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PSYCHOLOGY

A Concise Introduction

Fourth Edition

Richard A. Griggs

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Richard A. Griggs
University of Florida

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To Bennie, Henry, and Percy—my three shaggy muses

About the Author



Johnston Photography

Richard A. Griggs is Professor Emeritus of Psychology at the University of Florida. After earning his PhD in cognitive psychology at Indiana University, he went to the University of Florida, where he has spent his entire academic career. He has won numerous teaching awards at the University of Florida and was named APA's Society for the Teaching of Psychology Teacher of the Year for 4-year Colleges and Universities in 1994. He served on the Editorial Board of *Teaching of Psychology* for over a decade, as a *Contemporary Psychology* consulting editor for textbook reviews, and as an associate editor of *Thinking and Reasoning*. His two main research areas are human reasoning and the teaching of psychology. He has published over 100 journal articles, reviews, and book chapters, including 38 in *Teaching of Psychology*. He was also one of the originators and developers of the Society for the Teaching of Psychology's online resource, *A Compendium of Introductory Psychology Textbooks*, the editor of Volume 3 of the Society's *Handbook for Teaching Introductory Psychology*, and the coeditor of the Society's *Teaching Introductory Psychology: Tips from ToP* and *Teaching Statistics and Research Methods: Tips from ToP*. When he isn't busy with professional activities, he likes to relax at home with his wife Sherri, also a psychologist, and their dog, Percy. His main pastimes are golf, reading, and fitness.

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Preface

Those of us who teach introductory psychology have the privilege and the challenge of introducing students to our discipline, which is more expansive than ever as research proliferates in many areas. This task has become increasingly problematic in recent years as the authors of introductory textbooks have struggled to keep pace, resulting in books that are more comprehensive, longer, and thus more difficult to complete in one term. The choices of which topics to assign and to what depth to cover them have become more difficult for teachers. Teachers end up either omitting entire chapters or asking students to read chapters at a pace too hurried for optimal learning. Further, introductory textbooks have become much more expensive, leading some students to not even purchase them. As an introductory psychology teacher, I grappled with these critical issues. *Psychology: A Concise Introduction* is the result of my own search for a textbook that includes the essential core content in psychology but is also economical in both size and cost.

Chapter Topics. To make the most informed choices of chapter topics, I consulted Benjamin Miller and Barbara Gentile's national survey of 761 introductory psychology teachers at 490 schools (Miller & Gentile, 1998). They asked teachers to rate the importance of and need for coverage of 25 different topics in their courses. Since my first chapter covers psychology as a science, I chose the highest-rated topics in Miller and Gentile's study as the subjects of the other nine chapters. To maintain the book's brevity, I paired sensation with perception and cognitive development with social development in single chapters. The topic order is the standard one—introduction/methods, neuroscience, sensation/perception, learning, memory, thinking/intelligence, developmental psychology, personality, social psychology, and abnormal psychology. Because the topics of emotion, motivation, and states of consciousness were rated just below the chosen topics, I included sections on emotion and consciousness in the neuroscience chapter and on motivation in the learning chapter. My choices of chapter topics were further validated by Scott Bates's analysis of topic coverage for 107 introductory psychology course syllabi (Bates, 2004). His topic coverage findings based on syllabi analysis match my chapter topic choices almost perfectly.

Pedagogical Program. In writing *Psychology: A Concise Introduction*, I have tried to offer solid topical coverage in an engaging, conversational style. The content in each chapter has been reduced to the core content within that topic domain. Illustrations are full-color and pedagogically sound. Students will find this book easy to learn from. It incorporates both pedagogical aids and study guide exercises to structure their learning. My choice of pedagogical aids was primarily based

on research findings about student perception of the use and importance of the many aids employed in textbooks. I included the aids that students report valuing and using in their learning. Each chapter begins with an overview in the form of a topical outline, and key terms are identified by boldface type and then defined both in the text and in a marginal glossary. Detailed summaries are provided at the end of each major chapter section. Study guide exercises begin with Concept Check questions at the end of each chapter section. These questions lead students to think more deeply about the material in that section. For example, a question may ask students to contrast concepts to understand differences between them or to demonstrate their understanding of a concept by applying it in a novel situation. At the end of each chapter there is a list of key terms and a Key Terms Exercise to test student knowledge of these terms. A multiple-choice Practice Test on the chapter's content follows the Key Terms Exercise. Answers to this test along with answers to the Key Terms Exercise and the sectional Concept Checks are provided at the end of each chapter. These exercises combined with the pedagogical aids should foster sufficient review and self-assessment, eliminating the need for and additional expense of a separate study guide.

