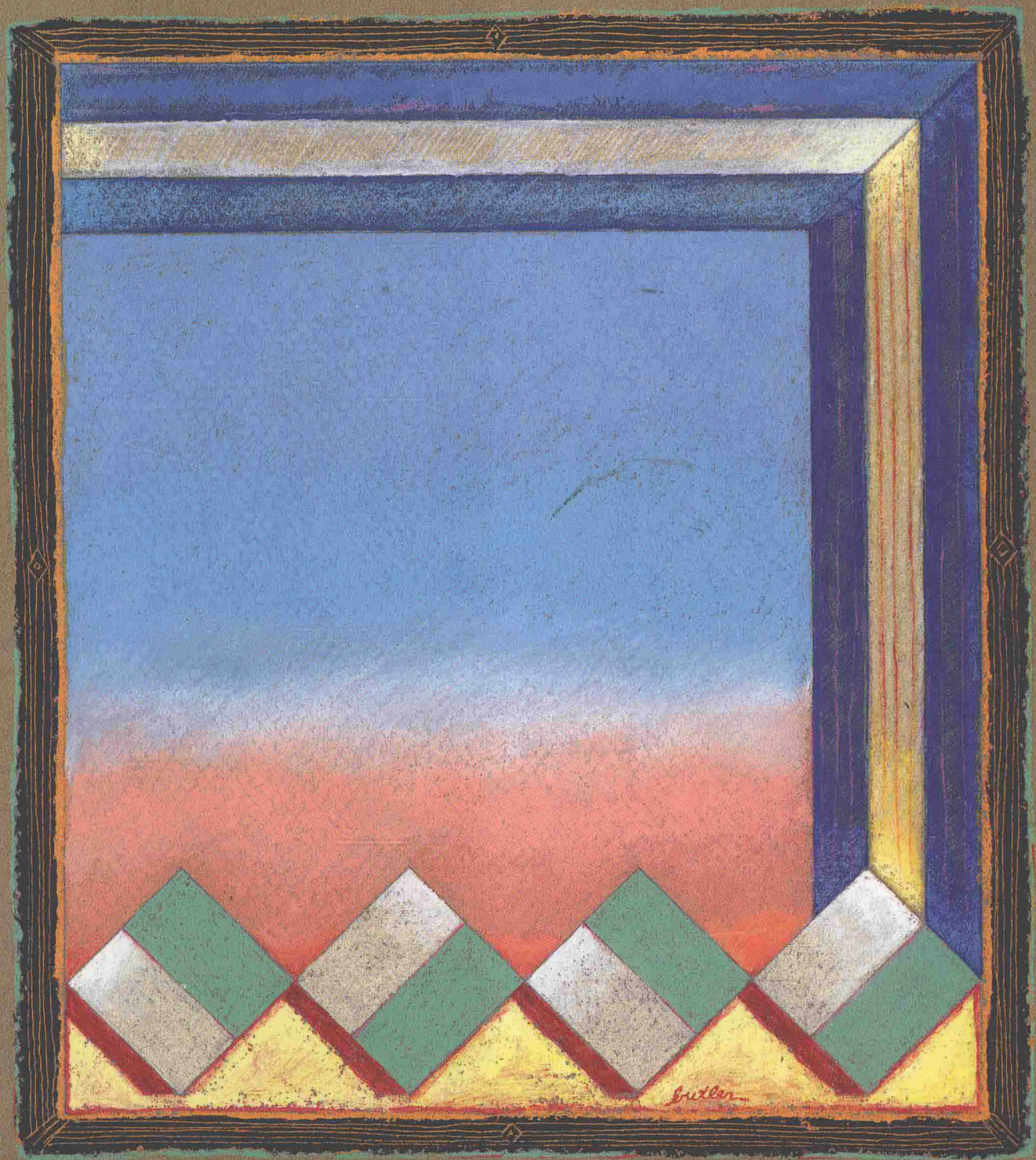
PSYCHOLOGY

CAMILLE B. WORTMAN
ELIZABETH F. LOFTUS



PSYCHOLOGY

FOURTH EDITION

CAMILLE B. WORTMAN
State University of New York at Stony Brook

ELIZABETH F. LOFTUS
University of Washington

MARY E. MARSHALL

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PSYCHOLOGY

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ABOUT THE AUTHORS

Camille B. Wortman is professor of psychology and Director of the Social/Health Psychology Training Program at the State University of New York at Stony Brook. A social psychologist, her major research interests include reactions to undesirable events, causal attribution, and reactions to stress and victimization. Wortman graduated summa cum laude from Duke University in 1969 and received her Ph.D. from Duke in 1972. She was a member of the psychology faculty at Northwestern for seven years. The introductory psychology course that she taught there was so successful that a lottery for enrollment had to be instituted because of student demand. In recognition of her excellence in undergraduate teaching, she won the Distinguished Teaching Award at Northwestern University. She then transferred to the University of Michigan where she taught and conducted research until 1989. Wortman has published numerous articles in every major journal in her field. She has also contributed chapters to a large number of edited books including *Advances in Social Psychology, New Directions in Attribution Research,* and the *Advances in Environmental Psychology* series. In recognition of her research, Wortman received the American Psychological Association's Distinguished Scientific Award for an Early Career Contribution to Psychology.

Elizabeth F. Loftus is professor of psychology at the University of Washington, Seattle. A specialist in learning and memory, she has been nationally recognized for her research on eyewitness testimony. Her first book on the subject, *Eyewitness Testimony,* was published by Harvard University Press in 1979 and won an APA National Media Award, Distinguished Contribution, in 1980. Another book, *Eyewitness Testimony: Psychological Perspectives,* which she co-edited, was published in 1984. *Memory* appeared in 1980; *Essence of Statistics* and *Mind at Play,* both co-authored, appeared in 1981 and 1983, respectively. Loftus's latest book, co-authored with Katherine Ketham, is *Witness for the Defense: the Accused, the Eyewitness, and the Expert Who Puts Memory on Trial* (St. Martin's Press, 1991). Loftus received her B.A. with highest honors in mathematics and psychology from UCLA in 1966, and an M.A. (1967) and Ph.D. (1970) in psychology from Stanford University. In 1982 she received an honorary doctor of science degree from Miami University of Ohio. Loftus was a Fellow at the Center for Advanced Study in the Behavioral Sciences, Stanford, 