we begin each chapter with an outline, an opening vignette, and an introductory paragraph that presents an overview of the chapter. To encourage questioning, we have written the text in a "question/answer" format rather than the traditional author-directed straight narrative. This facilitates an active learning experience for readers, while also modeling the types of questions readers should be asking themselves while they read.

In this third edition, we have strengthened the survey and question components by presenting a list of survey questions following the introductory paragraph. For reinforcement, we repeat the questions in the margin at the place in the chapter where they are discussed.

Read Each chapter has been carefully evaluated for clarity, conciseness, and student reading level. To further facilitate comprehension, we do not have the boxed essays that are commonly found in other texts. Such boxes interrupt the continuity of the text narrative, and many students find it difficult to decide "what part is important to read." Their complaints support our belief that setting off specific studies or applications from the main text narrative conveys the impression that these topics are less important. If something is worth discussing, we integrate it into our presentation.

Recite and Review To encourage recitation and review, we offer Review Questions after each major section. These Review Questions provide still another opportunity

for active participation. On the advice of users of previous editions, we have added more higher-order questions and moved the answers to the back of the book, where they are identified by a guide in the margin for easy location. This removes the temptation to peek, while still allowing access to the correct answers. To further encourage reviewing, each chapter concludes with a "Review of Major Concepts" that summarizes key terms and concepts.

wRite As part of the fourth R to the SQ4R method, this book is also designed to incorporate writing as a way of improving student retention. In addition to the writing students will do in the survey, question, and review sections, we encourage note-taking in the margin of each page. We have attempted to keep the margins as clear as possible, and the Instructor's Manual, which accompanies this text, describes a special "marginal marking" technique that can be easily taught to students.

The Owner's Manual, "How to Use this Book," which begins on page xxi, and the accompanying Student Study Guide both discuss the SQ4R method in more detail.

Numerous Learning Aids

In addition to the SQ4R techniques, we have incorporated other learning aids that are known to increase comprehension and retention. New terms are put in boldface type and immediately defined in the text and in the margin. Calling out and defining key terms in the margin increases overall comprehension and provides a useful review tool. All terms are also gathered in a complete, cumulative glossary at the end of the text. We have added many new tables, such as the table on drug actions and neurotransmitters in Chapter 5, which also contains an important illustration. The added tables that compare cross-sectional and longitudinal research designs in Chapter 9 and personality theories in Chapter 14 also serve as important educational tools. In addition, we have added a new photo timeline in Chapter 1 that provides an overview of the history of psychology. As a further aid to learning, an annotated list of suggested readings, popular and academic, is given at the end of each chapter.

Supplements

Psychology in Action is accompanied by a host of ancillary materials designed to facilitate active learning and teaching. The student supplements are described more fully on the back cover of this textbook. The instructor's supplements include an instructor's manual, a completely revised and magnificently improved test bank with user-friendly testing software, and much, much more. Information about these supplements can be found on the dust jacket of this text, in the Supplement Sampler sent with your examination copy, or by contacting your local Wiley sales representative.

