

PSYCHOLOGY

THIRD EDITION



CAMILLE B. WORTMAN
ELIZABETH F. LOFTUS

PSYCHOLOGY

Third Edition

CAMILLE B. WORTMAN

University of Michigan

ELIZABETH F. LOFTUS

University of Washington

MARY E. MARSHALL



Alfred A. Knopf

New York

**THIS IS A BORZOI BOOK
PUBLISHED BY
ALFRED A. KNOPF, INC.**

Third Edition

98765

Copyright © 1988, 1985, 1981 by Alfred A. Knopf, Inc.

All rights reserved under International and Pan-American Copyright Conventions. No part of this book may be reproduced in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from the publisher. All inquiries should be addressed to Alfred A. Knopf, Inc., 201 East 50th Street, New York, N.Y. 10022. Published in the United States by Alfred A. Knopf, Inc., New York, and simultaneously in Canada by Random House of Canada Limited, Toronto. Distributed by Random House, Inc., New York.

Library of Congress Cataloging in Publication Data

Wortman, Camille.

Psychology.

Bibliography: p.

Includes indexes.

1. Psychology. I. Loftus, Elizabeth F., 1944–
II. Marshall, Mary E. III. Title.

BF121.W67 1988 150 87-21341

ISBN 0-394-36537-2

**Third edition developed and produced
by Visual Education Corporation,
Princeton, NJ**

Manufactured in the United States of America

*Cover Sculpture: Jose De Rivera, Construction #107 (1969),
Hirshhorn Museum and Sculpture Garden, Smithsonian
Institution, Gift of the Artist through the Joseph H. Hirshhorn
Foundation, 1972.*

preface

THE GOALS OF THIS BOOK

This third edition of *Psychology* preserves—and improves on—the strengths of the second edition. The book's first major goal is to integrate theories and research with real-life applications so as to make the study of psychology both interesting and meaningful to students. Our second objective is to encourage critical thinking about psychological ideas and findings by stressing the kinds of critical questions that scientific researchers ask. The desire to strengthen these two goals led us to make a number of changes.

Integrating Theory, Research, and Applications

Some texts take 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”—cartoons, 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. Because we believe that psychology can be exciting and engaging without recourse to gimmicks or sacrifice of scientific integrity, we originally decided to write this book.

As in the first and second editions, our aim is to integrate conceptually sophisticated theories and research with applications and topics of current concern to students. We feel that separated boxes, vignettes, and other added-on features have several serious drawbacks. For one thing, they disrupt the flow and coherence of a chapter, often making it hard for readers to grasp how topics interrelate. For another, such added-on extras are based on the erroneous assumption that students need a breather from their toils as they wearily plod through scientific material. For those who disagree with this assumption 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.

The third edition of *Psychology* includes many new efforts to carry out this integration. Our section on generalized anxiety disorder and obsessive-compulsive disorders in Chapter 15 is one good example. In it, the psychoanalytic perspective, cognitive learning perspective, and biological perspective are all shown to shed light on these disorders. Such material was missing from the second edition. There we only described these problems; we now raise the question of “why?” Similarly, in Chapter 5, our discussion of programmed instruction is integrated with current theories and research on learning. In these and many other instances students can clearly see that scientific findings often have direct application to matters of practical importance in everyday life.

Interrelating Concepts Throughout the Book. Increasingly, researchers in different areas are finding that concepts presented in one subfield are relevant to concepts in another. We continue to make every effort to tie these interrelated concepts together so as 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 5 we discuss the role of schemas and expectations in learning. In Chapter 6 we pick up the thread again when discussing the limitations of human memory. The ideas appear again in Chapter 7, where we examine how people go about solving problems and making decisions. In Chapter 8 we see how cognitive development is affected by limited short-term memory storage space. Still later, in Chapter 17 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.

Encouraging Critical Thought

In planning our approach to writing this book, we asked ourselves the following question: *How can this*

text enhance the long-run impact of students' first (and often only) psychology course? The conclusion we came to is that giving them specific facts is not as important as helping them acquire an understanding of what the science of psychology is all about, and how it differs from common sense.

