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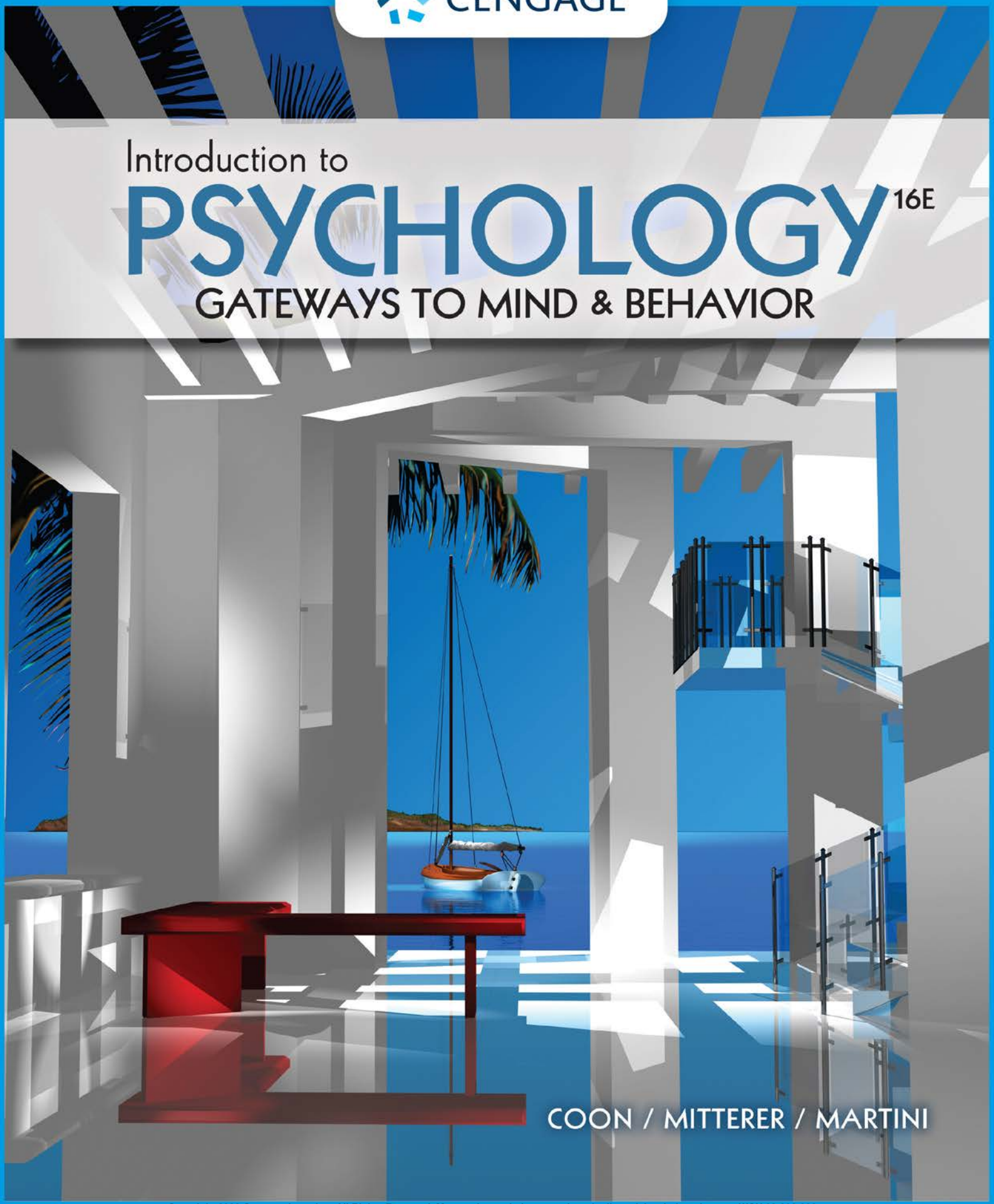

Introduction to PSYCHOLOGY 16E

GATEWAYS TO MIND & BEHAVIOR

COON / MITTERER / MARTINI

Introduction to Psychology:

Gateways to Mind and Behavior

16e

Dennis Coon

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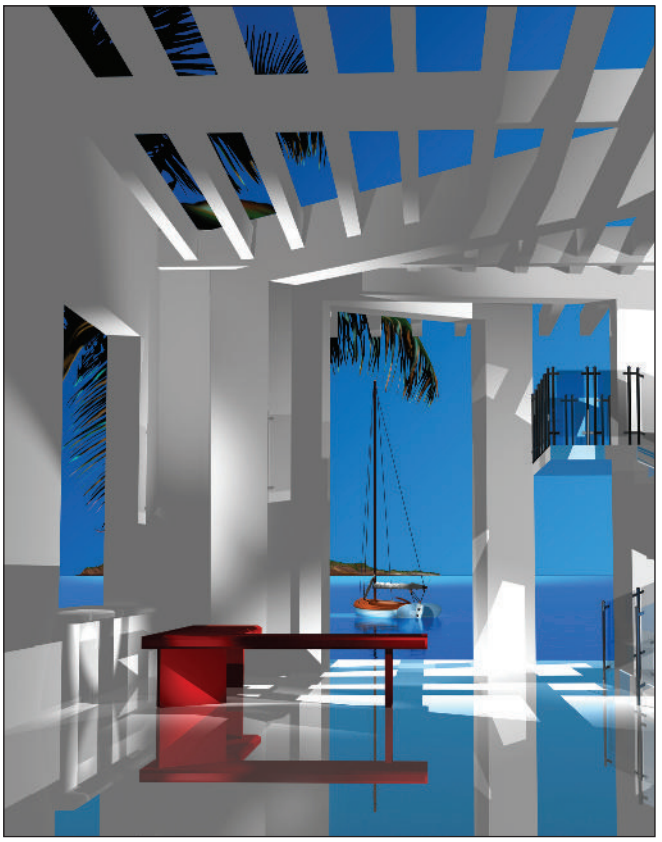

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***Introduction to Psychology: Gateways to Mind and Behavior*, Sixteenth Edition**
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Dedication

To Sevren

—DC

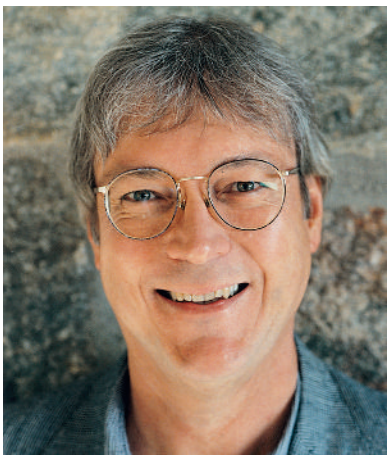
To Rue Elizabeth Pante

—JM

To David, Callum, and Ronan

—TM

About the Authors



Courtesy of Dennis Coon

Dennis Coon is a publishing phenomenon and one of the best-selling authors in the field of psychology. His innovative instructional methods and student-focused style make his works perennial favorites among instructors and students alike. To date, more than two million students have learned psychology with a Coon text as their guide. Dr. Coon graduated with a B.A. in psychology from the University of California, Riverside, and earned his PhD in social psychology from the University of Arizona. He is also coauthor, with John Mitterer and Tanya Martini, of *Psychology: Modules for Active Learning, 15th Edition.*

Courtesy of John Mitterer

John Mitterer was awarded his PhD in cognitive psychology from McMaster University. He has taught psychology at Brock University to more than 30,000 introductory psychology students. He is an award-winning teacher whose several teaching awards include a National 3M Teaching Fellowship, the Canadian Psychological Association Award for Distinguished Contributions to Education and Training in Psychology, and the Brock University Don Ursino Award for Excellence in the Teaching of Large Classes. He has created textbooks and support materials for both students and instructors, and he has published and lectured on undergraduate instruction throughout Canada and the United States.

Courtesy of Callum Williams

Tanya Martini obtained her PhD in developmental psychology from the University of Toronto. In addition to introductory psychology, she also teaches research methods, human learning, and courses aimed at facilitating students' understanding of career-related skills. She has received both the Brock University Distinguished Teaching Award, and the Chancellor's Chair for Teaching Excellence. Dr. Martini's research examines how undergraduates think about the skills that are being fostered during university experiences, both inside and outside the classroom. She's also interested in how we can improve students' understanding of career-related skills so that they are in a better position to leverage them when they apply for jobs or post-graduate programs. In addition to her position at the university, Dr. Martini currently sits on the advisory board for the Socio-Emotional Skills Initiative that has been undertaken by the Conference Board of Canada.

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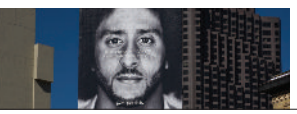

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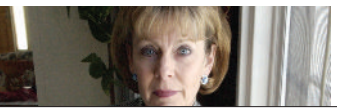

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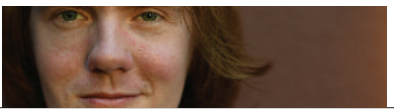

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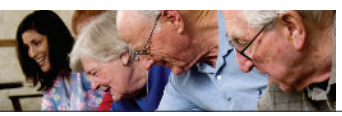

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Preface

To You, the Student—An Invitation to Learn Psychology with Us

Greetings from your authors! We look forward to being your guides as you explore the exciting field of psychology and our ever-evolving understanding of human behavior. In a very real sense, we wrote this book about you, for you, and to you. We sincerely hope you will find, as we do, that what you learn is at once familiar, surprising, and challenging.

Reading *Introduction to Psychology: Gateways to Mind and Behavior*

We have done all we could to make *Gateways to Mind and Behavior* enjoyable to read and relevant to your everyday life. Each chapter takes you on a journey into a different realm of psychology, where you will explore areas such as personality, abnormal behavior, memory, consciousness, and human development. Each one is complex and fascinating in its own right, with many pathways, landmarks, and interesting detours for you to discover. Like any journey of discovery, your exploration of psychology will help you better understand yourself, others, and the world around you. It's definitely a trip worth taking.

Studying Effectively with *Introduction to Psychology: Gateways to Mind and Behavior*

As would be the case on any interesting trip, studying psychology will be most rewarding if you adopt a reflective attitude. Psychologists believe that answers to important questions come through engaged and careful thought, observation, and inquiry. Put another way, they often ask "How can we step outside ourselves to look objectively at how we live, think, feel, and act?" As simple as that approach may seem, this type of careful consideration takes practice to develop. *Gateways to Mind and Behavior*, then, is your gateway, or passport, to an adventure in active, reflective learning, not just passive reading.

We offer at least three different ways to help you develop this type of reflective approach to your studies. First, to help you get off to a good start, we strongly encourage you to read our short "manual," *Psychology and Your Skill Set: Reflective Studying*, which precedes Chapter 1. In it, we describe what you can learn by taking this course, including the skills you'll develop that can be helpful in both your personal and professional life. In *Reflective Studying*, you'll also read about a variety of well-established study skills that you can use to get the most out of your psychology course, and your other courses as well.

Second, *MindTap® Psychology* for this text is a digital tool that can help you to learn the material in this book on your own terms. Using *MindTap*, you can read or listen to the electronic copy of the textbook, highlight key ideas, add notes, and create custom flashcards. MindTap also allows you to reinforce your learning with assignments that revisit topics you have learned about throughout each chapter. You can track your scores and stay motivated while pursuing your goals. Moreover, you can take advantage of the *MindTap Mobile App* to learn where and when it's convenient for you.

Third and finally, a set of *guided notes* is available for each chapter. Developed using the well-established Cornell method of note-taking, we have created them to help you distill the most important aspects of each chapter and develop good study aids to assist you in preparing for tests. Available as MS Word files, you can use the guided notes to help organize your thinking about the material, focus on key ideas and concepts, and practice summarizing important points in your own words.

To You, the Instructor—An Invitation to Teach Psychology with Us

Thank you for choosing *Introduction to Psychology: Gateways to Mind and Behavior* for your students and for your course. Marcel Proust wrote, "The real voyage of discovery consists not in seeing new landscapes but in having new eyes." It is in this spirit that we have written this book—our goal is to promote not just an interest in human behavior but an appreciation for the perspective of the psychological scientist as well.

As the authors of this textbook, we have together accumulated over 80 years of classroom experience, teaching tens of thousands of college and university students. Although we have found most students to be generally well intentioned, our modern world

certainly does immerse them in their work, careers, families, intimate relationships, and popular culture. As we compete for evermore-limited student attention, we need to motivate our students to read and educate them about how to learn effectively—learning, after all, is a life-long endeavor (Matthew & Sternberg, 2009; Paternoster & Pogarsky, 2009).

We have explicitly designed and written the sixteenth edition of *Gateways to Mind and Behavior* to foster this type of deeper student engagement with the field of psychology. We believe that this will result in better memory for what has been read and studied, and a deeper understanding of how to become more reflective learners and thinkers. To help you and your students reach these goals, we have designed this edition around two key goals: ***integrating support to address instructor learning objectives*** and ***integrating support for active student learning***. In the sections below, we discuss each of these in more detail.

Integrating Support to Address Instructor Learning Objectives

This edition of *Gateways* has a new structure; one that we believe will make it easier for instructors to customize their use of the book to address their specific learning outcomes, regardless of whether they are driven by department/state standards or by personal preference. Specifically, each chapter is now organized around approximately five sections that represent the "big ideas and issues" in that particular area of psychology. Each of these self-contained sections begins with a set of learning outcomes that are compatible with Bloom's Taxonomy and ends with a short *Reflective Practice* box that allows students to receive some immediate formative feedback regarding their understanding of the key concepts and ideas from that section. We believe that structuring the book around a smaller number of key topics like this will allow instructors the flexibility to customize their course by having students read only those sections that are central to their unique learning objectives.

