



Robert S. Feldman

UNDERSTANDING PSYCHOLOGY

Fifth Edition

Robert S. Feldman
University of Massachusetts–Amherst

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UNDERSTANDING PSYCHOLOGY, FIFTH EDITION

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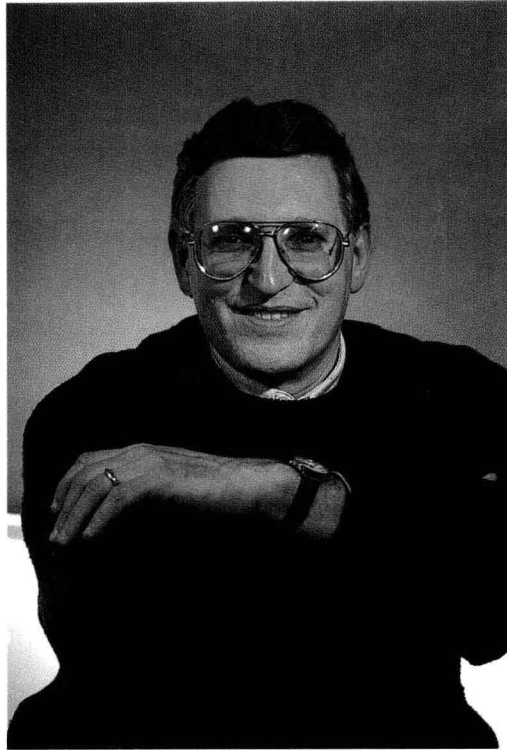
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About the Author



Robert S. Feldman is Professor of Psychology at the University of Massachusetts at Amherst, where he is Director of Undergraduate Studies and recipient of the College Outstanding Teacher Award. He has also taught courses at Mount Holyoke College, Wesleyan University, and Virginia Commonwealth University. As Director of Undergraduate Studies, he initiated the Minority Mentoring Program, and he teaches in the Talent Advancement Program. His introductory psychology classes, which he teaches every term, range in size from 20 to 300 students.

A graduate of Wesleyan University and the University of Wisconsin–Madison, Professor Feldman is a Fellow of both the American Psychological Association and the American Psychological Society. He is a winner of a Fulbright Senior Research Scholar and Lecturer award and has written some 100 scientific articles, book chapters, and books. His books, several of which have been translated into languages other than English, include *Fundamentals of Nonverbal Behavior*, *Development of Nonverbal Behavior in Children*, *Essentials of Understanding Psychology*, *Social Psychology*, and *Development Across the Life Span*. His research interests encompass the development of nonverbal behavior in children and the social psychology of education, and his research has been supported by grants from the National Institute of Mental Health and the National Institute on Disabilities and Rehabilitation Research.

Professor Feldman's spare time is most often devoted to serious cooking and earnest, but unpolished, piano playing. He lives with his wife, also a psychologist, and three children, overlooking the Holyoke mountain range in Amherst, Massachusetts.



To
Jonathan, Joshua, Sarah,
and Kathy

Preface

More than fifteen years have passed since I wrote these words at the beginning of the first edition of *Understanding Psychology*:

As I look out the window, the form of Mount Norwottock, an ancient volcanic mountain, rises above the landscape. I can see a farmer in the valley below Norwottock methodically plowing his fields, as, closer to home, a mother walks her child to school. A crew of carpenters is building a new house on land nearby, working together and following complicated architectural plans.

At the same time as I look out on this peaceful scene, the morning newspaper lying across my desk reports another terrorist attack, a Mideast treaty broken, and a murder in a small town nearby. It tells of a march of members of a Nazi-like organization who want to expel minorities from the United States, and of the upcoming release from a mental hospital of a killer judged innocent by reason of insanity.

The fundamental elements of the scene I describe are little changed today. The view from my study window continues to be dominated by the outline of Mount Norwottock and the tranquil fields that dot its base, while my daily newspaper is still filled with incidents of irrationality, selfishness, and violent competition among the world's people. For better or worse, the essential characteristics of human behavior have changed little over the last fifteen years.

What has changed, though, as we come to the start of the twenty-first century, is the field of psychology. The discipline has made important advances that help us to better understand people's behavior and thought processes. This book, now in its fifth edition, is a testament to the field's progress, as well as to the basics and principles on which the discipline of psychology is built.

THE GOALS OF *UNDERSTANDING PSYCHOLOGY*

The fifth edition of *Understanding Psychology* has four major goals:

1. To provide broad coverage of the field of psychology, introducing the theories, research, and applications that constitute the discipline.
2. To serve as an impetus for readers to think critically about psychological phenomena, particularly those that have an impact on their everyday lives.
3. To illustrate the substantial diversity both within the field of psychology and in society as a whole by presenting material that reflects the discipline's increasing concern with cultural, gender, racial, and ethnic issues.
4. To arouse intellectual curiosity and build an appreciation of how psychology can increase students' understanding of the world around them.

