



DAVID G. MYERS

PSYCHOLOGY

Fifth Edition

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Fifth Edition

Hope College
Holland, Michigan

WORTH PUBLISHERS

to christine

with thanks for a decade of
wonderful support and friendship

PSYCHOLOGY, Fifth Edition

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preface

Like the human beings whom psychologists study, textbooks, too, develop with age. From its conception in 1982 to its birth in 1986 and through the first several editions of its childhood and youth, this book, like the field it reports, has matured. Today's psychological science is more attuned to evolutionary and genetic influences, to the neuroscience revolution, and to gender and cultural diversity. We today can also harness new ways to present information, both in books and via electronic media. These changes are exhilarating! Keeping up with new discoveries and technologies fills each day and connects me with many colleagues and friends.

The thousands of instructors and millions of students who have studied this book have contributed immensely to its development. Much of this has occurred spontaneously, through correspondence and conversations. For this edition, we also welcomed survey input and reviews from 4234 students and 240 instructors, from British Columbia to Florida, and from New Hampshire to New Zealand. I look forward to continued feedback as we strive, over future editions, to create an ever better book.

Throughout its five editions, however, my vision for *Psychology* has not wavered: *to merge rigorous science with a broad human perspective in a book that engages both mind and heart*. My aim has been to create a state-of-the-art introduction to psychology, written with sensitivity to students' needs and interests. I aspire to help students gain insight into, and appreciate the wonder of, important phenomena of their lives. I also want to convey the inquisitive, caring spirit in which psychologists *do* psychology. The study of psycholo-

gy, I believe, enhances our abilities to restrain intuition with critical thinking, judgmentalism with compassion, and illusion with understanding.

Believing with Thoreau that "Anything living is easily and naturally expressed in popular language," I seek to communicate psychology's scholarship with crisp narrative and vivid storytelling. Writing as a solo author, I hope to tell psychology's story in a way that is warmly personal as well as rigorously scientific. I love to reflect on connections between psychology and other realms, such as literature, philosophy, history, sports, politics, and popular culture. And I love to provoke thought, to play with words, and to laugh.

Big Changes in the Fifth Edition

This new edition retains its predecessor's voice, and much of its content and organization. However, every page has been updated. The result is 664 new references and many new sections and examples reflecting the psychology of the late 1990s. This edition also *looks* new. Its reconceptualized illustrations, more effective chapter design, and many improved photos should help it *work* better than ever.

Increased Evolution and Behavior Genetics Coverage

The evolutionary and behavior genetics perspectives on psychology are now introduced in the first chapter, and coverage of these issues is now even more extensively integrated throughout the book (see the table on the following page). Chapter 2

Evolution and Behavior Genetics Coverage

The **evolutionary perspective** is covered on the following pages:

Aging, p. 130
 Anxiety disorders, p. 464
 Attraction, p. 582
 Biological predispositions in learning, pp. 250–252, 261
 Chapter 2, Neuroscience, Genetics, and Behavior
 Charles Darwin, p. 2
 Electromagnetic spectrum, sensitivity to, p. 154
 Emotional expression, p. 401
 Evolutionary perspective, defined, pp. 4–5
 Fear, p. 404
 Hearing, p. 164
 Instincts, p. 364
 Intelligence, pp. 358–359
 Language, pp. 319, 322
 Love, p. 137
 Need to belong, p. 367
 Overconfidence, p. 314
 Sensation, pp. 148, 170

Sensory adaptation, p. 152
 Signal detection theory, p. 149
 Sleep, p. 215
 Smell, pp. 174–176
 Stress and the immune system, p. 524

Behavior genetics is covered on the following pages:

Abuse, intergenerational transmission of, p. 266
 Adoption studies, pp. 110–111
 Aggression, pp. 571–578
 Behavioral effects of gender, p. 34
 Behavior genetics perspective, defined, pp. 4–5
 Biomedical therapies, pp. 507–512, 513
 Body type, p. 431
 Chapter 2, Neuroscience, Genetics, and Behavior
 Development, pp. 77–78
 attachment, pp. 97–98

authoritative parenting, pp. 104–105
 brain development, experience and, pp. 83–84
 language development, pp. 322–326
 motor development, p. 86
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 Depth perception, p. 186
 Drives and incentives, pp. 364–365
 Drug use, pp. 236–238
 Emotion and cognition, pp. 415–417
 Fear, pp. 404–405
 Genetics of conception, p. 78
 Happiness, p. 412