We believe that this approach has two important benefits. First, it conveys much of the excitement of doing scientific work. Second, and even more important, it gets students to think critically about psychological information by encouraging them to ask questions about how "facts" are obtained. In this way we hope to promote a healthy skepticism toward ideas derived from poor research methods. Such skepticism is very valuable 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 drugstore shelves. We have tried to provide students with the critical skills needed to question the validity of this popularized psychology. We hope that these skills will remain with them long after their introductory course.

Of course, the goal of teaching students to think critically is not an easy one. How, specifically, have we tried to accomplish it?

Focus on the Process of Scientific Inquiry. In the third 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. We have devoted an early chapter of the book (Chapter 2) to a careful consideration of how psychologists define research objectives, select a method of inquiry, gather and interpret their data, rule out alternative explanations, and deal with the ethical 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. For example, undergraduates are often impressed by Rosenhan's study in which normal people who entered mental hospital posing as schizophrenics failed to be detected as normal by the hospital staffs. Many introductory texts stop with a brief summary of Rosenhan's findings. This book, in contrast, encourages critical thought by guiding readers through an

analysis of what the Rosenhan study does and doesn't prove.

Comparing Empirical Data with Common-Sense Ideas. A second technique we use to develop critical thinking is to contrast "common sense" myths about psychology with what empirical data reveal. One of the frustrating things about teaching introductory psychology is 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 6 and 9 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. Finally, a third and very important way we encourage critical thinking is through the section in each chapter labeled "In Depth." In these sections we explore in detail the processes psychologists use to investigate a particular research question—how they developed their hypotheses, designed studies to test them, interpreted the findings, and modified their conclusions in light of new information or criticisms raised by others.

The In-Depth sections concentrate on a critical issue, investigating how different researchers have shed light on it. For instance, in the motivation chapter (Chapter 11) the In Depth explores 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 influenced one another's work. Throughout, the reader is led to see that the problem of significant, permanent weight loss is a complex one to which there are seldom simple answers. The new In-Depth sections included in this book are listed in the next section.

WHAT'S NEW IN THIS EDITION?

Although the third edition of *Psychology* continues to emphasize the themes present in the first and second editions, we have made a special effort to make the themes and processes *more accessible to students*. We have also incorporated much new material, and several chapters have been reorganized. Here we can review only the highlights of the many improvements we have made.

Interrelationship of Concepts Made Clearer

The classic admonition to the novice speechmaker is “tell them what you are going to tell them, then tell them, then tell them what you told them.” Pedagogically, this is also sound advice for textbook authors. In the third edition, we have tried to explain the interrelationship of concepts when they are first introduced. So, for example, when we first discuss *perceptual set* in Chapter 4, we explain how related concepts called *schemas* and *expectations* will be discussed in later chapters. This approach makes complex relationships and concepts more accessible to students. We use this approach throughout the book as we demonstrate that the various subfields of psychology are not independent, by more explicitly tying together concepts both within and between chapters. For example, in Chapter 3 we show the integrative nature of the brain’s functioning in the section “The Brain’s Role in Complex Behaviors.” In Chapter 4 we show the interrelatedness of the senses in “Integration of the Senses.” In Chapter 13 we use a compare and contrast format to integrate personality theories in “Comparing Approaches to Personality.” In Chapter 16, our new section on integrating behavior therapies with psychoanalytic theories shows the common elements they share.

Pedagogical Strengthening of In-Depth Sections

In our continual striving to improve critical thinking skills of *all* students, we have reorganized the In-Depth sections around a more consistent structural frame-

work. Each In-Depth now focuses on three broad divisions of the scientific process: “The Initial Studies,” “Criticisms, Alternatives, and Further Research,” and “Patterns and Conclusions.” In Chapter 1, we introduce students to the scientific process using this three heading format and explain how each of the In-Depth sections throughout the book will repeat this pattern while examining a particular research question. We feel this additional pedagogy will clarify for students the “In-Depth” research.