In addition, we have worked hard to bring the sixteenth edition of *Gateways* in line with the new recommendations put forth by the APA's Introductory Psychology Initiative (APA-IPI), while still maintaining the past edition's compatibility with the broader APA Guidelines for the Undergraduate Major. There are three main themes that appear throughout the textbook that are relevant to the APA-IPI. The first is related to *Human Diversity*, and these sections include material that ranges from the way that culture shapes moral reasoning to the way that poverty shaped the impact felt by families during COVID-19. Our discussions of human diversity include race, ethnicity, culture, SES, gender, sexual orientation, and age. Too often, such differences needlessly divide people into opposing groups. Our aim throughout this book is to discourage stereotyping, prejudice, discrimination, and intolerance. To that end, all pronouns and examples involving females and males are equally divided by gender. In artwork, photographs, and examples, we have also set out to portray the rich diversity of humanity.

The second APA-IPI theme that appears throughout the book is called *Studying the Science*. These sections model good critical thinking on topics such as adolescent mental health and the replication crisis, but they're also intended to emphasize how thinking in psychology has evolved with new research, and to highlight areas in which we're still searching for answers (e.g., How should we best conceptualize intelligence? How can we best manage implicit bias in the workplace?).

Finally, you'll see APA-IPI sections throughout the book related to *Psychology in Everyday Life*, which emphasize how psychological science can be applied to the world around us, including topics such as using laptops to take notes in class, intersex athletes competing at the Olympics, and celebrity endorsements to promote marketing campaigns. Table P.1 underscores the text's compatibility with the APA-IPI and Table P.2 shows how it can help you and your students meet the American Psychological Association's (2013) Guidelines for the Undergraduate Major.

In addition to our new format and compliance with APA initiatives, this edition of *Gateways* has a newly revised and expanded Instructor Companion Site that includes an *Instructor's Resource Manual,* which provides a wealth of teaching tips and classroom resources; *Cengage Learning Testing Powered by Cognero* featuring questions correlated to learning objectives, Bloom's taxonomy level, and difficulty; and *PowerPoint slides* providing concept coverage with dynamic animations, photographs, and video. Each of these resources has been designed with your needs in mind and will support you in successfully addressing the learning objectives you've created for your course.

Integrating Support for Active Student Learning

We have built in a number of features into the new edition of *Gateways* that we believe will assist students in honing their active learning skills. We'd like to draw your attention to four of them: *assisting with active reading*, *scaffolding student note-taking*, *promoting empirically-supported learning strategies*, and *emphasizing practical applications*.

Assisting with Active Reading

We have incorporated a number of features into the text itself that are intended to help students to learn actively as they are reading. These features include:

▲ TABLE P.1 APA-IPI Objectives Addressed by Reading
***Introduction to Psychology: Gateways to Mind and Behavior,* 16e**

Psychology Content: Identify basic concepts and research findings	
1.1. Define and explain basic psychological concepts.	All chapters, with support provided by *Glossary* and *Guided Notes*
1.2. Interpret research findings related to psychological concepts.	Sections 1.5–1.7 (*Research Methods*) Section 1.8 (*Psychology and Your Skill Set: Information Literacy*) *Studying the Science* sections
1.3. Apply psychological principles to personal growth and other aspects of everyday life.	*Psychology and Your Skill Set* sections *Psychology and Everyday Life* sections
Scientific Thinking: Solve problems using psychology methods	
2.1. Draw logical and objective conclusions about behavior and mental processes from empirical evidence.	Sections 1.5–1.7 (*Research Methods*) Section 1.8 (*Psychology and Your Skill Set: Information Literacy*) *Studying the Science* sections
2.2. Describe the advantages and limitations of various research strategies.	Sections 1.5–1.7 (*Research Methods*) *Studying the Science* sections
2.3. Design, conduct, or evaluate psychological research.	Sections 1.5–1.7 (*Research Methods*) *Studying the Science* sections
2.4. Evaluate how psychological science can be used to counter unsubstantiated statements, opinions, or beliefs.	Sections 1.5–1.7 (*Research Methods*) Section 1.8 (*Psychology and Your Skill Set: Information Literacy*)
Key Themes: Provide examples of psychology's integrative themes	
3.A. Psychological science relies on empirical evidence and adapts as new data develop.	All chapters, with a specific emphasis in *Studying the Science* sections
3.B. Psychology explains general principles that govern behavior while recognizing individual differences.	All chapters, with specific emphasis in *Human Diversity* sections
3.C. Psychological, biological, social, and cultural factors influence mental processes and behavior.	All chapters, with specific emphasis on Section 1.4 (*Biopsychosocial Model*) Section 17.4 (*Psychology and Your Skill Set: Diversity and Inclusion*) *Human Diversity* sections
3.D. Our perceptions filter our experiences of the world through an imperfect personal lens.	Sections 4.5–4.6 (*Attention and Perception*) Section 5.5 (*Psychology and Your Skill Set: Metacognition*) *Human Diversity* sections
3.E. Applying psychological principles can change our lives and communities in positive ways.	Section 18.3 (*Community Psychology*) Section 11.5 (*Civic Engagement*) *Psychology and Your Skill Set* sections *Psychology and Everyday Life* sections
3.F. Ethical principles guide psychology research and practice.	Sections 1.5–1.7 (*Research Methods*) Section 3.5 (*Ethical Behavior*)
3.G. Psychologists strive to promote respect for human diversity in its many forms.	All chapters, with specific emphasis in Section 17.4 (*Psychology and Your Skill Set: Diversity and Inclusion*) and *Human Diversity* sections

New Bloom's-oriented learning outcomes act as advance organizers to help guide student reading

Research suggests that, when included at the beginning of each chapter, learning outcomes help students build cognitive maps of upcoming topics and guide reading in productive ways (Ausubel, 1978; Gurlitt et al., 2012). The sections in each chapter of *Gateways* begin with a number of clearly-defined learning outcomes to prime student interest and focus their attention on the key ideas that they will encounter.

Active questioning is emphasized and modeled

How can questioning be built into a textbook? This new edition of *Gateways* continues its long tradition of using italicized *Dialogue Questions*, such as the previous sentence. They are typically the sorts of questions that students might find themselves thinking as they begin reading a section of text. As such, they model a dialogue in which the questions and the reactions of students are anticipated. They also clarify difficult points in a lively give-and-take between questions and responses.

Formative feedback is provided to students as they read

Within chapters, each main section concludes with a *Reflective Practice* box that allows students to test their recall and further develop their understanding of the topics presented. Each *Reflective Practice* box begins with a series of short, noncomprehensive quiz questions to help students actively process information and assess their progress. These questions, which are not as difficult as in-class tests, are meant to offer a sample of what students could be asked about various topics. Students who miss any items are

▲ TABLE P.2 APA Skills Guidelines 2.0 Addressed by Reading
***Introduction to Psychology: Gateways to Mind and Behavior,* 16e**

Chapter	Topic of Chapter	Skills in Action Topic	Chapter Addresses Material from APA Guidelines 2.0
Introduction	How to Study	Reflective Studying	4.1, 5.2, 5.3, 5.5
1	The Foundations of Psychological Science	Information Literacy	1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 2.5, 3.1
2	Brain and Behavior	Self-Regulation	1.1, 1.2, 5.2
3	Human Development	Ethical Behavior	1.1, 1.2, 2.5, 3.2, 5.1
4	Sensation, Attention, and Perception	Communication	1.1, 1.2, 4.1, 4.2, 4.3, 5.4
5	States of Consciousness	Metacognition	1.1, 1.2, 5.2, 5.3
6	Conditioning and Learning	Behavioral Self-Management	1.1, 1.2, 5.2
7	Memory	Giving Memorable Presentations	1.1, 1.2, 4.2, 5.3
8	Cognition, Language, and Creativity	Creativity and Innovation	1.1, 1.2, 1.3, 2.3, 2.5
9	Intelligence	Emotional Intelligence	1.1, 1.2, 3.2, 3.3, 4.3, 5.1, 5.4
10	Motivation and Emotion	Positivity and Optimism	1.1, 1.2, 1.3, 2.5, 4.3, 5.4
11	Sex, Gender, and Sexuality	Civic Engagement	1.3, 3.2, 3.3, 4.3, 5.2, 5.3, 5.4
12	Personality and Individual Differences	Leadership	1.1, 1.2, 2.1, 3.3, 5.1, 5.2, 5.4
13	Health Psychology	Stress Management	1.1, 1.2, 1.3, 3.3, 5.1
14	Psychological Disorders	Perseverance	5.2, 5.3, 5.5
15	Therapies	Managing Mental Health Issues	1.1, 1.2, 1.3, 3.3
16	Social Thinking and Social Influence	Teamwork	1.1, 1.2, 3.2, 3.3, 4.3, 5.1, 5.4
17	Prosocial and Antisocial Behavior	Diversity and Inclusion	1.1, 1.2, 1.3, 2.5, 3.2, 3.3, 4.3, 5.1, 5.4
18	Applied Psychology	Career Preparation	1.1, 1.2, 1.3, 2.3, 5.1, 5.5
Appendix	Statistics	Statistical Literacy	1.1, 2.1, 2.2, 2.4, 4.1

encouraged to backtrack and clarify their understanding before reading further.

Reflective Practice boxes also include *Think Critically* questions. These stimulating questions challenge students to think critically and analytically about psychology. Each is followed by a brief answer with which students can compare their own thoughts. Many of these answers are based on research and are informative in their own right. Finally, *Reflective Practice* boxes conclude with *Self-Reflect* questions that encourage students to connect new concepts with personal experiences and prior knowledge.

Built-in reading aids assist students in mastering key concepts and ideas

These reading aids include:

- Boldface terms, robust illustrations, and summaries of information relevant to the learning outcomes at the end of each chapter.
- *Bridges*, which are clearly marked in-text links to other material relevant to the reading at hand. For example, a student reading about the Freudian theory of dreams will encounter a bridge to a relevant discussion of psychoanalysis in a later chapter.
- *Placeholders*—different colored text and small geometric shapes—are used to draw attention to figure and table references in the text and make it easier for students to return to the section that they were reading after they have paused to view a table or figure.
- The *glossary function* has been made as powerful as possible. The *Main Glossary*, at the end of the book, is integrated with the *Subject Index*, making it easy to link important definitions to where they are discussed in the text. All glossary items are bold and defined in-text when the term is first encountered. In addition, the parallel *Running Glossary* defines key terms in the margins of the relevant pages, making it easy for students to find, study, and review important terms.

Scaffolding Student Note-Taking

We've noticed that many students struggle to take a good set of notes based on their reading of college texts. To address this issue, this new edition of *Gateways* comes with guided notes that are designed to scaffold students' ability to address the learning outcomes by extracting the most important information from each chapter. The notes, which are available as MS Word files, were developed using the well-established Cornell method of note-taking.

Each set of notes begins with a single-page multi-level summary of the chapter called *The Big Picture*, which gives students a bird's eye view of the chapter as a whole and emphasizes the structure that's created with headers and subheaders. The guided notes themselves focus students' attention on information relevant to the learning outcomes and press them to generate their own examples and summarize important ideas in their own words. Concept maps that are included with the notes are designed to assist students in recognizing the relationships between ideas presented in each section so that they can make important connections.

Promoting Empirically-Supported Learning Strategies

One of our goals with *Gateways* was to ensure that students begin thinking about skills during your course. Given its far-reaching implications, one that we spend considerable time on relates to effective learning. In the text itself, effective learning is promoted in a few places. First, the introduction (*Psychology and Your Skill Set: Reflective Studying*, which precedes Chapter 1) outlines some of the key features of reflective cognition and underscores its links to deeper understanding and memory. It also introduces students to specific empirically-supported strategies for a variety of different assessments, including multiple choice and short/long answer question formats.

In addition, *MindTap® Psychology* for this text provides a digital learning solution that powers students from memorization to mastery. MindTap gives you complete ownership of your content and learning experience. You have the freedom to customize the interactive syllabi, emphasize the most important topics, and add your own material or notes in the eBook. Assign Mastery Training to encourage students to begin studying early, and reinforce all that they have learned from the eBook with virtual labs, auto-graded writing assignments, and more. Whatever your learning goals may be, MindTap allows you to provide engaging content, and to challenge every single student while building his or her confidence.

Emphasizing Practical Applications

To further encourage students' reading, we have emphasized the many ways that psychology relates to practical problems in daily life. As mentioned earlier, this edition of the texts includes new *Psychology in Everyday Life* sections that tackle the role of psychology in addressing issues relevant to the world around us. Another major feature of this book is the *Psychology and Your Skill Set* sections that are found at the end of each chapter. These high-interest discussions bridge the gap between theory and practical applications by exploring how psychology has contributed to our understanding of the skills that are valuable at work and in our relationships.

We believe that it is fair for students to ask, "Does this mean anything to me? Can I use it? Why should I learn it if I can't?" These two unique sections found throughout the text allow them to see the benefits of adopting new ideas from this text, and they breathe life into psychology's concepts.

Introduction to Psychology: Gateways to Mind and Behavior—What's New in the 16th Edition?

On the content side, the 16th edition of *Introduction to Psychology: Gateways to Mind and Behavior* has been extensively updated and features some of the most recent, reliable, and interesting findings from psychological science, plus fully updated statistics. The following sections provide some highlights regarding the new topics and features that appear in this edition.