Intelligence, pp. 352–359
 Learning, pp. 250–252, 261
 Nature/ nurture debate, pp. 77–78
 Obesity and weight control, pp. 539–546
 Perception, pp. 194–200
 Personality traits, p. 432
 Psychological disorders:
 anxiety disorders, p. 464
 bio-psycho-social perspective, p. 456
 depression, pp. 471–472
 personality disorders, pp. 482–483
 schizophrenia, pp. 478–479
 Romantic love, p. 137
 Sex chromosomes and hormones, p. 79
 Sexuality, pp. 375–378
 Sexual orientation, pp. 380–382
 Smell, p. 175
 Stress, personality, and illness, pp. 516–524, 526–528
 Twin studies, pp. 108–111

offers a new main section on “Genetics and Behavior,” which includes subsections on evolutionary psychology and behavior genetics. This new section introduces students to basic concepts of evolution and behavior genetics that will recur throughout the book. I have retitled the chapter “Neuroscience, Genetics, and Behavior” to reflect the new content.

The integrated coverage of evolution and genetics appears in 16 of the book’s 18 chapters. For example, Chapter 3 (“The Developing Child”) discusses “The Genetics of Life,” “Sex Chromosomes, Sex Hormones, and Gender,” “Twin Studies,” and “Adoption Studies.” Chapter 11 (“Intelligence”) includes a lengthy section on “Genetic and Environmental Influences on Intelligence.”

New discoveries from the neuroscience frontier have also been added, building on Chapter 2’s axiom that “*everything psychological is simultaneously biological.*” Rather than pack all this information into an early chapter or two, much of it is more palatably disseminated throughout the book. Chapter 2, “Neuroscience, Genetics, and Behavior,” thus aims not to overwhelm students with biology, but to introduce important concepts and to whet readers’ appetite for more.

Fully Integrated Gender and Cultural Diversity Coverage

You asked for it. We listened. Here it is: The fourth edition’s “Diversity and Community” chapter material is now integrated throughout the text, where all student readers will encounter it. This integrated material adds to existing coverage. Topics range from the first chapter’s discussions of the social-cultural perspective, of cultural and gender variations, and of “human diversity and kinship,” through the last chapter’s discussion of cultural and gender roles. In between are dozens more gender- and culture-related topics, including those itemized on the next page.

For this and succeeding editions I also am working to offer a world-based psychology for our worldwide student readership. Thus, I continually search the world for research findings and text and photo examples, conscious that readers may be in Melbourne, Sheffield, Vancouver, or Nairobi. North American and European examples come easily, given that I reside in the United States, maintain contact with friends and colleagues in Canada, subscribe to several European periodicals, and live periodically in the United Kingdom. But

Coverage of the Psychology of Men and Women

Coverage of the **psychology of women and men** can be found on the following pages:

- | | | | |
|--------------------------------------|--|--|-----------------------------------|
| Abortion stress, p. 519 | Gender and childrearing, p. 106 | Life expectancy, p. 130 | Sexual disorders, p. 378 |
| Behavioral effects of gender, p. 34 | Generic pronoun "he," p. 329 | Male arousal in REM sleep, p. 213 | Sexual fantasies, p. 209 |
| Biological sex/ gender, p. 79 | Happiness, p. 412 | Maturation, pp. 117-118 | Sexuality, pp. 375-379 |
| Body image, p. 373 | Heart disease, p. 521 | Menarche, p. 117 | Sexual orientation, pp. 379-382 |
| Chapter 18, Social Psychology | Help-receiving, p. 586 | Menopause, p. 128 | Smoking, p. 538 |
| Dieting, p. 544 | Hormones and aggression, p. 572 | Midlife crisis, pp. 136-137 | Social connectedness, pp. 123-124 |
| Dream content, p. 218 | sexual behavior, p. 376 | Pornography, p. 377 | Stereotyping, p. 200 |
| Eating disorders, pp. 371-373 | sexual development, pp. 78-79, 116-117 | Psychological disorders, rates of, pp. 483-484 | Suicide, p. 469 |
| Emotional expression, pp. 398-399 | Immune system, p. 523 | Depression, pp. 470, 473 | Weight discrimination, p. 541 |
| Empty nest, pp. 138-139 | Intelligence, pp. 357-359 | Rape, pp. 253, 576-578 | Women and work, p. 140 |
| Fatherhood, p. 99 | Leadership, p. 389 | | Women in psychology, p. 8 |
| Freud's views, pp. 422-423, 425, 427 | | | |

