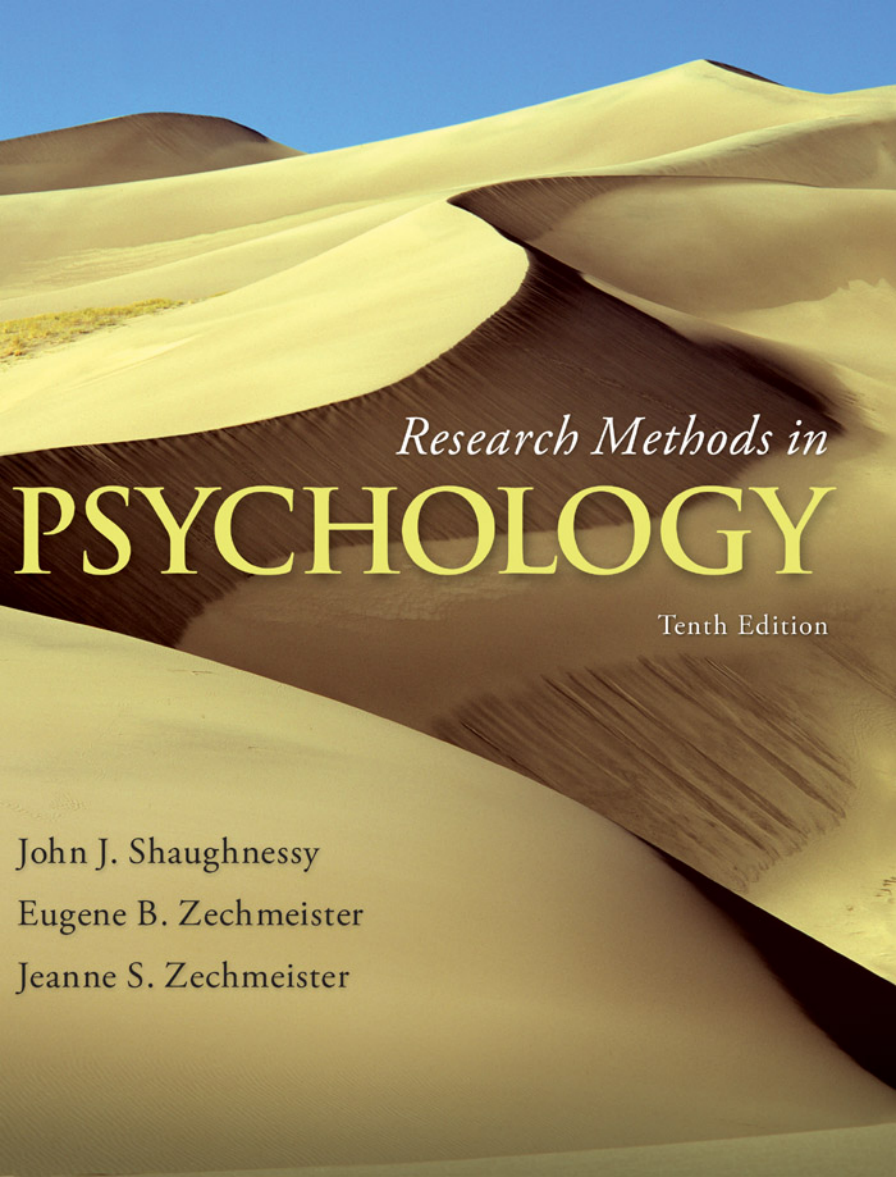
Research Methods in
PSYCHOLOGY
Tenth Edition
John J. Shaughnessy
Eugene B. Zechmeister
Jeanne S. Zechmeister

Research Methods in Psychology

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Tenth Edition

Research Methods in Psychology

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Mc Graw Hill Education

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Brief Contents

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About the Authors

JOHN J. SHAUGHNESSY is Professor of Psychology at Hope College, a relatively small, select, undergraduate liberal arts college in Holland, Michigan. After completing the B.S. degree at Loyola University of Chicago in 1969, he received the Ph.D. in 1972 from Northwestern University. He is a Fellow of the Association for Psychological Science and the Midwestern Psychological Association. His recent research has focused on practical aspects of memory. He is coauthor, with Benton J. Underwood, of *Experimentation in Psychology* (Wiley, 1975). Students selected him as the Hope Outstanding Professor Educator in 1992 and he received the Janet L. Andersen Excellence in Teaching Award from the college in 2008.