Fourth Edition Changes. Reaching the goal of a textbook that could be covered in a single term at a reasonable price without sacrificing essential content was a challenge, but based on the overwhelmingly positive market response, the publisher and I seem to have been successful. With only 10 chapters, *Psychology: A Concise Introduction* has fit nicely into introductory courses on both semester and quarter systems. The breadth of the audience for the text has also been gratifying. It has been used successfully at all types of colleges and universities, from two-year schools to research institutions. Given this success and to maintain the text's basic goal, the content was expanded and revised only where necessary. The 10 chapters (those topics taught most frequently by introductory teachers) remain the same, and content additions were made judiciously.

The third edition revisions were well received, so my fourth edition revisions are along the same lines. I only made revisions that enhanced the text's pedagogical program or visual persona, were absolutely necessary due to recent research findings, contributed toward more closure on a particular topic, or had substantial value to student readers. I have updated content where necessary (e.g., new analyses of Phineas Gage's brain damage in Chapter 2; discussion of the dual processing model of thinking in Chapter 6; and the complete revision of the coverage of mental disorders in Chapter 10 in accordance with the new DSM-5), added content that provides better closure on a topic (e.g., discussion of the Twin Towers of Pisa illusion to demonstrate the subjective nature of perception in Chapter 3 and coverage of the BBC Prison Study and its relationship to Zimbardo's Stanford Prison Experiment in Chapter 9) or that has value to students in their everyday lives (e.g., addition of the Premack principle of relative reinforcement and its uses in the real world in Chapter 4 and extended discussion of the false positive problem in medical screening in Chapter 6). I also added new concepts if they served

to strengthen a discussion of a related concept (e.g., addition of the nocebo effect in Chapter 1 and the neurocognitive theory of dreaming in Chapter 2).

In this new edition, the visual pedagogical program was expanded and strengthened throughout the text. Because this program is an integral part of the learning process, I carefully examined each figure, table, illustration, photo, and cartoon to ensure that it served a clear pedagogical function, and any that needed improvement were either revised or replaced. In addition, the tables were redesigned to facilitate their use, and new illustrations, historical photos, and cartoons were added where necessary to further improve the pedagogical value of the visual program. The text's interior design was also revised to have a cleaner look and thus enhance its use. Because of their success in the first three editions, the specific pedagogical aids employed (those that research has found students report valuing and using in their learning) and the structure of the integrated study guide remain the same. All of the questions in the Concept Check sections, Key Terms Exercises, and multiple-choice Practice Tests were reevaluated and revised if necessary. In sum, I think that students will find this new edition even easier to learn from.

As with the first three editions, the textbook's smaller size and lower cost allow teachers the option of adding supplemental readings to customize their courses to fit their own goals and interests. To facilitate the task of finding supplemental materials, Worth offers many supplements for this purpose.

Supplements

For Instructors

New! LaunchPad, Worth's new online course space, offers a set of prebuilt assignments, carefully crafted by a group of instructional designers and instructors with an abundance of teaching experience as well as deep familiarity with Worth content. Each **LaunchPad** unit contains videos, activities, and formative assessment pieces to build student understanding for each topic, culminating with a randomized summative quiz to hold students accountable for the unit. It also includes the **LearningCurve** formative assessment activities while incorporating the full range of Worth's psychology media options: **Video Activities**, **PsychInvestigator**, **PsychSim**, **Concepts in Action**, and others. Based on the latest findings from learning and memory research, **LearningCurve** combines adaptive question selection, personalized study plans, immediate and valuable feedback, and state-of-the-art question analysis reports. **LearningCurve's** gamelike nature keeps students engaged while helping them learn and remember key concepts.

Assign units in just a few clicks, and find scores in your gradebook upon submission. **LaunchPad** appeals not only to instructors who have been interested in adding an online component to their course but haven't been able to invest the time, but also to experienced online instructors curious to see how other colleagues might scaffold a series of online activities. Customize units as you wish, adding and dropping content to fit your course.

Instructor's Resource Manual, Andrew N. Christopher, Albion College; Pam Marek, Kennesaw State University; and Scott Cohn, Western Colorado State University

Thoroughly updated from the last edition, this manual provides a variety of resources to help you plan your course and class sessions. Resources include annotated chapter outlines and lecture guides with tips on how to present the material, effective classroom activities (including both in-class activities and homework assignments) drawn from established sources as well as the authors' own experiences, and suggestions for using Worth courseware, including LaunchPad, Worth's online course space, and all of Worth's video resources for introductory psychology.