Chapter 1: The Foundations of Psychological Science

- The new organization of this chapter includes the following major sections:

1.1 Commonsense Psychology	1.5 Core Features of Psychological Science
1.2 What Psychologists Do	1.6 Experimental Research
1.3 The History of Psychological Science	1.7 Nonexperimental Research
1.4 Contemporary Psychological Science and the Biopsychosocial Model	1.8 Psychology and Your Skill Set: Information Literacy

- The structure of Section 1.2 (*What Psychologists Do*) has been simplified to address two major themes: conducting psychological research and "helping people," or clinical work.
- Section 1.3 (*History of Psychological Science*) has been reorganized such that contemporary approaches are more clearly contrasted against historical ones.
- Section 1.5 (*Core Features of Psychological Science*) now includes a designated section on the types of data collected by psychological scientists (i.e., self-report/surveys, observational data, physiological data). New material in this section also introduces qualitative methods of inquiry. In addition, a new *Studying the Science* segment explains the importance of replicating scientific findings and the various reasons that can account for replication failures.
- Section 1.7 (*Nonexperimental Research*) now brings together all of the material related to nonexperimental methods (i.e., quasi-experiments, correlational research, cases studies).
- Section 1.8 (*Information Literacy*) includes new material related to the pressing need to check sources at a time when it is so easy to create misleading or biased web-based content, as

well as quick and practical suggestions related to lateral reading, which is the primary method employed by professional fact checkers.

Chapter 2: Brain and Behavior

- The new organization of this chapter includes the following major sections:

2.1 The Nervous System	2.4 The Subcortex and Endocrine System
2.2 Brain Research	2.5 Psychology and Your Skill Set: Self-regulation
2.3 The Cerebral Cortex	

- Section 2.3 (*The Cerebral Cortex*) contains more recent research concerning mirror neurons that questions their role in autism.
- Section 2.5 (*Self-Regulation*) includes a new *Studying the Science* segment that addresses recent efforts to replicate Mischel's famous "marshmallow test," and how poverty can impact the results of such self-regulation tasks.

Chapter 3: Human Development

- The new organization of this chapter includes the following major sections:

3.1 The Forces That Shape Development: Nature and Nurture	3.4 Language, Cognitive, and Moral Development
3.2 Physical and Perceptual Development	3.5 Psychology and Your Skill Set: Ethical Behavior
3.3 Emotional and Social Development	

- Section 3.1 (*Nature and Nurture*) now contains a new segment about epigenetics that describes, in very simplified terms, how epigenetic factors work to alter gene expression and their impact on development across the lifespan.
- Sections 3.2, 3.3, and 3.4 have been reorganized to adopt a chronological approach within each of these "topical areas" of development. Specifically, each topical area begins with a discussion of development in infancy and childhood, followed by a discussion of development in adolescence and adulthood.
- Section 3.2 (*Physical and Perceptual Development*) has new material detailing perceptual development beyond the visual system to include lifespan changes in hearing, taste, and smell.
- Section 3.3 (*Emotional and Social Development*) now includes recent research related to adolescent mental health concerns, as well as information about the positivity effect that has been repeatedly observed in research related to adults' emotional lives. This section also includes new material related to emerging adulthood, and introduces readers to established literature demonstrating that shrinking social networks in older adulthood is less about disengagement and more about purposefully prioritizing relationships that are the most rewarding.
- Section 3.4 (*Language, Cognitive, and Moral Development*) has been streamlined and reorganized to make way for an expanded discussion of theory of mind research, as well as more recent cognitive developmental research related to executive functions, academic learning, and children's memory.
- Section 3.5 (*Ethical Behavior*) includes a new *Human Diversity* section that outlines alternative bases for making moral decisions that go beyond the traditional focus on justice and care, outlining how they are important, in particular, in cultures outside of the West.

Chapter 4: Sensation, Attention, and Perception

- The new organization of this chapter includes the following major sections:

4.1 Sensation	4.5 Attention
4.2 Vision	4.6 Perception
4.3 Hearing	4.7 Psychology and Your Skill Set: Communication
4.4 Chemical and Somesthetic Senses	

- Section 4.1 (*Sensation*) has been rewritten to further clarify the process of transduction, and the section on sensory selection has been reorganized to make clear the four specific ways in which selection can take place.
- Sections 4.2 to 4.4, which relate to the basic sensory modalities, have all been reorganized to focus on how transduction occurs in that particular modality. A new *Psychology in Everyday Life* segment describes the phenomenon of motion sickness in terms of new material on multimodal integration.
- Section 4.5 (*Attention*) provides expanded coverage on processes related to attention, including new material related to multitasking. The importance of goals in guiding attention is also highlighted with new research that has been connected to inattentional blindness. This section concludes with a newly-written *Psychology in Everyday Life* section that addresses recent research on mind-wandering.
- Section 4.6 (*Perception*) has been reorganized to emphasize how transduction and experience contribute to both similarities and differences in human perception. In doing so, we draw in new references to popular culture (#thedress; Yanni vs. Laurel). A new *Human Diversity* segment discusses the other-race effect observed in face perception studies, and a new *Psychology in Everyday Life* segment discusses research related to the use of virtual reality in clinical contexts.

Chapter 5: States of Consciousness

- The new organization of this chapter includes the following sections:

5.1 States of Consciousness	5.4 Drug-Altered Consciousness
5.2 Hypnosis and Meditation	5.5 Psychology and Your Skill Set: Metacognition
5.3 Sleep	

- Section 5.3 (*Sleep*) includes new research on sleep disorders.
- Section 5.4 (*Drug-Altered Consciousness*) has updated information on state laws related to cannabis, new research on caffeine, and new statistics related to fentanyl overdoses.

Chapter 6: Conditioning and Learning

- The new organization of this chapter includes the following major sections:

6.1 The Basics of Learning	6.4 Observational Learning
6.2 Classical Conditioning	6.5 Cognitive Learning
6.3 Operant Conditioning	6.6 Psychology and Your Skill Set: Behavioral Self-Management

- Material related to conditioning has been streamlined to allow for a significantly expanded discussion of observational and cognitive learning.
- Section 6.4 (*Observational Learning*) includes new material that connects observational learning to workplace behavior (e.g., how people learn the type of inappropriate behavior that was the focus of the #metoo movement) and media coverage of real-life tragedies such as mass shootings (i.e., copycat crimes). Material related to observational learning and media-based violence has been updated, and a new *Studying the Science* segment unpacks why researchers sometimes come up with conflicting findings regarding the connection between media violence and aggression.
- Section 6.5 (*Cognitive Learning*) is now more clearly aimed at students interested in pursuing careers in education, as well helping students to better understand their own learning. Newly-written material covers the distinction between school and educational psychologists, Bloom's Taxonomy, and factors that influence cognitive learning (e.g., learner characteristics and learning strategies). Two *Studying the Science* sections look carefully at mindset and learning styles, areas in which newer findings have not always aligned with original research. This section concludes with a new segment on educational technology, including research that specifically examines the costs and benefits of using laptops in the classroom for note-taking.

Chapter 7: Memory

- The new organization of this chapter includes the following major sections:

7.1 A General Model of Memory	7.5 Accuracy of Long-Term Memory
7.2 Sensory & Short-Term (Working) Memory	7.6 Improving Your Memory
7.3 Long-Term Memory	7.7 Psychology and Your Skill Set: Giving Memorable Presentations
7.4 Remembering and Forgetting	

- This chapter now more clearly delineates memory systems (that is, types of memory) from memory processes, and emphasizes the general process of encoding as the means of moving information from working memory into long-term memory.
- Section 7.3 (*Long-Term Memory*) has been substantially reworked, elaborating on the idea that LTM is organized primarily based on meaning. This section also addresses the importance of LTM (i.e., the problem with adopting a view that people don't need to remember because they can just "Google it"), drawing on findings demonstrating that extensive prior knowledge in LTM helps with both quickly understanding new information and with remembering it later.
- Section 7.4 (*Remembering and Forgetting*) has been reorganized to focus on factors that do promote encoding and those that (surprisingly) do not, backed up by newer research that builds on the classic "penny" study. Updated views on forgetting (including its benefits for learning and the distinction between active and passive forgetting) and the reconstructive nature of remembering have also been added to this section.

Chapter 8: Cognition, Language, and Creativity

- The new organization of this chapter includes the following major sections:

8.1 The Basic Units of Cognition	8.4 Creative Thinking
8.2 Problem Solving	8.5 Psychology and Your Skill Set: Creativity and Innovation
8.3 Intuition, Decision-Making, and Cognitive Biases	

- Section 8.1 (*The Basic Units of Cognition*) includes updated information about bilingualism.
- Section 8.2 (*Problem Solving*) includes an expanded discussion of the different problem-solving strategies employed by experts and novices, drawing students' attention to the link between problem solving and memory.
- Section 8.3 (*Intuition, Decision Making, and Cognitive Biases*) now introduces readers to the role of psychology in the emerging field of behavioral economics. It also has a new section that describes the availability heuristic, as well as updated information on choice overload (including the conditions under which it does *not* occur).

Chapter 9: Intelligence

- The new organization of this chapter includes the following major sections:

9.1 Defining Human Intelligence	9.4 Genetic and Environmental Contributions to Intelligence
9.2 Measuring Intelligence	9.5 Thinking Ethically About Intelligence
9.3 Intellectual Giftedness and Disability	9.6 Psychology and Your Skill Set: Emotional Intelligence

- Section 9.1 (*Defining Human Intelligence*) has been reorganized to include more general material from other sections, and discusses the strengths and weaknesses associated with multiple conceptualizations of intelligence.
- Section 9.2 (*Measuring Intelligence*) includes newer research concerning developmental change in traditional IQ measures.
- Section 9.4 (*Genetic and Environmental Contributions to Intelligence*) describes newer research related to genetic contributions to intelligence, including the findings of large-scale studies suggesting that intelligence is the product of a large number of genes. Also included in this section is updated information about the role of the environment, including an

attempt to clarify conflicting research findings related to the role of programs such as Head Start.
- Chapter 9.5 (*Thinking Ethically About Intelligence*) includes new information from large-scale genetic studies emphasizing the need to avoid over-simplifying the concept of race, and its relation to IQ test scores. A new *Psychology in Everyday Life* section expands on prior coverage of artificial intelligence (AI), and includes a new discussion about AI privacy concerns, particularly those associated with the facial recognition programs now in use in many parts of the United States.

Chapter 10: Motivation and Emotion

- The new organization of this chapter includes the following major sections:

10.1 The Basics of Motivation	10.4 The Four Basic Aspects of Emotion
10.2 Biological Motives	10.5 Connecting the Four Basic Aspects of Emotion
10.3 Stimulus and Learned Motives	10.6 Psychology and Your Skill Set: Positivity and Optimism

- Section 10.1 (*The Basics of Motivation*) outlines newer findings related to the history of Maslow's hierarchy of needs, including some misconceptions about his ideas.
- Section 10.3 (*Stimulus and Learned Motives*) contains a more nuanced account of the Yerkes-Dodson law with a new figure that helps to explain how the relationship between arousal and performance depends on the ease of the task.
- Section 10.4 (*The Four Basic Aspects of Emotion*) now situates our discussion of emotion in the context of emotion-related experience, physiology, expression (i.e., behavior), and cognitions. In terms of behavior, newer research related to the importance of posture, eye gaze, and tone of voice has been included, and a new *Psychology in Everyday Life* section discusses new findings related to emotion contagion. Another new section describes emotion regulation, including the effectiveness of a variety of well-studied regulatory strategies.
- Section 10.5 (*Connecting the Four Basic Aspects of Emotion*) includes an updated treatment of Schachter and Singer's two-factor theory. A new *Studying the Science* section takes a closer look at Paul Ekman's basic emotion theory, including elements that have and have not been supported in more recent research.

Chapter 11: Sex, Gender, and Sexuality

- The new organization of this chapter includes the following major sections:

11.1 Sexual Development and Orientation	11.4 Sexual Relationships
11.2 Gender Identities and Roles	11.5 Psychology and Your Skill Set: Civic Engagement
11.3 Sexual Responses, Attitudes, and Behaviors	

- This chapter has been updated to reflect recent recommendations about the language that should be used to describe members of the LGBTQ community.
- Section 11.1 (*Sexual Development and Orientation*) contains a new *Psychology in Everyday Life* section related to the participation of intersex athletes in international competitions such as the Olympics.
- Section 11.3 (*Sexual Responses, Attitudes, and Behaviors*) includes newer research related to current sexual attitudes and behavior, as well as updated statistics on STDs.
- Section 11.4 (*Sexual Relationships*) has a brand-new section related to sexual harassment, including information designed to help students identify instances of harassment and potential responses.
- Section 11.5 (*Civic Engagement*) has updated information about young people's leadership and participation in major initiatives such as the Global Climate Strike.

Chapter 12: Personality and Individual Differences

- The new organization of this chapter includes the following major sections:

12.1 Theories of Personality	12.4 Factors Influencing Personality
12.2 Traits	12.5 Psychology and Your Skill Set: Leadership
12.3 Personality Assessment	

- Section 12.1 (*Theories of Personality*) has been reorganized to directly contrast key terms (e.g., personality, individual differences, temperament). Subsections related to theoretical perspectives have been rewritten in a parallel format (including each one's conceptions about the structure, dynamics, and development of personality) to make it easier for students to draw direct comparisons between them.
- Section 12.2 (*Traits*) includes a new *Human Diversity* section that highlights the HEXACO model of personality, and directly contrasts it with the Big Five. Two other new sections outline how a wide array of personalities can be explained with just a small number of trait-related factors, and the distinction between trait and type (e.g., Myers-Briggs) approaches to personality.