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JEANNE S. ZECHMEISTER was a member of the Psychology faculty at Loyola University of Chicago from 1990 to 2002. Professor Zechmeister completed her B.A. at University of Wisconsin-Madison (1983) and her M.S. (1988) and Ph.D. (1990) in Clinical Psychology at Northwestern University. She taught undergraduate and graduate courses in research methodology, and her research focused on psychological processes associated with forgiveness. Her effectiveness as a teacher is evidenced by her many years of high teacher ratings and by her being identified consistently each year by graduating seniors as one of their best teachers at Loyola. Dr. Zechmeister now writes in Charlottesville, Virginia.

To Paula
(J.J.S.)

To the Memory of Ruth O'Keane,
James O'Keane,
Kathleen O'Keane Zechmeister,
and My Mother
(E.B.Z.)

To the Memory of
My Father, Harold W. Sumi
(J.S.Z.)

Preface

In this tenth edition we continue to strive to meet the goals we set for our earlier editions: to provide an introduction to research methods in psychology that both excites students about the research process and helps them to become competent practitioners of research methods. Good organization of topics and clearly written text can help develop competency, but igniting students' enthusiasm about the research process is another matter. An enthusiastic instructor is the key, but we believe we can help. Our approach is to engage students by illustrating how the methods we describe are used to advance knowledge of behavior. To this end, we draw on recent and (hopefully) interesting psychology-related research, citing examples from such diverse sources as *Developmental Psychology; Journal of Personality and Social Psychology; Ethology; Psychological Science; Law and Human Behavior; Science; Journal of Cross-Cultural Psychology; Preventive Medicine; The Sports Psychologist; Cyberpsychology, Behavior & Social Networking; Perspectives on Psychological Science,* and many others. For those who are new to this textbook we begin by reviewing the basic organization, pedagogical aids, and major features. Those who have used the previous edition may want to go directly to "Changes in This Edition."

Organization and Approach

Our approach is based on our years of teaching experience. As instructors of research methods, we recognize that most students in our classes will be consumers of research and not producers of research. Students who choose to take on either role will benefit from developing critical thinking skills. We believe that we can best help our students think critically by taking a problem-solving approach to the study of research methods. As Sharon Begley, writer for *Newsweek,* commented in an essay critiquing science education: "Science is not a collection of facts but a way of interrogating the world." Moreover, "The most useful skill we could teach is the habit of asking oneself and others, *how do you know?"(Newsweek,* November 8, 2010, p. 26).

Researchers begin with a good question and then select a research method that can best help them answer their question. The sometimes painstaking task of gathering evidence is only the beginning of the research process. Analyzing and interpreting the evidence are equally important in making claims about psychological processes. Researchers (and students) must analyze the strengths and weaknesses of the method they have chosen in order to be able to evaluate critically the nature of the evidence they have obtained.

Another feature that we continue from our last edition is the website designed for our book. There are interactive exercises and quizzes for students to test their knowledge of text material, as well as links to other important psychology websites. Instructors will find the instructor's manual and lecture/discussion

aids helpful. Please come see us at *www.mhhe.com/shaughnessy10e.* In addition, the authors may be contacted at ZechResearchMethods@gmail.com.

As has been our approach for each edition, students learn that a *multimethod approach* to answering questions will best advance the science of psychology and that one goal of this book is to "fill their toolbox" with strategies for conducting research. Thus, our organization following the introductory chapters is in terms of "methods," moving from the simplest of observational techniques to complex experimental designs. We remain sensitive to ethical issues in psychological research and to the dilemmas researchers face when they study animal or human behavior. To emphasize our concern we give "ethics" its own chapter (Chapter 3) but also discuss specific ethical issues in other chapters as they relate to particular methodologies.