1978–79. She has published numerous articles, and travels extensively to present papers at college and university colloquia and to the legal profession. She has twice been the APA nominee for the NSF Waterman Award for outstanding contributions to science. Loftus has served as president of the Western Psychological Association (1984). She is also past president of the Psychology and Law Division and the Division of Experimental Psychology of the American Psychological Association. Loftus is on the board of directors of the APS and serves on the governing board of the Psychonomics Society. In 1990 she received an honorary doctorate from Leiden University, the Netherlands. In 1991 she was elected an Honorary Fellow (conferring lifetime membership) of the British Psychological Society.

Mary E. Marshall, until she became a psychology writer in 1979, was manager of special projects at the college department of Random House. During her ten years in college publishing, she supervised the development of introductory texts such as *Psychology Today, Abnormal Psychology* (2nd and 3rd eds.), and *Understanding Psychology* (2nd ed.). Marshall is a graduate with distinction of Connecticut College, Phi Beta Kappa and magna cum laude.

PREFACE

Now in its fourth edition, *Psychology* has come to be regarded as the book with a conscience. Rather than just offering facts and theories to help students pass their exams, we've also given them tools to use in their lives—tools for helping them gain insight into their own behavior and their relationships with others. *Psychology* will help students understand and think critically about human behavior long after this course has ended.

UNDERSTANDING HUMAN BEHAVIOR

We frequently encourage students to draw from course material to gain insight into both their own lives and the world around them. For example, a student may be surprised when he agrees to do something that he does not really want to do, or even that he believes is morally wrong. By understanding the pressures of conformity, which are described in Chapter 18, the student can gain insight into what leads to this behavior and how it can be avoided. A young woman may be terrified that her boyfriend is going to leave her, and may wonder whether her fear is realistic or groundless. By learning how her current orientation toward relationships may be influenced by events that happened earlier—parental death or divorce, for example—she can gain perspective on her current feelings. Finally, students may wonder how to make sense of things they read in the newspaper—for example, a description of a brutal incident of discrimination (such as the police beating a man in Los Angeles) or a gang rape of a woman by students at a nearby college. By learning about the complex causes of human behavior, they will gain insight into such events.