Computerized Test Bank, Cynthia S. Koenig, St. Mary's College of Maryland; Pam Marek, Kennesaw State University; Sherri L. Jackson, Jacksonville University; Richard A. Griggs, University of Florida; and Adrienne Williamson, Kennesaw State University

Tied to the pages of *Psychology: A Concise Introduction, Fourth Edition*, the Computerized Test Bank provides over 1,500 multiple-choice factual/definitional and conceptual questions. Powered by Diploma, it guides you through the process of creating a test, allowing you to add an unlimited number of questions, edit questions, create new questions, format a test, scramble questions, and include pictures and multimedia links. The accompanying **Gradebook** enables you to record student grades throughout your course and includes the capacity to track student records, view detailed analyses of test items, curve tests, generate reports, add weights to grades, and more. The disk provides the access point for **Diploma Online Testing** as well as Blackboard-formatted versions of the **Test Bank**.

Enhanced Course Management Solutions (Blackboard, Desire2Learn, Angel, Canvas, Moodle) allow adopters to access all of this edition's teaching and learning resources in one central location (via their course management system) through one seamless, guided experience.

For Classroom Presentation

New! Worth Introductory Psychology Videos, produced in conjunction with *Scientific American* and *Nature*, is a breakthrough collection of NEW modular, tutorial videos on core psychology topics. This set includes animations, interviews with top scientists, and carefully selected archival footage and is available on flash drive or as part of the new Worth Video Anthology for Introductory Psychology.

New! The Worth Video Anthology for Introductory Psychology is a complete collection, all in one place, of our video clips from the **Video Tool Kit**, the **Digital Media Archive**, and the third edition of the *Scientific American Frontiers Teaching Modules*, as well as from the new *Worth Introductory Psychology Videos*

coproduced with *Scientific American* and *Nature*. Available on DVD or flash drive, the set is accompanied by its own Faculty Guide.

New! Interactive Presentation Slides for Introductory Psychology is an extraordinary series of PowerPoint® lectures. This is a dynamic yet easy-to-use new way to engage students during classroom presentations of core psychology topics. This collection provides opportunities for discussion and interaction, and includes an unprecedented number of embedded video clips and animations (including activities from our **ActivePsych** series).

PowerPoint® Slide Sets In addition to the Interactive Presentation Slides, there are two other PowerPoint® slide sets to accompany the text. For each chapter, we offer a set that includes chapter art and illustrations and a final lecture presentation set that merges detailed chapter outlines with text illustrations and artwork from outside sources. Each set can be used directly or customized to fit your needs.

Additional Reading for Students

All of the following can be packaged with *Psychology: A Concise Introduction, Fourth Edition*, for a nominal additional cost.

New! Psychology and the Real World: Essays Illustrating Fundamental Contributions to Society This recent project of the FABBS Foundation brought together a virtual “Who’s Who” of contemporary psychological scientists to describe—in clear, captivating ways—the research they have passionately pursued and what it means to the “real world.” Each contribution is an original essay written for this project.

Scientific American Reader to Accompany Psychology: A Concise Introduction To provide a relevant and inexpensive supplementary reader to *Psychology: A Concise Introduction*, the text author, Richard Griggs, went through the *Scientific American* database and selected 10 recent articles that best complement the 10 chapters in the text. The articles are sequenced to match the chapter topic order, and the chapter related to each article will adequately prepare the student to read the article. The *Scientific American Reader* provides another tool for enhancing lectures, encouraging discussion, and emphasizing the relevance of psychology to everyday life.

Pursuing Human Strengths: A Positive Psychology Guide, Martin Bolt, Calvin College Martin Bolt’s workbook aims to help students build up their strengths. Closely following the research, this book provides a brief overview of nine positive traits, such as hope, self-respect, commitment, and joy. It also offers self-assessment activities that help students gauge how much of the trait they have developed, and research-based suggestions for how they might work further toward fostering these traits.

Critical Thinking Companion, Second Edition, Jane Halonen, University of West Florida; Cynthia Gray, Alverno College Tied to the main topics in introductory psychology, this handbook includes six categories of critical thinking exercises—pattern recognition, practical problem solving, creative problem solving, scientific problem solving, psychological reasoning, and perspective taking.