Chapter 13: Health Psychology

- The new organization of this chapter includes the following major sections:

13.1 Biopsychosocial and Behavioral Contributions to Health	13.4 Improving Health Through Coping
13.2 Stress and Health	13.5 Psychology and Your Skill Set: Stress Management
13.3 Improving Health with Treatment	

- Section 13.1 (*Biopsychosocial and Behavioral Contributions to Health*) has been substantially reworked to include greater emphasis on cultural differences in the extent to which practitioners adhere to the medical vs. biopsychosocial models of health. It also more clearly explains how the three components

of the biopsychosocial model are relevant to health psychologists' work. A new *Human Diversity* section addresses the role of poverty in contributing to the health-related consequences of COVID-19.
- Section 13.2 (*Stress and Health*) has been reorganized and streamlined to make way for new content in other sections.
- Section 13.3 (*Improving Health with Treatment*) is brand new and focuses broadly on the role of the biopsychosocial model in understanding the likelihood of seeking and complying with treatment from a health-care provider. Specific topics include: factors related to recognizing illness and seeking treatment (including complementary and alternative medicine), reasons for treatment noncompliance, and how health care practitioners can minimize the likelihood that noncompliance will occur. A *Studying the Science* section explores people's use of the Internet to find information during the COVID-19 pandemic.
- Section 13.4 (*Improving Health Through Coping*) has been streamlined to make way for content in other sections, but includes new material on relationship-focused coping.

Chapter 14: Psychological Disorders

- The new organization of this chapter includes the following major sections:

14.1 Psychopathology: Classification and Causes	14.4 Anxiety and Anxiety-Related Disorders
14.2 Psychotic Disorders	14.5 Psychology and Your Skill Set: Perseverance
14.3 Mood and Personality Disorders	

- Section 14.1 (*Classification and Causes*) has been reorganized to focus on four ways to define abnormality and the advantages and disadvantages of using the DSM-5 as a means of classifying mental health concerns.
- Section 14.3 (*Mood and Personality Disorders*) includes changes to language related to suicide that are in keeping with suggestions made by the American Foundation for Suicide Prevention.
- In all sections of this chapter, there is a greater emphasis on the biopsychosocial model as a means of understanding psychopathology.

Chapter 15: Therapies

- The new organization of this chapter includes the following major sections:

15.1 The Origins and Effectiveness of Psychotherapy	15.4 Medical Therapies
15.2 Behavior Therapies	15.5 Psychology and Your Skill Set: Managing Mental Health Issues
15.3 Cognitive and Humanistic Therapies	

- Section 15.1 (*The Origins and Effectiveness of Psychotherapy*) brings together general information about psychotherapies (e.g., history, classification, methods of establishing effectiveness) that had previously been distributed throughout the chapter.
- Section 15.2 (*Behavior Therapies*) now more clearly delineates two therapeutic techniques based on classical conditioning (aversion and exposure therapies) and two based on operant conditioning (token economies and a new section on intensive behavioral intervention, which is often used in the treatment of autism). The different types of exposure therapy (flooding, systematic desensitization, modeling) are also more clearly delineated.
- Section 15.3 (*Cognitive and Humanistic Therapies*) provides a clearer explanation of rational-emotive behavior therapy as one of the first examples of a cognitive behavior therapy.
- Section 15.4 (*Medical Therapies*) includes updated information related to brain stimulation therapies.

Chapter 16: Social Thinking and Social Influence

- The new organization of this chapter includes the following major sections:

16.1 The Fundamentals of Social Groups	16.3 Social Influence
16.2 Attitudes	16.4 Psychology and Your Skill Set: Teamwork

- Section 16.1 (*The Fundamentals of Social Groups*) brings together general information about groups (ingroups vs. outgroups, characteristics of groups, characteristics of individuals within groups) that was previously distributed throughout the chapter. This section also includes a more nuanced discussion of attribution theory, with a new table that shows how consistency, distinctiveness, and consensus impact the likelihood that an internal vs. external attribution will be made.
- Section 16.3 (*Social Influence*) includes a streamlined section on mere presence that allows for a more in-depth discussion of conformity (including new material on Sherif's famous autokinetic study) and compliance (including new research from behavioral economists related to "nudges"). A new *Studying the Science* section explores Milgram's obedience studies in greater depth, examining a broader range of his experimental conditions and what they tell us about the likelihood that people will (or will not) obey orders.
- Section 16.4 (*Teamwork*) now makes reference to COVID-19 and its impact on our understanding of the effectiveness of virtual teams.

Chapter 17: Prosocial and Antisocial Behavior

- The new organization of this chapter includes the following major sections:

17.1 Affiliation and Attraction	17.3 Antisocial Behavior: Aggression, Conflict, and Prejudice
17.2 Prosocial Behavior: Helping Others	17.4 Psychology and Your Skill Set: Diversity and Inclusion

- Section 17.2 (*Prosocial Behavior*) now clarifies the relationship between altruism and prosocial behavior, and distinguishes between self-oriented and other-oriented motives for prosocial behavior. An expanded section on the factors that

influence prosocial behavior is also included. Finally, a new *Studying the Science* section explores the construct of empathy.
- Section 17.3 (*Antisocial Behavior*) now distinguishes between direct and indirect aggression, providing examples from everyday life. Two new *Studying the Science* sections examine emerging work related to microaggressions (and some of the challenges associated with studying them) and the utility of the implicit association task (IAT). Finally, new material addresses the health consequences that stem from experiencing chronic prejudice and the utility of diversity training initiatives in the workplace.

Chapter 18: Applied Psychology

- The new organization of this chapter includes the following major sections:

18.1 Industrial/Organizational Psychology	18.3 Legal, Community, and Sports Psychology
18.2 Environmental Psychology	18.4 Psychology and Your Skill Set: Career Preparation

- Section 18.1 (*Industrial/Organizational Psychology*) has been reorganized and the discussion of flexible working has been expanded to include a discussion of this topic in relation to COVID-19.
- In Section 18.2 (*Environmental Psychology*), previous material on space habitats has been eliminated to allow for expanded coverage of human impacts on the environment.
- Section 18.3 (*Legal, Community, and Sports Psychology*) now distinguishes the related fields of legal and forensic psychology. Material about educational psychology has been moved to Chapter 6 (Conditioning and Learning); in its place is a brand-new section introducing students to community psychology.
- Section 18.4 (*Career Preparation*) contains some new suggestions for students to consider as they think about a possible career.

Appendix: A Psychologist's Skill Set: Statistical Literacy

- We have clarified the relationship between measures of central tendency and measures of variability to help readers understand their distinct contribution to descriptive statistics. The utility of correlations in making predictions has been further emphasized.

A Complete Course—Teaching and Learning Supplements

A rich array of supplements accompanies *Introduction to Psychology: Gateways to Mind and Behavior*, including several that make use of the latest technologies. These supplements are designed to make teaching and learning more effective. Many are available free to professors or students. Others can be packaged with this textbook at a discount. Contact your local sales representative for more information on any of the listed resources.

Student Support Materials

Introductory students must learn a multitude of abstract concepts, which can make a first course in psychology difficult. The materials listed here will greatly improve students' chances for success.

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MindTap® Psychology for Coon/Mitterer/Martini's *Introduction to Psychology: Gateways to Mind and Behavior*, 16th Edition, helps students learn on their own terms. They can begin studying early with Mastery Training, interact with the eBook, and reinforce learning with assignments that will help them prepare for the test. Students can also take advantage of the *MindTap Mobile App*. They can read or listen to the textbook and study with the aid of instructor notifications, flashcards, and practice quizzes. They can also highlight key text, add notes, and create their own custom flashcards. When it's time to study, everything they've flagged or noted can be gathered into a guide that they can organize.

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Teaching an introductory psychology course is a tremendous amount of work, and the supplements listed here should help make it possible for you to concentrate on the more creative and rewarding facets of teaching. All of these supplements are available online for download. Go to login.cengage.com to create an account and log in.

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The Instructor Companion Site for this title includes an *Instructor's Resource Manual,* which provides a wealth of teaching tips and classroom resources; *Cengage Learning Testing Powered by Cognero* featuring questions correlated to learning objectives, Bloom's taxonomy level, and difficulty; *Guided Notes for students* to assist with their note-taking; and *PowerPoint slides* providing

concept coverage with dynamic animations, photographs, and video.

Summary

We sincerely hope that both teachers and students will consider this book and its supporting materials a refreshing change from the ordinary. Creating it has been quite an adventurous journey for us; one that we look forward to sharing with you in the chapters that follow. We hope that you enjoy the ride.

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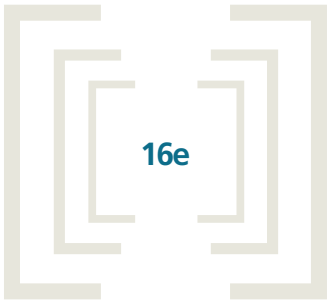
Introduction to Psychology: Gateways to Mind and Behavior



Introduction

Psychology and Your Skill Set: Reflective Studying

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Gateway Theme It is possible to learn more efficiently and effectively by being reflective about reading, note-taking, and studying.

Chapter Outline

Well Hello There!

As your authors, we are delighted to welcome you to the "manual" for this textbook. No! Don't skip this, please. We understand that few people want to start a new adventure by reading a manual—they would prefer to just step off the airplane and begin their vacation, get right into that new computer game, or start using their new camera or smartphone. But please be patient and take some time to read this short chapter—we think it will almost certainly increase your odds of success in this course.

Successfully learning psychology depends on how *reflective* you are as you read your textbook, listen during your classes, and study for exams. Students who get good grades tend to work more reflectively, not just longer or harder. They also tend to understand and remember more of what they've learned long after their exams are over. In this introduction, we share our thoughts on why psychology provides a good foundation for being successful in your personal and professional life, before going on to outline a variety of ways to become a more reflective learner.

I.1 Why Study Psychology?

GATEWAYS LEARNING OUTCOME:
After reading this section you should be able to:

I.1.1 Explain how studying psychology will help you in your personal and professional life

As you begin exploring the field of psychology, you may well be asking yourself what you'll get out of it. In general, most of your courses will offer you opportunities to learn in two important ways. The first has to do with course *content*—in this introductory psychology course, the content is what you'll learn about the field of psychology. This includes what psychological research tells us about memory, social relationships, brain functioning, children's development, and psychopathology (to name just a few topics). But taking a psychology course will also promote your learning in a second way—specifically, it will teach you about *skills* that you'll need to be successful in your personal and professional life.

What do you mean by "skills"? When we talk about skills, we're often talking about things that you can do, such as communicate clearly or work well with others. But in some cases, the term *skills* can also refer to personal characteristics; for example, independence, tolerance, and adaptability are often considered to be important skills.

These two broad categories of learning—content and skills—are outlined in the American Psychological Association's (APA) *Guidelines for the Undergraduate Psychology Major* (*version 2.0*) (American Psychological Association, 2013). It is well worth having a look at the full document (which is available online), but you can start by having a look at ▲ Table I.1.

Do you assume that your only goal is to memorize "the facts," or knowledge base, of psychology? If so, as you can see in Table I.1, you are thinking in terms of Goal 1. But what about the other goals listed there? Suppose you are given an assignment that involves working in small groups to evaluate some published research articles. Would you wonder why you have to work with other students? Or wish your professor would just get to the point and tell you what the articles are about? Understanding that your education is also about acquiring skills—like being able to think critically (Goal 2), consider diverse points of view (Goal 3), communicate clearly (Goal 4), and work as part of a team (Goal 5)—makes it easier for you to appreciate that professors set up assignments to build skills, as well as furthering what you know about psychology.

▲ Table I.1 APA Guidelines for the Undergraduate Psychology Major

Goal 1: Knowledge Base of Psychology
Goal 2: Scientific Inquiry and Critical Thinking
Goal 3: Ethical and Social Responsibility in a Diverse World
Goal 4: Communication
Goal 5: Professional Development

Adapted from American Psychological Association, 2013. For complete details, go to: www.apa.org/ed/precollege/about/learning-goals.pdf.

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Working on developing your skills may seem like a waste of your time compared with putting that time into learning course content. But don't sell it short; your skill set will be just as important as your content expertise whether you go on to post-graduate education or a career.

One of the things that you might notice as you look through Table I.1 is that many of the skills listed aren't really specific to psychology—they're likely to be just as relevant to someone majoring in history or business or biology. After all, people in all disciplines need to understand how to communicate well, work well with others, and behave ethically.

Some of the most important advice we can give you, then, is to remember to focus on the skills that you are learning throughout your studies at university, whether in psychology or other subjects. They may not always seem obvious when you're reading a textbook or when you're completing your assignments, but when it comes time for you to hit the job market, you'll be happy that you did.

Psychology and Your Skill Set

To understand why your skill set is important, have a look at ▲ Table I.2, which lists a few of the career opportunities open to psychology majors.

Travel agent? Think about it for a moment. A travel agent may not need psychology content expertise, such as being able to list Freud's stages of psychosexual development or explain what psychological functions are controlled by the different parts of the brain. But it *would* help to be able to work independently, do your own research, be able to make presentations to individuals or groups, have some sensitivity to cross-cultural issues, write well, and, in general, work well with people. While these sorts of skills can be learned in other ways, studying psychology provides a "golden opportunity" for you to develop an impressive set of skills that are valued by many employers.

▲ Table I.2 A Skills-Based List of Some Potential Careers for Psychology Majors

Addictions counselor	Manager
Administration	Market research analyst
Advertising	Marketing
Career/employment counselor	Mental health worker
Case worker	Motivational researcher
Child care worker	Personnel
Child welfare worker	Population studies researcher
Community worker	Probation or parole officer
Correctional officer	Professional consultant
Counselor	Program coordinator
Cultural diversity consultant	Psychiatric assistant or aide
Customs or immigration agent	Public health statistician
Daycare worker, supervisor	Public opinion interviewer
Educational counselor	Public relations
Entrepreneur	Psychology professor
Fundraiser or development officer	Recreation specialist
Gerontology	Research assistant
Government researcher	Sales representative
Health services	Social services/social worker
Hospice coordinator	Teaching
Human resources	Technical writer
Immigration officer	Travel agent
Labor relations specialist	Youth worker

Adapted from Canadian Psychological Association (2017).