FOSTERING CRITICAL THINKING

Perhaps the most important part of teaching students to think critically about what they read and experience is encouraging them to ask questions about how "facts" are obtained. In this way, we hope to promote a healthy skepticism toward ideas derived from inadequate research methods. Such skepticism is invaluable in today's society, where people are exposed to a barrage of popular "psychologizing"—everything from tests in the Sunday supplement to evaluate one's marriage to the numerous "self-improvement" books that line the bookstore shelves. We have tried to provide students with the critical skills needed to question the validity of popularized psychology. Students will forget particular facts and the details of specific studies, but we hope that these critical thinking skills will remain with them.

In short, we encourage students not to take their own behavior, the behavior of others, or what they read at face value. We teach them not to accept simple answers to complex questions. We teach them to weigh opposing arguments and reach their own conclusions about what they observe and read. Critical thinking skills are also fostered in several of the special features described below.

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FEATURES OF THIS TEXT

Since the first edition, a number of special features have distinguished this book from others and have been responsible for its success. These include (1) an integration of theory and research with applications, and a strict departure from the idea that an introductory psychology book has to resort to gimmicks; (2) a focus, throughout the book, on the process of scientific inquiry—that is, how psychologists develop testable hypotheses, how they gather and interpret data, and how they arrive at conclusions; (3) a comparison of empirical data with common-sense ideas; and (4) In Depth discussions of important issues.

INTEGRATING THEORY, RESEARCH, AND APPLICATIONS: THE BOOK WITHOUT GIMMICKS

Some texts have a strong research orientation, with little apparent concern for readability or student interest. Others are research-oriented in some parts and are interspersed with separate sections on applications and other high-interest topics. Many authors have filled their texts with an array of "special features"—newspaper clippings, boxed inserts of various kinds, even stories and vignettes. Indeed, many current books seem to be based on the assumption that the only way to make scientific content palatable to students is to offer them a panoply of gimmicks and titillating topics. We still believe that psychology can be exciting and engaging without resorting to gimmicks or sacrificing scientific integrity.

As in previous editions, our aim is to integrate conceptually sophisticated theories and research with applications and topics of current concern to students. We feel that separate boxes, vignettes, and other added-on features have several serious drawbacks. They disrupt the flow and coherence of a chapter, often making it hard for readers to grasp how topics interrelate. In addition, such added-on extras are based on the false assumption that students need a breather from their toils as they wearily plod through scientific material. For those who disagree, we offer an alternative view: By fully interweaving theories and research with applications, *all* of introductory psychology can be made fascinating and meaningful to students.

Increasingly, researchers in different areas are finding that concepts presented in one subfield are relevant to concepts in another. We continue to tie these interrelated concepts together to enrich students' overall understanding of psychology. For instance, the concepts of limited human capacity for processing information and of schemas are introduced in Chapter 4, which deals with sensation and perception. In Chapter 6, we discuss the role of schemas in learning. In Chapter 7 we pick up the thread again when discussing the limitations of human memory. The ideas appear again in Chapter 8, where we examine how people go about solving problems and making decisions. In Chapter 9 we see how cognitive development is affected by limited short-term memory storage space. Still later, in Chapter 18 on social psychology, we relate the very same ideas to social cognition, especially to how people employ schemas in forming impressions of others. In this way we hope that students will perceive some of the important consistencies in how we humans think and act.

FOCUS ON THE PROCESS OF SCIENTIFIC INQUIRY

In the fourth edition we continue to make every effort to emphasize the *process* of scientific inquiry. Repeatedly we focus on how psychologists develop testable hypotheses, how they gather and interpret data, and how they arrive at conclusions. We try to show how early studies form the foundation for later research, which in turn often refines our understanding by ruling out alternative explanations. Chapter 2 describes the research process: how psychologists define research objectives, select a method of inquiry, gather and interpret their data, rule out alternative explanations, and deal with the theoretical dilemmas that research sometimes poses. We then carry these themes throughout the book by repeatedly encouraging students to evaluate the theories and research we present.