Acknowledgments

First, I would like to thank all the reviewers who gave generously of their time and expertise in working on the first three editions of *Psychology: A Concise Introduction*. I am also indebted to my supplements author team. I truly appreciate their hard work and commitment to excellence.

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Finally, my thanks extend to my wife, Sherri. Her love, encouragement, and unflagging support kept me going through all four editions of this text.

PSYCHOLOGY

A Concise Introduction

Fourth Edition



1

The Science of Psychology

- **THE FOUR MAJOR RESEARCH PERSPECTIVES**

- Perspectives Emphasizing Internal Factors

- Perspectives Emphasizing External Factors

- **RESEARCH METHODS USED BY PSYCHOLOGISTS**

- Descriptive Methods

- Correlational Studies

- Experimental Research

- **HOW TO UNDERSTAND RESEARCH RESULTS**

- Descriptive Statistics

- Frequency Distributions

What do you think psychologists do? If you are like most people, when you think of a psychologist, you think of a therapist counseling people who have problems. If I asked you to name a psychologist, you would probably name Sigmund Freud. However, Freud and psychologists who work as therapists are not the focus of this book. They will be discussed, but they are only a part of psychology's story. Psychology is a science, not just a mental health profession. The subjects of this scientific study are you, me, all humans. Some psychologists may use other animals in their research, but their main goal is usually still to understand humans. **Psychology** is the science of behavior and mental processes. Psychologists attempt to understand all aspects of both our observable behavior, such as speech and physical movement, and internal mental processes, such as remembering and thinking, which cannot be directly observed. Psychologists may be found in any number of roles, including teaching, researching, consulting, and yes, counseling troubled people. This book, however, will focus on the research done by psychological scientists, the process by which they've accomplished that research, and what we've learned from their work.

Psychological researchers study everything about us from how our brain works and how we see and hear to how we reason and make decisions. The American Psychological Association lists 54 different divisions of psychology, and psychologists specialize in studying each of these different aspects of our behavior and mental processing. To learn more about these various subfields and careers in psychology, visit www.apa.org/careers/resources/guides/careers.aspx. Although there are many diverse areas within psychology, there are only four major research perspectives for studying these topics. We will begin with a general overview of these four perspectives and then provide descriptions of the major research methods that psychologists use regardless of their perspective. Understanding these perspectives and the research methods used by psychologists will allow you to start thinking like a psychologist (like a scientist).

Note that there are other perspectives in psychology that are primarily clinical in nature (related to psychological therapy). We will discuss the psychoanalytic perspective (which emphasizes the interaction of unconscious forces and childhood experiences in personality development) and the humanistic perspective (which emphasizes the personal growth motive) in Chapter 8, Personality Theories and Assessment.

The Four Major Research Perspectives

There are four major research perspectives—biological, cognitive, behavioral, and sociocultural. It's important to understand that these perspectives are complementary. The research findings from the major perspectives fit together like the pieces of a jigsaw puzzle to give us a more complete picture. No particular perspective is better than the others, and psychologists using the various perspectives work together to provide a more complete explanation of our behavior and mental processing.

► **psychology** The science of behavior and mental processes.

The best way to understand how the major research perspectives differ is to consider the major goal of psychologists—to explain human behavior and mental processes. To explain means to know the causes of our behavior and mental processes. To facilitate your understanding of these perspectives, I discuss them in two different pairs based on the type of causal factors that they emphasize—internal factors or external factors. The biological perspective and the cognitive perspective focus on causes that stem from within us (internal factors); the behavioral perspective and the sociocultural perspective focus on causes that stem from outside us (external factors). We’ll also briefly consider developmental psychology, a research field that provides a nice example of how these perspectives complement one another.

Perspectives Emphasizing Internal Factors

The biological perspective and the cognitive perspective focus on internal factors. In the case of the **biological perspective**, our physiological hardware (especially the brain and nervous system) is viewed as the major determiner of behavior and mental processing. The genetic and evolutionary bases of our physiology are also important. In contrast, for the **cognitive perspective**, the major explanatory focus is on how our mental processes, such as perception, memory, and problem solving, work and impact our behavior. To contrast this perspective with the biological perspective, you can think of these mental processes as the software, or programs, of the brain (the wetware, the biological corollary to computer hardware).