We believe that research methods are best taught in the context of published psychological research. Thus, we continue to use the rich psychology literature to provide examples of ways in which researchers actually use the methods we discuss. It is always fun for us to update the research examples, while continuing to include important "classic" findings and studies that have proved effective in helping students learn research methods. We believe that one way to motivate students to join us on this exciting path of pursuing knowledge is to show the "payoff" that psychological research provides.

Pedagogical aids include bullet points and Key Concepts within the chapters, and Review Questions at the end of chapters to help students see clearly the points we think are most important for them to learn. And we continue to rely on the Challenge Questions at the end of chapters to help students learn to apply the principles they have learned. Building on the model of the Challenge Questions, we have embedded Stretching Exercises in most chapters to allow students to apply research principles while they are learning about the principles. An extensive review of statistics remains at the end of the book (Chapters 11 and 12), and we continue to introduce these issues briefly in the appropriate places in the text. One way this is done is through a pedagogical aid we call "Stat Tips," which draws students' attention to questions of statistical analysis. In some cases we answer those questions for students; in other instances we refer them to material in Chapters 11 and 12. We believe our approach provides important flexibility that allows instructors to decide when and how they will cover statistics in a research methods course.

Changes in This Edition

- As with every revision, we work to improve the clarity of our presentation. Minor changes in sentence wording or paragraph structure make our presentation more concise and easier for students to understand.
- The basic methodologies of scientific psychology change little from year to year; however, research trends, techniques for data collection, research findings, and critical discussion topics constantly shift. In this edition we include dozens of recently published research findings reflecting new trends and techniques, as well as descriptions of important contemporary

issues in scientific psychology. This tenth edition contains more than 100 new references, the majority published since 2010.

- Some have characterized psychology as a science of "WEIRDOs" because researchers chiefly draw participants from Western, Educated, Industrialized, Rich, and Democratic countries (Jones, 2010; see Chapter 1). Even within these countries many groups, such as women, minorities, and immigrants, have been largely ignored over the years. Things are changing, however. Periodicals like the *Journal of Latina/o Psychology* bring psychological research to these communities and reflect an increasing trend in cross-cultural research. For example, we look at Robert Levine's cross-cultural studies of "helping behavior" and a subsequent correlational analysis of helping behavior in embedded cultures (see Knafo, Schwartz, & Levine, 2009, in Chapter 2). In Chapter 4 we describe research carried out by Nairán Ramírez-Esparza on language differences among Mexican and American students. Psychology is becoming more international; so too are the studies we cite.
- Today's researcher has access to millions of potential participants via the Internet. Online access has been especially important for survey researchers. In Chapter 5 we provide pointers for students interested in conducting online surveys.
- At the same time, online behavior itself is of interest to many researchers. Social networking sites and chat rooms are mined by social and personality psychologists, often through some form of participant observation (see Chapter 4). The emergence of cyberpsychology journals speaks to this new trend in psychological research.
- Gathering data frequently relies on sophisticated techniques and devices. One example is the electronically activated recorder (EAR) employed by James Pennebaker, Matthias Mehl, Nairán Ramírez-Esparza, and their colleagues to study language behavior, happiness, and behavioral health (see Chapter 4). In Chapter 7 we illustrate how digitally morphed photographs made to look similar to individuals' romantic partners reveal gender differences in first impressions (Günaydin, Zayas, Selcuk, & Hazan, 2012).
- As in earlier editions, we emphasize ethical concerns with the research enterprise by devoting a complete chapter to this topic (Chapter 3), but continue this conversation when specific methods are introduced. In this edition we highlight Jerry Burger's "replication" of Stanley Milgram's well-known studies in order to show how researchers work within ethical guidelines to protect human participants. Many online studies raise serious ethical issues. So, too, do observations using electronic techniques like EAR, and we discuss these issues.

Some minor changes should also be mentioned.

