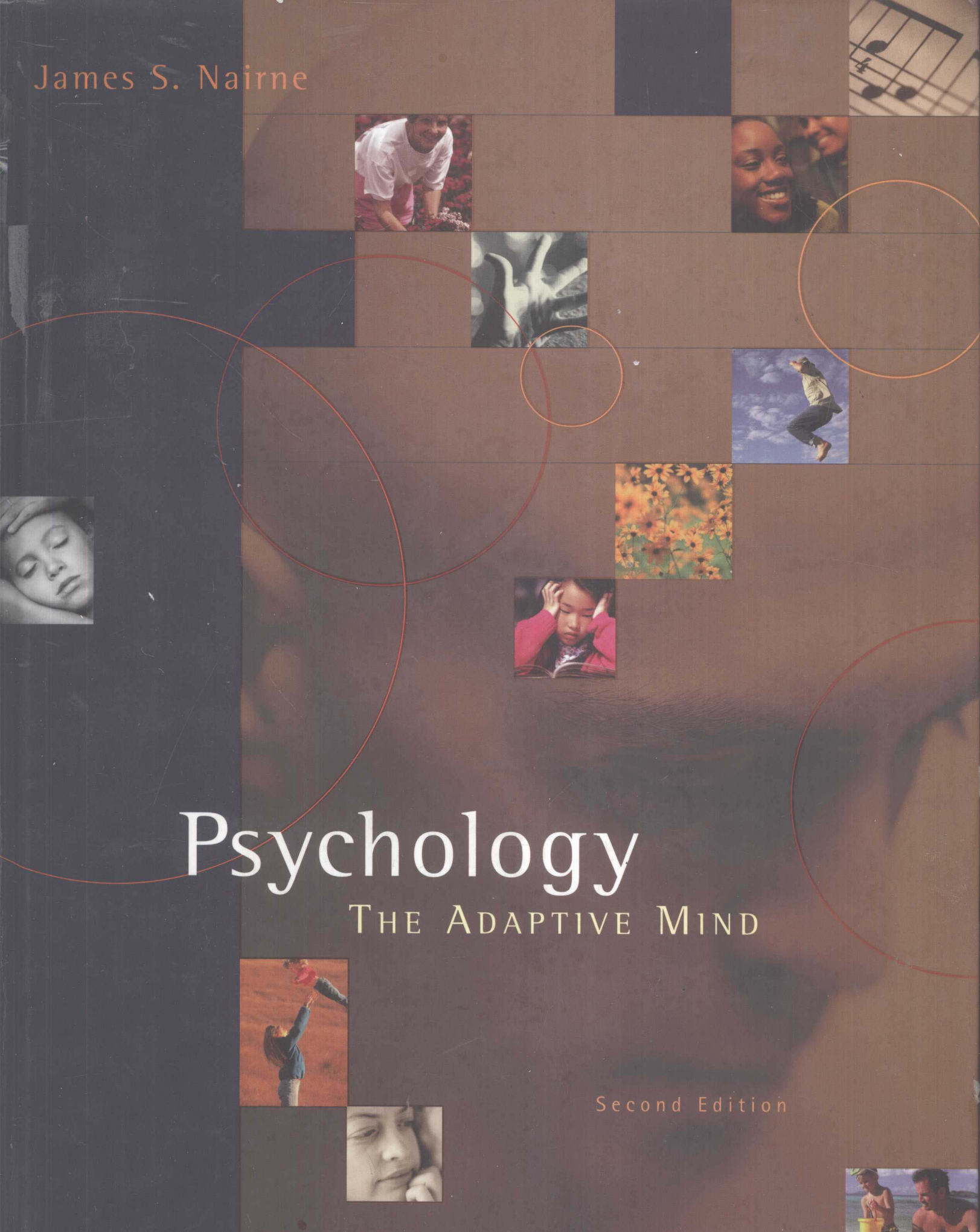


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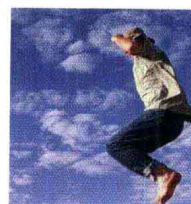
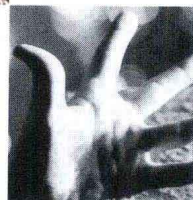