The biological perspective. We are biological creatures; therefore, looking for explanations in terms of our biology makes sense. Biological psychologists look for causes within our physiology, our genetics, and human evolution. They argue that our actions and thoughts are functions of our underlying biology. Let’s consider an example of what most people would term a “psychological” disorder, depression. Why do we get depressed? A biological psychologist might focus on a deficiency in the activity of certain chemicals in the nervous system as a cause of this problem. Therefore, to treat depression using this perspective, the problem with the chemical deficiency would have to be rectified. How? Antidepressant drugs such as Prozac or Zoloft might be prescribed. These drugs increase the activity of the neural chemicals involved, and this increased activity might lead to changes in our mood. If all goes well, a few weeks after beginning treatment, we begin to feel better. Thus, our mood is at least partly a function of our brain chemistry. Of course, many nonbiological factors can contribute to depression, including unhealthy patterns of thinking, learned helplessness, and disturbing life circumstances. It’s important to remember that employing psychology’s complementary perspectives in addressing research and clinical issues provides the most complete answer.

- ▶ **biological perspective** A research perspective whose major explanatory focus is how the brain, nervous system, and other physiological mechanisms produce behavior and mental processes.
- ▶ **cognitive perspective** A research perspective whose major explanatory focus is how mental processes, such as perception, memory, and problem solving, work and impact behavior.

In addition to the impact of brain chemistry, biological psychologists also study the involvement of the various parts of the brain and nervous system on our behavior and mental processes. For example, they have learned that our “eyes” are indeed in the back of our head. Biological psychologists have found that it is the back part of our brain that allows us to see the world. So, a more correct expression would be that “our eyes are in the back of our brain.” The brain is not only essential for vision, but it is also the control center for almost all of our behavior and mental processing. In Chapter 2, you will learn how the brain manages this incredibly difficult task as well as about the roles of other parts of our nervous system and the many different chemicals that transmit information within it.

The cognitive perspective. Cognitive psychologists study all aspects of cognitive processing from perception to the higher-level processes, such as problem solving and reasoning. Let’s try a brief exercise to gain insight into one aspect of our cognitive processing. I will name a category, and you say aloud as fast as you can the first instance of that category that comes to mind. Are you ready? The first category is FRUIT. If you are like most people, you said apple or orange. Let’s try another one. The category is PIECE OF FURNITURE. Again, if you are like most people, you said chair or sofa. Why, in the case of FRUIT, don’t people say pomegranate or papaya? How do we have categories of information organized so that certain examples come to mind first for most of us? In brief, cognitive research has shown that we organize categorical information around what we consider the most typical or representative examples of a category (Rosch, 1973). These examples (such as apple and orange for FRUIT) are called prototypes for the category and are retrieved first when we think of the category.

A broader cognitive processing question concerns how memory retrieval in general works. Haven’t you been in the situation of not being able to retrieve information from memory that you know you have stored there? This can be especially frustrating in exam situations. Or think about the opposite—an event or person comes to mind seemingly out of the blue. Why? Even more complex questions arise when we consider how we attempt to solve problems, reason, and make decisions. For example, here’s a series problem with a rather simple answer, but most people find it very difficult: What is the next character in the series OTTFSS_? The answer is not “O.” Why is this problem so difficult? The progress that cognitive psychologists have made in answering such questions about cognitive processing will be discussed in Chapter 5, on memory, and Chapter 6, on thinking and intelligence (where you can find the answer to the series problem).

Perspectives Emphasizing External Factors

Both the behavioral perspective and the sociocultural perspective focus on external factors in explaining human behavior and mental processing. The **behavioral perspective** emphasizes conditioning of our behavior by environmental events, and there is more emphasis on

► **behavioral perspective** A research perspective whose major explanatory focus is how external environmental events condition observable behavior.

► **sociocultural perspective** A research perspective whose major explanatory focus is how other people and the cultural context impact behavior and mental processes.

explaining observable behavior than on unobservable mental processes. The **sociocultural perspective** also emphasizes the influence of the external environment, but it more specifically focuses on the impact of other people and our culture as the major determiners of our behavior and mental processing. In addition to conditioning,

the sociocultural perspective equally stresses cognitive types of learning, such as learning by observation or modeling, and thus focuses just as much on mental processing as observable behavior.

