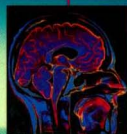


P *Fundamentals of* PSYCHOLOGY

THE BRAIN, THE PERSON, THE WORLD



STEPHEN M. KOSSLYN
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Fundamentals of Psychology

THE BRAIN, THE PERSON, THE WORLD

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*To our parents
—Bunny, Rhoda,
Duke, and Stanley—
for all of life's lessons
that you taught us*

Preface

Many brief psychology textbooks are available—would ours contribute anything new? 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 dovetailed. 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 wanted to be able to show these interconnections to all students, those using comprehensive texts like *Psychology: The Brain, the Person, the World*, as well as those using briefer 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.

Organization of This Textbook

Our 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 brief psychology textbooks have anywhere from 14 to 16 chapters; ours has 13. When using brief textbooks with more chapters, introductory psychology instructors often end up skipping chapters or parts of chapters 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 considering 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.

The topics of language, thinking, and intelligence are combined into a single chapter (Chapter 6) so that the student can clearly see the connections among these topics. In fact, “intelligence” is not “one thing,” but rather draws on language and thinking—among other abilities.

Similarly, Chapter 7 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.

To make a compact and manageable textbook for courses needing a brief text, we integrated the topic of sleep into the health, stress, and coping chapter (Chapter 10), focusing on how stress can affect sleep and how sleep deprivation can affect health and coping. In addition, the coverage of drugs and alcohol has been integrated into the same chapter, as the use of such substances is often related to a maladaptive coping strategy.

We include a single chapter on social psychology, Chapter 13. 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.

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 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 4, 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 eating disorders (Chapter 11) examines binge eating from the point of view of the brain (what happens at the biological level), the person (viewing eating as “bad” and restricting food intake as “good,” and how this perspective 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 the urge to binge, which in turn affects how the person feels about herself and her interactions with others (eating disorders primarily affect women).

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 (p. 13)
Simulated participation in a research study (pp. 32–33)
Measuring neural conduction time (p. 47)
The Stroop effect (p. 86)
Pop-out (p. 88)
Finding your blind spot (p. 93)
Seeing afterimages (p. 94)
Motion cues (p. 98)
Recognition and identification (pp. 102–103)
Modality-specific memory (pp. 162–163)
Lincoln’s head on a penny (p. 168)

False memory (pp. 176, 178)
Discovering syntax (pp. 193–194)
Mental imagery (pp. 199–200)
The hiking monk problem (p. 205)
The candle problem (p. 206)
Wason and Johnson-Laird’s card task (p. 209)
Representativeness (p. 210)
Smile demonstration (p. 245)
“Fake” personality reading (p. 277)
Myths about suicide (p. 410)
Progressive muscle relaxation (pp. 439–440)

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.

End-of-Chapter Review Tests There are 15 multiple-choice practice test questions at the end of each chapter, with answers provided at the end of the test. We ask both factual and conceptual questions to help student assess their knowledge of the chapter material, identify topics that may need additional study, and further consolidate the material in memory.

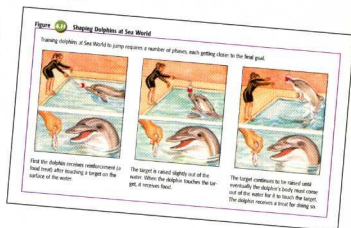
Illustration Program: Showing and Telling

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. 380), Watson's famous experiment with Little Albert (p. 126), Garcia's taste aversion conditioning (p. 132), the training of dolphins at Sea World (p. 143), Bandura's Bobo doll experiment (p. 151), Kosslyn's imagery scanning experiment (p. 200), the Schacter-Singer experiment (p. 246), and systematic desensitization (p. 441).

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

First-Person Accounts of Psychological Disorders

Chapter 11, 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 and who 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.

Instructor and Student Supplements

Instructor Resources

Instructor's Resource Manual Written by Gary Piggrem 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 Majorie Hardy at Eckerd College, in conjunction with Robin Rosenberg and Stephen Hoyer, 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.

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 Web site are also integrated for easy access to this Web site from your classroom. This material is also available in a Web format accessible at www.ablongman.com/ppt.

Allyn and Bacon Digital Media Archive CD-ROM for Psychology, Version 3.0 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 Web site at www.ablongman.com/mindmatters to download samples of this helpful resource.

Allyn and Bacon Interactive Video and Video Package *Fundamentals of 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 other 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 Web site at <http://www.ablongman.com/kosslyn> for more information.

Student Resources

Grade Aid 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 Web site content, ensuring consistency in practice and review across the Study Guide and Web resources.

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).

iSearch 2003 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).

Companion Web Site The Companion Web site for *Fundamentals of Psychology: The Brain, the Person, the World*, which can be accessed at www.ablongman.com/kosslyn, offers a wealth of information to enhance and supplement learning. This

site contains a wide range of resources for both students and instructors, including learning objectives, practice tests, and links to Web destinations.

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™ Web site, 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.

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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And finally, to you the reader, thank you for taking the time and effort to read this preface to its conclusion. We hope that this book helps you learn about psychology, about yourselves, and about the world.

Interest in gender and cultural diversity issues remains an important theme in modern psychology. These topics are treated throughout the text in an integrated fashion.

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Stephen Kosslyn is John Lindsley Professor of Psychology at Harvard University and Associate Psychologist in the Department of Neurology at Massachusetts General Hospital. He received his B.A. from UCLA and his Ph.D. from Stanford University, both in psychology. His first academic position was at Johns Hopkins University, where he was appointed Assistant Professor. He joined the Harvard faculty in 1977 as Associate Professor, and left in 1980 to take a Research Career Development Award. After a brief stay at Brandeis and a visit to Johns Hopkins in 1983, Kosslyn returned to Harvard as a Full Professor. His research has focused primarily on the nature of visual mental imagery and visual communication, and he has published 5 books and over 200 papers on these topics. Kosslyn has received numerous honors, including the National Academy of Sciences Initiatives in Research Award, the Prix Jean-Louis Signoret, and election to the American Academy of Arts and Sciences and the Society of Experimental Psychologists. He is currently "head tutor," supervising graduate students who teach a year-long introductory psychology course using levels of analysis, and chairs the Committee on Undergraduate Instruction in the Department of Psychology at Harvard. He is currently on the editorial boards of many professional journals; is a Fellow of the American Psychological Association, American Psychological Society, and American Association for the Advancement of Science; and has served on several National Research Council committees to advise the government on new technologies. Kosslyn has been a guest on local National Public Radio stations, CBS radio, CNN news, and *Nova*, and has been quoted in many newspapers and magazines.

Robin S. Rosenberg

Robin Rosenberg is a clinical psychologist in private practice and has taught Introductory psychology at Lesley University. She is certified in clinical hypnosis and is a member of the Academy for Eating Disorders. She received her B.A. in psychology from New York University, and her M.A. and Ph.D. in clinical psychology from the University of Maryland, College Park. She did her clinical internship at Massachusetts Mental Health Center and had a postdoctoral fellowship at Harvard Community Health Plan before joining the staff at Newton-Wellesley Hospital's Outpatient Services, where she worked for a number of years before leaving to expand her private practice. She specializes in treating people with eating disorders, depression, and anxiety and is interested in the integration of different therapy approaches. She was the founder and coordinator of the New England Society for Psychotherapy Integration and has given numerous professional talks on various topics related to the treatment of people with eating disorders, as well as popular talks on relapse prevention and on developing a healthy relationship with food, and with one's body.

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