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Reviewers for Third Edition

Joyce Allen

Lakeland College

Emir Andrews

Memorial University of Newfoundland

Richard Anglin

Oklahoma City Community College

Susan Anzivino

University of Maine at Farmington

Daniel Bellack College of Charleston Linda Bosmajian Hood College

Meg Clark

California State Polytechnic University -

Pomona

Dennis Cogan

Texas Tech University
Kathryn Jennings Cooper

Salt Lake Community College Linda Scott DeRosier

Rocky Mountain College

Robert Glassman

Lake Forest College

Patricia Marks Greenfield

University of California – Los Angeles

Sam Hagan

Edison County Community College

Algea Harrison

Oakland University

Linda Heath

Loyola University of Chicago

Dennis Jowaisis

Oklahoma City Community College

Kevin Keating

Broward Community College

Marsha Laswell

California State Polytechnic University -

Pomona

Maria Lopez-Treviño Mount San Jacinto College

Edward McCrary III El Camino Community College

Yancy McDougal

University of South Carolina-

Spartanburg
David Miller

Daytona Beach Community College

Kathleen Navarre *Delta College* Leslie Neumann

Forsyth Technical Community College

Linda Palm

Edison Community College

Leslee Pollina

Southeast Missouri State University

Edward Rinalducci

University of Central Florida

Michael Scozzaro

State University of New York at Buffalo

Larry Smith

Daytona Beach Junior College

Debra Steckler

Mary Washington College

Cynthia Viera *Phoenix College*Benjamin Wallace

Cleveland State University

Mary Wellman Rhode Island College

Fred Whitford

Montana State University

Mary Lou Zanich

Indiana University of Pennsylvania

Focus Group and Telesession Participants for Third Edition

Brian Bate, Cuyahoga Community College; Hugh Bateman, Jones Junior College; Ronald Boykin, Salisbury State University; Jack Brennecke, Mount San Antonio College; Ethel Canty, University of Texas—Brownsville; Joseph Ferrari, Cazenovia College; Allan Fingaret, Rhode Island College; Richard Fry, Youngstown State University; Roger Harnish, Rochester Institute of Technology; Richard Harris, Kansas State University; Tracy B. Henley, Mississippi State University; Roger Hock, New England College; Melvyn King, State University of New York at Cortland; Jack Kirschenbaum, Fullerton College; Cyn-

thia McDaniel, Northern Kentucky University; Deborah McDonald, New Mexico State University; Henry Morlock, State University of New York at Plattsburgh; Kenneth Murdoff, Lane Community College; William Overman, University of North Carolina at Wilmington; Steve Platt, Northern Michigan University; Janet Proctor, Purdue University; Dean Schroeder, Laramie Community College; Michael Schuller, Fresno City College; Alan Schultz, Prince George Community College; Peggy Skinner, South Plains College; Charles Slem, California Polytechnic State University – San Luis Obispo; Eugene Smith, Western Illinois University; David Thomas, Oklahoma State University; Cynthia Viera, Phoenix College; Matthew Westra, Longview Community College

Reviewers of Previous Editions

Worthon Allen, Utah State University; Peter Bankart, Wabash College; Patricia Barker, Schenectady County Community College; Daniel Bellack, Lexington Community College; Terry Blumenthal, Wake Forest University; Theodore N. Bosack, Providence College; Bernado J. Carducci, Indiana University Southeast; Charles S. Carver, University of Miami; Marion Cheney, Brevard Community College; Steve S. Cooper, Glendale Community College; Mark Covey, University of Idaho; Grace Dyrud, Augsburg College; Thomas Eckle, Modesto Junior College; James A. Eison, Southeast Missouri State University; Eric Fiazi, Los Angeles City College; Sandra Fiske, Onondaga Community College; Pamela Flynn, Community College of Philadelphia; William F. Ford, Bucks City Community College; Harris Friedman, Edison Community College; Paul Fuller, Muskegon Community College; Frederick Gault, Western Michigan University; Russell G. Geen, University of Missouri, Columbia; Joseph Giacobbe, Adirondack Community College; David A. Griese, SUNY Farmingdale; Sylvia Haith, Forsyth Technical College; Frederick Halper, Essex County Community College; George Hampton, University of Houston – Downtown; Mike Hawkins, Louisiana State University; Sidney Hochman, Nassau Community College; Kathryn Jennings, College of the Redwoods; Richard D. Honey, Transylvania University; Seth Kalichman, University of South Carolina; Paul Kaplan, Suffolk County Community College; Bruno Kappes, University of Alaska; Allan A. Lippert, Manatee Community College; Thomas Linton, Coppin State College; Virginia Otis Locke, University of Idaho; Tom Marsh, Pitt Community College; Nancy Meck, University of Kansas Medical Center; Michael Miller, College of St. Scholastica; Phil Mohan, University of Idaho; John Near, Elgin Community College; Steve Neighbors, Santa Barbara City College; Sarah O'Dowd, Community College of Rhode Island; Joseph J. Palladino, University of Southern Indiana; Richard S. Perroto, Queensborough Community College; Larry Pervin, Rutgers University, New Brunswick; Valerie Pinhas, Nassau Community College; Howard R. Pollio, University of Tennessee-Knoxville; Christopher Potter, Harrisburg Community College; Derrick Proctor, Andrews University; Antonio Puete, University of North Carolina-Wilmington; Joan S. Rabin, Towson State University; Michael J. Reich, University of Wisconsin-River Falls; Leonard S. Romney, Rockland Community College; Thomas E. Rudy, University of Pittsburgh; Carol D. Ryff, University of Wisconsin-Madison; Neil Salkind, University of Kansas-Lawrence; Richard J. Sanders, University of North Carolina-Wilmington; Steve Schneider, Pima College; Tizrah Schutzengel, Bergen Community College; Lawrence Scott, Bunker Hill Community College; Fred Shima, California State University-Dominquez Hills; Art Skibbe, Appalachian State University; Michael J. Strube, Washington University; Ronald Testa, Plymouth State College; John T. Vogel, Baldwin Wallace College; Mary Wellman, Rhode Island College; Paul J. Wellman, Texas A & M University; I. Eugene White, Salisbury State College; Delos D. Wickens, Colorado State University-Fort Collins; Charles Wiechert, San Antonio College; Jeff Walper, Delaware Technical and Community College; Bonnie S. Wright, St. Olaf College; Brian T. Yates, American University