The behavioral perspective. According to the behavioral perspective, we behave as we do because of our past history of conditioning by our environment. There are two major types of conditioning, classical (or Pavlovian) and operant. You may be familiar with the most famous example of classical conditioning—Ivan Pavlov’s dogs (Pavlov, 1927/1960). In his research, Pavlov sounded a tone and then put food in a dog’s mouth. The pairing of these two environmental events led the dog to salivate to the tone in anticipation of the arrival of the food. The salivary response to the tone was conditioned by the sequencing of the two environmental events (the sounding of the tone and putting food in the dog’s mouth). The dog learned that the sound of the tone meant food was on its way. According to behaviorists, such classical conditioning can explain how we learn fear and other emotional responses, taste aversions, and many other behaviors.

Classical conditioning is important in determining our behavior, but behaviorists believe operant conditioning is even more important. Operant conditioning involves the relationship between our behavior and its environmental consequences (whether they are reinforcing or punishing). Simply put, if we are reinforced for a behavior, its probability will increase; if we are punished, the probability will decrease. For example, if you ask your teacher a question and he praises you for asking such a good question and then answers it very carefully, you will tend to ask more questions. However, if the teacher criticizes you for asking a stupid question and doesn’t even bother to answer it, you will probably not ask more questions. Environmental events (such as a teacher’s response) thus control behavior through their reinforcing or punishing nature. Both types of conditioning, classical and operant, will be discussed in Chapter 4. The point to remember here is that environmental events condition our behavior and are the causes of it.

The sociocultural perspective. This perspective focuses on the impact of other people (individuals and groups) and our cultural surroundings on our behavior and mental processing. We are social animals; therefore other people are important to us and thus greatly affect what we do and how we think. None of us is immune to these social “forces.” Haven’t your thinking and behavior been impacted by other people, especially those close to you? Our coverage of sociocultural research will emphasize the impact of these social forces on our behavior and mental processing.

To help you understand the nature of sociocultural research, let’s consider a famous set of experiments that attempted to explain the social forces operating

during a tragic, real-world event—the Kitty Genovese murder in 1964 (Latané & Darley, 1970). Kitty was returning home from work to her apartment in New York City when she was brutally attacked, raped, and stabbed to death with a hunting knife. The attack was a prolonged one in which the attacker left and came back at least three times. Kitty screamed and pleaded for help throughout the attack, but none was forthcoming. Some people living in the building heard her screams for help, but no one helped. Someone finally called the police, but it was too late. The attacker had fled, and Kitty was dead. Exactly how many people witnessed the attack and failed to help is not clear. Initially reported as 38 (Rosenthal, 1964), more recent analysis of the available evidence indicates that the number may have been much smaller (Manning, Levine, & Collins, 2007). Regardless, no one acted until it was too late. To explain why these people didn't help, researchers manipulated the number of bystanders present in follow-up experiments. Their general finding is called the bystander effect (and sometimes the Genovese Syndrome)—the probability of a victim receiving help in an emergency is higher when there is only one bystander than when there are many. In brief, other bystanders may lead us not to help. How do we apply this effect to the Kitty Genovese murder? The bystanders to the murder led each other not to help. Each felt that someone else would do something and that surely someone else had already called the police. This research, along with studies of other intriguing topics that involve social forces, such as why we conform and why we obey even when it may lead to destructive behavior, will be detailed in Chapter 9, on social psychology.

Now you have at least a general understanding of the four major research perspectives, summarized in Table 1.1. Remember, these perspectives are complementary, and, when used together, help us to gain a more complete understanding of our behavior and mental processes. Developmental psychology (the scientific study of human development across the lifespan) is a research area that nicely illustrates the benefits of using multiple research perspectives to address experimental questions. A good example is the study of how children acquire language. Initially, behavioral learning principles of reinforcement and imitation were believed to be sufficient to account for language acquisition. Although these principles clearly do play a role (Whitehurst &

Table 1.1 The Four Major Research Perspectives in Psychology

| Research Perspective | Major Explanatory Focus |
|----------------------|---|
| Biological | How our physiology (especially the brain and nervous system) produces our behavior and mental processes and how genetics and evolution have impacted our physiology |
| Cognitive | How our mental processes, such as perception, memory, and problem solving, work and how they impact our behavior |
| Behavioral | How external environmental events condition our observable behavior |
| Sociocultural | How other people and the cultural context impact our behavior and mental processes |

Valdez-Menchaca, 1988), most developmental language researchers now recognize that biology, cognition, and the sociocultural context are also critical to language learning (Pinker, 1994; Tomasello, 2003). Studies of the brain, for example, indicate that specific brain areas are involved in language acquisition. Research has also revealed that cognitive processes are important as well. For example, as children acquire new concepts, they learn the names that go with them and thus expand their vocabulary. In addition, it has been shown that the socio-cultural context of language helps children to learn about the social pragmatic functions of language. For instance, they use a variety of pragmatic cues (such as an adult's focus of attention) for word learning. Thus, by using all four research perspectives, developmental researchers have gained a much better understanding of how children acquire language. We will learn in Chapter 7 (Developmental Psychology) that our understanding of many developmental questions has been broadened by the use of multiple research perspectives.