Many New In-Depth Sections Have Been Added. Instructors and students alike responded very favorably to the In-Depth sections in our first and second editions. In this edition, therefore, we have retained the best of the old, while creating many new In Depths on important research topics. The new additions are:

- Effects of TV Violence on Aggression (Chapter 2)
- Can Other Animals Learn Language? (Chapter 7)
- Are Children More Prone To Memory Distortions? (Chapter 8)
- The Hidden Observer (Chapter 12)
- How Consistent Is Behavior? (Chapter 13)
- Learned Helplessness (Chapter 15)
- Can Alcoholics Drink in Moderation? (Chapter 16)
- Why Do People Fall In Love? (Chapter 17)

In addition, we have heavily revised the In Depths retained from the second edition, in order to incorporate new research findings and conform to our new format. The result is an overall strengthening of this very popular feature.

Improved Coverage and Integration of Biological Foundations

Chapter 3 has been reorganized, rewritten, and updated. There is new material on neurotransmitters and neural networks, the evolution of brain structures, localization of function, brain disorders and treatment. The anatomical drawings have been revised for clarity and accuracy. In addition, Chapter 3 more clearly introduces the biological perspective that is integrated throughout the book. To briefly list a few examples:

- In Chapter 5 we’ve added a new section on the biological constraints on learning.
- In Chapter 6 there’s new material on memory storage sites in the brain.

- In Chapter 12 we've updated the physiological basis of sleep and added new findings on the physiology of hypnosis.
- In Chapter 15 there's new material on biological basis of depression, schizophrenia, and alcoholism.
- In Chapter 16 we've updated research on the effects of drugs on neurotransmitters.

"Part 4—The Process of Development" Has Been Reorganized

In the first and second editions, our coverage of human development consisted of one chapter on social and cognitive development and one chapter on language and its development. In the third edition, we've expanded the coverage of social and cognitive development, giving each its own chapter. We have greatly condensed our coverage of language and incorporated it into the new Chapter 7 on cognition and language. Language acquisition has been incorporated into Chapter 8 on cognitive development.

Up-to-Date Research and Findings Have Been Added

It is both an exciting and challenging task to select the most promising new studies and ideas to incorporate into an introductory textbook. Although we have added new material in every chapter, we can preview a sample here:

- In Chapter 2, an entirely new section on ethics.
- In Chapter 4, expanded coverage of signal detection theory; and bottom-up vs. top-down processing is introduced as an on-going theme throughout the chapter.
- In Chapter 6, a new section on encoding in short term memory including effortful versus automatic encoding.
- In Chapter 7, new material on creativity; and an update of heuristics.
- In Chapter 11, new material on the relationship between stress and disease; more on human sexuality; and updates of research on anorexia and bulimia.
- Chapter 12, a new discussion of varying responses to alcohol; and new material on crack.

- Chapter 13, new material on post Freudian Theories, e.g., ego psychology; and Kohut's object relations theory.
- Chapter 16, a new section on integrating psychoanalytic and behavioral therapies.
- Chapter 18, a new section on techniques of compliance.

ACKNOWLEDGMENTS

There would not have been a third edition in 1988 without the expert assistance of five consultants: First of all we want to thank Gerald Davison of the University of Southern California, who prepared outlines and research summaries for the revision of Chapters 13, 14, 15, and 16; Steven Ceci of Cornell University drafted the reorganization and expansion of Chapters 8 and 9; Lynn Nadel of the University of Arizona gave us detailed advice on the revision of Chapter 3; Ross Buck of the University of Connecticut provided criticisms and ideas for the improvement of Chapters 10 and 11; and David Winter of Wesleyan College played an invaluable role as general adviser.

We are also most grateful to the reviewers of the second and third editions who have labored along with us and are listed below.

Once again we thank the people at Random House/Knopf who put enormous effort into this project. Mary Falcon, our senior editor, skillfully guided us through another edition; Sylvia Shepard, our developmental editor, put her creative efforts to work for us again; Roberta Meyer helped keep everyone on schedule. We especially want to thank the people at Visual Education Corporation who are responsible for the beauty of this book: Susan Ashmore, Dan Liberatore, Marie Enders, Carrie Rosenthal, Anita Black, Max Crandall, Robert Sugar, Paul Gioni, and Ellen Horan. Once again we thank our husbands for their continued understanding and support, and finally, we thank Mary Marshall's son David for waiting until galleys to be born.