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How To Use This Book

Thank you for buying our text. We, the authors, would like to help you get the most from your purchase. We want to help you master the material in this text and get high grades in your introductory psychology course. You can reach both of these goals—mastery and demonstrating your mastery—if you take time now to do three things:

- 1. Familiarize yourself with the parts of the book.
- 2. Accept a little advice on how to read a chapter.
- 3. Keep three study tips in mind.

If you need more specific help, talk to your instructor and/or visit your college's counseling center. The Student Study Guide that accompanies this text is another important resource. It provides additional review and opportunities to apply what you have learned. This Guide and other student supplements are described on the back cover of this textbook.

FAMILIARIZING YOURSELF WITH THE TEXT

Psychology in Action has been carefully designed to help you learn the material. Take time now to examine the parts of this text and benefit from the help each offers.

- *Preface.* If you have not already done so, read the preface. It is a road map for the rest of the text.
- *Prologue*. This section presents the 21 basic components of critical thinking. Learn what critical thinking is and why it is important to improve your critical thinking skills.
- *Table of Contents*. Scan the table of contents for a bird's eye view of what you will study in this course. Get the big picture from the titles of chapters and the major topics within each chapter.
- Appendixes. Two Appendixes—Statistics and Applied Psychology—present important information about specific areas of study within the field of psychology. The Statistics appendix may be particularly helpful when studying Chapter 1 of the text. Consult your instructor regarding the use of the Applied Psychology appendix. A third appendix contains answers to the review questions.
- End-of-Book Glossary. There are two glossaries in this textbook. A "running glossary" appears in the margin of each chapter where key terms and concepts are defined when they are introduced. There is also an end-of-book glossary that gathers all of the terms from the running chapter glossaries in one place. Use the end-of-book glossary to review terms from other chapters.
- References. As you read a chapter assignment, you will find numerous studies cited (e.g., Jones et al., 1994). The reference section at the end of the book gives the complete data for all these citations. Use these sources for further reading on specific topics or for term paper research.
- · Name Index and Subject Index. If you are interested in learning more about a

particular individual, look for his or her name in the name index. The page numbers refer you to every place in the text where the individual is mentioned. If you are interested in a specific subject (e.g., anorexia nervosa or stress), check the subject index for page references.

HOW TO READ A CHAPTER

Every chapter of *Psychology in Action* contains specific learning aids to help you master the material:

CHAPTER Introducing Psychology OUTLINE UNDERSTANDING PSYCHOLOGY The Goals of Psychology GENDER AND CULTURAL DIVERSITY Cultural Psychology Psychology in Your Life PSYCHOLOGICAL RESEARCH Experimental Research Nonexperimental Research Techniques Correlation versus Experimental Methods **Evaluating Research** CRITICAL THINKING Applying Abstract Terminology ETHICS IN PSYCHOLOGY Research Ethics Animals in Research Clinical Practice Ethics

SCHOOLS OF PSYCHOLOGY Structuralism and Functionalism The Psychoanalytic and Gestalt Schools

Behaviorism Humanistic Psychology Cognitive Psychology Psychobiology Psychology Today

CHAPTER OUTLINE

Every chapter begins with an outline of major topics and subtopics that will be discussed. The major topics are boldfaced and fully capitalized. Under each are approximately three to five subtopics. Only the first letter of each word of these headings is capitalized. This pattern of headings is repeated within the chapter itself. The chapter outline and the corresponding headings within the chapter give you a mental scaffold upon which to arrange the new information you are learning.

