



培文书系·心理学系列



PSYCHOLOGY

THE BRAIN THE PERSON THE WORLD

心理学

大脑·人·世界

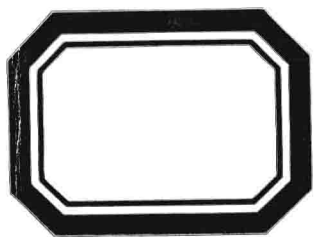
第 2 版



[美] Stephen M. Kosslyn Robin S. Rosenberg 著



北京大学出版社
PEKING UNIVERSITY PRESS



音文书系·心理学系列

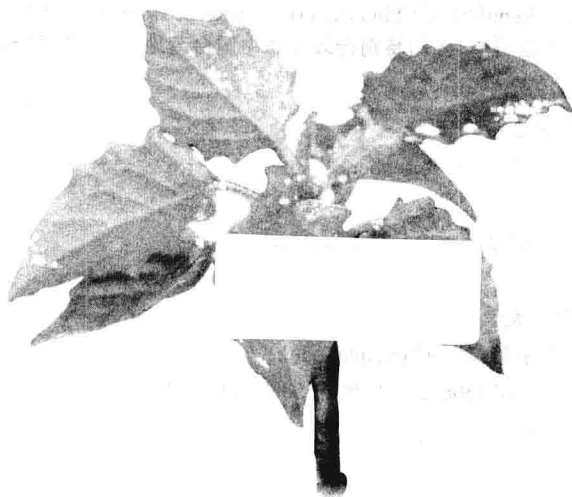
PSYCHOLOGY

THE BRAIN THE PERSON THE WORLD

心理学

大脑·人·世界

第2版



[美] Stephen M. Kosslyn Robin S. Rosenberg 著



北京大学出版社
PEKING UNIVERSITY PRESS

北京市版权局著作权合同登记图字:01-2004-3647 号

图书在版编目(CIP)数据

心理学:大脑,人,世界(第2版)/(美)考斯林(Kosslyn,S.M.)等著.一影印本.一北京:北京大学出版社,2004.7
(心理学系列)

ISBN 7-301-07416-6

I. 心… II. 考… III. 心理学—高等学校—教材—英文 IV. B84

中国版本图书馆CIP数据核字(2004)第039384号

English reprint edition copyright © 2004 by PEARSON EDUCATION ASIA LIMITED and PEKING UNIVERSITY PRESS.
Original English language title from Proprietor's edition of the Work.

Original English language title: Psychology: the brain, the person, the world, Stephen M. Kosslyn, Robin S. Rosenberg,
Copyright © 2003

ISBN:0205376096

All Rights Reserved.

Published by arrangement with the original publisher, Pearson Education, Inc., publishing as Allyn & Bacon, Inc.

This edition is authorized for sale and distribution only in the People's Republic of China (excluding Hong Kong, Macao SARs and Taiwan).

本书影印版由 Allyn & Bacon, Inc. 授权给北京大学出版社发行

For sale and distribution in the People's Republic of China exclusively (except Hong Kong SAR, Macao SAR and Taiwan).
仅限于中华人民共和国境内(不包括中国香港、澳门特别行政区和中国台湾地区)销售发行。

书 名: 心理学:大脑,人,世界(第2版)

著作责任者: [美] Stephen M. Kosslyn Robin S. Rosenberg 著

责任编辑: 符丹 苑海波

标准书号: ISBN 7-301-07416-6/C·0272

出版者: 北京大学出版社

地 址: 北京市海淀区中关村北京大学校内 100871

网 址: <http://cbs.pku.edu.cn> 电子信箱: pw@pup.pku.edu.cn

电 话: 邮购部 62752015 发行部 62750672 编辑部 58874097 58874098

印刷者: 三河市欣欣印刷有限公司

发 行 者: 北京大学出版社

经 销 者: 新华书店

850毫米×1168毫米 16开 54.75印张 935千字

2004年7月第1版 2006年12月第3次印刷

定 价: 88.00元

版权所有,翻印必究

本书封面贴有 Pearson Education(培生教育出版集团)激光防伪标签,无标签者不得销售。

出版说明

培文书系心理学英文影印系列旨在面向心理学领域的师生和广大心理科学的从业者和爱好者,推介国外心理学领域的英文原版专著和教材,使我国读者能够接触到原汁原味的第一手资料。

需要重申的是,作者本人的有些观点和结论尚需商榷,有些甚至是不可取的,为此提请读者加以甄别。书中的观点均不代表出版社观点。

北京大学出版社

2004年7月

Preface

How can we write a book that engages students and provides them with an *integrated* introduction to the field of psychology? That is what we asked each other as we began writing this textbook. One of us is a *cognitive neuroscientist* and the other a clinical psychologist. In writing collaboratively, we began to see how our different areas of psychology were dovetailing. Our teaching experiences convinced us that the different areas of psychology really do reflect different facets of the same whole—and we are inspired to try to bring this view to a larger audience. We also wanted to show students how to apply the results of psychological research to 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.

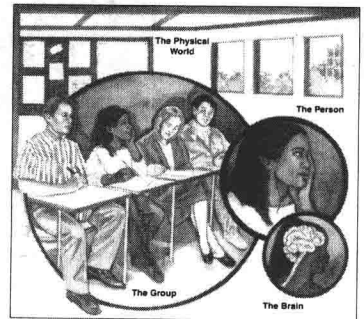
Our Vision: Brain, Person, World

Our vision is a textbook that better *integrates* the field of psychology. We do this by exploring how psychology can be viewed from the levels of the brain, the person, and the world. This theme is reflected in the overall organization of the text and its individual chapters.