REVIEWERS

David Barkmeier
Northeastern University

Major Johnston Beach
United States Military Academy, West Point

Norma Benimoff
Camden County College

Philip G. Benson
Auburn University

Ilene L. Bernstein
University of Washington

John Best
Eastern Illinois University

Art Blumenthal
University of Massachusetts, Boston

John G. Borkowski
University of Notre Dame

Ron Boyer
University of Cincinnati

Mark Byrd
University of Kansas

John L. Caruso
Southeastern Massachusetts University

Douglas Chatfield
Texas Technical University

Gerald S. Clack
Loyola University

Eva Conrad
San Bernadino Valley College

Joseph Danks
Kent State University

Sara Ellett
University of Kansas

Ronald Finke
State University of New York, Stony Brook

Donald Forsyth
Virginia Commonwealth University

Herbert Friedman
College of William and Mary

Dan Gallagher
Salisbury State College

Mark Garrison
Kentucky State University

Russell G. Geen
University of Missouri, Columbia

Richard A. Griggs
University of Florida

Carlos V. Grijalva
University of California, Los Angeles

Joseph C. Hammock
University of Georgia

Richard Harris
University of New Mexico

Charles Karis
Northeastern University

Walter G. Klopfer
Portland State University

Frank Kodman
Murray State University

Sam Korn
Hunter College

Janet M. Kulberg
University of Rhode Island

Mark Leary
Wake Forest University

Wesley Lynch
Montana State University

Mark Masaki
Youngstown State University

Michael McCloskey
Johns Hopkins University

Roger McIntire
University of Maryland, College Park

Captain Gerald Mitchell
United States Military Academy

Gregory L. Murphy
Brown University

Nora Newcombe
Temple University

Patricia Newsom
University of Idaho

Ronald Nowaczyk
Clemson University

Major Timothy R. O'Neill
United States Military Academy

Timothy M. Osberg
Niagra University

Charlotte J. Patterson
University of Virginia

Norman Poppel
Middlesex County College

Richard Reardon
University of Oklahoma

Milton Rosenbaum
University of Iowa

Paul Rosenfeld
Navy Personnel Research and Development Center

David Schroeder
University of Arkansas

Kimron Shapiro
Pennsylvania State University

Susan A. Shodahl
San Bernadino Valley College

Abigail Stewart
Brown University

D. Theron Stimmel
Southwest Texas State University

Helen Tager-Flusberg
University of Massachusetts

Elaine Walker
Cornell University

Benjamin Wallace
Cleveland State University

Joel Warm
University of Cincinnati

Susan Warner
University of Arizona

Fran Wehmer
Wayne State University

Gene White
Salisbury State College

Keith Wollen
Washington University

about the authors

Camille B. Wortman is professor of psychology at the University of Michigan, Ann Arbor. A social psychologist, her major research interests include reactions to uncontrollable outcomes and 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. Prior to joining the Michigan faculty in 1979, she was a member of the psychology faculty at Northwestern University 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. Since receiving her degree, 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 the *Advances in Experimental Social Psychology*, *New Directions in Attribution Research*, and *Advances in Environmental Psychology* series. On the basis 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 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 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 re-

ceived an honorary doctor of science degree from Miami University of Ohio. She has been a visiting instructor at Harvard University and the National Judicial College, and was assistant professor at the New School for Social Research before moving to the University of Washington. 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) and of the Psychology and Law Division of the American Psychological Association (1985).

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 (2d and 3d eds.), and *Understanding Psychology* (2d ed.). Marshall is a graduate with distinction of Connecticut College, Phi Beta Kappa and magna cum laude.

chapter opening photo credits

Chapter 1: Bruce Nauman, *Untitled*, 1978. Edition of 3. Courtesy Leo Castelli Gallery.

Chapter 2: Sidney Gordin, *Construction, Number 10*, 1955. Painted steel. Collection of Whitney Museum of American Art. Acq #56.10. Photo by Sheldon C. Collins.

