



# Psychology

THE BRAIN,  
—  
THE PERSON,  
—  
THE WORLD

STEPHEN M. KOSSLYN

ROBIN S. ROSENBERG

# PSYCHOLOGY

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## The Brain, the Person, the World



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*To Nathaniel, David, and Justin,  
for showing us how psychology really works.*

# PREFACE

**D**oes the field of psychology really need another introductory psychology textbook? This is what we, as coauthors, asked each other as we started to consider writing this book. One of us is a cognitive neuroscientist and the other a clinical psychologist. In working together, we began to see how our different areas of psychology were dovetailing. We had both come to view psychology in terms of events that occur at different levels of analysis: the brain (biological factors), the person (beliefs, desires, and feelings), the group (social, cultural, and environmental factors), and their interactions. This view of psychology is exciting because it can be applied to all psychological phenomena and can offer a way to organize a diverse range of theories and discoveries. We realized that this was an important way of teaching psychology. Different fields of psychology are interconnected, although they are not often presented this way in textbooks.

We also wanted to show students that applying the results of psychological research can make learning and remembering easier—not just for this course, but for any course, from economics to art history, and for the demands of life in general. We wanted to do more than just tell students how psychology can help them to be better learners—we wanted to apply these principles in this book, and teach students how to use these principles for themselves. A detailed explanation of this idea is found in the introduction, “Using Psychology to Learn Psychology,” on pages 1–5.

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## ORGANIZATION OF THIS TEXTBOOK

**O**ur goal was to write a textbook that would better integrate the field of psychology and engage students. We felt we could do this by exploring both how psychology can be viewed from various levels of analysis and how psychological principles can be applied to enhance learning. Both of these themes are reflected in the overall organization of the text and its individual chapters.

Most comprehensive psychology textbooks have anywhere from 16 to 22 chapters; ours has 15. When using textbooks with more chapters, introductory psychology instructors often end up skipping parts in the interest of time, or requiring students to read multiple chapters per week. Neither option is ideal; both are likely to result in only a superficial grasp of the field as a whole. Because introductory psychology is intended to be a survey of the entire field, we believed that a more compact book would allow students to sample all the areas of psychology. We have carefully chosen both core and cutting-edge concepts, theories, and findings, to give students a deeper understanding of the field.

To achieve a more compact book, we have combined several topics that we think are best covered in a more integrated manner. For example, Chapter 1 includes both an introduction to the field of psychology and an overview of the methods used in psychological research. To understand any science, students need to learn about the kinds of questions that are asked and the methods for answering them. By consider-

ing the methods, students get a concrete sense of the shape of the science as it stands today. Appendix A (Statistics) and Appendix B (How to Read, Critically Evaluate, and Write Research Papers) further enhance this coverage and can be assigned at any time in the course.

Chapter 3 covers both sensation and perception. These two topics are strongly related, and recent brain research suggests that the same brain systems underlie both types of phenomena. Combining the two topics in one chapter makes it easier for students to see how sensation and perception work to achieve the same ends, specifically, the identification of stimuli and the representation of spatial relations.

Similarly, Chapter 9 discusses the essentials of emotion and motivation in one chapter. The reason for including the two topics in one chapter is straightforward: Emotion is a major factor that motivates us. Unlike most other textbooks, ours introduces emotion first. By beginning the chapter with emotion, we are able to show how dramatic breakthroughs in the study of emotion (which have occurred, in part, because of discoveries about the brain) can illuminate aspects of human motivation.

We include a single chapter on social psychology, Chapter 15. This chapter is further divided into two sections: social cognition and social behavior, the traditional domains of the field. Again, by including both topics in a single chapter, we are better able to show how they are related. Students learn how cognition about other people's beliefs, desires, and feelings plays a key role in our social interactions.

In addition to providing more detailed information about research methods used in psychology, Appendix B walks students through the American Psychological Association (APA) format for research articles. This appendix helps students understand not only the APA format for a research paper, but also how a research study is designed to answer a particular question (or questions) of interest, and whether the data support a particular answer to the question. Appendix B also helps students to organize their own research papers and to know what should be included in each section. Finally, this appendix also helps students think critically about psychological studies that they may read or learn about through television, print, and online resources.