- In Chapter 1 we speak more appropriately of *ethnocentric bias* rather than simply *ethnocentrism*.

- In Chapter 6 we now use the term *matching variable* rather than *matching task* in our discussion of matched groups designs.
- In Chapter 9 we replaced the term *single-subject design* with *single-case research design* to bring us in line with contemporary usage (e.g., Kazdin, 2011). The chapter is now titled *Single-Case Research Designs* and, as in previous editions, includes discussion of both case studies and single-case experiments. We are aware that Chapter 9 does not always find its way into an instructor's syllabus. However, we believe the topics therein are important, especially because many undergraduates seek careers in applied psychology. We describe the many pitfalls when relying on a single case for making causal inferences, a circumstance often witnessed when research findings are presented in the popular media.
- In this edition we've inserted new "boxes" with information designed to pique students' interest in research topics. For example, in Chapter 9 we describe the work of Stacy Lopresti-Goodman and her colleagues to document the psychological devastation to orphaned chimpanzees caused by the pet- and bushmeat-trade and in Chapter 10 we describe statistical regression in the context of the "*Sports Illustrated jinx*."
- The Langer and Rodin (1976) classic quasi-experiment involving a responsibility manipulation within a nursing-home setting remains the foundation of our discussion of quasi-experimental designs in Chapter 10. To this, however, we've added contemporary time-series designs that investigate the aftermath of the September 11, 2001 terrorist attacks (Peterson & Seligman, 2003), and the effects of a city-wide smoking ban on health outcomes (Khuder et al., 2007). Our discussion of program evaluation in this chapter considers the evaluation of large-scale social programs such as Medicare.
- Finally, many Challenge Questions have been replaced with the goal of updating research examples and using questions that relate back to research findings discussed in each chapter. Should instructors be looking for a missing favorite, be assured it can be found in the *Instructor's Manual.*

Online Learning Center

The tenth edition of *Research Methods in Psychology* is accompanied by student and instructor supplements available at www.mhhe.com/shaughnessy10e. These resources, created by Shaughnessy, Zechmeister, and Zechmeister to augment the text material, have been updated for the tenth edition by coauthor Jeanne Zechmeister.

For Students

Multiple choice, true or false, and matching quizzes, along with problems and exercises can be used as study aids or submitted to instructors as homework exercises. Students also have access to learning objectives, a glossary, and online resources for each chapter.

For Instructors

The following resources are available to instructors using *Research Methods in Psychology*. Contact your local McGraw-Hill sales representative to obtain a password to access the online instructor materials.

Instructor's Manual to Accompany Research Methods in Psychology The updated manual includes chapter outlines and objectives, chapter review questions and answers, challenge questions and answers, issues and problems for class discussion, activities regarding how to read research critically, worksheets for students, classroom and homework projects, lecture and discussion aids for instructors, and pages that can be used in PowerPoint slides or study guides.

PowerPoint Presentations PowerPoint slides for each chapter outline the key points of the chapter.

Test Banks Test banks for each chapter include short answer and multiple choice questions and answers to test students' knowledge. Each question is keyed according to whether the question assesses factual or conceptual understanding, or application of methodological concepts. The test bank is also available with EZ Test computerized testing software. EZ Test provides a powerful, easy-to-use test maker to create printed quizzes and exams. For secure online testing, exams created in EZ Test can be exported to WebCT, Blackboard, and EZ Test Online. EZ Test comes with a Quick Start Guide; once the program is installed users have access to a User's Manual and Flash tutorials. Additional help is available at www.mhhe.com/eztest

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Words of Thanks

The cumulative contributions of many people to the tenth edition of our textbook are impossible to acknowledge adequately. Most recently we wish to thank the following reviewers, as well as offer our regrets if we were not able to incorporate all of their suggested changes: Jane Ashby (Central Michigan University), Austin Baldwin (Southern Methodist University), Nida Bikmen (Denison University), Nicole McCray (The University of Montana), and Adriane Seiffert (Vanderbilt University). We also wish to thank Liz Zechmeister, Andy Apodaca, and Emil Posavac for providing helpful information on several research topics.