COMPARING EMPIRICAL DATA WITH COMMON SENSE IDEAS

Another technique we use to develop critical thinking is to contrast "common sense" myths about psychology with conclusions based on empirical data. One of

the frustrating things about teaching introductory psychology is discovering the large number of students who believe that psychology is nothing more than "common sense." We try to show that while empirical data sometimes support our common-sense notions, they often do not. For instance, common sense leads us to believe that the more motivated people are, the better they will perform on a task. Drawing from theoretical and empirical work, we demonstrate in Chapter 1 how simplistic this assumption is.

Similarly, common sense tells us that we remember events exactly as they happen. In Chapters 2, 5 and 7, we counter this popular misconception. We present information on memory distortions—especially the fascinating cases of children's court testimony to show that our memories can be distorted by questions, suggestions, and our own moods. By highlighting such discrepancies between common sense and empirical findings, we hope to emphasize that people cannot trust their intuitions when it comes to human behavior. A careful evaluation of available evidence is always essential.

IN DEPTH SECTIONS

Perhaps the most important way that we try to encourage critical thinking skills is in the section of each chapter labeled "In Depth." Most psychology texts give a very even, almost homogeneous, coverage of all of the main concepts in psychology. We felt that there would be enormous advantages in providing a closer look at how psychologists have approached a given problem, exposing students to the process of psychological inquiry. All In Depth features have several key qualities. Each one explores a topic that is interesting to students and that flows directly into the narrative. They are not boxed or set apart.

In Depths give shape to the process of psychological inquiry. Each one discusses a problem and reviews the initial studies designed to address it. Then we discuss how later scientists challenged the earlier findings and sometimes came up with alternative hypotheses. We describe additional research that builds on and often challenges the conclusions of the early studies. Finally, we discuss current thinking regarding the problem in question, summarizing what is known and widely accepted, and what is still being debated. We also discuss studies currently in progress that are designed to further clarify the subject.

Finally, just as we do throughout the text, the In Depths challenge students to think about implications. For example, society continues to be upset about TV violence, especially on shows for children. Does viewing violence on TV have anything to do with apparent increases in crime or changes in the crimes that are occurring? In the In Depth on the effects of TV violence (Chapter 2), students will find both answers and additional questions about this important area of research. Are people influenced by things that they are not even aware of? In Chapter 4, an In Depth introduces students to the nature of unconscious processes. Whether subliminal stimuli cause people to do things they wouldn't otherwise do is an important question that is thoroughly explored. Recent research conclusions in this area support the idea that people are influenced by stimuli that they are not even aware were presented. However, there is virtually no evidence that stimuli below the level of awareness make people do complicated things such as buy items they would not otherwise buy or do things they would not otherwise do.

The In Depth in Chapter 7 takes students into the laboratory and into the courtroom. We explore the research and controversy over the malleability of memory and discuss the implications for the justice system. In the In Depth in Chapter 13, we discuss the Type A behavior pattern. There is considerable evidence that Type A behavior is bad for your health. But does this mean that if people become less competitive, the health risk will disappear? The In Depth appearing in Chapter 19 presents evidence suggesting that pornography can increase men's sexual aggression toward women. Should pornography therefore be banned? In Chapter 11 the In Depth explores the problem of obesity. We review the theoretical and empirical work of Schachter, Nisbett, Rodin, Herman and Polivy, and others, with particular attention to how these investigators have built on one another's work. Throughout the discussion, the reader is led to see that the problem of significant, permanent weight loss is a complex one to which there are no simple answers.

WHAT'S NEW IN THIS EDITION?