The key to this book is the idea that psychology can best be understood in terms of events that occur at different *levels of analysis*: the brain (biological factors), the person (beliefs, desires, and feelings), and the world or group (social, cultural, and environmental factors). We stress that none of these events occur in *isolation*. Not only do all of these events occur in the world, where we are bathed with specific stimuli and behave in accordance with certain goals, but also these events are constantly interacting. For example, our brains are affected by our beliefs (just think of how worrying can make our bodies become tense), and our social interactions both shape and are affected by our beliefs. In fact, as we discuss in this book, social interactions can actually cause the genes in our brains to operate differently. All psychological events, from group interactions to psychological disorders to memory and creativity can best be understood by considering events at all three levels and how they interact, both with the world and with each other. This view of psychology is exciting because it offers a way to organize a *diverse* range of theories and discoveries. Different fields of psychology are interconnected, although they are not often presented this way in textbooks. We wrote this book because no other textbook, in our opinion, was able to successfully connect the diverse fields of psychology.

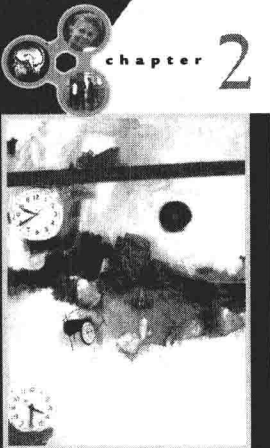
FIGURE 1.1 Levels of Analysis

Levels of analysis differ in the size of the events being considered, ranging from very large to very small.



Greater Emphasis on the Science of Psychology

In this edition, we have added a chapter on research methods (Chapter 2). Given our emphasis on the science of psychology, we decided that students really need to see this material in one place. This chapter describes the scientific method, types of studies that psychologists typically conduct, and fundamental concepts of statistics. In addition, we describe a novel way to conceptualize and analyze research. This method relies on clearly understanding the Question that is asked, the Alternative answers that are considered, and the Logic of the study, as well as the Method, Results, and Inferences you can draw from the results. In Chapter 2, we use this method to take a detailed look at a specific study, and we continue to use it in each subsequent chapter to examine one study in detail, in a new feature called "Understanding Research."



chapter 2

The Research Process: How We Find Things Out

chapter outline

The Scientific Method: Designed to Be Valid

- Step 1: Ask a Question
- Step 2: Observing Events
- Step 3: Formulating a Hypothesis
- Step 4: Testing the Hypothesis
- Step 5: Formulating a Theory
- Step 6: Testing a Theory

The Psychologist's Toolkit: Techniques of Scientific Research

- Experimental Research
- Correlational Research
- Qualitative Research
- The Critical Consumer of Psychology

Statistics: Answering Questions

- Descriptive Statistics
- Inferential Statistics
- Using SPSS Statistics

How to Think About Research Studies


- Formulating Research Questions
- The Scientific Method
- Writing Your Own Research Paper

In 1984, President Ronald Reagan gave his official blessing to a daring project, building a permanent inhabited space station. A key part of President Reagan's vision was that the space station should be built and staffed by people from many different countries. His vision came to pass, and the International Space Station (ISS) is now being constructed some 230 miles above earth. The ISS is a mammoth project, comparable in size and scope to the pyramids of ancient Egypt. The station will span a distance greater than a football field and will weigh over 1 million pounds. Its solar panels will spread over almost an acre, and it will cost at least \$90 billion.

The ISS is not just a technological marvel, it is also a testament to our very human ability to cooperate and interact effectively. The project is particularly impressive because it is being built by 16 countries—including former enemies, notably the United States and Russia.

In the first phase of the program (which began in 1995), American and Russian astronauts lived and worked together on the Russian Mir space station. These experiences taught astronauts and earth-bound scientists about living and working in space and, equally important, they also built cooperation and trust between the astronauts themselves and the respective organizations back on earth.

The ISS will be used not only to observe the earth, but also to experiment with new ways to manufacture materials, to make drugs, and to study diseases ranging from osteoporosis to cancer. But



Text Organization

Most psychology textbooks have anywhere from 16 to 22 chapters; ours has 16. Market research has shown that 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, and 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 believe that a book with fewer chapters would allow students to sample all the areas of psychology. We have carefully chosen core and cutting-edge concepts, theories, and findings, to give students a deeper understanding of the field.

We have combined several topics that are best covered in a more integrated manner. For example, Chapter 4 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 10 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. 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 also include a single chapter on social psychology, Chapter 16. 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.

Pedagogical Features

Chapter Story

We begin each chapter with a different story about a person or group. The story is then elaborated 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 addressed within a chapter, creating a coherent, thematic whole to further enhance student understanding. Finally, the story itself provides retrieval cues to help students remember the material. In the second edition, we have introduced new stories in Chapters 2 (Research Methods), 4 (Sensation and Perception),



chapter 6

Learning

chapter outline

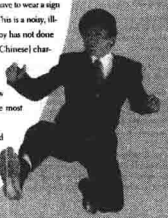
- Classical Conditioning
 - John's Experiments
 - Classical Conditioning: How it Works
 - Classical Conditioning: Applied
- Operant Conditioning
 - The Basics of Operant Conditioning
 - Is Learning and the Role of the Mind?
 - Applications of Operant Conditioning
 - Applied Basic Conditioning
 - The Learning Environment
- Cognitive and Social Learning
 - Cognitive Learning
 - Applied Learning: Hebb's Law
 - Observational Learning
 - Learning in the Real World
 - Learning from Media

Jackie Chan, actor, director, martial arts choreographer, and stuntman, begins his autobiography, *I Am Jackie Chan* (Chan & Yong, 1998) at the moment he is 45 years old and about to jump from the 21st floor of an office building in Rotterdam, the Netherlands, for his movie, *Who Am I?* The stuntmen on the film had only done the jump from the 16th floor, and Chan never asks his stuntmen to do stunts that he himself would not do. Jackie Chan did, in fact, jump from the 21st floor and land safely.