Subsequent chapters will detail the main concepts, theories, and research findings in the major fields of psychology. As you learn about these theories and research findings, beware of the **hindsight bias (I-knew-it-all-along phenomenon)**—the tendency, after learning about an outcome, to be overconfident in one's ability to have predicted it. Hindsight bias has been widely studied, having been featured in more than 800 scholarly papers (Roese & Vohs, 2012). It has been observed in various countries and among both children and adults (Blank, Musch, & Pohl, 2007). Research has shown that after people learn about an experimental finding, the finding seems obvious and very predictable (Slovic & Fischhoff, 1977). Almost any conceivable psychological research finding may seem like common sense after you learn about it. If you were told that research indicates that “opposites attract,” you would likely nod in agreement. Isn't it obvious? Then again, if you had been told that research indicates that “birds of a feather flock together,” you would probably have also agreed and thought the finding obvious. Hindsight bias works to make even a pair of opposite research conclusions both seem obvious (Teigen, 1986). Be mindful of hindsight bias as you learn about what psychologists have learned about us. It may lead you to think that this information is more obvious and easier than it actually is. You may falsely think that you already know much of the material and then not study sufficiently, leading to disappointment at exam time. The hindsight bias even works on itself. Don't you feel like you already knew about this bias? Incidentally, social psychology researchers have found that birds of a feather DO flock together and that opposites DO NOT attract (Myers, 2013).

Psychologists' conclusions are based upon scientific research and thus provide the best answers to questions about human behavior and mental processing. Whether these answers sometimes seem obvious or sometimes agree with

common sense is not important. What is important is understanding how psychologists conduct this scientific research in order to get the best answers to their questions. In the next section, we discuss their research methods.

► **hindsight bias (I-knew-it-all-along phenomenon)** The tendency, after learning about an outcome, to be overconfident in one's ability to have predicted it.

Section Summary

In this section, we learned that there are four major research perspectives in psychology. Two of them, the biological perspective and the cognitive perspective, focus on internal causes of our behavior and mental processing. The biological perspective focuses on causal explanations in terms of our physiology, especially the brain and nervous system. The cognitive perspective focuses on understanding how our mental processes work and how they impact our behavior. The biological perspective focuses on the physiological hardware, while the cognitive perspective focuses more on the mental processes or software of the brain.

The behavioral perspective and the sociocultural perspective emphasize external causes. The behavioral perspective focuses on how our observable behavior is conditioned by external environmental events. The sociocultural perspective emphasizes the impact that other people (social forces) and our culture have on our behavior and mental processing.

Psychologists use all four perspectives to get a more complete explanation of our behavior and mental processing. None of these perspectives is better than the others; they are complementary. Developmental psychology is a research field that nicely illustrates their complementary nature.

We also briefly discussed the hindsight bias, the I-knew-it-all-along phenomenon. This bias leads us to find outcomes as more obvious and predictable than they truly are. You need to beware of this bias when learning the basic research findings and theories discussed in the remainder of this text. It may lead you to think that this information is more obvious and easier than it actually is. It is important that you realize that psychologists have used scientific research methods to conduct their studies, thereby obtaining the best answers possible to their questions about human behavior and mental processing.

ConceptCheck | 1

- Explain how the biological and cognitive research perspectives differ in their explanations of human behavior and mental processing.
- Explain how the behavioral and sociocultural research perspectives differ in their explanations of human behavior and mental processing.

Research Methods Used by Psychologists

Regardless of their perspective, psychology researchers use the same research methods. These methods fall into three categories—descriptive, correlational, and experimental. The experimental method is used most often because it allows the researcher to explore cause–effect relationships. Remember, the main goal of psychology is to explain (through cause–effect relationships) human behavior and mental processes. However, sometimes researchers can't conduct experiments. For example, it is obviously unethical to set up an experiment testing the effects of passive smoking on children. Who would knowingly subject a group

of children to cigarette smoke? In such situations, psychologists can learn a lot by employing the other methods—descriptive and correlational. Researchers can carefully observe and describe the health effects on one child in a family of smokers, or they can study many families in search of relationships (correlations) between parental smoking and childhood infections. These other research methods also provide data for developing hypotheses (testable predictions about cause–effect relationships) to examine in experimental research. We’ll discuss the three types of methods in the following order: descriptive, correlational, and experimental.