Psychology

THE ADAPTIVE MIND

Second Edition

James S. Nairne
Purdue University



Psychology

THE ADAPTIVE MIND



Second Edition



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TO VIRGINIA AND STEPHANIE

About the Author

James S. Nairne is Professor of Psychological Sciences at Purdue University in West Lafayette, Indiana. He received his undergraduate training at the University of California, Berkeley and his Ph.D. in psychology from Yale University. As a graduate student, he was recruited to provide demonstrations for all sections of introductory psychology at Yale, and he has been an enthusiastic teacher of introductory psychology ever since. He is an active researcher in cognitive psychology, specializing in human memory, and he's published dozens of articles in professional journals. He is currently an associate editor for the *Journal of Memory and Language*, a consulting action editor for *Memory*, and he is a member of the editorial board of the *Journal of Experimental Psychology: Learning, Memory, and Cognition*.

Preface

To the Instructor

One of the first hurdles we face as instructors of introductory psychology is convincing students that psychology is more than just the study of abnormal behavior. Introduce yourself as a psychologist and you're likely to get a response such as "Don't analyze me!" or "I'd better watch what I say around you!" It takes time for students to realize that psychology is a vast interdisciplinary field that includes all aspects of both normal and abnormal behavior. Even after exposure to its breadth, the topics of psychology can remain mysterious and forbidding. Take a look at a typical chapter on learning, for example, and its contents seem to bear little resemblance to our everyday understanding of what it means to "learn." There are extended discussions of drooling dogs and key-pecking pigeons, but little about the connection between conditioning procedures and the learning problems we face on a daily basis.

In *Psychology: The Adaptive Mind*, I focus extensively on the function and purpose of psychological processes. Instead of leading with the facts and methods specific to a topic, I introduce each topic as a kind of "solution" to an adaptive or conceptual/practical "problem." For example, if you want to understand how we learn about the signaling properties of events (problem), we can look to classical conditioning (solution). Notice the shift in emphasis: Instead of topic followed by function, it's function followed by topic. This is what I call the adaptive problem-solving approach, and it offers a number of advantages:

1. The student has a reason to follow the discussion.
2. Because the discussion is about an adaptive or conceptual problem, it naturally promotes critical thinking. The student sees the connection between the problem and the solution.
3. The adaptive problem-solving theme extends across chapters.
4. The organization provides an effective learning framework.

Each chapter is organized around a set of adaptive or conceptual and practical problems that (a) focus the discussion on the functional relevance of the material and (b) demonstrate that we think and act for adaptive reasons. For example, classical conditioning is introduced as a solution to an adaptive problem: How do we learn about the signaling properties of events? Similarly, electrochemical transmission in the nervous system is introduced as the solution to the adaptive problem of communicating internally; the experimental method is introduced as a solution to the conceptual problem of determining the causes of behavior, and so on.

When behavior is viewed as the product of adaptive systems, psychology begins to make more sense. Students learn that behaviors (including the methods of psychologists!) are reactions to particular problems. When we emphasize adaptiveness we relax our egocentric view of the world and increase our sensitivity to why behavior is so diverse, both within and across species. Our appreciation of individuality and diversity is enhanced by the understanding that differences are natural consequences of adaptations to the environment.

CONTENT CHANGES SINCE THE FIRST EDITION

Please note that in addition to expanding the discussions of numerous topics and introducing new ones, I've improved the clarity of the narrative, rewritten parts that seemed a bit too technical in the first edition, and provided hundreds of new references, many from 1997 and 1998. I have also incorporated directly into the text the material that appeared at the end of the chapters as separate "Adaptive Mind" sections.