Coverage of Culture and Multicultural Experience

From the Introduction to Chapter 18, coverage of **culture and multicultural experience** permeates the book in the following discussions:

- | | | | |
|---|---|---|--|
| Aging population, pp. 129-130 | cognitive development, pp. 118-119 | Intelligence, pp. 337-338, 344, 356-357 | Schizophrenia, p. 478 |
| Aggression, pp. 574-575 | developmental similarities, pp. 106-107 | Language, pp. 320, 328-330 | Psychotherapy, p. 507 |
| Alcoholism, p. 456 | fetal alcohol syndrome, p. 81 | Life expectancy, p. 130 | Self-esteem, p. 439 |
| Anger, pp. 405-406 | moral development, p. 120 | Management styles, p. 388 | Self-serving bias, p. 440 |
| Attractiveness, p. 582 | motor development, p. 86 | Marriage, pp. 138, 139 | Sensory restriction, p. 178 |
| Behavioral effects of culture, p. 32 | social development, p. 94 | Obesity, pp. 540, 606 | Sexual orientation, p. 379 |
| Conformity, p. 557 | Dieting, p. 544 | Participative management, pp. 389-390 | Sexual standards, p. 125 |
| Corporal punishment practices, p. 259 | Drugs, psychological effects of, p. 232 | People with disabilities, pp. 407, 414 | Size-distance relationship, p. 192 |
| Culture context effects, p. 200 | Emotion: | Perception, p. 192 | Smoking, pp. 538, 539 |
| Culture shock, p. 446 | expressing, pp. 400-401 | Personal space, p. 21 | Social-cultural perspective, pp. 4-5 |
| Deaf culture, pp. 69, 167-169, 320, 321, 324, 329-330 | experiencing, p. 403 | Prejudice prototypes, p. 307 | Social clock, pp. 136-137 |
| Depression, p. 473 | Father care, p. 99 | Psychological disorders, pp. 456, 484 | Suicide, p. 469 |
| Development: | Human diversity/kinship, p. 33 | Dissociative personality disorder, p. 467 | Teen sexuality, pp. 125-127 |
| adolescence, pp. 115-116 | Hunger, pp. 370-371 | Eating disorders, pp. 372-373 | Testing bias, pp. 359-360 |
| attachment, p. 101 | Individualism/collectivism, pp. 441-443 | | Work-related values, pp. 136-137 |
| child-rearing, pp. 105-106 | | | See also Chapter 18, Social Psychology |

this edition also offers more than 50 mentions of Australia and New Zealand. We are all citizens of a shrinking world, thanks to increased migration and the growing global economy. Thus, American students, too, benefit from information and examples that internationalize their world-consciousness. And if psychology seeks to explain *human* behavior (not just American or Canadian or Australian behavior), the broader the scope of studies presented, the more accurate is our picture of this world's people. My aim is to expose all students to the world beyond their own country. Thus, I continue to welcome input and suggestions from all readers everywhere.