Chan had begun kung fu training in early childhood: his father woke him up each morning before sunrise and required him to work out for hours as the sun rose progressively higher into the sky. His father came from a long line of Chinese warriors, and had the view that "pain gives you discipline. Discipline is at the root of manhood. And so, to be a real man, one must suffer as much as possible" (p. 30).

Chan's early childhood years were spent living in the French embassy in Hong Kong, where his father was the cook and his mother the housekeeper and laundress, the Ambassador's youngest daughter was his friend, and he spent all day at home. When Chan was around 6 years old, he went to first grade, but had a hard time sitting still in the classroom. He was always making jokes and getting into trouble, often being forced to stand in the hallway, holding a desk over his head. Chan writes in his autobiography: "Sometimes I'd have to wear a sign around my neck, explaining the nature of my crime. Like, 'This is a noisy, ill-behaved boy.' Or, 'This boy lost all of his books.' Or, 'This boy has not done his homework.' Sometimes it would just say, in a couple of (Chinese) characters, 'Undefeat'." Chan describes standing out in the hall as "peaceful." And, if no one was looking, he says, "I'd gently put the desk down, lean against the wall, and catch a few zinks. Learning how to sleep standing up was probably the most useful thing school ever taught me" (p. 16).

Jackie Chan found the process of learning to read and write tedious, boring, and difficult. He was not promoted to second grade, and did not return to school the following year, remaining at home all day with his parents. That year his father was offered, and accepted, a better paying job as the cook at the American



6 (Learning), 7 (Memory), and 8 (Language and Thinking). For instance, Chapter 6, the chapter on learning principles, discusses martial arts film director, actor, and choreographer Jackie Chan. As readers learn more about Chan's life over the course of the chapter, they also learn more about learning principles and their applications. Because readers are likely to remember his biographical information, 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.

Looking at Levels

At the end of each section, we take some aspect of that section's 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 5 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. We integrate these diverse types of knowledge within each chapter, rather than relegating such information to only one or two chapters. This feature also forges bridges that reach across chapters, leading to more effective learning and remembering.

also had sleep apnea found that their apnea symptoms improved when their pace-makers increased the number of heartbeats by 15 percent (Carrigue et al., 2002). Finally, those with undiagnosed sleep apnea may take barbiturates to get a good night's sleep—this is unfortunate because barbiturates seriously compound the problem by depressing the central nervous system, interfering with the normal reflexes to begin breathing again.



Looking at Levels

Recovers From Jet Lag

If you ever debated that sleep, or its disruption, has an effect on consciousness, one good case of jet lag will convince you otherwise. Jet lag is that tired, groggy, disoriented feeling you get after flying across different time zones. If you leave California on a 2:00 P.M. nonstop flight, after about 10 hours in the air (assuming the plane is on schedule) you will arrive in Boston, where it is about 11:00 P.M. local time—time for bed. But your body ignores the 9-hour difference between the Pacific and Eastern time zones and experiences the time as 8:00 A.M. You are now awake and ready to go to sleep. And, come morning in Boston, your body will want to continue sleeping when the alarm rings. It is time to get up. The bodily changes, including altered hormonal and neurotransmitter activity, occur when your circadian rhythms are out of sync with the new time zone's physical and social cues. For example, your cortisol levels, which usually decrease before bedtime, are still high, and even if you do manage to get to sleep at what your body considers an early hour, the high level of cortisol is likely to lead to shallow and fragmented sleep (Center for the Advancement of Health, 1998).

How can you make a speedy recovery from jet lag? At the level of the brain, exposing yourself to light in the new time zone is thought to help reset the SCN.

TEST YOURSELF

1. Brain and body function differently in sleeping and waking. What is the biology of sleep?
2. Why do we dream? Do dreams have meaning?
3. What happens when we don't sleep enough? What are sleep disorders?

Hypnosis and Meditation

When Alice fell down the rabbit hole, her descent seemed endless; she kept tumbling so long she thought she might be nearing the center of the earth. Although

Hypnosis and Meditation 187

According to Ekman (1980), each of us learns a set of display rules for our culture that indicate when, to whom, and how strongly certain emotions can be shown. For example, he notes that in North America people will find it suspicious if at a man's funeral his secretary seems more upset than his wife. In the display rules of North American culture, the closer the relation to the deceased, the more emotion may be displayed. Display rules are partly a function of habit (individuals do differ in their styles), but they largely reflect "the way things are done" in a particular region, class, or ethnic culture.



UNDERSTANDING RESEARCH

Culture and Emotion

Ekman (1984) describes a fascinating test of his theory that all people share the same basic emotions but that emotional expression may be different because of different display rules.

QUESTION: How is the experience or expression of emotion different between Westerners and Japanese?

ALTERNATIVES: (1) The stereotype that Japanese are less emotional than Westerners may be correct, and they display what they feel. (2) Japanese may experience emotions the same way as Westerners, but display them differently. (3) Japanese may both experience and display emotions differently from Westerners. (4) Japanese and Westerners may experience and display emotions in the same ways.