Chapter 1: An Introduction to Psychology

- New section on the early contributions of women
- New section on culture

Chapter 2: The Tactics of Psychological Research

- Expanded coverage of zero correlations and scatter plots
- Expanded discussion of correlations and causality, including the third variable problem

Chapter 3: Biological Processes

- Expanded coverage of neurotransmitters
- Expanded section on communication within the brain, including neural networks
- New discussion of family studies and their role in the nature-nurture controversy

Chapter 4: Human Development

- New section on egocentrism
- New sections on temperament and childhood friendships
- Expanded discussion of adult development, including a new section on the family life cycle
- New sections on growing old in our society, ageism, and end-of-life decisions

Chapter 5: Sensation and Perception

- Expanded discussion of receptive fields
- Expanded discussion of higher-level detection
- New section on motion perception
- Expanded discussion of audition

Chapter 6: Consciousness

- Expanded discussion of attention deficit disorder
- New discussion of jet lag
- New discussion of sleep deprivation
- Expanded coverage of sleep disorders

Chapter 7: Learning from Experience

- Expanded coverage of partial reinforcement and shaping
- Expanded coverage of punishment
- Expanded coverage of social learning

Chapter 8: Remembering and Forgetting

- Expanded coverage of auditory memory
- Expanded coverage of repetition and distributed practice
- New discussion of false memories
- New section on repressed memories
- Expanded coverage of the neurobiology of memory

Chapter 9: Thought and Language

- Expanded coverage of language comprehension
- Expanded coverage of language in chimpanzees

- Expanded coverage of the value of heuristics

Chapter 10: Intelligence

- Expanded coverage of fluid and crystallized intelligences
- Expanded coverage of mental retardation
- New section on creativity
- New section on emotional intelligence

Chapter 11: Motivation and Emotion

- Expanded coverage of achievement motivation
- Expanded coverage of pheromones
- Expanded coverage of anger and happiness

Chapter 12: Personality

- Expanded discussion of personality tests, including new coverage of the MMPI and TAT tests
- Streamlined discussion of Freud's psychodynamic theory
- Expanded discussion of self-monitoring and the person-situation debate

Chapter 13: Social Psychology

- Expanded discussion of person perception, including new coverage of stereotypes and physical appearance
- New section on prejudice
- Expanded coverage of attributional biases
- Expanded coverage of persuasion and self-perception theory
- New section on deindividuation
- Expanded coverage of group decision making
- New section on the determinants of facial attractiveness

Chapter 14: Psychological Disorders

- Expanded discussion of panic attacks
- New section on suicide
- New discussion of the bio-psycho-social perspective
- New section on cultural influences

Chapter 15: Therapy

- New section on group therapy
- New section on family therapy

Chapter 16: Stress and Health



- Updated coverage of external and internal stressors
- Updated coverage of the immune response
- New Inside the Problem on adaptation and the immune response

NEW AND REVISED FEATURES

- An appealing new design adds interest but not clutter.
- Figures and photos have been updated.
- Glossary terms and definitions now appear in the margins.
- The outlines at the beginning of every chapter have been expanded.
- Learning Goals at the beginning of every section and a Test Yourself review at the end of every section give students regular opportunities to check their understanding.
- Concept Summaries throughout each chapter help students review important themes, approaches, or subject areas.
- Comprehensive chapter summaries let students review important points without having to take extensive notes or wade through lots of text again.
- Annotated Recommended Readings for every chapter include brief

descriptions of relevant books and articles to steer students toward further investigation.



- Text connections to the CD-ROM PsychNow! are highlighted throughout. 
- Relevant Web addresses are listed at the end of each chapter.
- InfoTrac College Edition URLs and suggested search terms appear at the end of each chapter. 
- **<http://psychology.wadsworth.com>** At the end of each chapter, students are encouraged to visit our text-specific Web site, which offers practice quizzes, hypercontents, updates, critical thinking questions, and discussion forums.

TEACHING AND LEARNING SUPPLEMENTS

Psychology: The Adaptive Mind is supported by a state-of-the-art teaching and learning package.

Study Guide (0-534-36774-7)

Prepared by Janet Proctor of Purdue University with a Language Enhancement Guide by Mary Beth Foster of Purdue University. This is a revision of the last edition. All test items have answers with rejoinders.