OPENING VIGNETTE

Following the outline is a brief story from real life or an anecdotal retelling of a classic experiment that introduces the theme of the chapter. These opening vignettes were carefully chosen both for their interest and their application to the chapter material. You will find references throughout the chapter to the opening vignette. Drawing on the vignette for examples helps you organize and remember key concepts.

have just touched my dog. He was rolling on In average the control of the contro loved it with his tail, with his paw, with his tongue. If he could speak, I believe he would say with me that paradise is attained by touch. [pp.

Thus Helen Keller began her book The World I Live In. Her world was totally different from that of most people: She couldn't see it or hear it be-cause she was blind and deaf, but she learned to know it through her sense of touch. Although deprived of two senses, she was as capable and as appreciative of life—if not more so—as any person with all five senses. This was because she made the most of the senses she did have. Excerpts from her book describe how she used these

Through the sense of touch I know the faces of friends Inrough the sense of touch I know the faces of friendthe illimitable variety of straight and curved lines, all
surfaces, the exuberance of the soil, the delicate singof flowers, the noble forms of trees, and the range of
mighty winds. Besides objects, surfaces, and atmospherical changes, I perceive countless vibrations.
Footsteps, I discover, vary torculally according to the
age, the sex, and the manners of the walker.
When a carrenter works in the house or in the house.

age, the sex, and the manners of the walker. When a carpenter works in the house or in the barn near by, I know by the slanting, up-and-down, toothed vibration, and the ringing concussion of blow upon blow, that he is saving or hammering.

In the evening quiet there are fewer vibrations than in the daytime, and then I rely more largely upon smell . Sometimes, when there is no wind, the odors are so grouped that I know the character of the country and can place a hayfield, a country store, a garden, a barn, a grove of pines, a farmhouse with the windraws onen. I know hy smell the kind of house



munication with others. This isolation was a constant source of frustration and anger, leading her to violent temper tantrums. In fact, she noted that "after awhile the need of some means of communication became so urgent that these outbursts occurred daily, sometimes urly" (1902, p. 32).

Helen's parents realized they had to find help for

their daughter, and after diligently searching they found Anne Sullivan, a young teacher who was able to break through Helen's barrier of isolation by taking advantage of her sense of touch. From the mom variage of ner sense of touch. From the moment she arrived, Anne began finger-spelling names of objects by placing her hand in Helen's and forming letters used in sign language. Although Helen learned to finger-spell many words, she didn't understand that these finger movements could signify names for things. Then one day, Anne took Helen to the pumphouse and, as Anne (1902) wrote:

I made Helen hold her mug under the spout while pumped. As the cold water gushed forth, filling the mug, I spelled "w-a-t-er" in Helen's free hand. The word coming so close upon the sensation of cold water rushing over her hand seemed to startle her. She dropped the mug and stood as one transfixed. A new light came into her face. (p. 257)

From that moment on, Helen had an unquenchable desire to learn the names of everything and everybody, to interact and communicate with everyone. That one moment, brought on by the sensation of cold water on her hand, was the impetus for a lifetime of learning about, understanding, and appreciating the world through her remaining senses. In 1904, Helen Keller graduated cum laude from Radcliffe, one of the most respected women's colleges in the world, and follow-ing her graduation went on to become a famous author and lecturer, inspiring hope and encouragement to the handicapped throughout the world.

The story of Helen Keller has been told and retold as an example of how people can overcome sensory deficiencies by using their other senses to the optimum. In this chapter, we will discuss each sense in detail and examine the sensory mechanisms by which each operates. We will describe, for instance, how environmental stimuli-light from a flashlight, the odor of a skunk, heat from a campfire—are received by sensory receptors, converted into a language the brain can understand, then transmitted to the brain. This process of receiving, converting, and transmitting information from the outside world ("outside" the brain, not necessarily outside the body) is called sensation.

Our study of sensation covers not only what are commonly known as the five senses—
vision, hearing, taste, smell, and touch—but also those senses that provide the brain with data from inside the body. These internal senses are the vestibular sense (the sense of balance) and kinesthesis (the sense of bodily position and movement).