Chapter 3: Jean (Hans) Arp, 1887–1966, *The Lion of the Cyclades*, 1957. White marble. #60.1243. Purchase, Horsley and Annie Townsend Bequest. Coll. Montreal Museum of Fine Arts.

Chapter 4: Dan Flavin, *Untitled*, 1977. © 1987 Sotheby's Inc.

Chapter 5: Seymour Lipton, *Loom*, 1965. Courtesy Seymour Lipton.

Chapter 6: Arnaldo Pomodoro, *Sphere No. 6*, 1963–65. Hirshhorn Museum and Sculpture Garden, Smithsonian Institution. Photo by Lee Boltin.

Chapter 7: David Smith, *Voltri XV*, 1962. Hirshhorn Museum and Sculpture Garden, Smithsonian Institution.

Chapter 8: Mathias Goeritz, *Open Mind, Empty Head*, 1956. University of Arizona Museum of Art. Gift of Edward J. Gallagher, Jr.

Chapter 9: Jean (Hans) Arp, *Torso Fruit*, 1960. Hirshhorn Museum and Sculpture Garden, Smithsonian Institution. Gift of Joseph H. Hirshhorn, 1966. Photo by Lee Stalsworth.

Chapter 10: Marino Marini, *Horse and Rider*, 1952–53. Hirshhorn Museum and Sculpture Garden, Smithsonian Institution. Gift of Joseph H. Hirshhorn. Photo by Lee Stalsworth.

Chapter 11: Umberto Boccioni, *Unique Forms of Continuity in Space*. (1913), Bronze (cast 1931), 43¾ × 34¾ × 15¾". Collection, The Museum of Modern Art, New York. Acquired through the Lillie P. Bliss Bequest.

Chapter 12: Constantin Brancusi, *Sleeping Muse*, 1909–1911. Hirshhorn Museum and Sculpture Garden, Smithsonian Institution. Gift of Joseph H. Hirshhorn, 1966. Photo by Lee Stalsworth.

Chapter 13: Henry Moore, *Internal and External Forms*, 1953–54. Albright-Knox Art Gallery, Buffalo, New York. General Purchase Funds, 1955.

Chapter 14: Antoine Poncet, *Cororeol*, 1966. Hirshhorn Museum and Sculpture Garden, Smithsonian Institution. Photo by Lee Boltin.

Chapter 15: Alberto Giacometti, *Cubist Head*, 1934–35. Hirshhorn Museum and Sculpture Garden, Smithsonian Institution. Joseph Martin/Scala/Art Resource.

Chapter 16: Jean (Hans) Arp, *Human Concretion without Oval Bowl (Concretion Humaine sans coupe)*, 1933. Bronze (polished). San Francisco Museum of Modern Art. William L. Gerstle Collection. William L. Gerstle Fund Purchase. #62.3421.

Chapter 17: Louise Bourgeois, *One and Others*, 1955. Painted wood. Acq #56.43. Collection of Whitney Museum of American Art. Photo by Jerry Thompson.

Chapter 18: Alexander Calder, *Large Spiny*, 1966. Nelson Rockefeller Collection. Photo by Lee Boltin.

contents

Preface v

PART ONE

THE SCIENCE OF PSYCHOLOGY 1

1 The Dimensions of Psychology 2

- Aspects of Psychology 3
- The History of Psychology 7
- Contemporary Fields of Specialization 13
- Looking at Issues from Different Perspectives 20
- Psychology as a Vocation and Perspective 21

2 The Methods of Psychology 24

Gathering Data 26

■ IN DEPTH: Exploring the Effects of TV Violence 36

-
- Analyzing Data 39
 - Some Pitfalls in Psychological Research 44
 - The Ethics of Research in Psychology 48

PART TWO

BIOLOGICAL AND PERCEPTUAL PROCESSES 53

3 The Biological Foundations of Behavior 54

- Control Systems 55
- The Brain: Master Control Center 65

■ IN DEPTH: Studying the Two Sides of the Brain 76

4 Sensation and Perception 84

- Stimuli, Sensations, and Perceptions 86
- The Human Senses 89
- Perceiving a Complex World 104