All-New Illustration Program and Design

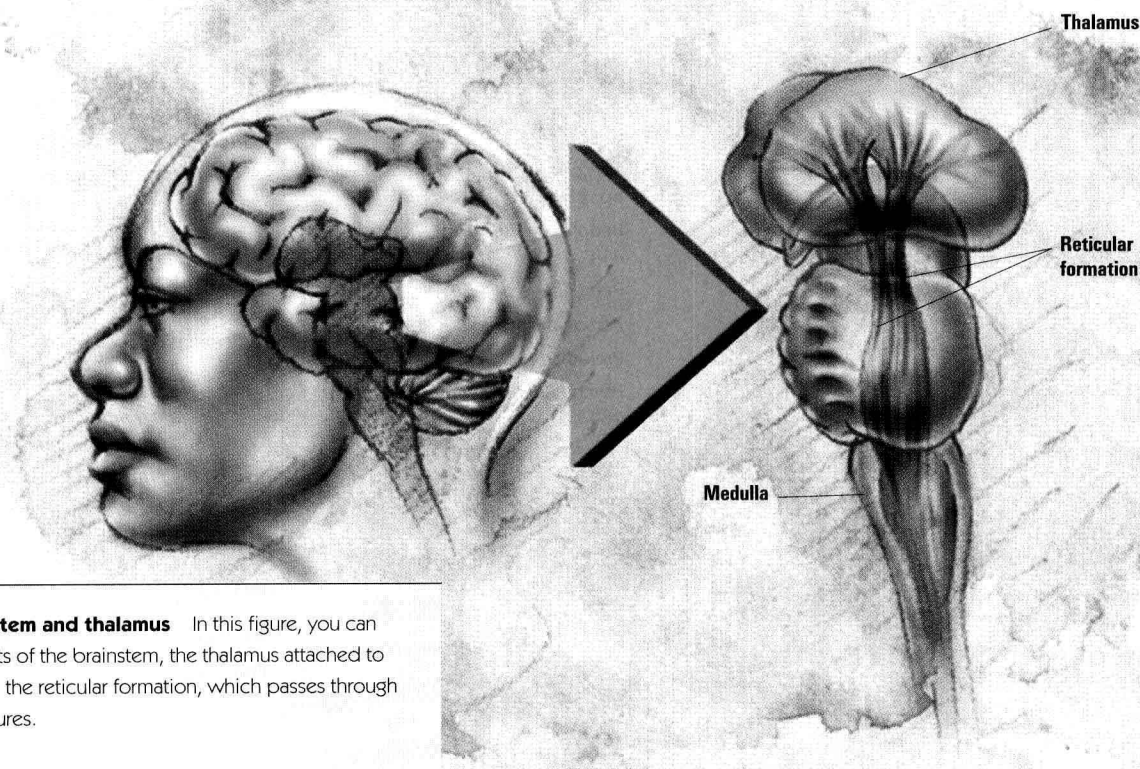
A team of artists, designers, and psychologists worked together to reconceptualize each piece of art and to create new illustrations. Malcolm Gear Designers also created a new, more student-friendly design for this book, partly in response to the input from over 4000 student readers. The result is a visually more effective book that better reinforces the key concepts for students. The anatomical art, for example, is all new—redrawn (as illustrated below) to be optimally comprehensible and appealing.

New Electronic Teaching and Learning Opportunities

I am pleased to be part of an unprecedented collaborative effort to provide teaching resources and interactive learning opportunities for introductory psychology. A team of psychology educators and I have been working together with Peregrine Publishers to create a one-stop Web site, **The Psychology Place** (<http://www.psychplace.com>). Instructors will find continuously updated teaching resources, including news and teaching tips. Student resources include interactive learning activities, carefully reviewed “Best of the Web” links, and hyperlinked *Scientific American* articles. Please also visit Worth Publishers’ Web site (www.worthpublishers.com) for other features designed to complement your teaching and learning experience.

Our new **student CD-ROM, *PsychQuest*** (by Thomas Ludwig, Hope College), provides active learning of important concepts for higher student interest and better retention. *PsychQuest* contains eight modules, each exploring a high-interest topic addressed in introductory psychology. The topics are depth perception in sports, psychoactive drugs, memory, weight regulation, depression, chronic stress, stereotyping, and mate selection. *PsychQuest* is an interactive tool that allows students to explore various psychological research topics, participate in experiments and simulations, quiz them-

Figure 2.13



The brainstem and thalamus In this figure, you can see the parts of the brainstem, the thalamus attached to its top, and the reticular formation, which passes through both structures.

selves on content, and link to the World Wide Web for additional information. Each module is designed to foster critical thinking and stimulate interest in key issues in psychology by relating psychological concepts to real-world issues.