As you read Chapter 3, keep the following Survey questions in mind and answer them in your own words:

- How do our sensory organs gather sensory information and convert it into signals the brain can understand
- . What is light, and how do our eye structures work to enable us to see?
- · What is sound, and how do our ear structures work to enable us to hear?
- How do we smell different odors and taste different flavors?
- How do we feel pressure, temperature, and pain? How are we able to keep our balance? And how do we know what our body is doing without watching it?
- What happens if we are deprived of all sensory information?

EXPERIENCING SENSATIONS

To experience sensations, we must have both a means of detecting stimuli and a means * How do our sensory organs of converting them into a language the brain can understand. By their nature, our sensory organs accomplish both goals. They are effective in detecting light, sound, tastes, odors, heat, and other stimuli that they then convert into signals that are sent to

Sensory Processing: Transduction, Reduction, and Coding

Our sense organs contain cells called receptors that receive and process sensory information from the environment. For each sense, these specialized cells respond to a distinct stimulus, such as sound waves and odor molecules. Through a process called transduction, the receptors convert the stimulus into neural impulses, which are sent to the brain. In hearing, for example, tiny receptor cells in the inner ear transduce mechanical vibrations (from sound waves) into electrochemical signals. These signals are carried by neurons to the brain. Each type of sensory receptor is designed to detect a wide variety of stimuli and a wide range of stimulation. However, also built into our sensory systems are structures that purposefully reduce the amount of stimuli we re ceive.

imagine what would happen if you did not have some natural filtering of stimuli? You would constantly hear blood rushing through your veins and continually feel your clothes brushing against your skin. Obviously, some level of filtering is needed so the brain is not overwhelmed with unnecessary information. It needs to be free to respond to those stimuli that have meaning for survival. Each of our senses is therefore customic designed to respond to only a select range of potential sensory information. All species have worked selective recently the truncers or small file from their investment. have evolved selective receptors that suppress or amplify information in order to survive For example, hawks have an acute sense of vision but a poor sense of smell. Similarly, although we humans cannot sense many stimuli (such as ultraviolet or infrared light),

gather sensory information and convert it into signals

INTRODUCTORY PARAGRAPH AND SURVEY QUESTIONS

After the opening vignette is a paragraph of commentary that also presents the major topics that will be discussed in the chapter. It concludes with a list of four to six Survey Questions. These are general questions you should be asking yourself as you read the chapter. For reinforcement, they are repeated in the margin at the place they are discussed. These questions are an important part of the SQ4R method described in the preface and in the Student Study Guide that accompanies this text.

RUNNING GLOSSARY

Key terms and concepts, which are boldfaced in the text the first time they appear, are defined. They are also printed again in the margin and defined in a "running glossary." The running glossary provides a helpful way of reviewing key terms before tests. If you want to check the meaning of a key term from another chapter, use the end-ofbook glossary.

TRY THIS YOURSELF ACTIVITIES In each chapter you will find several opportunities to apply what you are learning. These "Try This Yourself" sections are identified with the special icon shown above. These brief activities are fun to do, and research shows that actively involving yourself in learning increases comprehension and retention.

* ILLUSTRATIONS

Don't skip over the photos, figures, and tables. They visually reinforce important concepts and therefore often contain material that may appear on exams.

CHAPTER 3 / SENSATION

we can see a candle burning 30 miles away on a dark, clear night, hear the tick of a watch at 20 feet under quiet conditions, and smell one drop of perfume in a six-room apartment (Galanter, 1962).

(Galanter, 1992).

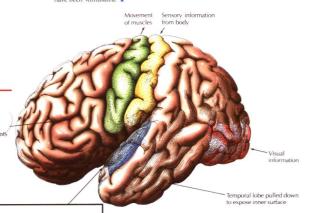
In the process of sensory reduction, we not only filter incoming sensations, we also analyze the sensations sent through before a neural impulse is finally sent to the cortex of the brain. This analysis is performed by cells in the reticular activating system (RAS) within the brain stem (see Chapter 2). The RAS determines whether or not incoming sensory information is important. If important, it passes the information on to the cerebral cortex. Because of this screening process, parents of a newborn, for example can sleep through passing sirens and blaring stereos yet awaken to the slightest whimper of their baby.