In short, *Understanding Psychology* is meant not only to expose readers to the content—and promise—of psychology, but also to do so in a way that will bring to life basic concepts and research findings, and sustain interest in the discipline long after readers have completed their first encounter with the field.

THE SCOPE AND STRUCTURE OF UNDERSTANDING PSYCHOLOGY

Understanding Psychology includes extensive coverage of the traditional topical areas of psychology, including the biological foundations of behavior, sensation and perception, states of consciousness, learning, memory, cognition, human development, personality, abnormal behavior and treatment, and social psychology. However, it also features distinctive chapters that focus primarily on applied topics, such as Chapter 15 on health psychology.

The flexibility of this textbook's organizational structure is considerable. Each chapter is divided into three or four manageable, self-contained units, allowing instructors to choose and omit sections in accordance with their syllabus. Furthermore, because chapters are self-contained, it is possible to use this book in either biologically-oriented or socially-oriented introductory psychology courses by choosing only those chapters that are relevant. In addition, material on applying psychology is well-integrated throughout, even in the chapters that cover the most traditional, theoretical topics. Consequently, courses that omit the more applied topical chapters will still be successful in conveying the relevance of psychology to students. As a result, the book reflects a combination of traditional core topics and contemporary applied subjects, providing a broad, eclectic—and current—view of the field of psychology.

Understanding Psychology employs a number of pedagogical devices designed to help students to master the field of psychology. The most important of these features are the following:

Prologue. Each chapter starts with an account of a real-life situation that demonstrates the relevance of basic principles and concepts of psychology to pertinent issues and problems. These prologues often depict well-known people and events, such as Kerri Strug's Olympic triumph, the Unabomber, and Christopher Reeve's accident and recovery, taking a psychological perspective.

Looking Ahead. A chapter overview follows the prologue. It articulates the key themes and issues covered within the chapter.

Guiding Questions. Each major section of the chapter begins with several broad questions, providing a framework for understanding and mastering the material that is to come. These questions appear in the margin next to the section reading.

Applying Psychology in the 21st Century. New to this edition, special boxes illustrate applications of current psychological theory and research findings to real-world problems, focusing on current advances and future possibilities likely to occur in the new century. For example, these discussions include research on the development of artificial sense organs, drugs to reduce forgetting, gene therapy, and computer-enhanced virtual psychotherapy.

Pathways Through Psychology. Every chapter provides biographical sketches of people working in professions that make use of the findings of psychology. Some of the people are psychologists; some work in other fields; all employ psychology on a daily basis. For example, there are interviews with a government analyst, a brain laboratory worker, a sleep laboratory director, an administrator working with people with mental retardation, a sports psychologist, a preschool teacher, an advocate for the homeless, and an advertising executive.

Exploring Diversity. In addition to a substantial amount of material relevant to diversity integrated throughout the text discussions, every chapter also devotes at least one special section to an aspect of racial, ethnic, gender, or cultural diversity. These sections highlight the way in which psychology informs (and is informed by) issues

relating to the increasing multiculturalism of world society. Among the Exploring Diversity sections are those on cross-cultural differences in memory, cross-cultural similarities in emotional expression, cultural perspectives on female circumcision, and the use of race to establish test norms.

PsychLinks. New to this edition, marginal icons called “PsychLinks,” indicate material on the *Understanding Psychology* World Wide Web site at <http://www.mhhe.com/psycafe>.

The Informed Consumer of Psychology. Every chapter includes material designed to make readers more informed consumers of psychological information by giving them the ability to evaluate critically what the field of psychology offers. For example, these sections discuss ways of assessing research claims, managing pain, identifying drug and alcohol problems, memory improvement, critical thinking strategies, losing weight successfully, ending sexual harassment, adjusting to death, assessing personality assessments, and choosing a therapist. These unique sections illustrate the applications built on psychological research while also providing sound, useful guidance regarding common problems.

Recap, Review, and Rethink. Every chapter is divided into three or four sections, each of which concludes with a Recap, Review, and Rethink section. The Recap summarizes the key points of the previous section. The Review tests initial recall of the material. The Rethink provides thought-provoking, critical-thinking questions.

Running Glossary. Key terms are highlighted in boldface type within the text where they are introduced and are defined in the margin of the page, with pronunciation guides for difficult words. There is also an end-of-book glossary.