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PART ONE

General Issues

CHAPTER ONE

Introduction

CHAPTER OUTLINE

The Science of Psychology

- Psychologists develop theories and conduct psychological research to answer questions about behavior and mental processes; these answers can impact individuals and society.
- The scientific method, a means to gain knowledge, refers to the ways in which questions are asked and the logic and methods used to gain answers.
- Two important characteristics of the scientific method are an empirical approach and a skeptical attitude.

It seems safe to assume that you've been exposed to many research findings in psychology, both in media presentations and in your psychology course work. If you are like the authors of your textbook, you are very curious about the mind and behavior. You like to think about people's (and animals') behavior. You wonder about people—why they act the way they do, how they became the people they are, and how they will continue to grow and change. And you may wonder about your own behavior and how your mind works. These thoughts and reflections set you apart from other people—not everyone is curious about the mind, and not everyone considers the reasons for behavior. But if you are curious, if you do wonder why people and animals behave the way they do, you have already taken the first step in the intriguing, exciting, and, yes, sometimes challenging journey into research methods in psychology.

Many students enter the field of psychology because of their interest in improving people's lives. But what methods and interventions are helpful to people? For example, students with a career goal that involves conducting psychotherapy must learn to identify patterns of behavior that are maladaptive and to distinguish psychological interventions that are helpful from those that are not. Psychologists gain understanding and insight into the means for improving people's lives by developing theories and conducting psychological research to answer their questions about behavior.

Many psychologists study topics that are directly relevant to people's everyday lives. One scientific journal, *Psychological Science in the Public Interest,* is dedicated to publishing reports of behavioral research on issues of general interest. For example, a 2012 report compared the experience of online dating to conventional dating practices (Finkel, Eastwick, Karney, Reis, & Sprecher, 2012). These researchers observed that although online dating offers more potential partners, online daters may be more likely to view these potential partners as "commodities" and may be less willing to commit to any one person. Another article in the journal evaluated 10 techniques used to improve students' learning (Dunlosky et al., 2013). The researchers found that the two best learning techniques include spreading out study sessions over time and taking practice tests. With this in mind, you can find practice tests for this textbook at the Online Learning Center: www.mhhe.com/shaughnessy10e.

Let us consider one very important research question among the many investigated by psychologists: What is the effect of violence in the media? After more than five decades of research and hundreds of research studies involving violence in television, films, video games, the Internet, and music, what do

psychologists say about the behavioral, emotional, and social effects of media violence? In a review of research that appeared in *Psychological Science in the Public Interest*, Anderson et al. (2003) reported several key findings:

—Exposure to media violence causes an increase in the likelihood of aggressive and violent thoughts, emotions, and behavior in short- and long-term contexts.
—The effects of violence in the media are consistent across a variety of research studies and methods, types of media, and samples of people.
—Recent long-term studies link frequent childhood exposure to media violence with adult aggression, including physical assaults and spouse abuse.
—Research evidence supports psychologists' theories that media violence "activates" (primes) people's aggressive cognitions and physiological arousal, facilitates people's learning of aggressive behaviors through observation, and desensitizes people to violence.
—Factors that influence the likelihood of aggression in response to media violence include characteristics of viewers (e.g., age and extent to which they identify with aggressive characters), social environments (e.g., parental monitoring of media violence), and media content (e.g., realism of violent depictions and consequences of violence).
—*No one* is immune to the effects of media violence.

A number of studies reveal that children and youth spend an inordinate amount of time as media consumers, possibly second only to sleeping. Thus, an implication of the research findings listed is that one way to lessen the devastating impact of aggression and violence in our society is to decrease exposure to media violence. Indeed, psychological research played an important role in the development of the V-chip (the "V" stands for "Violence") on televisions so that parents can block violent content (Anderson et al., 2003).

