

PSYCHOLOGY

FOURTH EDITION



James S. Nairne

FOURTH EDITION

Psychology *THE ADAPTIVE MIND*

James S. Nairne
Purdue University



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Psychology: The Adaptive Mind, Fourth Edition
James S. Nairne

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Cover Printer: *Phoenix Color Corp*
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Printed in the United States of America
1 2 3 4 5 6 7 09 08 07 06 05

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Library of Congress Control Number: 2004118283

Student Edition: ISBN 0-534-60538-9
Instructor's Edition: ISBN 0-495-03152-6
0-495-03162-3
0-495-03150-X

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To Virginia and Stephanie

About the Author



James S. Nairne is Distinguished Professor of Psychological Sciences at Purdue University, where he specializes in human memory. Recognized internationally as both a scholar and a teacher, he has received numerous teaching honors at Purdue, including the Liberal Arts Excellence in Education Award in 2000 and the Outstanding Undergraduate Teaching Award in 2001. Also in 2001, he was named a Fellow of the Purdue Teaching Academy, and in 2004 he was given a permanent position in Purdue's Book of Great Teachers. He is currently director of the Honors Program for the College of Liberal Arts. Professor Nairne received his Ph.D. in Human Memory and Cognition from Yale University. His memberships include APA, APS, and the Psychonomic Society. He currently serves as associate editor of the *Psychonomic Bulletin & Review* and is a past associate editor of the *Journal of Memory and Language*.

► To the Student

Psychology is the scientific study of behavior and mind. It can be a tough subject, but it can also be fun and even surprising in a number of unexpected ways. You'll find scores of research studies and hundreds of isolated facts scattered throughout this book, but my main goal is to help you understand the value and usefulness of psychology in your life. Toward that end, I'll show you how your behaviors, thoughts, and emotions help you solve important problems every day.

What Do We Mean by "The Adaptive Mind"?

Everything we do is influenced, in part, by our need to solve specific problems in our environment. By "problem" I simply mean the challenges we face or the demands we confront as we move through everyday life. We're constantly dipping into our psychological "tool kit" to solve one problem or another. For example, before you can react, your brain needs to communicate with the environment and with the rest of your body. To communicate internally, your body uses the nervous system, the endocrine system, and to some extent, even the genetic code. We also need to translate messages from the environment, which come in a variety of forms, into the internal language of the nervous system (which is electrochemical). We solve this problem through our various sensory systems, such as vision and audition. Our survival also depends on our ability to communicate through language and other nonverbal forms of communication.

You'll soon see that many of our behaviors and thoughts can be viewed as solutions to such problems or demands. Each chapter begins with a brief preview section that describes some of the challenges we face, or the challenges that psychologists face, and throughout the chapter I show you how these particular problems are solved. I invite you to browse 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!

► 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 like "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*, Fourth Edition, 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 a pressing environmental or conceptual challenge. 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 topics that (a) focus the discussion on the functional relevance of the material and (b) demonstrate that we think and act for adaptive reasons. When we view behavior 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 understanding that differences are natural consequences of adaptations to the environment.

Content Changes for the Fourth Edition

The major content changes in the fourth edition are listed chapter by chapter. In addition to these specific changes, I’ve improved the clarity of the narrative throughout, rewritten parts that seemed too technical in earlier editions, and updated the science. I’ve added numerous new references although I’ve tried to keep primary and classic references in place where appropriate. Finally, and most important, I’ve placed much greater emphasis in this edition on *culture* and the critical role it plays in determining how we think and act.

Chapter 1

1. New opening
2. New framing of the nature–nurture question
3. Expanded coverage of women in psychology
4. Expanded coverage of culture
5. New practical solutions: Can racial diversity make us think better?

Chapter 2

1. Look for new examples, especially in coverage of statistics
2. New reworked section on zero correlations
3. New coverage of recent APA code of ethics

Chapter 3

1. New opening
2. Expanded coverage of neuroimaging, particularly fMRI
3. Added discussion of mirror neurons
4. Expanded coverage of behavioral genetics

Chapter 4

1. Trimmed and reworked opening section
2. New coverage on research designs

Chapter 5

1. New opening
2. Expanded coverage of neuroimaging in higher-order vision
3. New section on cultural effects in perception
4. New work on pheromones in humans

Chapter 6

1. Trimmed and reworked opening section
2. New work on the effectiveness of subliminal messages
3. Expanded section on dreaming
4. New evidence on genetic predispositions in sleepwalking
5. Expanded section on the neurological effects of alcohol

Chapter 7

1. Trimmed the introductory section
2. More on timing effects in habituation
3. Trimmed the section on acquiring the CS-US connection
4. Rewritten the section on reinforcement
5. Trimmed the section on schedules of reinforcement
6. Expanded biological constraints section with new coverage on taste aversions and survival threats