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## PEDAGOGICAL FEATURES

The introduction, “Using Psychology to Learn Psychology,” is a roadmap devoted exclusively to the pedagogical features of this book; we ask students to read this introduction before they turn to Chapter 1. It will not only explain how to make the most of their time and effort in reading this text, but it will also teach them general principles that they can apply to their other courses. Each chapter of the text follows the format described in the introduction, which is based, in part, on psychological findings about how people best learn and remember information.

### Chapter Story

Each chapter begins with a different story about a person or a set of people. The story is then elaborated on throughout the chapter, providing a framework for the chapter's discussion of relevant psychological theories and research. These stories serve several purposes. They allow students to see how the psychological material covered in the chapter might apply to people outside of a psychological laboratory. This also makes the material more interesting and applicable to their lives, thus facilitating learning and remembering. In addition, the story integrates the various topics contained within a chapter, creating a coherent, thematic whole. Finally, the story itself provides retrieval cues to help students remember the material. For instance, Chapter 5, the chapter on learning principles, portrays a couple, Maria and Chris. As readers learn more about Maria's and Chris's relationship over the course of the chapter, they also learn more

about learning principles and their applications. Because readers are likely to remember the couple's relationship, they will also remember a lot about learning principles.

The chapter story is continued at the beginning of each section. This fosters integration with the rest of the chapter and introduces each section's topic in an applied context.

## Learning Objectives

At the beginning of each section, after the continuation of the story, we provide learning objective questions that highlight the most important points to be discussed, learned, and remembered. These questions are then answered at the end of the section (see *Consolidate!* below).

## Looking at Levels

Near the end of each section, we take some aspect of its content—a theory, a research study, the application of a psychological phenomenon—and consider it from three levels of analysis: the brain, the person, and the group, as well as interactions among events at each level. For instance, the section on sleep in Chapter 4 examines jet lag from the point of view of the brain (what happens at the biological level), the person (how jet lag affects the person's beliefs, desires, and feelings), and the group (how it affects interactions with others). We then show how events at the three levels affect one another. The events in the brain, for instance, clearly affect social interactions—if you're jet lagged, you will be slower and possibly more irritable in your interactions with others.

The information in the “Looking at Levels” feature serves to integrate knowledge about the brain; personal beliefs, desires, and feelings; and group interactions within each chapter, rather than relegating such information to only one or two chapters. This feature also provides an opportunity to integrate information across chapters, leading to more effective learning and remembering.



## Consolidate!

At the end of each section are answers to the learning objective questions posed at the beginning. These answers also review the most important aspects of the material. All of this will help *consolidate* learning (hence the name of the feature).

## Minidemonstrations

Most chapters have what we call *minidemonstrations*: demonstrations of psychological phenomena for students to try alone or with others. Trying out these brief exercises will (1) provide another modality of learning about the phenomenon—experiencing, not merely reading about it; (2) make the material more vivid, thereby enhancing attention and memory; and (3) bring psychological principles to life for students through their participation. The minidemonstrations include:

- Introspection (pp. 13–14)
- Simulated participation in a research study (pp. 34–35)
- Measuring neural conduction time (p. 49)
- The Stroop effect (p. 91)
- Pop-out (p. 95)
- Finding your blind spot (p. 99)
- Seeing afterimages (p. 100)
- Demonstration of channels (p. 102)
- Motion cues (p. 106)

Recognition and identification (pp. 108–109)  
Meditation (p. 149)  
Modality-specific memory (p. 205)  
Lincoln’s head on a penny (p. 211)  
False memory (pp. 221–222)  
Building mnemonics (p. 229)  
Discovering syntax (p. 238)  
Mental imagery (pp. 250–251)  
Prototypes (pp. 253–254)  
The hiking monk problem (p. 257)  
The candle problem (p. 257)  
Mental simulation (p. 258)  
The triangle problem (pp. 260, 262)  
Wason and Johnson-Laird’s card task (p. 265)  
Mental models (p. 265)  
Representativeness (p. 266)  
Divergent thinking (p. 303)  
“Fake” personality reading (p. 351)  
Assessment of stages of change (p. 446)  
Myths about suicide (p. 486)  
Progressive muscle relaxation (p. 523)  
Cognitive dissonance (p. 559)

## **A Deeper Level: Recap and Thought Questions**

Several features at the end of the chapter help students further consolidate what they have learned and provide an opportunity for additional learning by applying the material to new situations.