The fourth edition of *Psychology* is a major revision. About three-quarters of the chapters have been heavily revised as we've strived to be contemporary and comprehensive. We have made a special effort to include "cutting edge" research that is changing firmly entrenched notions in our field—including research on neurophysiology, judgment and decision making, intelligence, social cognition, and health psychology. Below are some examples of changes that reflect new findings and important areas of research:

- Chapter 2 How reliable is children's testimony? Clarke-Stewart's "Chester the Molester" study introduces students to the research process. This fascinating study has very important "real world" implications.
- Chapter 3 New material on cognitive neuroscience; updated In Depth on left–right hemispheres of the brain.
- Chapter 6 A revised classical conditioning section brings us up to date on the way behaviorists view this process. Numerous changes throughout clarify important concepts. New material links learning to Richard Thompson's research cited in Chapter 3.
- Chapter 7 Includes new research on short-term memory and working memory. In an updated In Depth, Elizabeth Loftus discusses reactions to her research on eyewitness testimony. Implications for the judicial system are stressed.
- Chapters 9 and 10 In the two development chapters, we've expanded coverage of adulthood, updated research on gender similarities and differences, and discussed genetics and personality.
- Chapter 13 Randy Larsen provided important information on new developments in personality psychology, including work on the behavior genetic approach to understanding personality. We've included fascinating new research on twins with similar personalities and new work by Nancy Cantor and her associates on the life tasks that people face. The concepts behind her theories are described in a study of making new friends in college.
- Chapter 15 This new chapter, Health, Stress and Coping, includes the following topics: Can stress make you sick? How can negative thinking affect your life? What does the latest research show on the best ways to deal with addiction to alcohol or cigarettes? A section on AIDS discusses current research designed to ameliorate the pain of those suffering from this disease.
- Chapter 16 It includes a discussion of twin and adoption studies. We evaluate the evidence that genetics may be an important cause of particular psychological disorders, including schizophrenia and generalized anxiety disorder.
- Chapters 18 and 19 Under the advice of John Bargh, important changes were made in the social psychology chapters, incorporating more "cutting edge" work on social cognition.

IN DEPTHS

About one-third of our In Depth features are new; the rest have been updated. The new additions are:

- Memory Enhancement and Hypnosis (Chapter 5)
- Do Cognitive Differences Develop between the Sexes? (Chapter 9)
- What Is So Deadly about "Type A" Personality? (Chapter 13)
- The Psychological Consequences of Abortion? (Chapter 15)
- Treating Suicidal People (Chapter 17)
- Pornography: What Is Its Relationship to Rape? (Chapter 19)