Chapter 8

1. More discussion on coding and the inner voice
2. Expanded and reworked the section on elaboration
3. New coverage of flashbulb memories and 9/11
4. Expanded the section on memory illusions
5. New coverage of the reminiscence bump
6. New coverage of simulated “repression” experiments
7. Updated neuroscience section

Chapter 9

1. New coverage of the linguistic relativity hypothesis
2. New section on insight, with examples and some new neuroscience data
3. Reworked section on framing effects in decision making and new applications

Chapter 10

1. Expanded section on giftedness, including new discussion of savant syndrome
2. Expanded section on the Flynn effect
3. New section on Claude Steele’s work relating stereotype threat to intelligence
4. Expanded Practical Solution to include new work on the effect of music lessons on IQ

Chapter 11

1. New work on culture and achievement motivation
2. Trimmed and simplified the section on intrinsic motivation
3. New coverage of leptin as a signal for eating
4. Expanded coverage of eating disorders and their prevalence across cultures

Chapter 12

1. Reworked the section on Eysenck and the Big Five
2. Expanded the section on locus of control and self-efficacy
3. Expanded discussion of the person–situation debate

Chapter 13

1. Reworked introduction
2. Expanded the section on self-fulfilling prophecies
3. New work on culture and the fundamental attribution error
4. New cautionary notes on Milgram's experiment
5. Expanded coverage on lasting relationships

Chapter 14

1. Updated coverage of DSM-IV to DSM-IV-TR
2. Trimmed and reworked the section on insanity
3. Added four new sections on gender and culture (anxiety, somatoform, mood, and schizophrenia)
4. New coverage of biological determinants of abnormal behavior

Chapter 15

1. Expanded coverage of SSRIs
2. New coverage of transcranial magnetic stimulation

Chapter 16

1. Updated coverage throughout and provided new examples

Critical Features

- Learning Goals at the beginning 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.
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- Annotated Recommended Readings for every chapter offer brief descriptions of relevant books and articles to steer students toward further investigation.
- InfoTrac® College Edition URLs and suggested search terms appear at the end of each chapter.
- **<http://psychology.wadsworth.com>** Students are encouraged to visit our text-specific website, which offers online quizzes, web links, and more.

Teaching and Learning Supplements

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

Study Guide

(0-495-03155-0)

Prepared by Janet Proctor of Purdue University

The Study Guide is completely updated to accompany the fourth edition of the text. All test items have answers with rejoinders.

WebTutor™ Advantage

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Real-time access to tools that take your course beyond the classroom:

- Study tools: Chapter outlines, summaries, learning objectives, “Video Critical Thinking” questions, glossary flash cards (with audio), practice quizzes, InfoTrac College Edition exercises, and web links—as well as a grade book feature that automatically grades and allows you to track your students’ scores on book-specific study materials.
- Audiovisual aids: Lab simulations, animations, and videos that bring difficult concepts to life.
- Engaging interactive content: Assessments and learning games that encourage mastery, content from the Book Companion website, and dozens of additional simulations and video clips.

Also Available: **WebTutor Advantage Plus** features all of the benefits of WebTutor Advantage, plus an electronic version of the complete text!

Instructor’s Resource Manual

(0-534-59953-2)

By Charles Grah of Austin Peay State University and Gregory Robinson-Reigler of the University of St. Thomas at St. Paul

This edition is in a large three-ring binder for ease of use and contains the following for each chapter in the text:

- Resource Integration Guide
- Detailed chapter outlines
- Demonstrations and activities
- Student critical thinking journal
- Making connections
- Incorporating diversity
- Focus on research

- Questions for study and review
- Practical Solutions
- Answering critical thinking questions
- Film and video suggestions
- Recommended readings
- What's on the Web?
- InfoTrac College Edition activities

Test Bank

(0-495-03158-5)

By Shirley-Anne Hensch of the University of Wisconsin Center

This update of the last edition contains approximately 4,035 test items. For each chapter of the Test Bank, you will find:

- Approximately 200 multiple-choice items, each with key concept, main text page reference, type of question, and correct answer
- An additional 10 multiple-choice items repurposed from the Study Guide
- Approximately 40 sentence-completion questions
- Approximately 20 essay questions and 20 true/false questions
- 20 multiple-choice, 10 sentence completion, 5 essay, and 5 true/false questions from each chapter marked as online quiz questions
- A chapter-opening guide with cross-referencing of items

ExamView® Computerized Testing

(0-495-03157-7)

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Multimedia Manager Instructor's Resource CD-ROM

(0-495-03156-9)

By Michele Miller, Northern Arizona University

Your one-stop source for preparing lectures, in-class activities, assignments, quizzes, and tests! Available for many of our most popular titles, these CD-ROMs contain an electronic version of the Instructor's Manual with Test Bank—giving you instant access to chapter outlines, ideas for activities and assignments, quiz and test items (with answers and page references), and more. The CD-ROM also provides a Resource Integration Guide that shows you, at a glance, which resources and elements correspond with the major topics in each chapter of the text.