Descriptive Methods

There are three types of **descriptive methods**: observational techniques, case studies, and survey research. The main purpose of all three methods is to provide objective and detailed descriptions of behavior and mental processes. However, these descriptive data only allow the researcher to speculate about cause–effect relationships—to develop hypotheses about causal relationships. Such hypotheses must then be tested in experiments. With this important limitation in mind, we’ll consider the three descriptive methods one at a time.

Observational techniques. Observational techniques exactly reflect their name. The researcher directly observes the behavior of interest. Such observation can be done in the laboratory. For example, children’s behavior can be observed using one-way mirrors in the laboratory. However, behavior in the laboratory setting may not be natural. This is why researchers often use **naturalistic observation**, a descriptive research method in which behavior is observed in its natural setting, without the researcher intervening in the behavior being observed. Researchers use naturalistic observation when they are interested in how humans or other animals behave in their natural environments. The researcher attempts to describe both objectively and thoroughly the behaviors that are present and the relationships among these behaviors. There have been many well-known observational studies of other species of animals in their natural habitats. You are probably familiar with some of them—Dian Fossey’s study of mountain gorillas in Africa, on which the movie, *Gorillas in the Mist*, was based, and Jane Goodall’s study of chimpanzees in Africa (Fossey, 1983; Goodall, 1986). This method is not used only for the observation

of other species of animals. Observational studies of human behavior are conducted in many natural settings such as the workplace and school and in social settings such as bars.

Observational techniques do have a major potential problem, though. The observer may influence or change the behavior of those being observed. This is why observers must remain as unobtrusive as possible, so that the results won’t be contaminated by their presence.

- ▶ **descriptive methods** Research methods whose main purpose is to provide objective and detailed descriptions of behavior and mental processes.
- ▶ **naturalistic observation** A descriptive research method in which the behavior of interest is observed in its natural setting, and the researcher does not intervene in the behavior being observed.

To overcome this possible shortcoming, researchers use participant observation. In **participant observation**, the observer becomes part of the group being observed. Sometimes naturalistic observation studies that start out with unobtrusive observation end up as participant observation studies. For example, Dian Fossey's study of gorillas turned into participant observation when she was finally accepted as a member of the group. However, in most participant observation studies, the observer begins the study as a participant, whether in a laboratory or natural setting. You can think of this type of study as comparable to doing undercover work. A famous example of such a study involved a group of people posing as patients with symptoms of a major mental disorder to see if doctors at psychiatric hospitals could distinguish them from real patients (Rosenhan, 1973). It turned out that the doctors couldn't do so, but the patients could. Once admitted, these "pseudopatients" acted normally and asked to be released to see what would happen. Well, they weren't released right away. We will find out what happened to them in Chapter 10.

Case studies. Detailed observation is also involved in a case study. In a **case study**, the researcher studies an individual in depth over an extended period of time. In brief, the researcher attempts to learn as much as possible about the individual being studied. A life history for the individual is developed, and data for a variety of tests are collected. The most common use of case studies is in clinical settings with patients suffering specific deficits or problems. The main goal of a case study is to gather information that will help in the treatment of the patient. The results of a case study cannot be generalized to the entire population. They are specific to the individual that has been studied. However, case study data do allow researchers to develop hypotheses that can then be tested in experimental research. A famous example of such a case study is that of the late Henry Molaison, a person with amnesia (Scoville & Milner, 1957). He was studied by nearly 100 investigators (Corkin, 2002) and is often referred to as the most studied individual in the history of neuroscience (Squire, 2009). For confidentiality purposes while he was alive (he died in 2008 at the age of 82), only his initials, H. M., were used to identify him in the hundreds of studies that he participated in for over five decades. Thus, we will refer to him as H. M. His case will be discussed in more detail in Chapter 5 (Memory), but



Lady studying chimps, chimp studying lady.

cartoonstock

- ▶ **participant observation** A descriptive research method in which the observer becomes part of the group being observed.
- ▶ **case study** A descriptive research method in which the researcher studies an individual in depth over an extended period of time.