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Camille B. Wortman

Elizabeth F. Loftus

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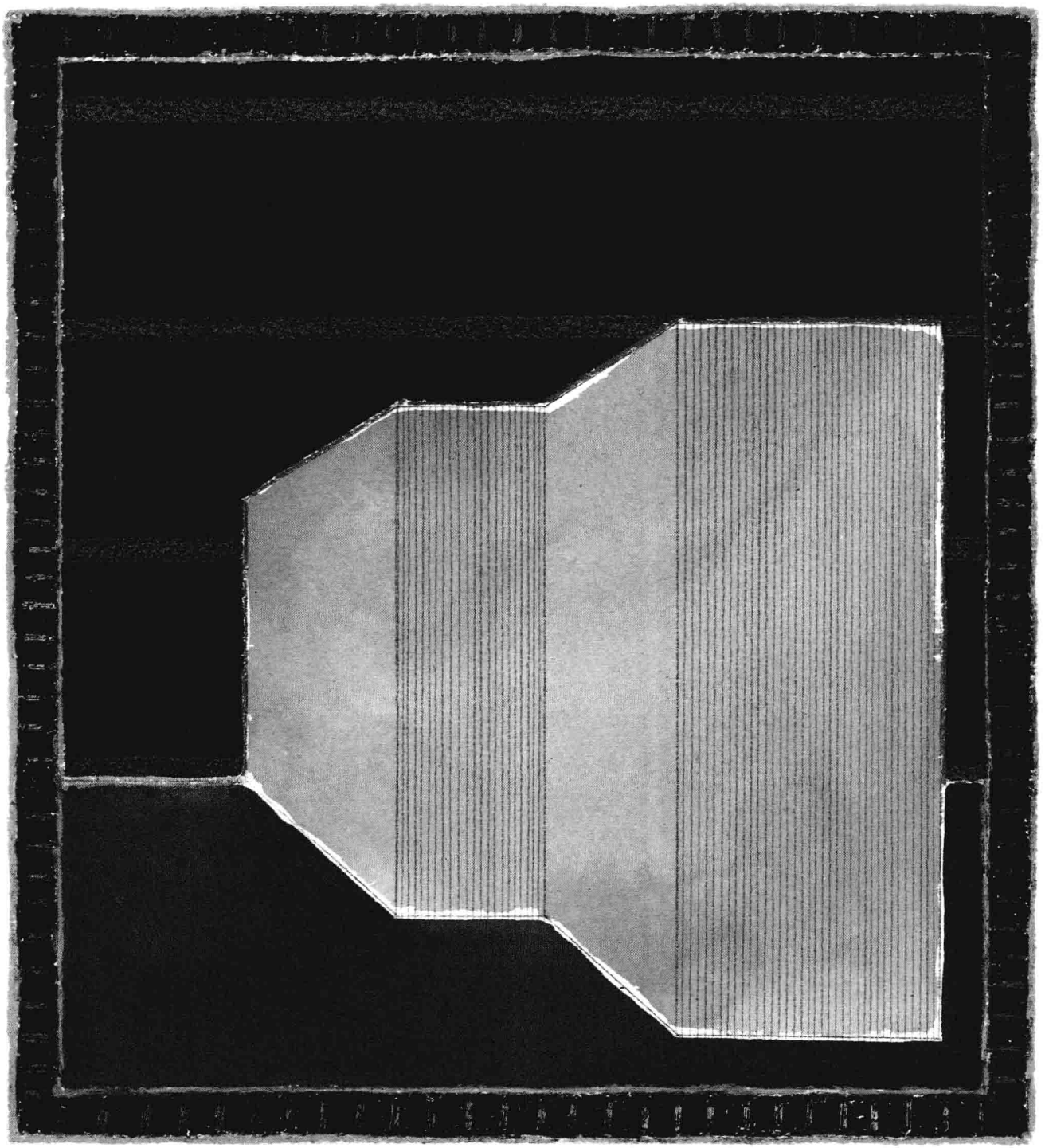
PSYCHOLOGY

CHAPTER 1

THE DIMENSIONS OF PSYCHOLOGY



OUTLINE

ASPECTS OF PSYCHOLOGY
Psychology Is a Science
Psychology Is a Means of Promoting Human Welfare

PSYCHOLOGY'S PAST AND PRESENT
A New Discipline Emerges
The Development of Contemporary Perspectives: Psychology in the Twentieth Century
Applying Different Perspectives: An Eclectic Approach
The Three Goals of Modern Psychology

CONTEMPORARY FIELDS OF SPECIALIZATION
Experimental Psychology
Neuropsychology
Personality Psychology
Social Psychology
Developmental Psychology
Industrial and Organizational Psychology
Educational and School Psychology
Clinical and Counseling Psychology
Health Psychology
Emerging Fields of Specialization

PSYCHOLOGY'S VALUE TO YOU

When you hear the word *psychology,* what comes to mind? A laboratory where scientists run rats through mazes, trying to understand what influences learning and performance? Or do you picture a therapist listening to someone's problems, analyzing dreams, or providing guidance on how to raise children? Although these are common preconceptions about psychology, they provide only a limited view of what the field and this book are all about. But each one touches on an important aspect of the subject you are about to explore. The first emphasizes that psychology is a *science,* a set of procedures for systematically observing facts and organizing them into generalizations about why things occur as they do. The second stresses that psychology is *a means of promoting human welfare,* a body of information that can be applied to help solve a variety of human problems. We begin this chapter by examining these two aspects of **psychology,** which can be defined as the study of behavior and mental processes.

ASPECTS OF PSYCHOLOGY

PSYCHOLOGY IS A SCIENCE

Psychology may not seem as much of a science to you as biology or chemistry does. Psychologists, after all, often study things that cannot be put into test tubes or looked at under microscopes. A psychologist might want to know why identical twins can develop quite different personalities; why women in general seem to be more emotionally expressive than men; why people sometimes persist in behaviors that threaten their health or undermine their happiness; and why we are occasionally so attracted to another person that we say we are in love. Are such questions really appropriate for a scientist to study?