More research questions remain. One important question concerns the distinction between *passive* observation of violence (e.g., television depictions) and the *active* engagement with violent media that occurs with video and Internet games (Figure 1.1). Is it possible that the effects of media violence are even stronger when viewers are actively engaged with violence while playing video games? This might be the case if active involvement reinforces aggressive tendencies to a greater degree than does passive observation. Other research questions concern the steps needed to decrease the impact of violence in our society and the role that limiting violence in the media should play in a free society. Perhaps these questions will some day be *your* research questions, or perhaps you are interested in exploring the causes of drug addiction or the roots of prejudice. Literally thousands of important research questions remain. As you continue your study of research in psychology, one day you may contribute to psychologists' efforts to improve our human condition!

Key Concept

Psychologists seek to answer questions about behavior, thoughts, and feelings by using the scientific method. The **scientific method** is an abstract concept that refers to the ways in which questions are asked and the logic and methods used to gain answers. When using the scientific method, psychologists rely on

FIGURE 1.1 Does the effect of violent media differ for (a) passive television viewing versus (b) active video game performance?

(a)

(b)

an *empirical approach* and adopt a *skeptical attitude* toward explanations of behavior and mental processes. We will discuss these two characteristics as part of our introduction to psychological research in this chapter, and in Chapter 2 we will describe additional characteristics of the scientific method.

Science in Context

- Science occurs in at least three contexts: historical, social-cultural, and moral contexts.

Although the concept of the scientific method may be abstract, the practice of psychological science is very much a concrete human activity that affects us on several levels. Psychologists can have an impact at the level of the individual (e.g., therapeutic intervention for aggression), the family (e.g., parental control over their children's media use), and society (e.g., efforts to decrease violent programming on television networks). *For their impact to be effective, however, psychologists must build upon a foundation of carefully designed and executed research.*

Human activities are influenced heavily by the context in which they occur, and scientific activity is no exception. We can suggest that at least three contexts play a critical role in influencing science: historical context, social-cultural context, and moral context. We will briefly describe each of these in turn.

Historical Context

- An empirical approach, which relies on direct observation and experimentation for answering questions, was critical for developing the science of psychology.
- The computer revolution has been a key factor in the shift from behaviorism to cognitive psychology as the dominant theme in psychological inquiry.

We don't really know exactly when psychology first became an independent discipline. Psychology emerged gradually, with roots in the thinking of Aristotle, in the writings of later philosophers such as Descartes and Locke and, later, in the work of early 19th-century physiologists and physicists. The official beginning of psychology is often marked as occurring in 1879 when Wilhelm Wundt established a formal psychology laboratory in Leipzig, Germany.

One of the decisions early psychologists faced at the end of the 19th century concerned whether psychology should more closely affiliate with the physical sciences or remain a subdiscipline of philosophy (Sokal, 1992). With the development of psychophysical methods and reaction-time methods for understanding nervous system transmission, psychologists believed they could eventually measure thought itself (Coon, 1992). With these powerful methods of observation, psychology was on the way to becoming a quantifiable, laboratory-based science. Scientific psychologists hoped that their study of the mind would achieve equal prominence with the more established sciences of physics, chemistry, and astronomy (Coon, 1992).

One of the roadblocks to the emerging science of psychology was the public's strong interest in spiritualism and psychic phenomena at the turn of the 20th century (Coon, 1992). The general public viewed these topics of "the mind" to be within the province of psychology and sought scientific answers to their questions about clairvoyance, telepathy, and communication with the dead. However, many psychologists wished to divorce the young science from these pseudoscientific topics. To establish psychology as a science, psychologists embraced empiricism as the means to advance understanding about human

Key Concept

behavior. The **empirical approach** emphasizes direct observation and experimentation as a way of answering questions. It is perhaps the most important characteristic of the scientific method. Using this approach, psychologists focused on behaviors and experiences that could be *observed directly*.