How This Book Will Help You with Skill Development

You probably won't be surprised to learn that *Introduction to Psychology: Gateways to Mind and Behavior* has been written with the APA *Guidelines* in mind, in an effort to help you further develop your career-related skill set. Here are some skills highlights:

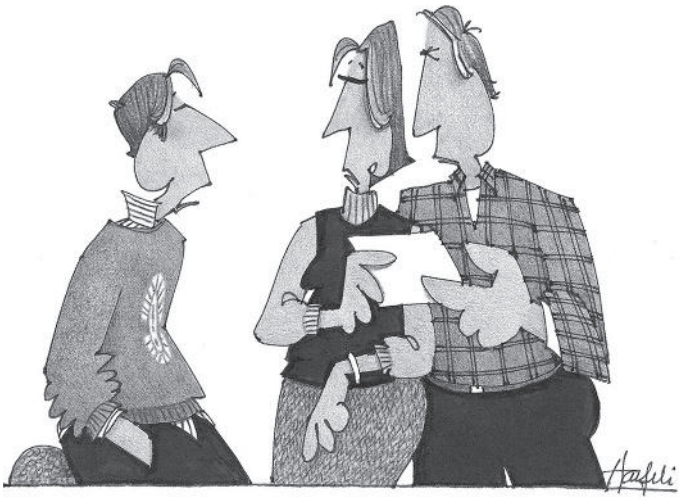
- **Application Skills:** One skill that employers value is the ability to see connections and apply learning from one situation to another. In this book, we have a number of sections about *Psychology in Everyday Life* which are intended to make clear how the findings from psychological science can be seen all around us.
- **Research and Critical Thinking Skills:** We will introduce you to science and psychology research, from the research methods in Chapter 1 to the Statistical Literacy Appendix (and everywhere in between!). An important element of research is critical thinking, which encompasses a wide array of related skills including defining problems, searching for and evaluating information to address those problems, and synthesizing information that you gather. But critical thinking skills matter in many careers beyond research, so in this book we've tried to model it whenever we can. In particular, scattered throughout the book you'll find sections called *Studying the Science*, in which we specifically focus on thinking critically about complex topics such as the link between media violence and aggression.
- **Cultural Awareness Skills:** OK, so we can't take you on a field trip to Japan, but throughout this book, we invite you to reflect on the differences among people of different ethnicities, sexual orientations, ages, and genders. Developing these skills will be particularly important when you find yourself having to work with others whose background or belief system is not the same as your own. Throughout this text, you'll find sections titled *Human Diversity*, which will draw your attention to the wide variation in human characteristics and behaviors.
- **Psychology and Your Skill Set:** In the remainder of this Introduction we discuss a full set of study skills, from how to read and listen for understanding to how to take tests and overcome procrastination. In addition, at the end of each chapter you'll also encounter a *Psychology and Your Skill Set* section. Each of these sections connects the field of psychology to a skill that is likely to be useful across a broad range of career paths. These sections, combined with the digital resources for this book, will allow you to measure your skill level and give you practical ideas you can use to improve your skill set.

Of course, we understand that the classroom isn't the only place to learn skills that can help you in your personal life and career. Many college and university students will also have part-time jobs, or they will participate in other learning experiences such as community-based volunteering, student government or clubs, or study abroad. Often, the skills that you develop through these extracurricular experiences will support or complement the skills that you can learn through the assignments that you'll complete for your courses.

For example, common part-time student jobs involving interaction with the public (e.g., waiting tables, customer service, or retail jobs) often help to build *verbal* communication skills such as the ability to speak to others, and to listen effectively to what others are saying. In contrast, class assignments often build *writing* skills and the ability to *read and understand* complex material. When you are attempting to persuade an employer that you have a broad range of communication skills, then, you should make sure that you discuss what you have learned from a variety of experiences both inside and outside of the classroom to demonstrate the full range of your abilities.

Reflective Learning: The Most Important Ingredient

Simply deciding that you want to learn some content or skills isn't going to actually make it happen. To understand why, think about the last time you spent the evening relaxing in front of the



"I'm too busy going to college to study."

William Haefeli/Conde Nast/Cartoon bank

television. It probably was fun, but you may have noticed that you didn't think too much about what you were watching and that your subsequent memories are not detailed. You were engaging in **experiential processing**, more or less passively soaking up the experience (Kahneman, 2011; Norman, 1994).

Now contrast that with your experience in a recent job interview. It is highly unlikely that you got through the interview by relying on experiential processing alone (and even less likely that you landed the job if you did). Instead, you probably actively and carefully listened to the questions and put some serious effort into thinking through the implications of answering in different ways before responding. No drifting off here; you were focused and controlled until you left the interview, when you likely breathed a much-deserved sigh of relief. By reacting mindfully (Siegel, 2010), you engaged in **reflective processing** (Kahneman, 2011; Norman, 1994). Rather than just having the experience, you *actively thought* about it. Similarly, **reflective learning** occurs when you engage in deliberately reflective and active self-regulated study (Anthony, Clayton, & Zusho, 2013; Mega, Ronconi, & De Beni, 2014). Here, in general, is how you can promote reflective learning of both content and skills:

1. **Set specific, objective learning goals.** Begin each learning session with specific goals in mind. What knowledge or skills are you trying to master? What do you hope to accomplish (Pychyl, 2013)? The learning outcomes that precede each section will help you with this task.
2. **Plan a learning strategy.** How will you accomplish your goals? Make daily, weekly, and monthly plans for learning. Then put them into action.
3. **Be your own teacher.** Effective learners silently give themselves guidance and ask themselves questions. For example, as you are learning, you might ask yourself, "What are the important ideas here? What do I remember? What don't I understand? What do I need to review? What should I do next?"
4. **Monitor your progress and correct your strategy when necessary.** Reflective learning depends on self-monitoring. Exceptional learners keep records of their progress toward learning goals (pages read, hours of studying, assignments completed, and so forth). They quiz themselves, use study guides, and find other ways to check their understanding while learning. Consider asking yourself these questions regularly as you work toward mastering both course content and skills: Do any specific areas of your work need improvement? If you are not making good progress toward long-range goals, do you need to revise your short-term targets? If you fall short of your goals, you may need to adjust how you budget your time. You may also need to change your learning environment to deal with distractions such as browsing the web, daydreaming, talking to friends, or testing the limits of your hearing with your new ear buds.
5. **Reward yourself.** When you meet your daily, weekly, or monthly goals, reward your efforts in some way, such as going to a movie or downloading some new music. Be aware that self-praise also rewards learning. Being able to say "Hey, I did it!" can be rewarding. In the long run, success, self-improvement, and personal satisfaction are the real payoffs for learning.

If you discover that you lack certain knowledge or skills, ask for help, take advantage of tutoring programs, or look for information beyond your courses and textbooks. Knowing how to reflectively enhance learning can be a key to lifelong enrichment and personal empowerment (Van Blerkom, 2012).

I.2 Reflective Reading: How to Tame a Textbook

GATEWAYS LEARNING OUTCOME:
After reading this section you should be able to:

I.2.1 Describe how you can get the most out of this textbook

One powerful way to get the most out of this textbook is to be more reflective through **self-reference**. As you read, relate new facts, terms, and concepts to your own experiences and information that you already know well. Doing this will make new ideas more personally meaningful and easier to remember. **Critical thinking** is another powerful way to be more reflective. Remember, critical thinkers pause to evaluate, compare, analyze, critique, and synthesize what they are reading (Chaffee, 2015). You should, too. In Chapter 1, we will learn how to think critically about psychological science.

Does this really work? You bet! Using a reflective reading strategy improves learning and course grades (Taraban, Rynearson, & Kerr, 2000). It also results in enhanced long-term understanding. Simply reading straight through a textbook chapter can give you intellectual indigestion. That's why it's better to stop often to reflect, review, and digest information as you read.

Going Digital

Digital media can also offer several ways to learn more reflectively from this textbook. You can get a good start by exploring MindTap.

MindTap

MindTap is a highly personalized, fully online learning platform that integrates in one site all of the authoritative content, assignments, and services that accompany your textbook, *Introduction to Psychology: Gateways to Mind and Behavior*.

What can I expect to get out of MindTap? Many of the more active elements of reflective learning are better presented digitally. There is room, for example, to include only a few practice quizzes in a print textbook (and you, the reader, have to self-score them). In contrast, digital media make it feasible to present more extensive practice materials, as well as to provide immediate feedback.

MindTap has been designed to make it easier for you to engage in reflective learning by presenting the entire course (yup, the textbook, too) through a reflective learning path that includes video and other interactive activities. You will be able to complete reading assignments, annotate your readings, complete homework, get detailed instant feedback on Guided Practice Activities, and interact with quizzes and assessments. MindTap includes a variety of apps known as "MindApps," allowing functionality such as having the text read aloud to you, as well as synchronizing your notes with your personal Evernote account. MindApps are woven into the MindTap platform and enhance your learning experience with this textbook.

Psychology Websites

As you read (reflectively, of course) through this textbook, you may, from time to time, find yourself wanting to read more about a particular topic. Consider following up by looking up some of the references included in this text. For example, suppose that you were just reading about procrastination and wanted to learn more about the reference *Pychyl* (2013). You can look up all in-chapter references in the "References" section at the back of this text. There, you will find that *Pychyl* (2013) is a book about overcoming procrastination.

Sometimes, though, the reference that you are interested in will be a psychology journal article. To locate journal articles, you can use PsycINFO, a specialized online database offered by the American Psychological Association (APA). **PsycINFO** provides summaries of the scientific and scholarly literature in psychology. Each record in PsycINFO consists of an abstract (short summary), plus notes about the author, title, source, and other details. Entering the author's or authors' name(s) and article title will bring you to the article in question. Also, all PsycINFO entries are indexed using key terms. Thus, you can search for various topics by entering words such as *procrastination*, *postpartum depression*, or *creativity* and find research papers on any topic in psychology that might interest you.

Most colleges and universities subscribe to PsycINFO. You can usually search PsycINFO from a terminal in your college library or computer center—for free. PsycINFO can also be directly accessed (for a fee) through the Internet via APA's PsycINFO Direct service. For more information on how to gain access to PsycINFO, check out www.apa.org/pubs/databases/psycinfo/index.aspx. Beware, though: Many of the primary research papers available through PsycINFO are highly technical. Don't be put off by this; read and digest what you can. You'll pick up some interesting information and become a better psychology student in the process.

Aside from PsycINFO, there are a number of good websites that you can consult for reliable information about psychology. For example, the American Psychological Association (APA) and the Association for Psychological Science (APS) maintain online libraries of general-interest articles on many topics. They are well worth consulting when you have questions about psychological issues. You'll find them at www.apa.org and www.psychologicalscience.org. For links to recent articles in newspapers and magazines, check the APA's PsycPORT page at www.apa.org/news/psycport/index.aspx. Other high-quality websites include those maintained by other professional organizations, such as the National Institute of Mental Health (www.nimh.nih.gov). (■ See Section 1.8 for more on the important skill of information literacy.)

I.3 Reflective Note-Taking: LISAN Up!

GATEWAYS LEARNING OUTCOME:
After reading this section you should be able to:

I.3.1 Describe how you can get the most out of class time

Just as studying a textbook is best done reflectively, so, too, is learning in class (Norman, 1994). Like effective reading, good notes come from actively seeking information. A **reflective listener** avoids distractions and skillfully gathers ideas. Here's a listening/note-taking plan that works for many students. The letters LISAN, pronounced like the word *listen,* will help you remember the steps:

- L = *Lead. Don't follow*. Read assigned materials before coming to class. Try to anticipate what your teacher will say by asking yourself questions. If your teacher provides course notes or

Experiential processing Thought that is passive, effortless, and automatic.

Reflective processing Thought that is active, effortful, and controlled.

Reflective learning Deliberately reflective and active self-guided study.

Self-reference The practice of relating new information to prior life experience.

Critical thinking An ability to evaluate, compare, analyze, critique, and synthesize information.

PsycINFO A searchable online database that provides brief summaries of the scientific and scholarly literature in psychology.

Reflective listener A person who knows how to maintain attention, avoid distractions, and actively gather information from lectures.

Microsoft PowerPoint® overheads before lectures, survey them before coming to class. Reflective questions can come from those materials or from study guides, reading assignments, or your own curiosity.

- I = *Ideas.* Every lecture is based on a core of ideas. Usually, an idea is followed by examples or explanations. Ask yourself often, "What is the main idea now? What ideas support it?"
- S = *Signal words.* Listen for words that tell you what direction the instructor is taking. For instance, here are some signal words:

There are three reasons . . .	Here come ideas
Most important is . . .	Main idea
On the contrary . . .	Opposite idea
As an example . . .	Support for main idea
Therefore . . .	Conclusion

- A = *Actively listen.* Sit where you can get involved and ask questions. Bring questions that you want answered from the last lecture or from your text. Raise your hand at the beginning of class or approach your professor before the lecture. Do anything that helps you stay active, alert, and engaged.
- N = *Note taking.* Students who take accurate lecture notes tend to do well on tests (Williams & Eggert, 2002). However, don't try to be a tape recorder. Listen to everything, but be selective and write down only key points. If you are too busy writing, you may not grasp what your professor is saying. When you're taking notes, it might help to think of yourself as a reporter who is trying to get a good story (Ryan, 2001; Wong, 2015).

Most students take reasonably good notes—and then don't use them! Instead, they wait until just before exams to review. By then, their notes have lost much of their meaning. If you don't want your notes to seem like chicken scratches, it pays to review them periodically (Ellis, 2016).

Using and Reviewing Your Notes

When you review, you will learn more if you take these extra steps (Ellis, 2016; Pychyl, 2013; Santrock & Halonen, 2013):

- As soon as you can, reflect on your notes to fill in gaps, complete thoughts, and look for connections among ideas.
- Remember to link new ideas to what you already know.
- Summarize your notes. Boil them down and organize them.
- After each class session, write down several major ideas, definitions, or details that are likely to become test questions. Then, make up questions from your notes and be sure that you can answer them.