Looking Back. To facilitate both the review and synthesis of the information covered, two end-of-chapter features reinforce student learning. First, a *numbered chapter summary* emphasizes the key points of the chapter and is organized according to the orienting questions posed at the beginning of every major section. Second, a list of *key terms and concepts*, including the page numbers where they are introduced is provided at the end of each chapter.

Epilogue. New to this edition, each chapter ends with an epilogue that incorporates critical thinking questions relating to the prologue at the opening of the chapter. The end-of-chapter thought-provoking questions in the epilogue provide a way of tying the chapter together and illustrating how the concepts addressed in the chapter apply to the real-world situation presented in the prologue.

WHAT’S NEW IN THE FIFTH EDITION?

This edition contains a significant amount of new and updated information. To cite just one example, advances in behavioral genetics and evolutionary approaches to psychology receive significant new coverage. Furthermore, many chapters address the importance of evolving technologies in affecting behavior. Overall, approximately 1,600 new citations have been added, with close to 1,000 of those from publications in just the last three years.

In addition to the extensive updating, a broad range of new topics has been incorporated. The following sample of new and revised topics featured in this edition provides a good indication of the currency of the revision: evolutionary foundations of behavior (Chapter 1); census sampling issues (Chapter 2); behavioral genetics (Chapter 3); spinal cord repair (Chapter 3); virtual sense organs (Chapter 4); critical evaluation of drug programs (Chapter 5); media influences on learning (Chapter 6); thinking machines (Chapter 7); Ebonics and Spanglish (Chapter 8); the Flynn effect (Chapter 9); dexfenfluramine (Chapter 10); the glass ceiling and sexual harassment (Chapter 11); genetic engineering (Chapter 12); limitations on the human life span

(Chapter 13); shy and inhibited personality traits (Chapter 14); psychological components of cancer (Chapter 15); borderline personality disorder (Chapter 16); virtual therapy (Chapter 17); and stereotype vulnerability (Chapter 18).

Among the pedagogical features new to this edition are the *Applying Psychology in the 21st Century* boxes. They address current advances and future possibilities, focusing on the ways our lives can be bettered in the next century through the work being carried out by psychologists. *PsychLinks*, another new feature, is an annotated listing of World Wide Web sites relevant to the chapter content.

Finally, a short *epilogue* at the end of every chapter incorporates critical-thinking questions relating to the prologue. Because the opening prologues serve as case studies that foreshadow the topics that the chapter will address, the epilogue's thought-provoking questions tie the chapter together. They also illustrate how the concepts addressed in the chapter can be applied to the real-world situation described in the opening prologue.

The fifth edition re-emphasizes and expands the critical thinking aspects of the textbook. *Recap, Review, and Rethink* sections have been enhanced by the addition of more questions designed to provoke higher-order, critical thinking. These questions are broad and integrative, and can even serve as the basis for student essays.

Despite the extensive changes to this edition of *Understanding Psychology*, one constant remains: the basic student-friendliness of the text. *Understanding Psychology*, fifth edition, remains a textbook devoted to student success. In aiding students' efforts to master the body of material that the field of psychology encompasses, the book is designed to nurture students' excitement about psychology, and to keep that excitement alive for a lifetime.

SUPPLEMENTS PACKAGE

A complete, integrated multimedia package supports the fifth edition of *Understanding Psychology*. The following supplements may accompany *Understanding Psychology*, fifth edition. Please contact your local McGraw-Hill representative for details concerning policies, prices, and availability, as some restrictions may apply.

The **Student Study Guide** (0-07-303475-4) was prepared by Mark Garrison of Kentucky State University. Each chapter of the Study Guide opens with a summary and list of learning objectives. A guided review and matching exercises help students to learn the material in the chapter, and multiple-choice practice tests and essay questions allow them to gauge their understanding of the information. An answer key provides answers to all of the chapter's exercises, including feedback for all multiple-choice items. A list of activities and projects that encourage students to apply psychology to their everyday lives is also included.

The **Instructor's Manual** (0-07-303476-2), prepared by Sandy Ciccarelli of Gulf Coast Community College, is packaged in a three-ring binder with tab dividers for each chapter. This presentation allows instructors to reorder, remove, or add their own material, enabling them to customize the manual to meet the needs of their course. Each chapter provides numerous ideas for lectures, demonstrations, activities, and projects complete with ready-to-use handouts. A set of learning objectives that corresponds with the study guide and the test bank, and lists of relevant films and videos are also included.

The **Test Bank** (0-07-303477-0) was prepared by Jeff Kaufman and Beverly Knoernschild of Muscatine Community College. The test bank contains more than 2,000 multiple-choice items, classified by cognitive type and level of difficulty, and keyed to the appropriate learning objective and textbook page number. Items that test knowledge of material in the textbook's boxes are indicated for easy reference. Essay questions are also provided for all chapters.