Although psychology continues to emphasize the empirical approach, psychology has changed significantly since its beginnings. Early psychologists were primarily interested in questions of sensation and perception—for instance, visual illusions and imagery. In the early 20th century, psychology in the United States was heavily influenced by a behaviorist approach introduced by John B. Watson. Psychological theories focused on learning, and psychologists relied mostly on experiments with animals to test their theories. In behaviorism, an external stimulus and an observable behavioral response are more important than internal workings of the mind (described as the "black box"). Behaviorism was the dominant perspective in psychology well into the middle of the 20th century. Nevertheless, by the time Ulric Neisser's *Cognitive Psychology* was published in 1967, psychology had turned again to an interest in mental processes. Cognitive psychologists returned to the reaction-time experiments that were used in the early psychology laboratories to investigate the nature of cognitive processes. The cognitive perspective is still dominant in psychology, and cognition is a major topic within the field of neuroscience as investigators study the biology of the mind. There is great potential for the development of scientific psychology in the 21st century.

A significant factor in the rise of cognitive psychology was the computer revolution (Robins, Gosling, & Craik, 1999). With the advent of computers, behaviorism's "black box" was represented using a computer metaphor. Psychologists spoke of information processing, storage, and retrieval between input (stimulus) and output (response). Just as the computer provided a useful metaphor for understanding cognitive processes, the continued development of readily available, powerful computers has broadened the scope and precision of measuring cognitive processes. Today in psychology laboratories throughout the United States and the world, computer technology is replacing paper-and-pencil measures of people's thoughts, feelings, and behaviors. Similarly, continued improvements in the technology of brain imaging (e.g., fMRI, functional magnetic resonance imaging) will advance neuroscience as an important discipline within the fields of psychology, biology, chemistry, and medicine.

These broad trends in the historical development of psychology, from behaviorism to cognitive neuroscience, represent the "bigger picture" of what happened in psychology in the 20th century. A closer look, however, reveals the variety of topics investigated in the science of psychology. Psychologists today do research in such general areas as clinical, social, organizational, counseling, physiological, cognitive, educational, developmental, and health psychology. Investigations in all of these areas help us to understand the complexity of behavior and mental processes.

Science in general—and psychology in particular—has changed because of the brilliant ideas of exceptional individuals. The ideas of Galileo, Darwin, and Einstein not only changed the way scientists viewed their disciplines, but their ideas also changed the way people understand themselves and their

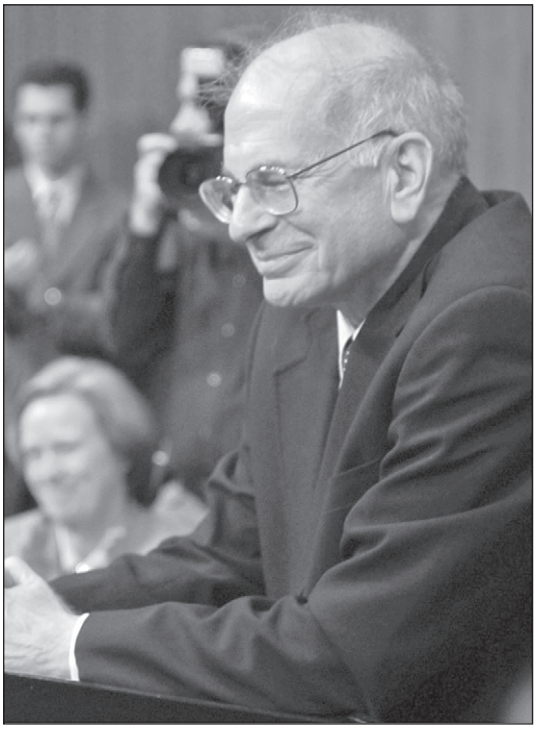
BOX 1.1

PSYCHOLOGY AND THE NOBEL PRIZE

Each year, the Royal Swedish Academy of Sciences awards the distinguished Nobel Prize for researchers' work in a variety of fields. In October 2002, Daniel Kahneman became the first person with a doctorate in psychology to win this award. He was recognized for his research on intuitive judgment, human reasoning, and decision making in conditions of uncertainty. His research, conducted with his long-term collaborator, Amos Tversky (1937–1996), was honored because of its influential role in economic theories (Kahneman, 2003). Kahneman shared the Nobel Economics Prize with economist Vernon Smith, who was cited for his work in developing laboratory experiments (an important topic in this text) in economics.