■ IN DEPTH: Can We Perceive Without Awareness? 114

PART THREE

LEARNING AND INFORMATION PROCESSING 121

5 Learning 122

- The Nature of Learning 123
- Classical Conditioning 125
- Operant Conditioning 131
- Biological Constraints on Associative Learning 139

■ IN DEPTH: Studying Learned Taste Aversions 140

Learning and Cognition 143

6 Memory and Forgetting 150

- Sensory Memory 152
- Short-Term Memory 153
- Long-Term Memory 157

■ IN DEPTH: Studying Eyewitness Testimony 165

The Physiology of Memory 168
Forgetting 171

7 Cognition and Language 176

- Forming Concepts 177
- Solving Problems 180
- Making Decisions 188
- Language 193

■ IN DEPTH: Can Other Animals Learn Language? 200

PART FOUR

THE PROCESS OF DEVELOPMENT 205

8 Cognitive Development 206

- The Process of Development 207
- The Competency of the Human Infant 209

Cognitive Development in Infancy and
Childhood 213

■ IN DEPTH: Are Children More Prone to
Memory Distortions? 227

Cognitive Development in Adolescence and
Adulthood 230

9 Social and Personality Development 236

Explaining Social and Personality
Development 237

Social and Personality Development in
Infancy 239

■ IN DEPTH: Studying the Effects of Early Day
Care on Emotional Development 242

Social and Personality Development in
Childhood 245

Social and Personality Development in
Adolescence 252

Social and Personality Development in
Adulthood 254

PART FIVE EMOTION, MOTIVATION, AND CONSCIOUSNESS 259

10 Perspectives on Emotion 260

The Physiology of Emotion 261

The Behavioral Expression of Emotion 265

Emotional States of Feeling 269

■ IN DEPTH: Studying Happiness 269

Theories of Emotion 274

Emotional Reactions to Crisis 279

Emotional Stress and Illness 281

11 The Dynamics of Motivation 288

The Development of Motivational
Concepts 289

Eating and Weight Control 293

■ IN DEPTH: Studying Obesity and Weight
Control 296

Sexual Behavior 298

Stimulus Seeking and Arousal 302

Learned Motivation: The Case of
Achievement 306

12 Altered States of Consciousness 314

Characteristics of Altered States 316

Sleep and Dreaming 317

Hypnosis 324

■ IN DEPTH: Studying the Hidden
Observer 328

Self-Regulated Altered States 330

Drugs and Altered Consciousness 333

PART SIX PERSONALITY AND INDIVIDUALITY 343

13 Personality Theories and Research 344

Psychoanalytic Theories 346

Behaviorist and Social Learning

Approaches 354

Trait Theories 358

■ IN DEPTH: Is Behavior Really
Consistent? 360

Humanistic Views 364

Comparing Approaches to
Personality 368

14 Assessment and Individual Differences 372

Constructing and Evaluating
Tests 373

Measuring Human Intelligence 377

■ IN DEPTH: Explaining Racial Differences in
IQ 387

Assessing Personality 391

Testing for Vocational Selection and
Counseling 399

The Ethics of Testing 400

PART SEVEN
PSYCHOLOGICAL
DISORDERS

403

I5 Exploring Abnormal Behavior

404

- What Is Abnormal Behavior? 405
- Approaches to Abnormality 407
- Classifying Psychological Disorders 412
- Anxiety Disorders 413
- Somatoform Disorders 417
- Dissociative Disorders 418
- Affective Disorders 418

■ IN DEPTH: Seligman's Theory of "Learned Helplessness" 422

- Schizophrenia 426
- Personality Disorders 432
- Addictive Disorders 434

I6 Approaches to Treatment

438

- Psychotherapies 439
- Biological Treatments 456
- Combining Psychological and Biological Treatments 459

■ IN DEPTH: Can Alcoholics Drink in Moderation? 460

- Community Mental Health 462

PART EIGHT
SOCIAL PSYCHOLOGY

469

I7 Attitudes and Social Perception

470

- Attitudes 471
- Person Perception and Attribution 479
- Attraction, Friendship, and Love 487