Computerized Test Banks, available in Windows (0-07-303479-7) and Macintosh (0-07-303478-9) formats, make the items from the Test Bank easily available to instructors. The test-generating program Microtest III facilitates selection of questions from the Test Bank and printing tests and answer keys, and also allows instructors to add or import their own questions.

Other supplements may include, but may not be limited to: **Phone-in Test Compiling, Overhead Transparency Acetates** (0-07-303480-0), **PRISM Student CD-ROM** (0-07-303448-7), **Presentation Manager CD-ROM** (0-07-303752-4), **PowerPoint Slides** (0-07-303753-2), **Videos and Videodisks**, *Understanding Psychology Web page*, **McGraw-Hill Learning Architecture** (0-07-450943-8), *P.O.W.E.R. Learning: A Psychology Student's Guide to Success* by Robert S. Feldman, and *Psychology This Week*, an update prepared by Robert S. Feldman and delivered directly to students and faculty via e-mail weekly.

Finally, a toll-free, interactive reader comment line has been established for comments and queries. Users of *Understanding Psychology* can call 1-800-223-6880, extension 29496, to have access to this line.

ACKNOWLEDGMENTS

One of the most important features of *Understanding Psychology* is the involvement of both professionals and students in the review process. The fifth edition of *Understanding Psychology* has relied heavily on—and profited substantially from—the advice of instructors and students from a wide range of backgrounds.

First, the manuscript was evaluated by traditional academic reviewers, who served in their capacity as content experts and teachers of psychology. These reviewers helped ensure that the coverage and presentation was accurate, incorporated state-of-the-art research findings, and remained focused on the diverse needs of introductory psychology courses. They include the following:

Mike Aamodt, *Radford University*

Susan K. Beck, *Wallace State College*

Therison Bradshaw, *Macomb Community College*

Andrew R. Eisen, *Fairleigh Dickinson University*

Steve Ellyson, *Youngstown State University*

Gary King, *Rose State College*

Jeff Kaufman, *Muscatine Community College*

Dave G. McDonald, *University of Missouri*

Tom Moye, *Coe College*

Brenda Nantz, *Vincennes University*

Robert F. Schultz, *Fulton-Montgomery Community College*

Joanne Stephenson, *Union University*

George T. Taylor, *University of Missouri–St. Louis*

Several people also gave us their input in reviews and interviews about the ancillary package. I am grateful to the following teachers of psychology:

Mike Aamodt, *Radford University*

Craig Beauman, *California State–Fullerton*

Don Brodeaur, *Sacred Heart University*

Cindy Dulaney, *Xavier University*

Jeff Kaufman, *Muscatine Community College*

George T. Taylor, *University of Missouri–St. Louis*.



*The Student Review Panel, who provided a line-by-line review of *Understanding Psychology*, consisted of Jean Pacifico, Petra Doyle, and Benjamin Happ.*

Another group of reviewers consisted of a panel of three students who had used the previous edition of *Understanding Psychology* in their introductory psychology class. Over the course of a subsequent semester, they reviewed the entire manuscript, literally line-by-line. Their insights, suggestions, and sometimes all-too-enthusiastic criticism were invaluable to me as I prepared this revision. The student review panel consisted of Petra Doyle, Benjamin Happ, and Jean Pacifico.

Finally, dozens of students read parts of the manuscript to ensure that the material was clear and engaging. Their suggestions are incorporated throughout the text.

I am grateful to all of these reviewers who provided their time and expertise to help ensure that *Understanding Psychology* reflects the best that psychology has to offer.

I also owe a great deal to numerous others. My thinking has been shaped by many teachers along my educational path. I was introduced to psychology at Wesleyan University, where several committed and inspiring teachers—in particular Karl Scheibe—conveyed their sense of excitement about the field and made its relevance clear to me. Karl epitomizes the teacher-scholar combination to which I aspire, and I continue to marvel at my fortune in having such a role model.

By the time I left Wesleyan I could envision no other career but that of psychologist. Although the nature of the University of Wisconsin, where I did my graduate work, could not have been more different from the much smaller Wesleyan, the excitement and inspiration were similar. Once again, a cadre of excellent teachers—led, especially, by the late Vernon Allen—molded my thinking and taught me to appreciate the beauty and science of the discipline of psychology.

My colleagues and students at the University of Massachusetts at Amherst provide ongoing intellectual stimulation, and I thank them for making the university a fine place to work. Several people also provided extraordinary research and editorial help. In particular, I am grateful to my superb students, past and present. In particular, I thank Erik Coats (now at Vassar College), who remains a constant source of ideas and (more often than I wish) eager criticism, and my current graduate students Sara Pollak Levine, Dan Hrubes, and Jim Forrest. Edward Murphy helped in a variety of important ways, providing highly useful and intelligent editorial input and advice. Finally, I am very grateful to John Graiff, whose hard work and dedication helped immeasurably on just about everything involving this book.