The letters *LISAN* are a guide to active listening, but listening and good note-taking are not enough. You must also review, organize, reflect, extend, and think about new ideas. Use active listening to get involved in your classes, and you will undoubtedly learn more (Van Blerkom, 2012).

I.4 Reflective Study Strategies: Making a Habit of Success

GATEWAYS LEARNING OUTCOME:
After reading this section you should be able to:

I.4.1 Describe how you can best prepare for tests

Grades depend as much on effort as they do on intelligence. But good students work more efficiently, not just harder, and that's true when they study as well as when they write exams. In this section we provide some tips for improving your studying and test-taking skills.

Strategies for Studying

In an interesting paper, researchers reviewed more than 700 research articles on 10 of the most commonly used learning strategies to determine which ones were the most effective (Dunlosky et al., 2013). One of the study strategies most commonly used by students—highlighting or underlining material in the text or lecture notes—was found to be a particularly *ineffective* way to master the material, largely because it doesn't usually promote active or reflective learning. If you cannot imagine your textbook without the pretty neon colors, make sure that you combine your highlighting with one (or more!) of the effective strategies that we discuss below.

Test Yourself

A great way to improve grades is to take practice tests before the real one (Karpicke & Blunt, 2011; Sutterer & Awh, 2016), and this strategy came out as a clear winner in the review of learning strategies. In other words, reflective studying should include **self-testing**, in which you pose questions to yourself. You can use flashcards, online quizzes in MindTap, a study guide, or any other means that you find helpful. You'll also find *Reflective Practice* self-tests at the end of each major section of this textbook. As you study, try to anticipate potential test questions and be sure you can answer them. Studying without self-testing is like practicing for a basketball game without shooting any baskets.

Use Spaced Study Sessions

Another clear winner in the review of learning strategies was the use of spaced study sessions. It is reasonable to review intensely before an exam. However, you're taking a big risk if you are only cramming (learning new information at the last minute). Spaced practice is much more efficient (Dunlosky et al., 2013; Sternberg, 2017). **Spaced practice** consists of a large number of relatively short study sessions. Long, uninterrupted study sessions are called **massed practice**. (If you "massed up" your studying, you probably messed it up, too.) Cramming places a big burden on memory. Generally, you shouldn't try to learn anything new about a subject during the last day before a test. It is far better to learn small amounts every day and review frequently.

Other Suggestions for Studying

Ideally, you should study in a quiet, well-lit area free of distractions. If possible, you should also have one place only for studying. Do nothing else there: keep magazines, social media sites, friends, cell phones, pets, video games, televisions, and other distractions out of the area (Przepiorka, Błachnio, & Díaz-Morales, 2016). In this way, the habit of studying will become strongly linked with one specific place.

Also, many students *underprepare* for exams, and most *overestimate* how well they will do. A solution to both problems is **overlearning**, in which you continue studying beyond your initial mastery of a topic. In other words, plan to do extra study and review *after* you think you are prepared for a test. One way to overlearn is to approach all tests as if they will be essays. That way, you will learn more completely, so you really "know your stuff."

Strategies for Taking Tests

OK, but what about actually taking the tests? Are there any strategies for that? You bet! You'll do better on all types of tests if you observe the following guidelines (Van Blerkom, 2012; Wong, 2015):

1. Read all directions and questions carefully. They may give you good advice or clues about what to include in your answer and how to format it.
2. Survey the test quickly before you begin.
3. Answer easy questions before spending time on more difficult ones.
4. Be sure to answer all questions.
5. Use your time wisely.
6. Ask for clarification when necessary.

Objective Tests

Several additional strategies can help you do better on objective tests. Such tests (multiple-choice and true–false items) require you to recognize a correct answer among wrong ones or a true statement versus a false one. Here are some strategies for taking objective tests:

1. Relate the question to what you know about the topic. Then read the alternatives. Does one match the answer that you expected to find? If none match, reexamine the choices and look for a partial match.
2. Read all the choices for each question before you make a decision. Here's why: if you immediately think that *a* is correct and stop reading, you might miss seeing a better answer like both *a* and *d*.
3. Read rapidly and skip items that you are unsure about. You may find free information in later questions that will help you answer difficult items.
4. Eliminate certain alternatives. With a four-choice multiple-choice test, you have one chance in four of guessing right. If you can eliminate two alternatives, your guessing odds improve to 50–50.
5. Be sure to answer any skipped items, unless there is a penalty for guessing. Even if you are not sure of the answer, you may be right. If you leave a question blank, it is automatically wrong. When you are forced to guess, don't choose the longest answer or the letter that you've used the least. Both strategies lower scores more than random guessing does.
6. Some people might say: "Don't change your answers on a multiple-choice test. Your first choice is usually correct." Those people would be wrong. If you change answers, you are more likely to *gain* points than to lose them. This is especially true if you are uncertain of your first choice, or it was a hunch and your second choice is more reflective (Higham & Gerrard, 2005).
7. Search for the one best answer to each question. Some answers may be partly true, yet flawed in some way. If you are uncertain, try rating each multiple-choice alternative on a 1 to 10 scale. The answer with the highest rating is the one you are looking for.
8. Remember that few circumstances fall at the extremes. Answers that include superlatives such as *always* or *never* are often false.

Essay Tests

Essay questions are a weak spot for students who lack organization, don't support their ideas, or don't directly answer the question (Van Blerkom, 2012). When you take an essay exam, try the following:

1. Read the question carefully. Be sure to note key words, such as *compare*, *contrast*, *discuss*, *evaluate*, *analyze*, and *describe*. These words all demand a certain emphasis in your answer.
2. Answer the question. If the question asks for a definition and an example, make sure that you provide both. Providing just a definition or just an example will get you half marks.
3. Reflect on your answer for a few minutes and list the main points that you want to make. Just write them as they come to mind. Then rearrange the ideas in a logical order and begin writing. Elaborate plans or outlines are not necessary.
4. Don't beat around the bush or pad your answer. Be direct. Make a point and support it. Get your list of ideas into words.
5. Look over your essay for errors in spelling and grammar. Save this for last. Your ideas are more important. You can work on spelling and grammar separately if they affect your grade.

Short-Answer Tests

Tests that ask you to fill in a blank, define a term, or list specific items can be difficult. Usually, the questions themselves contain little information. If you don't know the answer, you won't get much help from the questions. The best way to prepare for short-answer tests is to overlearn the details of the course. As you study, pay special attention to lists of related terms.

Again, it is best to start with the questions whose answers you're sure you know. Follow that by completing the questions

Self-testing Evaluating learning by posing questions to yourself.

Spaced practice Practice spread over many relatively short study sessions.

Massed practice Practice done in a long, uninterrupted study session.

Overlearning Continuing to study and learn after you think that you've mastered a topic.

whose answers you think you probably know. Questions whose answers you have no idea about can be left blank.

See Figure I.1 for a summary of study skills.

Managing Procrastination

All these techniques are fine. But what can I do about procrastination? **Procrastination**, the tendency to put off working on unpleasant tasks, is almost universal. (When campus workshops on procrastination are offered, many students never get around to signing up!) Even when procrastination doesn't lead to failure, it can cause much suffering (Hensley, 2016; Sirois & Tosti, 2012; Wohl, Pychyl, & Bennett, 2010). Procrastinators work only under pressure, skip classes, give false reasons for late work, and feel ashamed of their last-minute efforts. They also tend to feel frustrated, bored, and guilty (Pychyl, 2013).

Why do so many students procrastinate? Many students equate grades with their personal worth—that is, they act as if grades tell whether they are good, smart people who will succeed in life. By procrastinating, they can blame their poor work on a late start rather than a lack of ability (Haghbin, McCaffrey, & Pychyl, 2012). After all, it wasn't their best effort, was it? Perfectionism is a related problem. If you expect the impossible, it's hard to start an assignment. Students with high standards often end up with all-or-nothing work habits (Rice, Richardson, & Clark, 2012).

While procrastination can be a real problem for students, most can improve by learning to manage time effectively, setting realistic goals, and considering their attitude toward learning. We have already discussed general study skills, so let's consider these other strategies in a little more detail.

Time Management

A **weekly time schedule** is a written plan that allocates time for study, work, and leisure activities. To prepare your schedule, make a chart showing all the hours in each day of the week. Then fill in times that are already committed: sleep, meals, classes, work, team practices, lessons, appointments, and so forth. Next, fill in times when you will study for various classes. Finally, label the remaining hours as open or free times. Each day, you can use your schedule as a checklist. That way, you'll know at a glance which tasks are done and which still need attention (Pychyl, 2013).

You may also find it valuable to make a **term schedule** that lists the dates of all quizzes, tests, reports, papers, and other major assignments for each class. The beauty of sticking to a schedule is that you know you are making an honest effort. It will also help you avoid feeling bored while you are working or guilty when you play.

Be sure to treat your study times as serious commitments, but respect your free time, too. And remember, students who study hard and practice time management *do* get better grades (Nandagopal & Ericsson, 2011).

Study Skills Checklist

Time Management
- ☐ Make formal schedule
- ☐ Set specific goals

Study Habits
- ☐ Study in specific area
- ☐ Pace study and review
- ☐ Create memory aids
- ☐ Test yourself
- ☐ Overlearn

Reading
- ☐ Use reflective SQ4R method
- ☐ Study while reading
- ☐ Review frequently

Note Taking
- ☐ Listen actively
- ☐ Use LISAN method
- ☐ Review notes frequently

Figure I.1 Study skills checklist.

Goal Setting

As mentioned earlier, students who are reflective, active learners set **specific goals** for studying. Such goals should be clear-cut and measurable (Pychyl, 2013). If you find it hard to stay motivated, try setting goals for the semester, the week, the day, and even for single study sessions. Also, be aware that more effort early in a course can greatly reduce the stress that you might experience later. If your professors don't give frequent assignments, set your own day-by-day goals. That way, you can turn big assignments into a series of smaller tasks that you can complete. An example would be reading, studying, and reviewing eight pages a day to complete a 40-page chapter in five days. For this textbook, reading one section every day or two might be a good pace. Remember, many small steps can add up to an impressive journey.

Developing a Positive Attitude

A final point to remember is that you are most likely to procrastinate if you think that a task will be unpleasant. Students often think that something must be wrong if learning doesn't come easily, but in fact the opposite is true—real learning is effortful. That doesn't mean it has to be unpleasant, though—in fact, reflective students can almost always find ways to make schoolwork interesting and enjoyable (Mega, Ronconi, & De Beni, 2014). Try to approach your schoolwork as if it were a game, a sport, an adventure, or simply a way to become a better person. The best educational experiences are challenging, yet fun (Santrock & Halonen, 2013).

Virtually every topic is interesting to someone, somewhere. For example, you may not be particularly interested in the sex life of South American tree frogs, but a biologist might be fascinated. (Another tree frog might be, too.) If you wait for teachers to make everything in their courses interesting, you are missing the point. Interest is a matter of *your attitude* (Sirois & Tosti, 2012).

Getting Out What You Put In

There is a distinction in Zen between *live* words and *dead* words. Live words come from personal experience; dead words are about a subject. This book will be only a collection of dead words unless you accept the challenge of taking an intellectual journey. You will find many helpful, useful, and exciting ideas in the pages that follow. To make them yours, you must set out to actively and reflectively learn as much as you can. The ideas presented here should get you off to a good start. Good luck!

For more information, consult any of the following books:

Chaffee, J. (2015). *Thinking critically* (11th ed.). Belmont, CA: Cengage Learning/Wadsworth.

Ellis, D. (2016). *The essential guide to becoming a master student* (4th ed.). Boston, MA: Cengage Learning.

Pychyl, T. A. (2013). *Solving the procrastination puzzle: A concise guide to strategies for change*. New York: Tarcher/Penguin.

Santrock, J. W., & Halonen, J. S. (2013). *Your guide to college success: Strategies for achieving your goals* (7th ed.). Belmont, CA: Cengage Learning/Wadsworth.

Van Blerkom, D. L. (2012). *College study skills: Becoming a strategic learner* (7th ed.). Belmont, CA: Cengage Learning/Wadsworth.

Wong, W. (2015). *Essential study skills* (8th ed.). Belmont, CA: Cengage Learning/Wadsworth.

Reflective Practice

Psychology and Your Skill Set: Reflective Studying

1. The facts you pick up during your academic studies are the most important aspect of your education. T or F?
2. Setting learning goals and monitoring your progress are important parts of _____ learning.
3. When using the LISAN method, students try to write down as much of a lecture as possible so that their notes are complete. T or F?
4. Spaced study sessions are usually superior to massed practice. T or F?
5. According to research, you should almost always stick with your first answer on multiple-choice tests. T or F?
6. To use the technique known as *overlearning*, you should continue to study after you feel you have mastered a topic. T or F?
7. Procrastination is related to seeking perfection and equating self-worth with grades. T or F?

THINK CRITICALLY

8. How is the LISAN method reflective?

SELF-REFLECT

- What career paths are you considering? What skills do you think would be valuable in a job like that? Do you already possess these skills? If so, how might you strengthen them? If not, what kinds of experiences can you undertake during your degree to develop these skills? One of the best ways to begin answering these questions is to sit down and undertake an inventory of the skills you have learned from your psychology studies and elsewhere.

Answers: 1. F. 2. reflective 3. F 4. T 5. F 6. T 7. T 8. Both encourage people to be reflective and to actively seek information as a way of learning more effectively.

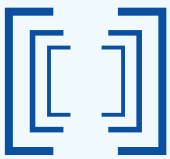
Procrastination The tendency to put off working on unpleasant tasks.

Weekly time schedule A written plan that allocates time for study, work, and leisure activities during a one-week period.

Term schedule A written plan that lists the dates of all major assignments for each of your classes for an entire term.

Specific goals Goals with clearly defined and measurable outcomes.