■ IN DEPTH: Why Do People Fall in Love? 491

- The Psychology of Prejudice 493

I8 Social Influence and the Human Environment

502

- Going Along with Others 503

■ IN DEPTH: Research on Obedience 506

- The Social Significance of Groups 511
- Aggression and Altruism 517
- Environmental Psychology 527
- Psychology and the Future 530

Glossary

533

References

555

Name Index

597

Subject Index

609

PART ONE

THE SCIENCE OF PSYCHOLOGY



The Dimensions of Psychology



Bruce Nauman, *Untitled*, 1978.

ASPECTS OF PSYCHOLOGY

Psychology Is a Science

Science Versus Common Sense
The Ongoing Nature of Science

Psychology Is a Means of Promoting Human Welfare

THE HISTORY OF PSYCHOLOGY

Wundt Helps to Establish

Psychology as a Science

Functionalists Broaden the
Definition of Psychology

Behaviorists Focus on
Observable Behavior

Gestaltists Look at the Whole

Cognitive Psychologists Expand
the Study of Mental Processes

Freud Begins Probing the Unconscious

Humanists Oppose Deterministic
Views

Building on the Past

CONTEMPORARY FIELDS OF SPECIALIZATION

Experimental and Physiological
Psychology

Personality Psychology

Social Psychology

Developmental Psychology

Industrial and Organizational
Psychology

Educational and School

Psychology

Clinical and Counseling

Psychology

Emerging Fields of Specialization

LOOKING AT ISSUES FROM
DIFFERENT PERSPECTIVES

PSYCHOLOGY AS A VOCATION
AND A PERSPECTIVE

When you hear the word *psychology*, what comes to mind? A laboratory where scientists, trying to understand what influences learning and performance, observe rats as they run through mazes? Or does the word conjure up images of 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 picture of what this book is all about. Yet each touches on an important aspect of the subject you are about to explore. The first suggests that *psychology is a science*, a set of procedures for systematically observing facts about behavior and organizing these facts into generalizations about why humans and other animals act 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

What does it mean to say that psychology is a science? It means that 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. Next they proceed to 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 manner under this set of circumstances." Psychologists then gather more evidence to verify these predictions and modify the original theory as new facts emerge.

Although psychology has been a science for many years, some people still question whether all aspects of

human behavior are accessible to scientific inquiry. One such person is William Proxmire, chairman of the Senate subcommittee that oversees the National Science Foundation (NSF). Senator Proxmire believes that certain human behaviors are too individual, too unpredictable to be studied with the methods of science. One of his targets some years ago was an NSF grant for research on love. Proxmire argued:

I object to this not only because no one—not even the National Science Foundation—can argue that falling in love is a science; not only that, even if they spend \$84 million or \$84 billion they wouldn't get an answer that anyone would believe. I am against it because I don't want the answer. I believe that 200 million other Americans want to leave some things in life a mystery, and right at the top of the things we don't want to know is why a man falls in love with a woman and vice versa. (National Science Foundation Funded Projects, 1975)

Psychologists, of course, disagree. They believe it is possible and desirable to conduct rigorous research on all aspects of human behavior, even those as complex and multifaceted as love. Psychologists doubt that human behavior is such a mystery that it cannot be understood scientifically. They believe there are patterns underlying human thought and actions, just as there are patterns underlying all phenomena in the physical universe. These patterns can be discovered through careful observation and measurement of how people respond under various conditions. From a large number of such observations, psychologists can generalize about how people typically behave in a given situation. These generalizations, in turn, enable predictions to be made about how someone might act in a slightly different but related situation. By testing such predictions, psychologists can further evaluate their initial generalizations, altering them as evidence demands. This, in essence, is the process of science, and psychologists argue that it can be applied to human behavior just as surely as it can be applied to the study of atoms and molecules, celestial bodies, and the movement of continents across the face of the earth.

This is not to deny that research in psychology can be challenging. Psychologists cannot dismantle human beings to find out what makes them tick. Studying the how and why of human behavior often takes ingenuity.