Multimedia Manager Instructor's Resource CD-ROMs contain a Multimedia Manager presentation tool as well. Easily assemble, edit, publish, and present custom lectures for your course with ready-to-use Microsoft® PowerPoint® slides, as well as:

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- Clear instructions that make it easy for you to modify these presentations to suit your needs by importing videos from our Psychology Digital Video Library, or any other elements, into existing lecture presentations

Text Companion Website

<http://psychology.wadsworth.com/nairne4e/>

The text's website contains online quizzes, web links, and more for every chapter of the text.

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(0-534-27513-3)

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PsychologyNow™

(0-495-03170-4)

A web-based intelligent study system, PsychologyNow provides a complete package of diagnostic quizzes written by Steven Elias, Auburn University Montgomery, personalized Study Plans, Integrated Learning Modules, an Instructor Grade Book, and a direct link to vMentor online tutoring. Contact your Wadsworth representative for availability.

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A key component of each student's Study Plan, these visually and pedagogically rich modules begin with clearly stated learning objectives followed by knowledge-building animations with audio that present key concepts. Modules also include discovery activities and self-check quizzes that confirm understanding of module material.

Built-in Instructor Grade Book

PsychologyNow's Instructor Grade Book assists instructors in tracking grades and monitoring student progress. Student grades can also be exported from PsychologyNow to a WebCT or Blackboard grade book. Whether or not instructors choose to use the grade book, students can benefit from the intelligent study system without any instructor setup or involvement. At any time, students can assess their progress by comparing Pretest and Posttest results.

vMentor™

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Lecture Outlines for Note Taking

(0-495-03163-1)

This booklet contains chapter-by-chapter outlines for your students to take notes while reading the text or attending lectures. Written by Michelle Miller, Northern Arizona University.

The Wadsworth Psychology Digital Video Library 2.0

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The Wadsworth Media Guide for Introductory Psychology

(0-534-17585-6)

Russell J. Watson, editor

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Critical Thinking with Psychology: Separating Sense from Nonsense, 2nd Edition

by John Ruscio

(0-534-63459-1)

This book provides a compelling framework for making the distinction between the true science of human thought and behavior, and pop psychology. Because we are inundated with “scientific” claims, the author does not merely differentiate science and pseudoscience but goes further to teach the fundamentals of scientific reasoning on which students can base their evaluation of information.

Cross-Cultural Perspectives in Introductory Psychology, 4th Edition

by William F. Price and Richley H. Crapo

(0-534-54653-6)

Containing 27 articles on cultural groups around the globe, this book is an ideal companion volume to any introductory psychology text. These articles were specifically chosen to increase student understanding of the similarities and differences among the peoples of the world as they relate to psychological principles, concepts, and issues.

Acknowledgments

My publisher deserves enormous credit for organizing the team and for helping me carry out my original plan for this book. I've had the opportunity to work with a number of talented individuals during the past decade. My original editor, Jim Brace-Thompson, was quite influential in shaping the first edition and deserves enormous thanks (and credit). My second editor, Stacey Purviance, took over from JBT with vigor and an astonishing amount of intelligence and savvy. My current editor, Marianne Taflinger, has been a friend and supporter for a long time and is a constant source of fresh ideas. This edition also benefited greatly from the work of a fine developmental editor, Kirk Bomont.

On the production side, the captain of the fourth edition team is Cheri Palmer, who held together the tight production schedule and coordinated the efforts of numerous people. Extra special thanks also go to Mary Douglas of Rogue Valley Publications, Kay Mikel of WordWorks, and Myrna Engler—great job!

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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We offer special thanks to the following professors and their students for conducting student reviews of the manuscript: F. Samuel Bauer, Christopher Newport University; Gabriel P. Frommer, Indiana University; R. Martin Lobdell, Pierce College; Robert M. Stern, Pennsylvania State University; and the students of Dominican College.

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Dr. Valerie Scott of Indiana University Southeast generously agreed to solicit diary reviews from the following students. Their responses were helpful and encouraging: Angela Lashley, Theresa Raymer, Brent Saylor, Mindy Goodale, Scott Hall, D. Jones, Heather Wenning, Rebecca Thompson, Holly Martin, Dan Abel, Edith Groves, Kim Krueger, J. Kittle, and Jennifer Hall.

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Many colleagues and students at Purdue also played very important roles in creating the final product, often suffering through questions about one research area or another, especially Peter Urcuioli. One of my graduate students, Fabian Novello, helped me a great deal on the first edition, as did Alicia Knoedler, Georgia Panayiotou, and Esther Strahan. Undergraduates Jennifer Bataille, Lauren Baker, Julie Flynn, and Kate Gapinski—now all graduated—read portions of the manu-