SCENARIO: If the two groups are equally emotional but respect different display rules that regulate how they show their emotions in public (Alternative 2), then they both should show emotions when in private but behave differently when in public.

RESULTS: Americans in Berkeley and Japanese in Tokyo were shown the same films, one positive (tender) and one negative (a surgical procedure). Participants viewed the films either alone or in the company of a white-coated scientist. Unbeknownst to the participants, a hidden camera monitored their facial expressions as they watched the films, both when alone and with company.

CONCLUSIONS: Both national groups showed the same range of emotional expression when they viewed the films in individual screenings, one person at a time, but the Japanese participants were notably more restrained when they were in company. Ekman analyzed slow-motion videotapes of the participants as they watched, which revealed that a Japanese participant watching alone reacted in the same way as an American. But a Japanese watching in the presence of company would begin showing an emotional reaction, then quickly squelch it.

REFERENCES: According to Ekman, the initial Japanese reaction reflected the basic, innate emotions; then when company was present—display rules came to the fore, and the participants regulated their show of emotions accordingly. Thus, Japanese experience emotions as do Westerners, but display them differently.

* Display rules: A culture-specific rule that indicates when, to whom, and how strongly certain emotions can be shown.

Culture affects not only how willing you are to express emotion in specific situations, but also how sensitive you are to the emotional expressions of others (Steptoe et al., 1996). It is almost as if when a culture makes emotion harder to detect, its members develop better abilities to detect them. For example, although China has

Test Yourself!

At the end of each major section, we ask general questions that students should be able to answer based on a careful reading of the material. We encourage students to answer these questions *before* they go to the website (www.ablongman.com/kosslyn2e) to see our answers. These questions should help students identify which concepts they've mastered, and which topics will need more of their attention before moving on.

Understanding Research

Certain basic elements are included in all research reports. In this new feature, we discuss and illustrate these elements, which will help students as they read and interpret published research studies and also write up their own research. In each chapter, we walk students through one particular research study so they can understand the content in greater depth and learn to think critically about research.

Hands On!

In most chapters we have included at least one Hands On! feature, which is a demonstration of psychological phenomena for students to try alone or with others. The brief exercises will (1) provide students with another way to learn about the phenomenon—experiencing, not merely reading about it; (2) make the material more vivid, thereby enhancing students' attention and memory; and (3) put psychological principles into a concrete context, showing students that the principles really can affect how we think, feel, and behave.

The minidemonstrations include:

Introspection (p. 11)
 Simulated participation in a research study (pp. 45–46)
 Measured neural conduction time (p. 76)
 Transduction in the retina (p. 128)
 Finding your blind spot (p. 129)
 Dark adaptation (p. 129)
 Seeing afterimages (p. 131)
 Ambiguous figures (p. 136)
 Motion cues (p. 139)
 Recognition and identification (pp. 141–142)
 Pop-out (p. 146)
 The Stroop Effect (p. 148)
 Kinesthetic sense (p. 163)
 Meditation (pp. 195–196)
 Mental image and classical conditioning (p. 221)
 Chunking (p. 257)

Modality-specific memory (p. 259)
 Lincoln's head on a penny (p. 269)
 False memory (pp. 281, 283)
 Interactive images (p. 290)
 Method of loci (pp. 290–291)
 Pegword systems (p. 291)
 Rhyming words (p. 291)
 Building mnemonics (p. 292)
 Memory enhancing techniques (pp. 293–294)
 Discovering syntax (p. 303)
 Mental imagery (pp. 320–322)
 Prototypes (pp. 325–326)
 The hiking monk problem (p. 329)
 The candle problem (p. 329)
 Wason and Johnson-Laird's card task (p. 338)

Consolidate!

We've included several features at the end of the chapter to 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 key points that students should know after a thorough reading of the material. This feature helps consolidate the core material even further in memory.

Think It Through. Critical thinking questions called “Think It Through” are provided for each section of the chapter. These questions ask students to apply the material to real-world settings and the opening story, and require them to think deeply about the material. Such active processing enhances memory.

Key Terms. We provide a list of key terms, including page references, to aid in student mastery of key vocabulary.

FIGURE 8.8 The Hiking Monk Problem

A monk leaves the bottom of a mountain every Monday at 5:00 A.M. and walks up a twisty path, climbing at a rate of 1.5 miles an hour, until he reaches the top at 4:00 P.M., having taken off a half hour for lunch. He meditates on the mountain until sundown. At 5:00 the next morning he departs and walks down the path, going 3.5 miles an hour, until he reaches the bottom. Is there any point in the two journeys when he is at precisely the same location on the path at precisely the same time of day? You don't need to say what that time is, just whether there would be such a time.

Finding the right representation for a problem can be tricky because once you think of a problem in a certain way, you may find it difficult to drop this view and try out others (Smith & Blankenship, 1989, 1991). For example, consider the problem in Figure 8.8: after you think about it, look at its solution in Figure 8.10 on page 330 (adapted from Duncker, 1945). At first, you probably thought of the box simply as a container, and not as a potential part of the solution. Becoming stuck on one interpretation of an object or aspect of the situation is called *functional fixedness*. Neuroimaging studies have shown that extra brain activity is required

FIGURE 8.9 The Candle Problem

Participants are asked to use the materials provided to mount the candle on the wall so that it can be lit. Some participants are given the materials as shown in the left panel; others, as shown in the right panel. Participants given the materials as shown in the right panel are more likely to solve the problem.