CHAPTER IN REVIEW



Gateways to Reflective Studying

Summary: Gateways Learning Outcomes

I.1 Why Study Psychology?

I.1.1 Explain how studying psychology will help you in your personal and professional life

Two broad categories of learning relate to *content* (that is, the subject matter) and *skills*. Psychology students learn a variety of skills during their studies, including research skills, critical thinking skills, cultural awareness skills, communication skills, and personal skills. All of these can be useful at work or in your personal life. The study of psychology will also prepare you for many potentially rewarding careers. Some of those exist within the field of psychology, but the skills learned in a psychology degree can also be applied to a wide range of other career paths.

I.2 Reflective Reading: How to Tame a Textbook

I.2.1 Describe how you can get the most out of this textbook

Reflective reading, which involves actively thinking about what is being read, is better than passive reading. Using digital media offers another way to be more reflective about your reading.

I.3 Reflective Note-taking: LISAN Up!

I.3.1 Describe how you can get the most out of class time

Reflective learning in class involves active listening. One way to be a more active listener in class is to follow the five steps of the LISAN method: lead, don't follow; identify the main ideas; pay attention to signal words; actively listen; engage in good note taking.

I.4 Reflective Study Strategies: Making a Habit of Success

I.4.1 Describe how you can best prepare for tests

More reflective studying involves studying in a specific place, using spaced study sessions, trying mnemonics, testing yourself, and overlearning. Remember that more specialized strategies may be needed for objective tests, essay tests, and short-answer tests. Avoid procrastination through time management, setting goals, and making learning an adventure.

1 The Foundations of Psychological Science

Guardian/eyevine/Redux

Gateway Theme Psychology is a profession and a science. Psychologists rely on scientific methods to critically answer questions about behavior.

Chapter Outline

Living in a Tree House

When Nate Madsen was 25 years old, he learned that loggers were cutting down giant redwoods in a grove that had become his refuge—a restful spot where he could leave behind the stressors of student life. Determined not to simply watch as the trees were destroyed, Nate climbed 160 feet into the branches of a giant redwood and stayed there for more than two years. During that time, he endured heavy rain and winds from above and harassment from people below. Friends climbed up ropes to visit and then abseiled back down to the ground. From his perch with the spectacular view, Nate watched the birds and the bears and, with the help of a donated laptop computer and some very understanding professors, he completed his college degree. And though he didn't climb down for his graduation ceremony, at least 70 people turned up at the base of the tree to help him celebrate his academic success.

"What could Nate possibly have been *thinking*?," you might wonder. But you might equally wonder why people get married, grow roses, become suicide bombers, go to college, or live out their lives in monasteries. You might even wonder, at least sometimes, why *you* do some of the things you do. In other words, the odds are that you are curious about human behavior (just like your authors, we should point out). That may even be a part of the reason that you are taking a course in psychology and reading this book.

We humans have always been curious about humankind. Even the word *psychology* is thousands of years old, coming from the ancient Greek roots *psyche*, meaning mind, and *logos*, meaning knowledge or study. Psychology, then, started out as the study of mind and the contemporary field of psychology is an ever-changing vista of people and ideas that can help you better understand yourself and others. Psychology is about love, stress, therapy, persuasion, hypnosis, perception, memory, death, conformity, creativity, learning, personality, aging, intelligence, sexuality, emotion, happiness, wisdom, and much more. This book is a guided tour of human behavior. We hope you enjoy the voyage.

1.1 Commonsense Psychology: Not Necessarily "Common" or "Sense"

GATEWAYS LEARNING OUTCOMES:
After reading this section you should be able to:

1.1.1 Explain why people fail to recognize that "commonsense" beliefs are often false

1.1.2 Distinguish between superstition, pseudoscience, and science

If psychology has been around for centuries isn't it by now mostly common sense? Because we deal with ourselves and others every day, it is tempting to think that we already know what is true in psychology. But you may be surprised to learn how many "commonsense" beliefs about human behavior are false. For example, have you ever heard that some people are left-brained and some are right-brained? Or that subliminal advertising really works? Or that playing Mozart's music to infants will boost their intelligence? It turns out that these widely held beliefs, and many others, are simply wrong (Lilienfeld et al., 2010).

How could that be? From the perspective of contemporary psychology, common sense is frequently wrong because we humans are vulnerable to **uncritical acceptance**—a failure to evaluate claims with sufficient logical rigor. Instead, we have a tendency to accept beliefs as true for illogical reasons, such as:

- having someone we respect or trust assure us that the claims are true
- believing the claims despite having weak or nonexistent evidence
- frequently encountering repetitions of claims, especially from multiple sources or the media
- wanting the claims to be true

As a consequence, we all too often are tempted to accept commonsense beliefs, false news, urban legends, and even outrageous claims about the powers of healing crystals, miraculous herbal remedies, psychics predicting their future, and so forth. Consider astrology horoscopes, which generally contain mostly flattering traits. Naturally, when your personality and your future are described in *desirable* terms, it is hard to deny that the description has the ring of truth (Rogers & Soule, 2009). On the other hand, how much acceptance would astrology receive if all horoscopes read like this:

> **Virgo:** Your nitpicking is unbearable to your friends. You are cold, unemotional, and usually fall asleep while making love. You have no chance of ever finding a person who will love you. Virgos make good doorstops.

But even when a horoscope contains a mixture of good and bad traits, it may seem accurate because we humans are also vulnerable to **confirmation bias**, the tendency to remember or notice things that confirm our expectations and ignore the rest (Lilienfeld, Ammirati, & Landfield, 2009). For example, how well does the following astrological description describe your personality?

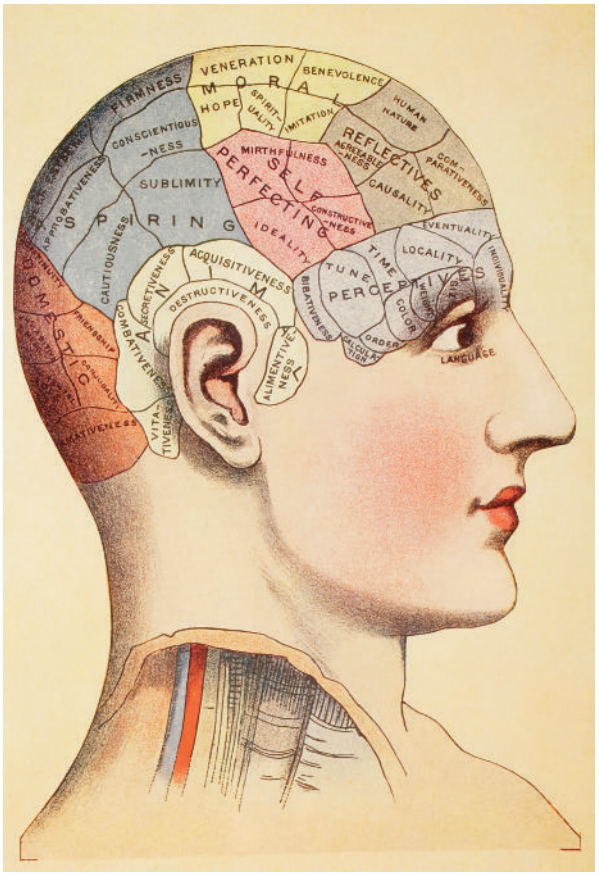
> You have many personality strengths, with some weaknesses to which you can usually adjust. You tend to be accepting of yourself. You are comfortable with some structure in your life but do enjoy diverse experiences from time to time. Although on the inside you might be a bit unsure of yourself, you appear under control to others. You are sexually well adjusted, although you do have some questions. Your life goals are more or less realistic. Occasionally, you question your decisions and actions because you're unsure that they are correct. You want to be liked and admired by other people. You are not using your potential to its full extent. You like to think for yourself and don't always take other people's word without thinking it through. You are not generally willing to disclose to others because it might lead to problems. You are a natural introvert, cautious, and careful around others, although there are times when you can be an extrovert who is the life of the party.

A psychologist read a similar summary to college students who thought they were taking a personality test. Though their astrological signs spanned the range from Aquarius to Capricorn, only a few students in the sample felt that the description was *in*accurate. But if you reread the description, you will see that it contains both sides of several personality dimensions ("You are a natural introvert … although there are times when you can be an extrovert …"). Its apparent accuracy is an illusion based on confirmation bias.

Confirmation bias, which can occur unconsciously, is similar to *cherry picking*, the deliberate selection of evidence and arguments to support one's own beliefs while ignoring contradictory evidence or arguments (Boudry, Blancke, & Pigliucci, 2015). Conscious or not, this is a surefire way to protect yourself from confronting your mistaken beliefs. It is also a surefire way to remain mistaken (Schick & Vaughn, 2014).

Science, Pseudoscience, and Superstition

The entire belief system of astrology is based on the types of flawed observations and flawed reasoning characteristic of uncritical acceptance. As such, it can be considered a type of **superstition**, an unfounded belief held without objective evidence or in the face of falsifying evidence. If the unfounded belief system seems scientific, it is sometimes called a **pseudoscience** or "false science." Many other beliefs are also pseudoscientific. For example, *phrenology* was popularized in the early 1800s by Franz Gall, a German anatomy teacher. Phrenology claimed that the shape of the skull reveals personality traits. However, psychological research has clearly demonstrated that bumps on the head have nothing to do with talent or ability. The phrenologists were so far off that they listed the part of the brain that controls hearing as a center for combativeness!



Universal History Archive/Universal Images Group/Getty Images

Phrenology was an attempt to assess personality characteristics by examining various areas of the skull. Phrenologists used charts such as the one shown here as guides. Like other pseudopsychologists, phrenologists resisted attempts to empirically verify their concepts.

Graphology, the study of handwriting as a predictor of personality, is a more recent example of pseudoscience. Though examining handwriting can be useful for detecting forgeries, graphologists score no better than average on tests of accuracy in rating personality (Dazzi & Pedrabissi, 2009; Furnham, Chamorro-Premuzic, & Callahan, 2003).

In contrast to superstition and pseudoscience, practicing **science** requires that we take an objective approach to answering questions using careful observations and experiments. The data that we gather need to be evaluated impartially, avoiding the temptation to engage in confirmation bias, or cherry picking only the results we want to see. As scientists, some psychologists do research to establish the validity of claims such as those put forward about astrology and graphology. Psychological researchers also work to discover new knowledge, or to apply psychology to solve problems in fields such as mental health, business, education, sports, law, medicine, and the design of machines (Bayne & Jinks, 2013). Other people who work in the area of psychological science include teachers who share their knowledge with students and clinicians who work to assist people with their problems. Let's take a closer look at the wide range of career paths that are possible in psychology.

1.2 What Psychologists Do

GATEWAYS LEARNING OUTCOMES:
After reading this section you should be able to:

1.2.1 Name some areas in which psychological scientists do research

1.2.2 Describe the work carried out by clinical and counseling psychologists

Every **psychologist** is highly trained in the methods, knowledge, and theories of psychological research. Psychologists have usually earned a master's degree or a doctorate, typically requiring several years of postgraduate training. About 31 percent are employed full time at colleges or universities (including medical schools), where they teach and do research, consulting, or therapy. The remainder give psychological tests, do research in other settings, or serve as consultants to business, industry, government, or the military. In fact, at present, the American Psychological Association (APA) consists of more than 50 divisions, each reflecting special skills or areas of interest.

Psychological Research

No matter where they are employed, or what their area of specialization is, many psychologists do research. Some do *basic research,* in which they seek knowledge for its own sake. For example, a psychologist might study memory simply to understand how it works. Others do *applied research* to solve immediate practical problems, such as finding ways to improve athletic performance (Davey, 2011). Some do both types of research. Some of the major areas of research are listed in ▲ Table 1.1.

Research involving animals was mentioned in some of the psychology specialties listed in Table 1.1. Why is that? You may be surprised to learn that psychologists are interested in the behavior of *any* living creature—from flatworms to humans. Indeed, some comparative psychologists spend their entire careers studying rats, cats, dogs, parrots, or chimpanzees.

Uncritical acceptance The tendency to believe claims because they seem true or because it would be nice if they were true.

Confirmation bias The tendency to remember or notice information that fits one's expectations, while forgetting or ignoring discrepancies.

Superstition Unfounded belief held without evidence or in spite of falsifying evidence.

Pseudoscience Unfounded belief system that seems to be based on science.

Science An objective approach to answering questions that relies on careful observations and experiments.

Psychologist A person highly trained in the methods, factual knowledge, and theories of psychology.