I also offer my thanks to Meera Dash, senior developmental editor, who provided a deft and insightful editorial touch for this edition. Every reader of this book also owes a debt of gratitude to Rhona Robbin, developmental editor on prior editions of *Understanding Psychology*. Her relentless pursuit of excellence helped form this book, and she taught me a great deal about the craft and art of writing. Joe Terry, sponsoring editor for this edition, has brought a thoughtful, creative energy and strong commitment to the book, and I am looking forward to working with him for many

years. Other people at McGraw-Hill were central to the design, production, and marketing process, including Cathy Smith and Mary Christianson. I am also appreciative of Jim Rozsa, admitted nice guy, whose marketing savvy I'm counting on. I am proud to be a part of this world-class team.

Finally, I remain completely in the debt of my family. My parents, Leah Brochstein and the late Saul D. Feldman, provided a lifetime foundation of love and support, and I continue to see their influence in every corner of my life. My extended family also play a central role in my life. They include, more or less in order of age, my nieces and nephews, my brother, assorted brothers- and sisters-in-law, Ethel Radler, and Harry Brochstein. Finally, my mother-in-law, the late Mary Evans Vorwerk, had an important influence on this book, and I remain ever grateful to her.

Ultimately, my children, Jonathan, Joshua, and Sarah, and my wife, Katherine, remain the focal point of my life. I thank them, with immense love.

Robert S. Feldman
Amherst, Massachusetts

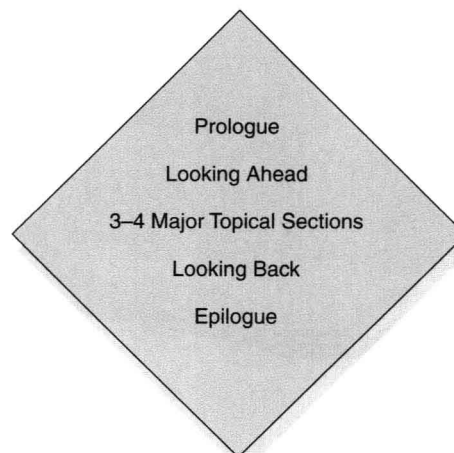
USING UNDERSTANDING PSYCHOLOGY: A GUIDE FOR STUDENTS

Understanding Psychology has been written with you, the reader, in mind. At every step in the development of the book, students and instructors have been consulted extensively, seeking to identify the combination of learning features that would maximize readers' ability to learn and retain the subject matter of psychology. The result is a book that contains features that will not only help you to understand psychology, but also make it a discipline that is part of your life.

Now it's your turn; take the following steps to maximize the effectiveness of the learning tools in this book. These steps include familiarizing yourself with the arrangement of the book, using the built-in learning aids, and employing a systematic study strategy.

Familiarize Yourself with the Arrangement of *Understanding Psychology*

Begin by reading the list of chapters and skimming the detailed table of contents. It provides an overview of the topics that will be covered and gives a sense of the way in which the various topics are interrelated. Note that every chapter follows the same diamond-shaped pattern:



The heart of each chapter consists of three or four self-contained units that provide logical starting and stopping points for reading and studying. You can use these sections of each chapter to plan your studying. For instance, if your instructor assigns a chapter to read over the course of a week, you might plan to read and study one major section each day, using later days in the week to review the material.

Use the Built-in Learning Aids

Once you have acquired a broad overview of *Understanding Psychology*, you're ready to begin reading and learning about psychology. Each chapter contains the same set of features that will help you master the material. They include:

Prologue

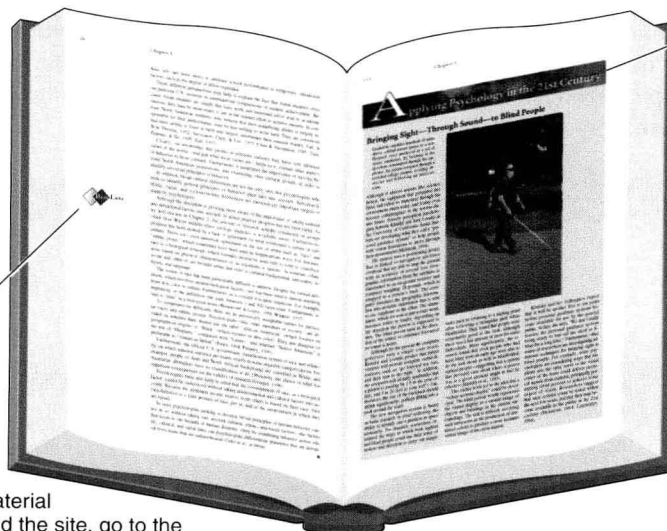
Each chapter begins with a Prologue. The Prologue sets the stage for the content of the chapter, providing a relevant, real-life scenario.