Mental models (p. 338)
 Representativeness (p. 340)
 “Fake” personality readings (p. 439)
 Prochaska self-test (p. 550)
 Suicide misconceptions self-test (pp. 583, 584)
 Progressive muscle relaxation (p. 626)
 Cognitive dissonance (p. 678)
 Asch experiment (pp. 704–705)

CONSOLIDATE!

The Science of Psychology: Getting to Know You

- Psychology is the science of mental processes and behavior.
- The goals of psychology are to describe, explain, predict, and control mental processes and behavior.
- Psychology can best be understood by studying events at different levels of analysis: the levels of the brain, person, and group.
- The level of the brain is where we examine the activity of certain brain systems, structural differences, or people's brains, and effects of various genes and chemicals (such as hormones) on mental processes and behavior.
- The level of the person is where we study the contents of mental processes, not just the mechanisms that give rise to them. The contents of our memories, beliefs, goals, feelings, and the like are part and parcel of who we are.
- The level of the group includes both our previous and our present social interactions.
- Events at the different levels are interdependent and are always interacting.

THINK IT THROUGH If you look at your own life, can you identify instances where events at the different levels of analysis were clearly at work? Can you think of any dangers inherent in adopting a scientific understanding of psychology? Think about criminals. How would you react if it could be shown conclusively that all criminals have an abnormal structure in a certain part of their brains? If this were true, what should we do with this knowledge? Or, what if it could be shown that criminals have perfectly normal brains, but they all had weak parents who didn't give them enough discipline when they were children? Neither of these single-perspective views is likely to be correct, but what, if any, level of analysis turns out to be more important than the others?

Psychology Then and Now: The Evolution of a Science

- Psychology began as the study of mental processes, such as those that underlie perception, memory, and reasoning.

- The structuralists tried to understand such processes. Their goal was to identify the elements of consciousness and the rules by which these elements are combined into mental structures. One of the primary methods of the structuralists was introspection (“looking within”), which turned out to be unreliable and not always valid.
- The functionalists rejected the goal of identifying mental processes and how they operated in favor of seeking explanations for thoughts, feelings, and behavior. The functionalists were interested in how mental processes adapt to help people survive in the natural world.
- In contrast, the Gestalt psychologists also reacted against the structuralists, but they were more disturbed by the emphasis on breaking mental processes into distinct elements. The Gestaltists studied how the brain organizes material into overall patterns, both in perception and in thinking.
- Freud and his colleagues shifted focus to events at the level of the person (and, to some extent, the level of the group). Psychoanalytic theories of the mind are concerned largely with the operation of unconscious mental processes and primitive impulses (often referred to as *instincts*) that we think, feel, and do.
- The behaviorists rejected the assumption that psychology should focus on mental processes; they opted to stick with what we could see—stimuli, responses, and the consequences of responses.
- The humanists, in part reacting against Freud's theory, were interested in developing patterns of psychological problems that related on impact for individuals and their potentials.
- Elements of the various strands came together in the cognitive revolution, which began by thinking of the mind by analogy to a computer program; in this view, mental processing is information processing.
- Cognitive reconstructions study the relation between events at all three levels of analysis, with an emphasis on how the brain gives rise to thoughts, feelings, and behavior.
- Evolutionary psychology treats many goals and cognitive strategies as adaptations that are the result of natural selection.

THINK IT THROUGH If Tiger Woods were being studied by adherents of a single psychological “school,” which would be least likely to produce useful insights? Most likely? When asked to account for

FIGURE 6.15 Bandura's Study on Observational Learning

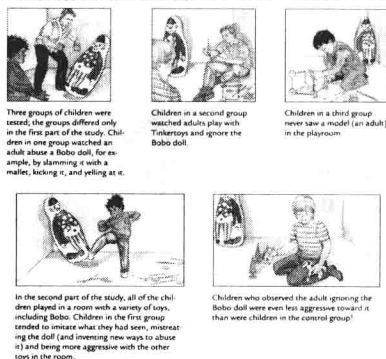


FIGURE 16.5 The Jigsaw Classroom

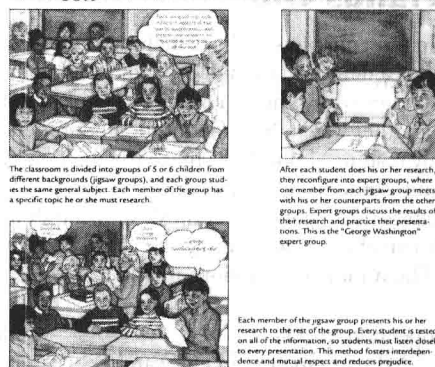


Illustration Program: Visualizing Information

The second edition includes two major refinements of the art. First, we adopted a clearer style of drawings. 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. (1) The panel illustrations walk students through each study, allowing them to understand its details more fully. (2) The clear, uncomplicated illustrations use perceptual principles to convey information effectively (these principles are described in detail in Kosslyn, 1994b). (3) 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. (4) Working through these displays leads to active processing—and better remembering. Examples include a study on alcohol and sexual aggression (p. 202), Watson's famous experiment with Little Albert (p. 217), Garcia's taste aversion (p. 224), the training of dolphins at Sea World (p. 237), Bandura's Bobo doll experiment (p. 247), and systematic desensitization (p. 627). Second, we've continued to make good use of photos. We now use photos to illustrate a particularly important or interesting fact. The captions of photos convey information pertinent to the section, and the photos themselves are used as hooks to allow students to better understand this material.

What's New in the Second Edition?

Every chapter is brimming with new research and cutting-edge coverage. Some of the key changes in the second edition are listed below, by chapter.