The answer is that a science is defined not by *what* it studies, but by *how* it studies it. Psychologists, like other scientists, adopt a special approach to obtaining and organizing knowledge. They use systematic methods to gather data about the things that interest them, methods you will read about in Chapter 2. Once these data have been collected, they carefully analyze the data and interpret the meaning of their findings as objectively as they can. Along with conducting research, they develop general principles or theories about why things happen as they do. A **theory** is an attempt to fit all the known, relevant facts into a logical explanation. Once formulated, a theory can serve as a framework for collecting more

data. "If this theory is true," psychologists reason, "people should respond in the following way in this set of circumstances." Psychologists then gather more evidence to verify these predictions. As new facts emerge, they often modify their theories to make them more accurate or more comprehensive. In this way scientific knowledge grows.

Of course, applying scientific methods to psychological questions is often more challenging than this brief description implies. Psychologists cannot dismantle human beings to learn what makes them tick. Studying the how and why of human behavior often takes ingenuity. Later in this chapter and throughout the rest of this book we shall look at how psychologists have skillfully designed studies to answer some of the many questions we all have about human behavior.

SCIENCE VERSUS COMMON SENSE

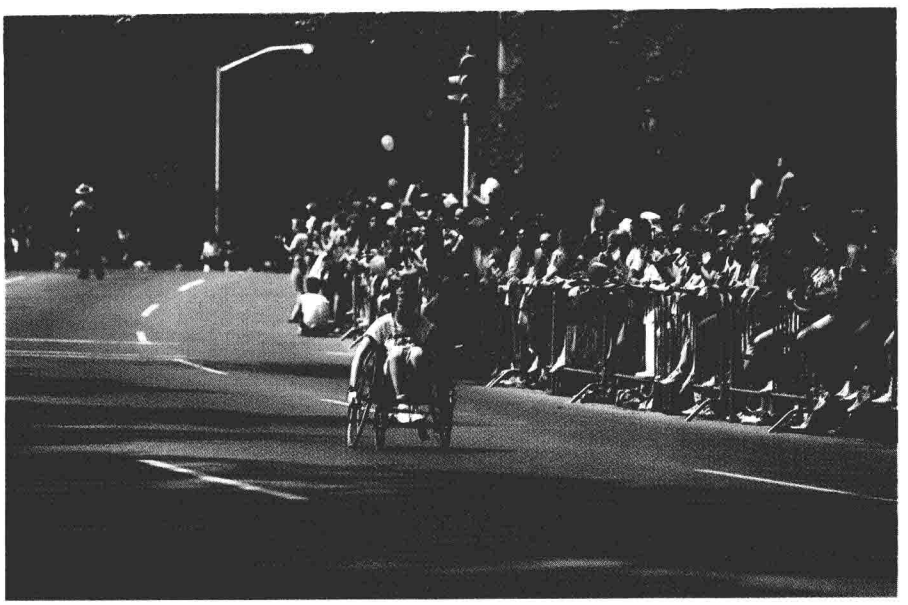
There are certainly ways of "knowing" things other than through science. People often rely for their knowledge on tradition and "common sense." Aren't these other sources of information just as reliable as science? The answer is "no," they generally are not, because the knowledge derived from these other sources has never been put to systematic test. Instead, it is simply accepted because it *seems* logical and right. Scientific knowledge, in contrast, has always been tested systematically. Such systematic testing is the hallmark of science.

How often does scientific knowledge disprove what "common sense" tells us? More often than one might think, psychologists have found. Suppose you are an arithmetic teacher who notices that some students do poorly because they give up trying as soon as a problem seems hard. How can you help these children? Common sense might suggest that you assign them many easy problems to build their confidence. Then later, when they encounter harder problems, they should be so sure of eventually succeeding that they will tend to persist until they do.