Looking Ahead

The Looking Ahead sections raise the key themes and issues addressed in the chapter. They alert you to what you'll have learned after reading and studying the chapter.

Guiding Questions

Several broad questions are found at the start of every major section. These questions help focus your thinking about the chapter content. The same questions organize the chapter summary at the end of the chapter. Use these questions (which psychologists refer to as "advance organizers") to help organize what you will need to learn.

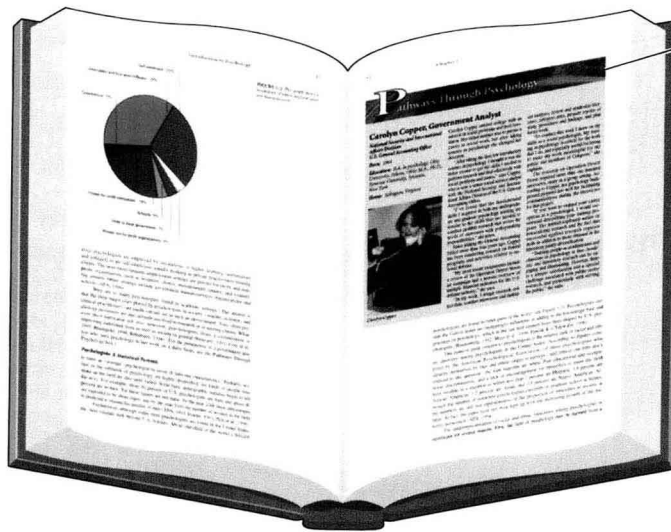


PsychLinks

The *PsychLinks* logo, shown here, indicates that a World Wide Web site is associated with the material being discussed. To find the site, go to the *Understanding Psychology* Web site for this book, located at <http://www.mhhe.com/psycake>. Look for the page number from this book on which the logo is located, and you'll find a link to relevant material.

Applying Psychology in the 21st Century

is a box in each chapter that describes psychological research issues, applied to everyday problems. They focus on the applications of psychology relevant to the next century. Read them to understand the very real ways that psychology promises to improve the human condition.

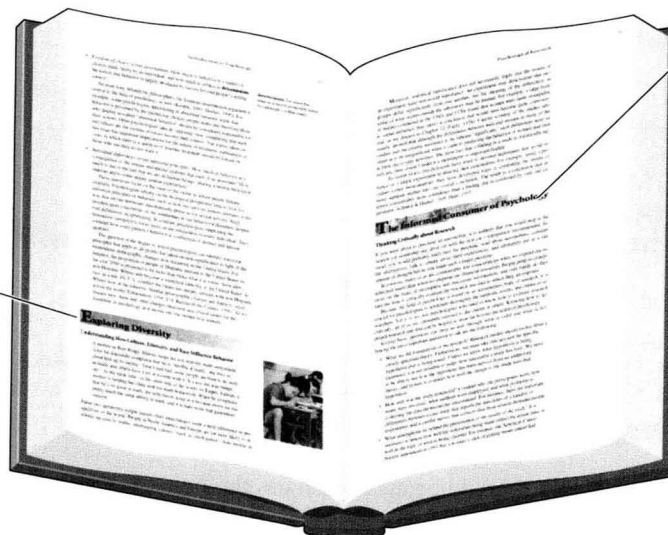


Pathways Through Psychology

are interviews with individuals—psychologists and non-psychologists—whose professions and daily work are affected by the findings from the field of psychology. These biographical sketches show you the ways that the study of psychology is related to a broad range of professions and work-related issues. They can help answer your questions about how you could use your knowledge of psychology once you graduate.

Exploring Diversity

Every chapter includes at least one section devoted to an aspect of racial, ethnic, gender, or cultural diversity. These discussions show you many similarities between psychology and the multi-cultural issues that are so central to our increasingly diverse global society.