Chapter 1: Psychology: Yesterday and Today

- A shorter, more focused introduction to the field and the book (Methodology has been moved into the new Chapter 2)
- Updated opening story and expanded treatment of "Levels of Analysis"—which is now the *only* central theme of the book (in the interest of simplicity and clarity, "Using Psychology to Learn Psychology" has been eliminated as a theme, although the approach is still used in the actual treatment of material)

- Expanded, reorganized, and revised History of Psychology, which preserves the “story” told in the previous edition and continues to draw on Tiger Woods to illustrate key concepts
- New “Looking at Levels” section, “Sex and Emotional Involvement” (expanding coverage of Evolutionary Psychology)
- New photos to illustrate the central concepts (such as “what is psychology”), to underline the role of women in the history of psychology, and to make the summary of history come alive
- 2 new references, 1 from the year 2000 or later

Chapter 2: The Research Process: How We Find Things Out

- New chapter, which focuses on research methods
- Opening story that focuses on the International Space Station and the psychology that needs to be understood to make the space station work
- Expanded treatment of the scientific method
- Expanded and revised treatment of research concepts used in psychology (such as the new table on four types of validity)
- Expanded and revised treatment of research methods used in psychology
- Introduction of the QALMRI method (question/alternatives/logic/method/results/inferences), which is used in all subsequent “Understanding Research” sections
- Introduction of the “Understanding Research” feature, with the first one, “When Does Mental Practice Improve Later Performance?”
- New “Looking at Levels” sections on sleep disturbances and cognitive function, leadership, graph design for the eye and mind, and imitation
- 24 new references, 10 from the year 2000 or later

Chapter 3: The Biology of Mind and Behavior

- Expanded treatment of glial cells, processes in axons, and neurotransmitters (including a new table summarizing major neurotransmitter substances)
- New section on endogenous cannabinoids and their role in memory and attention
- New figure showing action at the synapse
- New “Understanding Research” section, “The Hemispheric Interpreter”
- Additional discussion of key brain areas, such as the nucleus accumbens
- New “Looking at Levels” section, “Brain Damage on the Roller Coaster”
- Expanded discussion of fMRI brain scanning, and discussion of optical brain imaging
- Expanded discussion of transcranial brain stimulation (TMS)
- Reorganized discussion of brain stimulation
- Greatly expanded and reorganized discussion of genetics
- New figure illustrating homozygous and heterozygous genotypes
- Discussion of knockin and knockout mice
- Discussion of brain plasticity
- 42 new references, 36 from the year 2000 or later

Chapter 4: Sensation and Perception: How the World Enters the Mind

- New opening story, based on the Mexican artist Frida Kahlo
- New organization, in terms of the traditional distinction between sensation and perception

- Psychophysics addressed at the beginning, before the nature of visual sensation
- Expanded coverage of the new type of photodetector discovered in the retina
- New material on the differences between mixing colored lights versus paints
- Additional genetic research on sex differences in color perception
- Additional discussion of neural processes of perception, including that of Hubel and Weisel
- Expanded discussion of perceptual learning, including that which is used in “chicken sexing”
- Expanded discussion of cross-cultural differences in drawing
- New section on motion perception
- New figure illustrating signal detection outcomes
- New figure illustrating the phi phenomenon
- New figure showing two visual pathways (the “what” and “where” pathways)
- New “Understanding Research” section, “Two Ways to Specify Spatial Relations” (a study that involves using barbiturates to “put to sleep” temporarily only a single cerebral hemisphere)
- Expanded and reorganized section on attention, integrated into perception
- Expanded treatment of hearing
- Expanded treatment of smell (including effects of female hormones on sensitivity) and female pheromones (including those that sexually attract males)
- Expanded treatment of taste, pain, and magnetic sense
- 64 new references, 43 from the year 2000 or later

Chapter 5: Consciousness

- Expanded section on the nature of consciousness
- New section on the function of sleep (restorative and evolutionary theories)
- Expanded section on narcolepsy—a discussion of the role of orexin
- Expanded section on sleep apnea—the role of heart rate and the nervous system
- New “Understanding Research” section on hypnosis and memory
- Added coverage of cannabinoids (particularly anandamide)
- 41 new references, 28 from the year 2000 or later

Chapter 6: Learning

- New chapter opening story, based on the life of Jackie Chan
- Addition of the topic of habituation
- Forward, delayed, trace, higher order, and evaluative conditioning added
- Simultaneous and backward pairing labeled
- New “Understanding Research” section on taste aversion
- Expanded section on escape conditioning and avoidance learning
- Positive and negative punishment added (versus simply “punishment”)
- Update of the effects of TV on aggression
- New figure illustrating variations of the classical conditioning procedure
- New figure illustrating higher order conditioning
- New panel illustration depicting positive and negative reinforcement and punishment
- 16 new references, 13 from the year 2000 or later

Chapter 7: Memory: Living With Yesterday

- New opening story, focusing on the memory expert “S.”
- Expanded discussion of the Atkinson and Shiffrin model (plus new figure illustrating the three-stage model of memory)

- Expanded discussion of working memory
- New minidemonstration on chunking
- New section on the formation of neural connections, with an expanded discussion of knockout and knockin mice and the genetics of memory
- New figure illustrating the structure of semantic memory networks
- New discussion of cultural differences in memory
- New “Understanding Research” section, “A Better Police Lineup”
- Expanded discussion of false memories
- 50 new references, 38 from the year 2000 or later

Chapter 8: Language and Thinking

- New opening story, focusing on Albert Einstein’s language and thought
- Expanded treatment of language comprehension versus production
- Expanded treatment of “pragmatics” in language
- New illustration of a “tree structure” showing syntactic analysis of a sentence
- New “Understanding Research” section, “Untangling Ambiguity During Comprehension”
- Expanded discussion of child speech and the development of language ability
- New table summarizing key milestones in language acquisition
- New section on gesture
- Expanded discussion of second language learning
- Revised discussion of concepts
- New figure containing a mental rotation exercise
- Expanded discussion of heuristics
- New “Looking at Levels” section, “Cognitive Engineering at Home and at the Nuclear Power Plant”
- New panel illustration showing three different problem-solving techniques
- New figure on mental models
- New section on framing decisions
- New “Looking at Levels” section, “Judging Pain”
- 87 new references, 52 from the year 2000 or later

Chapter 9: Types of Intelligence: What Does It Mean to Be Smart?