How does the brain differentiate between various inco and smells? It does so through a process called coding. Coding for a specific sensation depends on the number and type of sensory cells that are activated, on the precise nerve that is stimulated, and ultimately on the part of the brain that the nerve stimulates. In other words, sounds and smells are interpreted as distinct sensations not because of the environmental stimuli that activate them but because their respective neural impulses travel by different routes and arrive at different parts of the brain. Figure 3.1 illustrates the parts of the brain involved in sensory reception.



X Try This Yourself

To personally experience coding, close your eyes and with your fingertips press gently on your evelids for about 30 seconds. The visual sensations you experience (circles; streams of light) reflect the fact that the receptor cells at the backs of your eyes are prepared to code any kind of stimulation, including pressure, into visual patterns. So even though you aren't looking at anything, you still "see" something because your visual receptors



CHAPTER 3 / SENSATION

PSYCHOLOGY IN ACTION

CONDUCTING SOCRATIC DISCUSSIONS

Thinking about S

At the heart of critical thinking is critical questioning. The velops your critical thinking skills. (A by-product of this exercise is that it will help you master the chapter material.)

At the heart of critical thinking is critical questioning. The ability to delve heneath the superficial or rise above mere appearances by considering logical consequences and possible boundaries is the core of critical thinking. Socrates an ancient Greek philosopher, modeled this type of thinking in his question-and-answer method of teaching. In a Socratic discussion, the questioner uses probing questions to learn what the other person thinks to help the respondent is comfortable and doesn't become offended, defensive, or intimidated, because he or she knows the shared purpose is to clarify and evaluate a line of reasoning.

In this exercise, we offer several questions related to Chapter 3 that will help you practice the method of Socratic discussions. Select a good friend or classmate to simulate the roles of questioner" and "respondent." One of you should play Socrates and question the other for half the questions; then reverse roles for the remaining questions. We are providing sample questions that Socrates might ask, and the respondents as swers should be followed up with questions such as: "Why?" "How do you know?" "What is your reason for saying that?" "For example?" "Can I summarize your point as . . .?" Relax and enjoy your role as both the questioner and respondent. Critical, Socratic questioners do not attempt to make the other person look stupid. This should be a fun "mind game" that stretches your intellectual capacity and de-mind game" that stretches your intellectual

CRITICAL THINKING EXERCISE

Each chapter contains a special critical thinking exercise. These exercises provide important insights into the chapter material, while also improving your basic critical thinking skills.

Intentional Deprivation: The Benefits of Boredom

Considering the extreme boredom, hallucinations, and occasional panic experienced by the students in the original studies of sensory deprivation, it is surprising that researchers have found beneficial uses for it. In the early 1960s, a psychiatrist named John searchers have found beneficial uses for it. In the early 1960s, a psychiatrist named John C. Lilly set out to study deprivation effects by donning a diving helmet and immersing himself in a dark, soundproof tank of highly saline, buoyant water. During his immersion, Lilly reported experiencing "out of body" sensations, mind trips to other dimensions, and a general sense of being born again (Lilly, 1972). Other proponents of "tanking" claim that it produces a blissful, relaxed state of mind and vivid, enjoyable

Why did Bexton, Heron, and Scott's subjects experience su le who engage in tanking find it so enjoyable? One of the major reasons for the difference may be the power of suggestion. In Beston, Heron, and Scott's studies, participants were unwittingly led to expect negative experiences, since they were given medical release forms to sign and "panic buttons" to push if they became too stressed. However, the results may also be due to a time factor. Whereas the McGill students ation for many hours or even days, people in isolati

NARRATIVE QUESTIONS

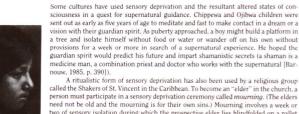
These imbedded, narrative questions model for you the process of active learning and the questioning goal for the SQ4R method. This helps focus your reading and increases comprehension.