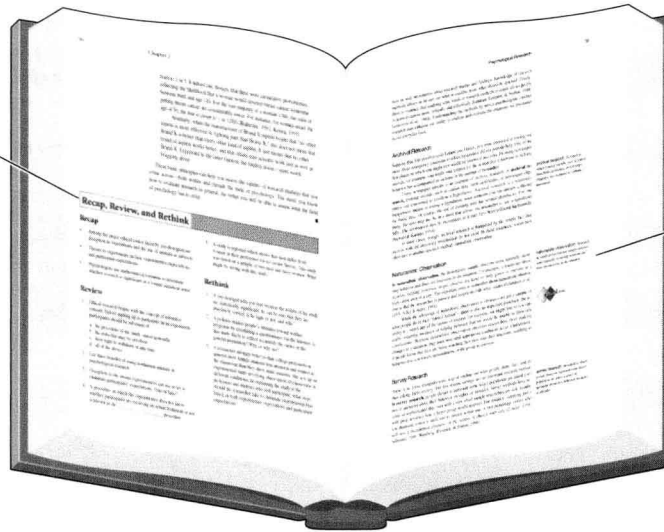
The Informed Consumer of Psychology

A major goal of *Understanding Psychology* is to make readers more informed, critical consumers of psychological information. These features, found in every chapter, give you the tools to evaluate information relating to human behavior and will help make you a more informed consumer of that information.

Recap, Review, and Rethink

Every main section of a chapter ends with a Recap, Review, and Rethink section. The Recap is a short, bulleted list that states the main points addressed in that section. The Review provides a series of questions that ask for concrete information, in a multiple choice, fill-in, or true-false format. The answers to these questions appear at the bottom of the pages that follow the questions. Finally, Rethink questions are designed to evoke critical thinking; they are thought-provoking questions that often have more than one correct answer.

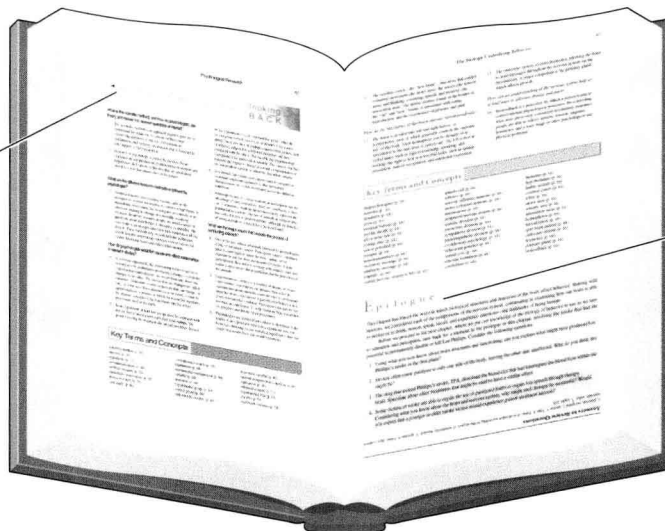
Answer these questions! Your responses will indicate both your degree of mastery of the material and the depth of your knowledge. Use questions with which you have difficulty to guide your future studying.

*Running Glossary*

When a key term or concept appears in the text, it appears either in italics or bold type. Italicized words are of secondary importance; boldfaced words are of primary importance. Terms in bold are also printed and defined in the margins and in the end-of-book Glossary. Pronunciations are given for the difficult terms. In addition, bold-faced terms are included in the list of Key Terms and Concepts at the end of every chapter. You might want to highlight the difficult definitions with a marker or highlighter.

Looking Back

These end-of-chapter sections include two important parts: The numbered summary is organized around the guiding questions asked earlier in the chapter. The key terms and concepts list includes a page number where the term is first introduced in the chapter. To find its definition, you have two choices: turn to the margin of the page where the term is first introduced, or consult the end-of-book Glossary, which contains every key term and concept.

*Epilogue*

The Epilogue refers back to the Prologue scenario, which opened the chapter. The Epilogue helps you to place this scenario in the context of the chapter material, asking questions designed to get you thinking critically about the information.

Because every chapter contains these features, the book provides a set of familiar landmarks to help you chart your way through new material. This structure will help you in organizing each chapter's content, as well as learning and remembering the material.

One final note: You should be aware that psychologists use a style of writing approved by the American Psychological Association. The only out-of-the-ordinary aspect of this style is in terms of citations to previous research. These citations are indicated by a name and date, typically set off in parentheses at the end of a sentence specifying the author and the year of publication (e.g., Kirsch & Lynn, 1998). Each of these names and dates refers to a book or article included in the References at the end of this book.

Use a Proven Strategy for Effective Study and Critical Thinking

Now that you are acquainted with the special features of *Understanding Psychology* that are designed to help you learn the content and thinking of psychology, you should consider using a general study strategy. It is ironic that although we are expected to study and ultimately learn a wide range of material throughout our schooling, we are

rarely taught any systematic strategies that permit us to study more effectively. Yet, just as we wouldn't expect a physician to learn human anatomy by trial and error, it is the unusual student who is able to stumble upon a truly effective studying strategy.