- Additional headings to indicate structure
- Reorganized section, “Is There More Than One Way to Be Smart?,” which now includes the section, “Boosting IQ”
- New “Diversity in Intelligence” section that combines discussions of mental retardation, the gifted, and creativity
- Revised section on the genetics of intelligence, including recent brain-neuroimaging results
- New material on the relation between testosterone levels in IQ
- Revised treatment of creativity
- New section on enhancing creativity
- New “Understanding Research” section, “Constrained Creativity”
- 61 new references, 54 from the year 2000 or later

Chapter 10: Emotion and Motivation: Feeling and Striving

- New research on “basic emotions” added
- Expanded coverage of the biological basis of emotions

- Added coverage of the neural bases of reward
- New section on controlling emotions
- Expanded coverage of the biological basis for appetite
- Updated coverage of the concept of a “set point” for body weight
- New section on mating preferences
- New research on visual sexual stimuli
- Updated coverage on sexual orientation
- 73 new references, 67 from the year 2000 or later

Chapter 11: Personality: Vive la Différence!

- Gordon Allport’s notion of central traits added
- Added information about specific tests, such as the Cattell 16PF, MMPI-2, and NEO-PI-R
- More coverage of projective tests
- Updated coverage of the behavioral genetics of personality
- New “Understanding Research” section, “The Minnesota Study of Twins Reared Apart”
- New “Looking at Levels” section, “The Cyberstudent Personality” (how traits affect Web-based learning)
- Added discussion of Bandura’s concept of self-reflectiveness
- Updated coverage of individualism versus collectivism
- 55 new references, 36 from the year 2000 or later

Chapter 12: Psychology Over the Life Span: Growing Up, Growing Older, Growing Wiser

- Revised section on teratogens
- New “Understanding Research” section, “Stimulating the Unborn”
- New “Looking at Levels” section, “Cued Emotions” (how mothers shape their infants’ emotional responses)
- Revised section on motor development, exploring the relation between SIDS and infant sleeping positions
- Revised section on infant perception
- New material on Siegler’s “wave model” of cognitive development
- New material on memory development
- Revised section on effects of daycare on behavior
- Revised section on gender identity
- Additional material on “the secular trend” and factors affecting the age of menarche
- Revised sections on adolescent reasoning and egocentrism
- New section on evolving peer relationships during adolescence
- Revised section on moral development
- New material on the “cerebral reserve hypothesis” regarding cognitive aging
- Revised section on the effects of aging on personality
- New section on emotion in the elderly
- New section on adult relationships
- Completely revised section on death and dying
- 87 new references, 64 from the year 2000 or later

Chapter 13: Stress, Health, and Coping

- Update on Selye’s work, including Taylor’s notion of “tend-and-befriend”
- Work-related factors expanded to include economic factors and Karasek’s demand-control model
- Psychoneuroimmunology added (moved from another chapter)

- Reorganized section on health-impairing behaviors—why we engage in them as well as how to change them
- Update on humor in the section on coping
- New “Understanding Research” section, “Emotional Disclosure and Health”
- Expanded section on placebos
- 39 new references, 31 from the year 2000 or later

Chapter 14: Psychological Disorders

- Reorganized and expanded section, “Identifying Psychological Disorders: What’s Abnormal?”
- More cross-cultural material
- New “Understanding Research” section, “Symptoms of Depression in China and the United States”
- Discussion of general anxiety disorder added
- New “Looking at Levels” section, “Individual Differences in Responses to Trauma”
- New figure on Beck’s “Negative Triad”
- Expanded coverage of DID
- New figure on “Body Image Distortion”
- 58 new references, 48 from the year 2000 or later

Chapter 15: Treatment

- Separate section on biomedical treatment
- New “Looking at Levels” section on depression and the placebo effect
- Revised section on prevention
- Addition of antidepressant/placebo effect information
- Additional information on exposure
- New “Understanding Research” section, “For OCD: CBT Plus Medication, Without Exclusion”
- Expanded coverage of cybertherapy
- New table on the effects of medication
- 47 new references; 40 from the year 2000 or later

Chapter 16: Social Psychology: Meeting of the Minds

- New section on “thin slices” work (Ambady)
- New section on the primacy effect and self-fulfilling prophecy
- New section on implicit attitudes
- New section on social cognitive neuroscience
- New “Understanding Research” section, “How Stereotypes Can Prime Behavior”
- New figure on the self-fulfilling prophecy
- New figure on the “Implicit Attitudes Test”
- Addition of the elaboration likelihood model
- Expanded coverage of cognition and prejudice (e.g., Payne’s study on priming of racial stereotypes)
- New discussion of the jigsaw classroom technique (Aronson)
- New figure, “The Jigsaw Classroom”
- New discussion of informational and normative social influence in conformity section
- New figure on the choice points of bystander behavior
- Groupthink moved to this chapter
- 47 new references, 36 from the year 2000 or later

Instructor and Student Resources

Psychology: The Brain, the Person, the World, Second Edition, is accompanied by the following teaching and learning aids.