Goals for the Fifth Edition

Throughout this revision, I have steadfastly followed eight principles:

1. **To exemplify the process of inquiry** I strive to show students not just the outcome of research, but how the research process works. Throughout, the book tries to excite readers' curiosity. It invites them to imagine themselves as participants in classic experiments. Several chapters introduce research stories as mysteries that progressively unravel as one clue after another falls into place. (See, for example, the historical story of research on the brain's processing of language—page 63.)
2. **To teach critical thinking** By presenting research as intellectual detective work, I exemplify an inquiring, analytical mind-set. Whether students are studying development, cognition, or statistics, they will become involved in, and see the rewards of, critical reasoning. Moreover, they will discover how an empirical approach can help them evaluate competing ideas and claims for highly publicized phenomena—ranging from subliminal persuasion, ESP, and facilitated communication to astrology, basketball streak-shooting, and repressed and recovered memories.
3. **To put facts in the service of concepts** My intention is not to fill students' intellectual file drawers with facts, but to reveal psychology's major concepts—to teach students how to think, and to offer psychological ideas worth thinking about. In each chapter I place emphasis on those concepts I hope students will carry with them long after they complete the course. Always, I try to follow Albert Einstein's dictum: "Everything should be made as simple as possible, but not simpler."
4. **To be as up-to-date as possible** Few things dampen students' interest as quickly as the sense that they are reading stale news. While retaining psychology's classic studies and concepts, I also present the discipline's most important recent developments. Fully 24 percent of the references in this edition are dated 1994 to 1997.
5. **To integrate principles and applications** Throughout—by means of anecdotes, case histories, and the posing of hypothetical situations—I relate the findings of basic research to their applications and implications. Where psychology can illuminate pressing human issues—be they racism and sexism, health and happiness, or violence and war—I have not hesitated to shine its light.
6. **To enhance comprehension by providing continuity** Many chapters have a significant issue or theme that links subtopics, forming a thread that ties the chapter

together. Chapter 8, "Learning," conveys the idea that bold thinkers can serve as intellectual pioneers. Chapter 10, "Thinking and Language," raises the issue of human rationality and irrationality. Chapter 15, "Psychological Disorders," conveys empathy for, and understanding of, troubled lives. "The uniformity of a work," observed Edward Gibbon, "denotes the hand of a single artist." Because the book has a single author, other threads, such as behavior genetics and cultural diversity, weave throughout the whole book, and students hear a consistent voice.

7. **To reinforce learning at every step** Everyday examples and rhetorical questions encourage students to process the material actively. Concepts presented earlier are frequently applied, and thereby reinforced, in later chapters. For instance, in Chapter 5, "Sensation," students learn that much of our information processing occurs *outside* our conscious awareness. Ensuing chapters reinforce this concept. A marginal glossary, and end-of-section and end-of-chapter lists of key terms, help students master important terminology. Major sections begin with previews and end with summaries that highlight the organization and key concepts.
8. **To convey respect for human unity and diversity** Time and again, readers will see evidence of our human kinship—our shared biological heritage, our common mechanisms of seeing and learning, hungering and feeling, loving and hating. They will also better understand the dimensions of our diversity—our *individual* diversity in development and aptitudes, temperament and personality, and disorder and health; and our *cultural* diversity in attitudes and expressive styles, childrearing and care for the elderly, and life priorities.

The Supplements Package

Psychology is accompanied by widely acclaimed materials to enhance teaching and learning. For students who desire additional help mastering the text, there is Richard O. Straub's (University of Michigan, Dearborn) *Study Guide*. Each chapter follows the text's *PRTR: Preview/Read/Think Critically/Review* format to guide students at each step of their study. For each section of the text chapter, an explanation is provided of the idioms and other phrases potentially unfamiliar to students for whom English is a second language. Several new Internet activities, called "Web Sightings," have been included, along with new crossword puzzles and pedagogically effective new fill-in-the-blank flow charts. The study guide is also computerized in a highly interactive program for use in the Windows or Macintosh formats.