**SUMMARY** At the close of each chapter is a section-by-section review of the material. These summaries highlight the key points that students should know after a thorough reading of the material. This feature helps consolidate the core material even further in memory.

**STORY QUESTIONS AND ANSWERS** This feature poses questions about the characters in the chapter story, followed by answers. The questions and answers show students how to apply each section’s psychological principles and research to life outside the psychology laboratory, using the chapter story as an extended example.

**THINK IT THROUGH** Additional critical thinking questions called “Think It Through” are also provided for each section of the chapter. These questions ask students to apply the material to real-world settings and require them to think deeply about the material. Such active processing enhances memory.

## **Illustration Program: Showing and Telling**

Many of the most important studies are not only described in the text, but are also visually demonstrated in step-by-step illustrations. These multimodal presentations enhance learning in several ways. First, the panel illustrations walk through each study, allowing the reader to understand its details more fully. Second, the clear, uncomplicated illustrations use perceptual principles to convey information effectively. Third, this dual-mode format allows for both visual and verbal learning; students can recall either the words in the text *or* the illustrations when remembering the study. Finally, working through these displays leads to active processing—and better remembering. Examples include a study on alcohol and sexual aggression (p. 156), Watson’s famous experiment with Little Albert (p. 169), Garcia’s taste aversion conditioning



(p. 174), the training of dolphins at Sea World (p. 184), Bandura's Bobo doll experiment (p. 192), Kosslyn's imagery scanning experiment (p. 250), the Schacter-Singer experiment (p. 318), and systematic desensitization (p. 524).

Like the illustrations, the evocative chapter opening artwork may serve the function of "priming" readers with ideas and expectations about what will come in the chapter.

## **First-Person Accounts of Psychological Disorders**

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Chapter 13, Psychological Disorders, provides an opportunity to understand the major disorders not only from the psychologist's perspective, but also from the point of view of people experiencing those disorders. Discussion of each of the major disorders includes first-person accounts from individuals who have struggled with a disorder, which describe the ways it affected their lives. These accounts, entitled ". . . From the Inside," allow students to see beneath the clinical description—to understand how psychological disorders affect real people.

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# **INSTRUCTOR AND STUDENT SUPPLEMENTS**

## **Instructor Resources**

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**INSTRUCTOR'S RESOURCE MANUAL** Written by Gary Piggemat at the Devry Institute of Technology, Columbus, this helpful teaching aid includes for each chapter: chapter-at-a-glance table, chapter overview, chapter outline, list of teaching objectives, list of key terms with page references, discussion questions, classroom demonstrations, student activities, list of media and internet resources, and Web activities.

**TEST BANK** Prepared by Wendy Domjan at the University of Texas, Austin, this resource includes 125–140 questions per chapter in multiple-choice and essay formats. Each question is rated for difficulty and categorized as factual, conceptual, or applied. Page references to the text are provided for each question. Wendy Domjan is also the author of the Practice Test booklet, available free to your students when ordered with a new textbook. The practice tests are made up of a completely separate set of 25 multiple-choice questions per chapter. Domjan's authorship of both test supplements ensures consistency between testing and practice.

**TEST BANK II** This resource will provide an additional 100 questions per chapter in multiple-choice and essay formats. Each question will be rated for difficulty and as factual, conceptual, or applied. Page references will also be provided for each question. Test Bank II will be published for the fall semester of 2001 to ensure an ample number of questions for use over multiple semesters.