Although trained in fields other than psychology, several scientists have been awarded the Nobel Prize for research directly related to the behavioral sciences (Chernoff, 2002; Pickren, 2003), for example:

- **1904,** Physiology or Medicine: Ivan Pavlov won the Nobel Prize for his research on digestion, which subsequently influenced his work on classical conditioning.
- **1961,** Physiology or Medicine: A physicist, Georg von Békésy, won the Nobel Prize for his work on psychoacoustics—the perception of sound.
- **1973,** Physiology or Medicine: Three ethologists, Karl von Frisch, Konrad Lorenz, and Nikolaas Tinbergen, were honored with the first Nobel Prize awarded for purely behavioral research. Ethology is a branch of biology in which researchers observe behavior of organisms in relation to their natural environment (see Chapter 4).
- **1978,** Economics: Herbert A. Simon was awarded the Nobel Prize for his groundbreaking research on organizational decision making (MacCoun, 2002). Kahneman, referring to his 2002 Nobel Prize, cited Simon's research as instrumental for his own research.



- **1981,** Physiology or Medicine: The Nobel Prize was awarded to Roger W. Sperry, a zoologist who demonstrated the distinct roles of the two brain hemispheres using the "split-brain" procedure.

The achievements of these scientists and many others testify to the breadth and importance of behavioral research in the sciences. Although there is not a "Nobel Prize for Psychology" (a distinction shared by the field of mathematics), the work of scientists in a variety of areas is recognized as contributing to our understanding of behavior.

world. Similarly, many exceptional individuals have influenced the progress of psychology (Haggbloom et al., 2002), including Nobel Prize winners (see Box 1.1). Early in American psychology, William James (1842–1910) developed his technique of introspection to investigate mental processes, and Sigmund Freud (1856–1939) focused on understanding personality, mental disorders,

and the unconscious using his method of free association. As the prominence of behaviorism grew, B. F. Skinner (1904–1990) turned to the experimental analysis of behavior. Many other individuals greatly influenced thinking within specific areas of psychology, such as developmental, clinical, social, and cognitive psychology. We hope you will be able to learn more about these influential psychologists, from both the past and the present, in the areas of most interest to you.

Science also changes less dramatically, in ways that result from the cumulative efforts of many individuals. One way to describe these more gradual changes is by describing the growth of the profession of psychology. The American Psychological Association (APA) was formed in 1892 with 31 members. In 1992, the 100th anniversary of APA, there were over 72,000 members, and today there are over 137,000 APA members in 54 divisions of psychology. Another professional organization, the Association for Psychological Science (APS), formed in 1988 to emphasize scientific issues in psychology. Both APA and APS sponsor annual conventions, where psychologists learn about the most recent developments in their fields. Each organization also publishes scientific journals in order to communicate the latest research findings to its members and to society in general.

You can become part of psychology's history in the making. Both APA and APS provide educational and research opportunities for undergraduate and graduate psychology students. Information about joining APA and APS as a regular member or as a student affiliate can be obtained by consulting their Internet websites:

(APA) www.apa.org
(APS) www.psychologicalscience.org

Both the APA and APS websites provide news about important recent psychological research findings, information about psychology publications (including relatively low-cost student subscription rates for major psychology journals), and links to many psychology organizations. Take a look!

Social and Cultural Context

- The social and cultural context influences researchers' choice of topics, society's acceptance of findings, and the locations in which research takes place.
- Ethnocentric bias occurs when people's views of another culture are biased by the framework or lens of their own culture.

Science is influenced not only by its historical context but also by the prevailing social and cultural context. This prevailing context is sometimes referred to as the *zeitgeist*—the spirit of the times. Psychological research and its application exist in a reciprocal relationship with society: research has an effect on and is affected by society. The social and cultural context can influence what researchers choose to study, the resources available to support their research, and society's acceptance of their findings. For example, researchers have developed new research programs on women's issues and research that investigates issues