CHAPTER 3 / SENSATION



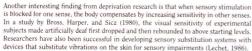
Gender and Cultural Diversity

SEEKING SENSORY DEPRIVATION



A ritualistic form of sensory deprivation has also been used by a religious group called the Shakers of St. Vincent in the Caribbean. To become an "elder" in the church, a person must participate in a sensory deprivation ceremony called *mourning*. (The elders need not be old and the mourning is for their own sins.) Mourning involves a week or two of sensory isolation during which the prospective elder lies blindfolded on a pallet and discusses any spiritual experiences with a church official. It is possible that many of these experiences are similar to those experienced by John C. Lilly and the subjects in the Bexton, Heron, and Scott experiments at McGill University

Sensory Substitution: Natural and Artificial Compensation



devices that substitute wibrations on the skin for sensory impairments (Lechet, 1986).

Helen Keller similarly learned to "see" and "hear" with her sense of touch, and she often recognized visitors by their smell or by vibrations from their walk. Despite the heightened sensitivity of her functioning senses, however, Helen professed a lifeling yearning to experience a normal sensory world. She gave this advice to those whose senses are "normal":

I who am blind can give one hint to those who see: use your eyes as if tomorrow you would be stricken blind. And the same method can be applied to the other senses. Hear the music of voices, the song of a bird, the mighty strains of an orchestra as if you would be stricken deaf tomorrow. Touch each object as if tomorrow your tactile sense would fail. Smell the perfume of flowers, taste with relish each morsel as if tomorrow you could never smell and taste again. Make the most of every sense, glory in all the facets of pleasure and beauty which the world reveals to you through the several means of contact which nature provides.

GENDER AND CULTURAL **DIVERSITY SECTIONS**

These sections embedded in the running narrative of each chapter are identified with a separate heading and a special icon, shown above. To succeed in today's world, you must be aware of other cultures and important gender issues.

REVIEW QUESTIONS

Each major section of a chapter concludes with 4 to 10 self-test comprehension questions. These review questions give you feedback on whether you have "drifted off" or fully mastered the major concepts in that section. Use these questions to review for exams, too. The answers for all questions are found in an appendix at the back of the text.

Review Questions

- 1. What are some of the effects of sensory deprivation?
- 2. The technique termed REST, which is based on sensory deprivation, has been successful in treating severe childhood psychological dis
- 3. What is meant by "sensory substituti

Answers to Review Questio

6. Psychological findings can be applied to improve our personal lives. The study of psychology leads to an appre tion for scientific methods of research, as opposed to pseudo-scientific methods.

PSYCHOLOGICAL RESEARCH

- Research methodology includes experimental techniques designed to investigate cause-and-effect relationships and nonexperimental techniques that provide description
- 8. An experiment begins with a hypothesis or possible explanation for behavior. Independent variables are the factors the experimenter manipulates and dependent variables are measurable behaviors of the subjects. Experimental control includes assigning subjects to groups and holding extraneous variables constant.
- 9. Nonexperimental research techniques are used to obtain descriptions of behavior. Naturalistic observation is used to study behavior in its natural habitat. Surveys use interws or questionnaires to obtain information on a sample of subjects. Individual case studies are in-denth studies of single subjects.
- 10. Experiments enable us to determine causes for beha-
- 11. Psychologists use statistics to judge whether research findings are significant or due to chance

SUGGESTED READINGS

ETHICS IN PSYCHOLOGY Psychologists are expected to maintain high ethical stan-dards in their relations with human and animal research bjects and in therapeutic relationships with clients. The APA has published specific guidelines detailing these ethical standards.

SCHOOLS OF PSYCHOLOGY

- Psychologists have grouped together to form various schools of psychology with distinct approaches to the study of behavior. Structuralists attempted to identify elements of consciousness and how these elements form the structure of the mind. Functionalists studied the fun structure of the finite. Furthern and the individual to the environment. They broadened the scope of psychology and extended its influence to such fields as education and in-
- 74. Freud's psychoanalytic theory examined psychological problems that were presumed to be caused by unconscious conflicts. The Gestalt school studied organizing principles of perceptual processes and paved the way for an eclectic approach.
- Behaviorism emphasizes obsern Benaviorism emphasizes observable behaviors and the ways they are learned. Humanistic psychology focuses on inner meanings and assumes our nature is positive and growth-seeking. Cognitive psychology examines reasonng and mental processes.
- Psychobiology attempts to explain behavior as complex chemical and biological events within the brain.

SUGGESTED READINGS

ternative to reading the chapter.

REVIEW OF MAJOR CONCEPTS -

At the end of each chapter, the entire chap-

ter is summarized in sentence outline form.