Thomson Learning Web Tutor™ (0-534-76578-5)

This on-line ancillary helps students succeed by taking the course beyond classroom boundaries to a virtual environment rich with study and mastery tools, communication tools, and course content. Professors can use WebTutor to provide virtual office hours, post their syllabi, set up threaded discussions, track student progress with the quizzing material, and so on. For students, WebTutor offers real-time access to a full array of study tools, including flashcards (with audio), practice quizzes and tests, on-line tutorials, exercises, discussion questions, Web links, and a full glossary. Professors can customize the content in any way they choose, from uploading images and other resources, to adding Web links, to creating their own practice materials.

Instructor's Resource Guide (0-534-36778-X)

By Charles Grah of Austin Peay State University and Gregory Robinson-Reigler of the University of St. Thomas at St. Paul. This update of the last edition contains the following for each chapter in the text:

- Detailed chapter outlines
- Learning objectives
- Lecture elaborations
- Making connections
- Incorporating diversity
- Focus on research
- Demonstrations and activities
- Student critical thinking journal
- Answers to critical thinking questions
- Suggested readings
- InfoTrac College Edition key words
- Film and video suggestions
- Supplements correlation grid
- Guide for the first day of instruction

Instructor's Resource Guide ASCII Version (0-534-36781-X MAC and 0-534-36782-8 WIN)

This is the electronic version (ASCII) of the Instructor's Resource Guide.

Test Bank (0-534-36775-5)

By Shirley-Anne Hensch of the University of Wisconsin, Center. In this update of the last edition you will find approximately 4035 test items:

- Approximately 195 multiple-choice items, 40 sentence-completion questions and 20 essay questions for each text chapter.
- Ten new items are designed for use as an on-line quiz and ten items are taken from the second edition Study Guide.
- Each test item (about 20 per chapter) will have the following information in the margin: section and page references, type of question, correct answer, and Study Guide and on-line quiz alerts.
- Each chapter opener includes a section grid that maps the test items for each sub-topic in the text chapter.

Thomson Learning Testing Tools™ (0-534-36779-8 MAC and 0-534-36780-1 WIN)

This is the electronic version of the Test Bank.

Transparency Acetates (0-534-36776-3)

Approximately 100 text figures are available in this acetate package.

Electronic Transparencies (0-534-36777-1)

The complete set of transparencies is available on a cross-platform CD-ROM in Adobe Acrobat. The disk has a one-time download of Acrobat Reader for easy viewing of the electronic slides

Web Site

<http://psychology.wadsworth.com>

Wadsworth's PsychStudy Center contains the ten test items per chapter for the on-line quiz, as well as all the basic PsychStudy Center amenities: practice quizzes, hypercontents, updates, critical thinking questions, and discussion forums, teaching tips, and InfoTrac College Edition links.

CNN Today Videos: Introductory Psychology

Volume 1 (0-534-36634-1); Volume 2 (0-534-50420-5)

Exclusive to Wadsworth. The CNN Today Video is course-specific to help you launch lectures and to encourage discussion. Organized by topics covered in a typical course, these 60-minute videos contain many exciting clips. Qualified adopters will each receive one free video.

Integrator Online™ CD-ROM for Introductory Psychology (0-534-35746-6)

Designed for use in any teaching and learning situation from standard lecture to full Internet delivery, this CD-ROM is directly linked to the content of each chapter. The faculty version of Integrator Online includes CourseWeaver Online™, which allows you to deliver course materials via local lecture, individual computers, or Internet links, interactive activities, study sessions, and simulations. Alternatively, students can use the CD-ROM on their own to explore activities, complete homework, or practice for quizzes.

Powerpoint for Introductory Psychology

by Linda Lockwood, Metropolitan State College (0-534-26624-XMAC and 0-534-26623-1WIN)

Covering the 16 most commonly taught topics in Introductory Psychology, this PowerPoint presentation features many figures pulled directly from Wadsworth psychology texts. Fully functional and ready to use, you may also personalize the presentation by editing the material, importing your own images and text, or exporting into your own pre-existing PowerPoint presentation.