Psychologist Carol Dweck (1975) decided to test this common-sense approach against another approach suggested by her scientific research. In some of her earlier studies she had found that children whose performance deteriorates after failure usually explain their failure in terms of things they cannot change, such as innate lack of ability (Dweck and Reppucci, 1973). Such children feel helpless in problem-solving situations. They believe that there is no reason to keep on trying, since nothing they do will make a difference. Dweck suspected that if these children were taught to attribute failure to something they *could* change (such as insufficient effort), they might persist longer at problems and experience more success.

To evaluate the effectiveness of this alternative approach against the common-sense one, Dweck chose twelve children who were known to give up in the face of failure. She divided the children into two groups and gave each group twenty-five days of special training with math problems. The first group was presented only with easy problems and so experienced nothing but success. The second group was given a mixture of easy and difficult problems. Whenever these students began to give up, they were encouraged to believe they were simply not trying hard enough. At the end of the training period, both groups were tested on new arithmetic problems. Contrary to the common-sense idea that many successes should build confidence and lead to greater persistence, the "success only" children continued to quit when they once again experienced failure. In contrast, the children who had been taught to attribute failure to insufficient effort persisted longer at the problems and performed much better than they had before.

Dweck's study is just one of many that shows how scientific findings about human behavior often contradict common-sense notions (Brown, 1984). To take another example, consider the common-sense idea that if people under hypnosis remember details about the past that they did not recall before, then hypnosis must be an effective memory aid. This conclusion seems so logical, you are probably sure it is right, but psychologists have found that it isn't. Scientific tests reveal that the memories of hypnotized people are often less accurate than those of people who are not hypnotized. Hypnotized people may report many new recollections that they did not report before, but sometimes they have just manufactured those recollections because they *seem* appropriate. Of course, hypnotized people may also retrieve correct information that they could not recall when not hypnotized. But most of this memory improvement can be explained by factors that have nothing to do with hypnosis per se. You will find out what these factors are when you read about hypnosis in Chapter 5 of this book. The point for now is that scientific



Psychologists have disproved many commonsense beliefs. For example, people who might otherwise give up on a difficult task are more likely to persist and succeed, not when they are given easier tasks to build their confidence, but when they are persuaded to try harder.

findings about hypnosis or any other aspect of behavior sometimes contradict our common-sense views.

Another common-sense idea contradicted by scientific findings is the assumption that, to eliminate discriminatory behavior toward ethnic minorities, we must first eliminate prejudiced attitudes toward them. The overwhelming majority of people accept this common-sense view, yet psychologists have challenged it (Vaughan, 1977). In one experiment conducted many years ago, psychologist Richard LaPiere (1934) traveled around the United States with a Chinese couple, expecting to be denied service at hotels and restaurants because of the anti-Oriental attitudes prevalent at the time. But this was not what happened. "In something like ten thousand miles of motor travel," LaPiere wrote, "twice across the United States, up and down the Pacific Coast, we met definite rejection just once from those asked to serve us" (LaPiere, 1934, p. 233). LaPiere followed up his travels by writing a letter to each of the 251 establishments he and his Chinese friends had visited, asking whether they would provide food or lodging to Orientals. Of the 128 that responded, more than 90 percent answered with a flat "no," showing that their attitudes were very prejudiced. Apparently, people do not always act in accordance with their attitudes, as common sense would have us believe. In Chapter 18 we shall explore the conditions under which inconsistency between attitudes and behavior is most likely to occur.

That psychology sometimes contradicts intuitive judgments about human behavior is an important theme of this book. As you read this text and learn more about psychology, you may be surprised to learn just how many of the "facts" about human nature that you accept as valid fail to hold up under scientific scrutiny.

THE ONGOING NATURE OF SCIENCE

In exploring how psychologists sometimes challenge common-sense notions, we have described just a few examples of the imaginative detective work that researchers do. But note that few scientific questions are ever fully and unequivocally answered. Like any science, psychology is an ongoing field of study. The findings of different investigators inevitably lead to new problems, new directions, new possibilities. This is what makes psychology so exciting: There is always more to learn.

An excellent example of the ongoing nature of psychological investigations is research on how a person's way of attributing causes can affect his or her performance. Remember Dweck's research on how children who attribute failure to their own lack of ability tend to give up trying as soon as tasks become

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