**ALLYN AND BACON TEST MANAGER—COMPUTERIZED TEST BANK** (Available for Windows, CD-ROM and disk, and Macintosh disk; DOS disk available upon request.) Allyn and Bacon Test Manager is an integrated suite of testing and assessment tools for Windows and Macintosh. You can use Test Manager to create professional-looking exams in just minutes by building tests from the existing database of questions, editing questions, or adding your own. Course management features include a class roster, gradebook, and item analysis. Test Manager also has everything you need to create and administer online tests. For first-time users, there is a guided tour of the entire Test Manager system and screen wizards to walk you through each area.

**CALL-IN AND FAX TESTING** One toll-free call to our testing center will have a finished, ready-to-duplicate test on its way to you within 48 hours, via mail or fax.

**ALLYN AND BACON TRANSPARENCIES FOR INTRODUCTORY PSYCHOLOGY, 2001** A full set of color acetate transparencies is available to enhance classroom lectures and discussions. These images include those from the Kosslyn and Rosenberg text and other sources, to support and extend teaching and learning.

**KOSSLYN AND ROSENBERG POWERPOINT PRESENTATION CD-ROM** This book-specific presentation provides detailed outlines of key points for each chapter, supported by charts, graphs, diagrams, and other visuals from the textbook. Resources from the Kosslyn and Rosenberg companion Website are also integrated for easy access to this Website from your classroom. This material is also available in a Web format accessible at [www.abacon.com/ppt](http://www.abacon.com/ppt).

**ALLYN AND BACON DIGITAL MEDIA ARCHIVE CD-ROM FOR PSYCHOLOGY, VERSION 2.0** Allyn and Bacon provides an array of media products to help liven up your classroom presentations. The Digital Media Archive provides charts, graphs, tables, and figures electronically on one cross-platform CD-ROM. The Digital Media Archive also provides video and audio clips along with the electronic images that can be easily integrated into your lectures. This helpful resource extends the coverage found on the Kosslyn and Rosenberg PowerPoint Presentation CD-ROM.

**ALLYN AND BACON MIND MATTERS CD-ROM FACULTY GUIDE** This helpful instructor resource offers detailed overviews of each unit of the Mind Matters CD-ROM (described below), supplemented by additional test questions and chapter-by-chapter references correlating content from the CD-ROM with the Kosslyn and Rosenberg textbook. This in-depth guide makes it easy to integrate the Allyn and Bacon Mind Matters CD-ROM into your syllabus. Visit the Allyn and Bacon Mind Matters Website at [www.abacon.com/mindmatters](http://www.abacon.com/mindmatters) to download samples of this helpful resource.

**ALLYN AND BACON INTERACTIVE VIDEO AND VIDEO PACKAGE** *Psychology: The Brain, the Person, the World* is supported by a unique interactive video containing brief video clips based on content in each chapter of the text. Each video clip contains contextualizing information and critical thinking questions, further relating the video content to that in the textbook chapter. A wide variety of additional videos are also available upon adoption of the Kosslyn and Rosenberg textbook. Please contact your local Allyn and Bacon publisher's representative for more information.

**COURSE MANAGEMENT SYSTEMS** Course Management Systems combine Allyn and Bacon's premium online content with enhanced class management tools such as syllabus building, quizzing and grading, and results reporting. To find out which systems are available with the Kosslyn and Rosenberg text, visit the Kosslyn and Rosenberg Website at <http://www.abacon.com/kosslyn> for more information.

## **Student Resources**

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**STUDENT STUDY GUIDE WITH PRACTICE TESTS** This study guide, written by Marjorie Hardy of Eckerd College, contains a wide variety of helpful study tools including, for each chapter: "Before You Read" preview sections with chapter summaries; "As You Read" self-tests; "A Deeper Level" thought questions that focus on critical thinking; glossary term identification exercises; "After You Read" multiple-choice post-tests; and Web resources. Marjorie Hardy is also the author of the text-specific Kosslyn and Rosenberg Website content, ensuring consistency in practice and review across the Study Guide and Web resources.

**PRACTICE TEST BOOKLET** If students want extra help preparing for exams (and who doesn't?), this booklet, written by Test Bank author Wendy Domjan, provides sample multiple-choice tests for each chapter, allowing students to practice what they have learned using a simulated classroom quiz. The booklet also includes answers and page references to the text. Available packaged free with new copies of the Kosslyn and Rosenberg textbook.