The *Instructor's Resources*, created by Martin Bolt (Calvin College) for *Psychology*, has been hailed as the finest set of psychology teaching re-

sources ever assembled. With 20 percent new items in this edition, it features dozens of ready-to-use demonstration handouts, along with learning objectives, lecture/discussion ideas, student projects, classroom exercises, video and film suggestions, and Internet exercises. Martin Bolt's *Lecture Guides*, which come in both printed and easily modifiable WordPerfect formats, offer instructors an additional resource for lecture preparation.

PsychSim 4, the award-winning computer software developed by Thomas Ludwig (Hope College) brings some of psychology's most important concepts and methods to life. *PsychSim 4* (available on CD-ROM or floppies) contains 19 programs for use in the Windows or Macintosh format. Some simulations engage the student as experimenter—conditioning a rat, electrically probing the hypothalamus, or working in a sleep lab. Others engage the student as subject—responding to tests of memory or visual illusions, or interpreting facial expressions. Still others provide a dynamic tutorial/demonstration of, say, hemispheric processing or cognitive development principles. Student worksheets are provided. *PsychSim 4* is significantly enhanced over an earlier version that received the 1990 Educom/NCRIPTAL Higher Education Software Award for “Best Psychology Software”—marking the first time that software specifically designed for introductory psychology had been so honored. See also p. xx for a description of Ludwig's new *PsychQuest CD-ROM*.

The *Test Banks*, by John Brink (Calvin College), provide over 4000 multiple-choice questions, plus essay questions. Each question is keyed to a learning objective, page-referenced to the textbook, and rated in level of difficulty. (Optional questions are also included for the *PsychSim* programs and *The Brain*, *The Mind*, and *PsychQuest* modules; see below.) User-friendly computerized test generation is also available.

Our *Psychology Videodisc* will help you bring to life for your students all the major topics in *Psychology*, combining brief, exciting video clips and animated segments with a library of stills. This videodisc is accompanied by an extensive *Instructor's Guide*, by Martin Bolt and Richard O. Straub, complete with bar codes, descriptions of each item and suggestions for how to incorporate the material into your lecture, and a subject index that references and cross-references all items by topic. Thomas Ludwig's accompanying presentation software package, which includes a bar-code generator, is also available for use on IBM-PC or Macintosh computers.

For users of the *Discovering Psychology* telecourse, we have a *Discovering Psychology* Study Guide. This Study Guide is designed for use with this text and with the *Discovering Psychology* telecourse, narrated by Philip Zimbardo and produced by the Annenberg/CPB Project.

In addition, Worth Publishers has produced **38 video modules from *The Mind* series**, in association with WNET. These modules were edited by Frank J. Vattano (Colorado State University) with the consultation of Charles Brewer (Furman University) and myself. Rather than displace the instructor, as do longer films, these brief clips (which can be dubbed onto individual cassettes) dramatically enhance and illustrate lectures. They do so in ways that written and spoken words cannot—by introducing students to a split-brain patient being tested, a sleeping subject being monitored in a lab, a patient suffering the ravages of schizophrenia, and so forth. In addition to the 38 modules on videocassettes, Worth Publishers also offers a laser disc with 14 highlights from *The Mind* modules. The laser disc is accompanied by a bar-coded Faculty Guide.

The new **Second Edition of *The Brain teaching modules*** by Frank J. Vattano, Thomas L. Ben-net, and Michelle Butler (all of Colorado State University) is also available with this text. Accompanied by a faculty guide keyed specifically to the chapters in the book, these video modules are the perfect complement to help capture students' interest and vividly illustrate the important role of biological processes underlying human behavior. There are 11 new and 12 significantly updated modules in addition to nine from the original series.

Finally, Worth Publishers has created the **Scientific American Frontiers Video Collection for Introductory Psychology**. The collection, approximately 25 video segments that are 8 to 25 minutes long, is an excellent resource to stimulate class discussion and interest on a variety of topics.