Instructor's Supplements

Test Bank (0-205-39295-4). Prepared by Eric Miller at Kent State University and accuracy checked by Stephen Kosslyn and one of his graduate students, the test bank contains over 175 items per chapter, in essay, short-answer, multiple-choice, and true/false format. Page references to in-text material, answer justification, and a difficulty rating scale allow you to customize the assessment materials to best fit your needs. An appendix includes a sample open-book quiz.

Instructor's Manual (0-205-39366-7). Prepared by Marcia J. McKinley at Mount St. Mary's College, the IM contains additional material to enrich your class presentations. For each chapter, the IM provides a Chapter-at-a-Glance grid; detailed lecture outlines; demonstrations and activities for classroom use; updated video, media, and Web resources; and other detailed pedagogical information. In addition, this manual includes a preface and a sample syllabus, and the appendix includes a comprehensive list of student handouts.

Computerized Test Bank (0-205-38896-5). This computerized version of the test bank is available with Tamarack's easy-to-use TestGenEQ software, which lets you prepare printed, network, and online tests. It includes full-edition capability for Windows and Macintosh. This supplement is available upon adoption of the textbook from your local Allyn and Bacon sales representative.

Powerpoint Presentation CD-ROM (0-205-39570-8). Prepared by Daniel Horn at the University of Michigan, this multimedia resource contains textbook images with demonstrations, key points for lectures, and the full *Instructor's Resource Manual* in digitized form.

Allyn & Bacon Transparencies for Introductory Psychology, 2004. *New publication!* Over 200 full-color transparencies taken from the text and other sources are referenced in the *Instructor's Manual* for the most appropriate use in your classroom presentations.

Insights to Psychology: Volumes I and II (Part I: 0-205-39477-9; Part II: 0-205-39478-7). *New publication!* These interactive videos illustrate the many theories and concepts surrounding 16 areas of psychology. The Interactive Video contains 2–3 video clips per topic, followed by critical thinking questions that challenge students. A Video Guide provides further exploration questions and Internet resources for more information. These videos are also available on DVD from your Allyn and Bacon sales representative.

The Allyn & Bacon Digital Media Archive for Psychology, 4.0 (0-205-39537-6). *New publication!* This collection of media products—charts, graphs, tables, figures, and audio and video clips—enlivens your classroom with resources that can be easily integrated into your lectures. Now, the video clips include classic psychology experiments footage.

Course Management. Use our pre-loaded, customizable content and assessment items to teach your online courses. Available in CourseCompass, Blackboard, and WebCT formats.

Student Supplements

Companion Website. This unique resource for connecting the textbook to the Internet can be accessed at www.ablongman.com/kosslyn2e. Each chapter includes learning objectives, chapter summaries, updated and annotated Web links for additional sources of information, flash card glossary terms, and online practice tests.

Grade Aid Study Guide (0-205-39538-4). Developed by Marcia J. McKinley at Mount St. Mary's College, this is a comprehensive and interactive study guide. Each chapter includes "Before You Read," with a brief chapter summary and chapter learning objectives; "As You Read," a collection of demonstrations, activities, and exercises; "After You Read," containing three short-practice quizzes and one comprehensive practice test; and "When You Have Finished," with Web links for further information and crossword puzzles using key terms from the text. An appendix includes answers to all practice tests and crossword puzzles.

MyPsychLab: Where Learning Comes to Life! (0-205-39770-0). MyPsychLab is an exciting new learning and teaching tool designed to increase student success in the classroom and provide instructors with every resource needed to teach and administer an introductory psychology course. Designed to be used as a supplement to a traditional lecture course or for complete administration of an online course, MyPsychLab features a text-specific e-book—matching the exact layout of the printed textbook—with multimedia and assessment icons in the margins. These icons launch to exciting resources—stimulating animations, video clips, audio explanations, activities, controlled assessments, and profiles of prominent psychologists—to expand upon the key topics students encounter as they read the text.

With MyPsychLab, instructors can quickly and easily manage class information and provide students with extra resources to help improve their success rate. MyPsychLab includes access to Research Navigator, Allyn & Bacon's online journal database program, and to the Tutor Center, which directs students to free tutoring from qualified college psychology instructors on all material in the text. Tutors are available via phone, fax, e-mail, or the Internet during the Tutor Center hours of 5 P.M.–12 A.M. EST, Sunday through Thursday.

Research Navigator Guide for Psychology (0-205-37640-1). This easy-to-read guide helps point students in the right direction as they explore the tremendous array of information on psychology on the Internet. In addition, the guide provides a wide range of additional annotated Web links for further exploration.

This guide also contains an access code to Research Navigator, Allyn and Bacon's online collection of academic and popular journals. Research Navigator offers students three exclusive databases (Ebsco's ContentSelect, *The New York Times* on the Web, and Link Library) of credible and reliable source content to help students focus their research efforts and get the research process started.

Mind Matters II CD-ROM (0-205-38881-7). *New publication!* The Allyn and Bacon *Mind Matters II* CD-ROM makes psychology more engaging, interactive, informative, and fun! *Mind Matters II* covers the core concepts of psychology through a combination of text, graphics, simulations, video clips of historic experiments, and activities. Assessments test comprehension at both the topic and unit levels. New to *Mind Matters II*—innovative modules on Personality, Developmental Psychology, and Social Psychology.