Psychologists, however, have devised several excellent (and proven) techniques for improving study skills, two of which are described here. By employing one of these procedures—known by the initials “SQ3R” and “MURDER”—you can increase your ability to learn and retain information and to think critically, not just in psychology classes but in all academic subjects.

The SQ3R method includes a series of five steps, designated by the initials S-Q-R-R-R. The first step is to *survey* the material by reading the chapter outlines, chapter headings, figure captions, recaps, and Looking Ahead and Looking Back sections, providing yourself with an overview of the major points of the chapter. The next step—the “Q” in SQ3R—is to *question*. Formulate questions—either aloud or in writing—prior to actually reading a section of the material. For instance, if you had first surveyed this section of the book, you might jot down in the margin, “What do ‘SQ3R’ and ‘MURDER’ stand for?” The queries posed in the marginal guiding questions and the reviews that end each part of the chapter are also a good source of questions. But it is important not to rely on them entirely; making up your own questions is critical. *Understanding Psychology* has wide margins in which you can write your own questions. This process helps you to focus on the key points of the chapter, while at the same time putting you in an inquisitive frame of mind.

It is now time for the next, and most crucial, step: to *read* the material. Read carefully and, even more importantly, read actively and critically. For instance, while you are reading, answer the questions you have asked yourself. You may find yourself coming up with new questions as you read along; that's fine, since it shows you are reading inquisitively and paying attention to the material. Critically evaluate material by considering the implications of what you are reading, thinking about possible exceptions and contradictions, and examining the assumptions that lie behind the assertions made by the author.

The next step—the second “R”—is the most unusual. This “R” stands for *recite*, in which you look up from the book and describe and explain to yourself, or to a friend, the material you have just read and answer the questions you have posed earlier. Do it aloud; this is one time when talking to yourself is nothing to be embarrassed about. The recitation process helps you to clearly identify your degree of understanding of the material you have just read. Moreover, psychological research has shown that communicating material to others, or reciting it aloud to yourself, assists you in learning it in a different—and deeper—way than material which you do not intend to communicate. Hence, your recitation of the material is a crucial link in the studying process.

The final “R” refers to *review*. As we discuss in Chapter 7, reviewing is a prerequisite to fully learning and remembering material you have studied. Look over the information; reread the Recaps and Looking Back summaries; answer in-text review questions; and use any ancillary materials you may have available. (There is both a traditional and a computerized student study guide available to accompany *Understanding Psychology*.) Reviewing should be an active process, in which you consider how different pieces of information fit together and develop a sense of the overall picture.

An alternative approach to studying—although not altogether dissimilar to SQ3R—is provided by the MURDER system (Dansereau, 1978). Despite the deadly connotations of its title, the MURDER system is a useful study strategy.

In MURDER, the first step is to establish an appropriate *mood* for studying by setting goals for a study session and choosing a time and place in which you will not be distracted. Next comes reading for *understanding*, in which careful attention is paid to the meaning of the material being studied. *Recall* is an immediate attempt to recall the material from memory, without referring to the text. *Digesting* the material comes next; you should correct any recall errors, and attempt to organize and store newly learned material in memory.

You should work next on *expanding* (analyzing and evaluating) new material, and try to apply it to situations that go beyond the applications discussed in the text. By incorporating what you have learned into a larger information network in memory, you will be able to recall it more easily in the future. Finally, the last step is *review*. Just as with the SQ3R system, MURDER suggests that the systematic review of material is a necessary condition for successful studying.

Both the SQ3R and MURDER systems provide a proven means of increasing your study effectiveness. It is not necessary, though, to feel tied to a particular strategy; you might want to combine other elements into your own study system. For example, learning tips and strategies for critical thinking will be presented throughout *Understanding Psychology*, such as in Chapter 7 when the use of mnemonics (memory techniques for organizing material to help its recall) are discussed. If these tactics help you to successfully master new material, stick with them.

The last aspect of studying that warrants mention is that *when* and *where* you study are in some ways as important as *how* you study. One of the truisms of the psychological literature is that we learn things better, and are able to recall them longer, when we study material in small chunks over several study sessions, rather than massing our studying into one lengthy session. This implies that all-night studying just prior to a test is going to be less effective—and a lot more tiring—than employing a series of steady, regular study sessions.

In addition to carefully timing your studying, you should seek out a special location to study. It doesn't really matter where it is, as long as it has minimal distractions and is a place that you use *only* for studying. Identifying a special "territory" allows you get in the right mood for study as soon as you begin.

A Final Comment

By using these proven study strategies, as well as by making use of the learning tools integrated in the text, you will maximize your understanding of the material in this book and will master techniques that will help you learn and think critically in all your academic endeavors. More importantly, you will optimize your understanding of the field of psychology. It is worth the effort: the excitement, challenge, and promise that psychology holds for you are significant.