In Appreciation

If it is true that “whoever walks with the wise becomes wise,” then I am wiser for all the wisdom and advice received from my colleagues. With the aid of several hundred consultants and reviewers over the last decade, this has become a better, more accurate book than one author alone (this author, at least) could write. My indebtedness continues to each of the teacher-scholars whose influence I acknowledged in the four previous editions.

My gratitude now extends to the colleagues who contributed criticism, corrections, and creative ideas to this new edition. For their expertise and encouragement, I thank the following reviewers:

Michael Akiyama, *University of Michigan—Dearborn*

Lynn Augsbach, *Morehead State University*

F. Samuel Bauer, *Christopher Newport University*

Gira Bhatt, *Camosun College*

Charles Brewer, *Furman University*

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Stephen Saunders, *Marquette University*

Christopher Taylor, *University of Arizona*

G. Patience Thomas, *Raymond Walters College*

Irving Tucker, *Shepherd College*

Robert Lee Williams, *Gallaudet University*

Through its first four editions, Charles Brewer (Furman University) enhanced this book with meticulous critiques, probing questions, and spirit-sustaining encouragement. In the planning of this new edition, he helped define priorities as a special consultant.

At Worth Publishers a host of people played key roles in creating this fifth edition. Christine Brune, chief editor for the last three editions, is a wonder worker. She offers just the right mix of encouragement, gentle admonition, attention to detail, and passion for excellence. An author could not ask for more.

Worth president Susan Driscoll, managing editor Suzanne Thibodeau, and psychology executive editor Catherine Woods helped construct and execute the plan for this new edition. Catherine also became a trusted sounding board as we faced the myriad discrete decisions along the way. Betty Probert and Penny Bice ably edited and produced the supplements, and Betty offered sage advice on the book as well.

Other Worth staff also played essential roles. Freelance copyeditor Nancy Fleming sensitively fine-tuned the final manuscript. Project editor Laura Rubin effectively guided the transformation of manuscript into book with the able assistance of Cele Gardner and Yuna Lee. Worth's gifted artistic and production team, led by George Touloumes and including Stacey Alexander, Demetrios Zangos, and Fernando Quiñones, plus Mary Marshall and photo researchers Joan Meisel and Silvia Dinale, took their game to a new level in creating this unprecedented new design and photo program. And psychology marketing manager Kate Steinbacher has led the effort to make this new edition available to psychology instructors. To all of them I am deeply grateful for an extraordinary effort.

At Hope College, the supporting team members for this edition included Gretchen Rumohr-Voskuil, who researched countless bits of informa-

tion, proofed hundreds of pages, and prepared the name index. With infectious good cheer, Kathy Adamski composed my awkward dictation into letters to researchers. Typesetters Phyllis and Richard Vandervelde met or exceeded all deadlines, often by working into the wee hours to enter or revise every one of the more than 400,000 words, and finally to code them for electronic delivery.

Again, I gratefully acknowledge the influence of my writing coach, poet Jack Ridl, whose influence lingers in the voice you will be hearing in the pages that follow. He more than anyone cultivated my delight in dancing with the language, and taught me to approach writing as a craft that shades into art.

After hearing countless dozens of people say that this book's supplements have taken their teaching to a new level, I reflect on how fortunate I am to be a part of a team on which everyone has produced on-time work marked by the highest professional standards. For their remarkable talents, their dedication, and their friendship, I thank Martin Bolt, John Brink, Thomas Ludwig, and Richard O. Straub. Rick Straub also authored the critical

thinking exercises that appear at the end of each chapter.

Finally, my gratitude extends to the students and instructors who have written to offer suggestions or just an encouraging word. It is for them, and for those about to begin their study of psychology, that I have done my best to introduce the field I love.

As soon as those who paint the Golden Gate Bridge finish, it is time to start over again. So it is with this book. The ink is barely dry before I begin envisioning the next edition. By the time you read this, I will be gathering information for the sixth edition. Your input will again influence how this book continues to evolve. So, please, do share your thoughts.



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