ACKNOWLEDGMENTS

Writing this textbook has been a unique experience for me. College professors live relatively solitary professional lives; we interact a lot with students and colleagues, but we're not usually part of a team, especially one of the size required to produce a textbook such as *Psychology: The Adaptive Mind*. My publisher deserves enormous

credit for organizing the team and for helping me carry out my original plan for the book. Particular thanks are due to Bill Roberts and Craig Barth, for demanding that the book have a “soul,” as well as a distinctive author voice. I am also very grateful to Ken King and Jay Honeck for convincing me to write the book in the first place.

I’ve had the opportunity to work with a number of talented individuals during the writing and production of this book. My editor on the first edition, Jim Brace-Thompson, was very influential in shaping the book and deserves enormous thanks (and credit). My current editor, Stacey Purviance, took over from JBT with vigor and an astonishing amount of intelligence and savvy. She understood the book from the beginning and is probably its most effective spokesperson. I’ve also been fortunate to work with two gifted developmental editors, Joanne Tinsley and Penelope Sky. Both are true professionals and influenced the book in many ways. Penelope did a great job in particular with the art and photo scheme for the second edition. Thanks. The second edition also received an enormous boost from Greg Robinson-Riegler who helped craft the fine concept summary tables (among other things).

On the production side, the captain of the second edition team was Tanya Nigh, who held together the tight production schedule and coordinated the efforts at Wadsworth. Special thanks go to Nicole Barone at Thompson Steele, Inc.; she was an absolute pleasure to work with—competent, friendly, and always there when I called.

Of course, I could never have written this book without the help and guidance I received from the reviewers listed below. I hope they can see their mark on the book because it’s substantial.

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Finally, and perhaps most importantly, I want to thank my family. Everyone, including my parents, experienced the writing of this book in one way or another. My wife and daughter, Virginia and Stephanie, lived the book as I did, and I dedicate it to them with love.

James S. Nairne

To the Student

Psychology is the scientific study of behavior and mind. It can be a tough subject, but I think you'll find it's rewarding and fascinating. Throughout this book there are dozens of specific studies and hundreds of isolated facts, but my main goal is for you to understand psychology in a way that will be useful throughout your life. Toward that end, I try hard to show you how particular behaviors, cognitive processes, and emotions help you solve important adaptive problems every day.

WHAT DO WE MEAN BY “THE ADAPTIVE MIND”?

I take the view that everything we do is influenced, in part, by our need to solve—or adapt to—problems in our environment. By “problem” I simply mean the challenges we need to meet, or the demands we need to resolve, as we move through everyday life. For example, before you can act or respond to something, your brain needs to communicate with the environment and with the rest of your body. To solve this adaptive problem—communicating internally—your body uses the nervous system, the endocrine system, and the genetic code. Our survival also depends frequently on our ability to communicate with each other. Again, how to communicate with others is a problem that we need to solve. In this case, the solution—or adaptation—was the development of verbal and nonverbal language.

I hope it's easy to see that our behaviors and thoughts can be seen as solutions (adaptations) to problems or demands. Each chapter begins with three or four adaptive or conceptual problems like the ones described above, and throughout the chapter I show you how these particular problems are solved by the body and mind.

I invite you to browse back through the rest of the preface for a preview of how this book is organized. And I hope you will soon begin applying what you learn to situations in your daily life. The study of psychology may be challenging, but above all else it is relevant to everything we do. Have fun!

James S. Nairne

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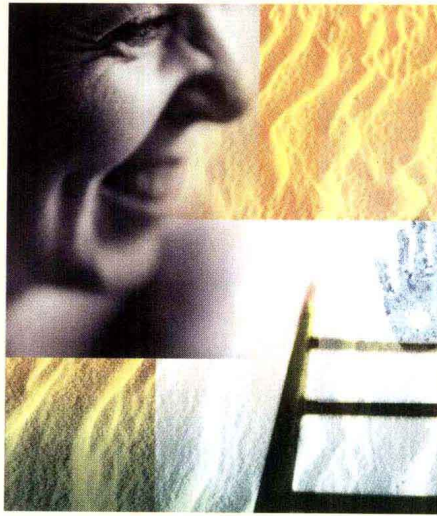
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