The summary provides an additional oppor-

tunity to see how all the topics and sub-

topics within the chapter are interrelated. This section also reinforces the key terms

and concepts from the chapter, but it does

not explain them. Therefore, it is not an al-

The list of suggested readings at the end of each chapter is useful for term paper research, as well as general interest and personal growth. Some are academic sources, and others are popular books and articles, but all are readable and informative.

SUGGESTED READINGS

MERICAN PSYCHOLOGICAL ASSOCIATION. (1986). Careers in psy-chology. Washington, DC: APA. This booklet is available free to students from the American Psychological Association, 1200 17th Street NW, Washington, DC 20036.

AMERICAN PSYCHOLOGICAL ASSOCIATION, (1990). Ethical princi-ples of psychologists. American Psychologist, 45, 390–395. This article lists and discusses the ethical principles involved with clinical practice, research with human subjects, and re-search with animals.

BRISLIN, R. (1993). Understanding culture's influence on behavior. Orlando, FL: Harcourt Brace Joyanovich. A fun book to read, especially for people who like people

- DZBY, P. C. (1989). Methods in behavioral research. (4th ed.)
 Palo Alto, CA: Mayfield. An introduction to the use of research methods in psychology.
- MILGRAM, S. (1974). Obedience to authority. New York: Harper & Row. In this book, Milgram describes his original experi-
- SCHULTZ, D. P., & SCHULTZ, S. E. (1992). A history of modern psychology (5th ed.). Orlando, FL: Harcourt, Brace, Jovanovich. A short history of psychology.
- STANOVICH, K. E. (1991). How to think straight about psychology. New York: HarperCollins. An interesting book on how to evaluate psychological and pseudopsychological research.

1

THREE STUDY TIPS

Now that you have a sense of the book as a whole and how to approach each chapter, you are on your way to meeting your twin goals — mastering the material and demonstrating your mastery. We'd like to send you off with three guaranteed-to-work study tips:

- 1. Use the SQ4R method. These initials stand for the six steps in effective reading: Survey, Question, Read, Recite, Review, and wRite. Here's how to apply SQ4R to this textbook.
 - Survey the chapter using the outline, opening vignette, introductory paragraph, and survey questions.
 - To maintain your attention and increase comprehension as you read, turn
 the heading of each section into a *question*. The survey questions listed at
 the beginning of the chapter and repeated in the margin do this for the
 main sections. Use them as a model for turning the second- and third-level
 headings into questions.
 - As you *read* the chapter, attempt to answer the questions you form from the headings.
 - After you have read and looked for answers to your questions, stop and recite your answers. Either say them quietly to yourself or write them down.
 - Answer the *review* questions at the end of each major section. Write down your responses and check your answers at the back of the book.
 - In addition to the writing you do in the above steps, add to the wRiting component of the SQ4R method by taking brief notes to yourself in the text margins about points that are unclear. Use these notes to ask questions during class lectures. The SQ4R method may sound time consuming, but our students have found that it actually saves time while also increasing their understanding of the material.
- 2. Distribute your study time. While it is important to review before a quiz or exam, if you wait until the last minute to cram a lot of material into a short, intensive study period you are not likely to do well in any college class. One of the clearest findings in psychology is that spaced practice is a much more efficient way to study and learn than massed practice (see Chapter 7). Just as you wouldn't wait until the night before a big basketball game to begin practicing your freethrows, you can't begin to study the night before an exam.
- 3. Actively listen to class lectures. Arrive on time and don't leave class early—you may miss important notes and assignments. Listen *actively* during lecture. Ask questions if you don't understand. Look at the instructor while he or she is talking. Focus your attention on what is being said by asking yourself, "What is the main idea?" Write down the key ideas and supporting details and examples. Include important names, dates, and new terms. But don't try to write everything the instructor says word for word. This is passive, rote copying, not active listening. Leave enough space in your notes so you can add material if the lecturer goes back to a topic or expands on the discussion. Pay particular attention to anything the instructor writes on the board. Lecturers generally take the time to write on the board those concepts they feel are most important to your learning.

If you would like more information on study skills, consult any of the following books. Carman, R. A., & Adams, W. R. (1985). *Study skills: A student's guide for survival.* New York: Wiley.