**ALLYN AND BACON MIND MATTERS CD-ROM** This student CD-ROM features in-depth units on the history of psychology, research methodology, biopsychology, learning, memory, sensation, and perception. Each unit includes self-contained modules that cover core psychological concepts through a combination of text, graphics, humor, activities, and extensive assessment. This resource is available packaged with new copies of the Kosslyn and Rosenberg textbook and is supported by an in-depth faculty guide (see above).

**PSYCHOLOGY ON THE NET, 2001** Updated to reflect the most current URLs related to the study of psychology, this easy-to-read guide helps point you and your students in the right direction when looking at the tremendous array of information related to psychology on the Internet. Available free packaged with new copies of the Kosslyn and Rosenberg textbook (value package option only).

## Online Supplements for Students and Instructors

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**SUPER SITE FOR KOSSLYN AND ROSENBERG** This premiere Website offers access to *The Psychology Place*,™ an extensive Web resource for introductory psychology that benefits both students and instructors. Instructors enjoy an extensive selection of teaching resources, access to recent research news, Web investigations, a wide variety of scientifically accurate and appropriate Web resources, integration of online investigative and collaborative learning activities, communication with other instructors, and the ability to share teaching ideas and challenges by participating in the Op Ed Forum. Students receive a 6-month subscription that provides access to a wide range of helpful resources, including extensive learning activities, news updates, research reports, Web links, and animations.

This extensive site is organized by chapter in the Kosslyn and Rosenberg textbook and is supported by additional text-specific resources including audio and video clips, learning objectives, chapter summaries, interactive online quizzes, and additional Web links to relevant psychology sites, to reinforce learning. Please visit [www.abacon.com/kosslyn](http://www.abacon.com/kosslyn) or contact your local Allyn and Bacon publisher's representative for more information.

**KOSSLYN AND ROSENBERG E-BOOK** An e-book is an electronic (digital) version of the print textbook. The e-book duplicates the print textbook, following the exact page format and page numbering of the print book.

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## **Additional Resources**

***HOW TO THINK STRAIGHT ABOUT PSYCHOLOGY, 6TH EDITION*** This well-known critical thinking manual by Keith Stanovich helps students become educated consumers of psychological information, particularly those topics they may encounter in the media or self-help literature.

***DIVERSITY ACTIVITIES FOR PSYCHOLOGY*** This student manual, developed by Valerie Whittlesey, offers a wide variety of hands-on activities to help incorporate issues of diversity into your classroom. Activities are correlated with all major areas of psychological research, making it easy to assign this supplement with the Kosslyn and Rosenberg textbook.

***ASK DR. MIKE: FREQUENTLY ASKED QUESTIONS ABOUT PSYCHOLOGY*** Developed by Mike Atkinson, author of the popular “Ask Dr. Mike” column on the Psychology Place™ Website, this manual contains a collection of commonly asked student questions with in-depth answers, organized by major topics in the introductory psychology course.

***EVALUATING PSYCHOLOGICAL INFORMATION: SHARPENING YOUR CRITICAL THINKING SKILLS, 3RD EDITION*** Developed by James Bell, this workbook focuses on helping students to evaluate psychological research systematically and to improve their critical thinking skills.

***TOOLS OF CRITICAL THINKING*** This critical thinking text by David A. Levy provides tools and skills for approaching all forms of problem solving, particularly in psychology.

***HANDBOOK FOR PSYCHOLOGY*** This helpful handbook, created by Drew Appleby, provides students with a wide array of information ranging from majoring in psychology to graduate school and job opportunities with a psychology degree.

***HOW TO WRITE PSYCHOLOGY PAPERS, 2ND EDITION*** Les Parrot provides a brief overview for writing APA-style psychology papers, including information on overcoming paper panic, using the Internet, preparing a working reference list, avoiding plagiarism, and using inclusive language. This book extends and elaborates on the material in Appendix B.

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# **PSYCHOLOGY**



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