▲ Table 1.1 Types of Psychologists and What They Do

Specialty		Typical Activities	Sample Research Topic
Biopsychology	B*	Researches the brain, nervous system, and other physical origins of behavior	"I've been doing some exciting research on how the brain controls hunger."
Clinical	A	Does psychotherapy; investigates clinical problems; develops methods of treatment	"I'm curious about the relationship between early childhood trauma and adult relationships and how it can help adults be more successful in their marriages."
Cognitive	B	Studies human thinking and information-processing abilities	"I want to know how reasoning, problem solving, memory, and other mental processes relate to playing computer games."
Community	A	Promotes community-wide mental health through research, prevention, education, and consultation	"How can we prevent the spread of sexually transmitted diseases more effectively? That's what I want to understand better."
Comparative	B	Studies and compares the behavior of different species, especially animals	"I'm fascinated by the communication abilities of porpoises."
Consumer	A	Researches packaging, advertising, marketing methods, and characteristics of consumers	"My job is to improve the marketing of products that are environment-friendly."
Counseling	A	Does psychotherapy and personal counseling; researches emotional disturbances and counseling methods	"I am focused on understanding more about why people become hoarders and how to help them stop."
Cultural	B	Studies the ways in which culture, subculture, and ethnic group membership affect behavior	"I am interested in how culture affects human eating behavior, especially the foods that we eat and whether we eat with a spoon, chopsticks, or our fingers."
Developmental	A, B	Conducts research on infant, child, adolescent, and adult development; does clinical work with disturbed children; acts as a consultant to parents and schools	"I'm focusing on the transitions from the teenage years to early adulthood."
Educational	A	Investigates classroom dynamics, teaching styles, and learning; develops educational tests, evaluates educational programs	"My passion is to figure out how to help people with different learning styles be effective learners."
Engineering	A	Does applied research on the design of machinery, computers, airlines, automobiles, and so on for business, industry, and the military	"I'm studying how people use wearable computer interfaces, like Google Glass."
Environmental	A, B	Studies the effects of urban noise, crowding, attitudes toward the environment, and human use of space; acts as a consultant on environmental issues	"I am concerned about global warming and want to understand what impact rising temperatures have on human culture."
Evolutionary	B	Studies how behavior is guided by patterns that evolved during the long history of humankind	"I am studying some interesting trends in male and female mating choices."
Forensic	A	Studies problems of crime and crime prevention, rehabilitation programs, prisons, and courtroom dynamics; selects candidates for police work	"I am interested in improving the reliability of eyewitness testimony during trials."
Gender	B	Researches differences between males and females, the acquisition of gender identity, and the role of gender throughout life	"I want to understand how young boys and girls are influenced by gender stereotypes."
Health	A, B	Studies the relationship between behavior and health; uses psychological principles to promote health and prevent illness	"How to help people overcome drug addictions is my field of study."
Industrial-organizational	A	Selects job applicants; does skills analysis; evaluates on-the-job training; improves work environments and human relations in organizations and work settings	"Which plays a greater role in successful management styles, intelligence or emotion? That is my question."
Learning	B	Studies how and why learning occurs; develops theories of learning	"Right now, I'm investigating how patterns of reinforcement affect learning. I am especially interested in superstitious conditioning."
Medical	A	Applies psychology to manage medical problems, such as the emotional impact of illness, self-screening for cancer, and compliance in taking medicine	"I want to know how to help people take charge of their own health."
Personality	B	Studies personality traits and dynamics; develops theories of personality and tests for assessing personality traits	"I am especially interested in the personality profiles of people who are willing to take extreme risks."
School	A	Does psychological testing, referrals, and emotional and vocational counseling of students; detects and treats learning disabilities; improves classroom learning	"My focus is finding out how to keep students in school instead of having them drop out."
Sensation and perception	B	Studies the sense organs and the process of perception; investigates the mechanisms of sensation; develops theories about how perception occurs	"I am using a perceptual theory to study how we are able to recognize faces in a crowd."
Social	B	Investigates human social behavior, including attitudes, conformity, persuasion, prejudice, friendship, aggression, helping, and so forth	"My interest is interpersonal attraction. I place two strangers in a room and analyze how strongly they are attracted to each other."

*Research in this area is typically applied (A), basic (B), or both (A, B).

Ashley Cooper/The Image Bank Unreleased/Getty Images

This timber wolf is wearing a tracking collar. Through tracking studies and other tests, psychologists are better able to understand how wild wolves think and communicate (Range, Möslinger, & Virányi, 2012). Since wolves are endangered across much of their historical range, this understanding may prove crucial in enhancing efforts to conserve these intriguing creatures.

Although only a small percentage of psychological studies involve animals, this work has the potential to answer many important questions (Baker & Serdikoff, 2013). Some psychologists use an **animal model** to discover principles that apply to humans. For instance, animal studies have helped us understand stress, learning, obesity, aging, sleep, and many other topics. Psychology can also benefit animals. Behavioral studies can help us better care for domestic animals and those in zoos, as well as conserve endangered species in the wild.

Helping People

I thought that all psychologists did therapy and treated abnormal behavior! Actually, only about 45 percent of psychologists are directly involved in providing mental health services. Although most psychologists help people in one way or another, those who are specifically interested in emotional problems usually specialize in clinical or counseling psychology (see Table 1.1). A **clinical psychologist** treats psychological problems or does research on therapies and mental disorders. In contrast, a **counseling psychologist** generally treats milder problems, such as troubles at work or school.

To become a clinical psychologist, you need to have a doctorate (PhD, PsyD, or EdD). Most clinical psychologists have a PhD and follow a *scientist-as-practitioner* model—that is, they are trained to do either research or therapy. Many do both. Other clinicians earn the PsyD (Doctor of Psychology) degree, which emphasizes therapy skills rather than research (Stricker, 2011).

Does a psychologist need a license to offer therapy? Yes. Psychologists must also meet stringent legal requirements. To work as a clinical or counseling psychologist, you must have a license issued by a state examining board. However, the law does not prevent people from calling themselves almost anything else they choose—therapist, rebirther, primal feeling facilitator, cosmic aura balancer, or life skills coach—or from selling "psychological" services to anyone willing to pay. Beware of people with self-proclaimed titles. Even if their intentions are honorable, they may have little actual training.

Licensed clinical and counseling psychologists must also follow an ethical code that stresses (1) high levels of competence, integrity, and responsibility; (2) respect for people's rights to privacy, dignity, confidentiality, and personal freedom; and, above all, (3) protection of the client's welfare (American Psychological Association, 2017a; Barnett et al., 2007). (■ See Section 3.5 for more information about ethics.)

Beyond Psychologists: Other Mental Health Professionals

Clinical and counseling psychologists often coordinate their efforts with psychiatrists, psychoanalysts, counselors, and other mental health professionals. Each has a specific blend of training and skills. For example, a **psychiatrist** (sometimes called a *shrink*, a slang term derived from the term *head shrinkers*) is a medical doctor who treats serious mental disorders, often by prescribing drugs. Today, clinical psychology and psychiatry are somewhat more similar than in years gone by—many psychiatrists use psychotherapy, for example, and psychologists in Iowa, Idaho, New Mexico, Louisiana, and Illinois can also legally prescribe drugs (as can psychologists in the U.S. military). It will be interesting to see whether other states grant similar privileges in the years to come (McGrath & Moore, 2010).

A **psychoanalyst** is a psychiatrist or psychologist who has a very specific approach to psychotherapy. According to an old stereotype, to be a psychoanalyst, you must have a moustache and goatee, spectacles, a German accent, and a well-padded couch. In reality, though, psychoanalysts have an MD or PhD degree, plus further training in Freudian psychoanalysis.

In many states, counselors also do mental health work. A **counselor** is an adviser who helps solve problems with marriage, career, school, work, or the like. To be a licensed counselor (such as a marriage and family counselor, a child counselor, or a school counselor) typically requires a master's degree (though it doesn't have to be in psychology), plus one or two years of full-time supervised counseling experience. Counselors learn practical helping skills and do not treat serious mental disorders.

Animal model In research, an animal whose behavior is studied to derive principles that may apply to human behavior.

Clinical psychologist A psychologist who specializes in the treatment of psychological and behavioral disturbances or who does research on such disturbances.

Counseling psychologist A psychologist who specializes in the treatment of milder emotional and behavioral disturbances.

Psychiatrist A medical doctor with additional training in the diagnosis and treatment of mental and emotional disorders.

Psychoanalyst A mental health professional (usually a medical doctor) trained to practice psychoanalysis.

Counselor A mental health professional who specializes in helping people with problems that do not involve serious mental disorders.

One of the key things that characterizes all psychologists is their belief in the importance of psychological science. Even those who focus on doing therapy are invested in making sure that the techniques they use with clients are *evidence-based*, that is, supported by research. Research in psychology has a long and interesting history that dates back more than 100 years, and many of its guiding ideas have changed over time. Let's take a closer look at some of the key people and ideas that have helped to shape psychology.

Reflective Practice

What Psychologists Do

1. Horoscopes provided by astrology are stated in positive terms, which have a "ring of truth." This fact is the basis of
a. falsification
b. uncritical acceptance
c. confirmation bias
d. critical thinking

Match the following research areas with the topics that they cover.

2. Developmental	**A.** Attitudes, groups, psychology leadership
3. Learning	**B.** Behavior as related to the legal system
4. Personality	**C.** Brain and nervous system
5. Sensation and perception	**D.** Child psychology
6. Biopsychology	**E.** Individual differences, motivation
7. Social psychology	**F.** Processing sensory information
8. Forensic psychology	**G.** Conditioning, memory

9. A psychologist who specializes in treating human emotional difficulties is called a(n) _____ psychologist

THINK CRITICALLY

10. Based on what you've read in this chapter, evaluate the following statement: *Superstitions like astrology and graphology are harmless.*

SELF-REFLECT

- How stringently do you evaluate your own beliefs and the claims made by others? For which topics are you most likely to fall victim to confirmation bias?
- At first, many students think that psychology is primarily about abnormal behavior and psychotherapy. Did you? How would you evaluate the field now?

Answers: 1. b 2. D 3. G 4. E 5. F 6. C 7. A 8. B 9. clinical or counseling 10. False. Although superstitions may seem like no more than a quaint nuisance, they can do real harm. For example, people seeking treatment for psychological disorders may become the victims of self-appointed "experts" who offer ineffective, pseudoscientific therapies (Kida, 2006; Lilienfeld, Ruscio, & Lynn, 2008). Or imagine being turned down for a job by a graphologist who was hired by the company to evaluate your suitability by analyzing your handwriting. Even a graphological society recommends that handwriting analysis should not be used to select people for jobs (Sinner & Goffin, 2003).

1.3 The History of Psychological Science: A Trip Through Time

GATEWAYS LEARNING OUTCOMES:
After reading this section you should be able to:

1.3.1 Explain the method that Wundt and Titchener used to study conscious experience and the limitations of this method

1.3.2 Contrast Titchener's structuralist approach to psychology with

(a) the Gestalt approach developed by Wertheimer
(b) the functionalist approach developed by James
(c) the behaviorist approach developed by Watson and Skinner
(d) the psychoanalytic approach developed by Freud
(e) the cognitive approach
(f) the humanists' approach developed by Maslow and Rogers

Most historians now agree that scientific psychology truly took hold in the late 1800s in Leipzig, Germany (Kardas, 2014). There, in 1879, Wilhelm Wundt (VILL-helm Voont), the father of psychology, set up a laboratory to study the mind. How, Wundt wondered, do we experience sensations, images, and feelings?

Wundt (and psychologists ever since) relied on **scientific observation**. Although casual observation also relies on gathering *empirical evidence* (information gained from direct observation), scientific observation is *systematic* (that is, carefully planned) and *intersubjective* (that is, many observers can confirm what's been seen). For example, has anyone ever told you that people in New York City (or Paris, or wherever) are rude? While this statement may be based on observation, it would not be considered scientific if it's based on just one person's experience. It's possible that this person simply had a bad encounter on a single visit and may well have nothing to say about New Yorkers or Parisians in general. Basically, then, taking a scientific approach says, "Let's take a more objective look" (Stangor, 2015; Stanovich, 2013).

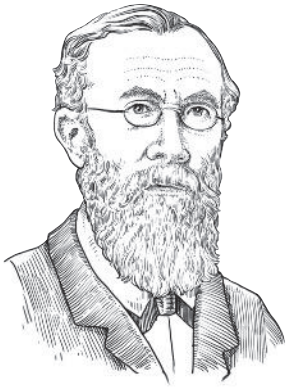
Introspection and Structuralism

In his efforts to be scientific, Wundt systematically observed and measured objective stimuli of various kinds (e.g., lights, sounds, and weights). A **stimulus** is any physical energy that affects a person and evokes a response [stimulus: singular; stimuli (STIM-you-lie): plural]. He then presented various stimuli to observers, who were asked to "look within" via **introspection**, which is defined as

the personal observation of mental events such as thoughts, feelings, and sensations. If you were to focus on a nearby object and carefully describe aloud your inner thoughts, feelings, and sensations about it you would be *introspecting*. In this way, introspection can be seen as the precursor to *self-report methods* of gathering data that psychologists use today (■ see Section 1.5).

Aware that casual introspection may be unreliable, Wundt sought to train his *introspectionists* to be systematic and scientific as they looked inward to report their reactions to various stimuli (Asthana, 2015). Over the years, Wundt studied vision, hearing, taste, touch, memory, time perception, and many other topics. By insisting on systematic observation and measurement, he asked some interesting questions and got contemporary psychology off to a good start as the scientific study of mental events (Schultz & Schultz, 2016).

Edward Titchener (TICH-in-er) brought Wundt's ideas about introspection to the United States, naming them **structuralism**—the study of sensations and personal experience analyzed as basic elements.



Wilhelm Wundt (1832–1920). Wundt is credited with making psychology an independent science, separate from philosophy. Wundt's original training was in medicine, but he became deeply interested in psychology. In his laboratory, Wundt investigated how sensations, images, and feelings combine to make up personal experience.

But you can't analyze conscious experience in the same way as a chemical compound, can you? Although even Wundt didn't think that you could do that, the structuralists tried to explore "mental chemistry," mostly through introspection. For instance, an observer might hold an apple and decide that she or he had experienced the item's hue (color), roundness, and weight. Another question that a structuralist might have asked is, "What basic tastes mix together to create complex flavors as different as broccoli, lime, bacon, and strawberry cheesecake?"

The Shortcomings of Introspection

The early psychologists all relied mainly on introspection, casual or otherwise, for observations of the mind in action. But right from the beginning, introspection proved to be a poor way to answer psychological questions (Benjafield, 2015). No matter how insightful the individual, systematic the observations, or well-trained the introspectionists, results from one introspection to the next frequently disagreed. Even worse, there was no way to settle intersubjective differences. Think about it: If you and a friend both introspect on your perceptions of an apple and end up listing different basic elements, who would be right?

As if this were not problem enough, in 1901 one of Wundt's students, Karl Marbe, reported a dramatic example of what has come to be called **imageless thought** (Hergenhahn & Henley, 2014). He asked trained introspectionists to introspect while they compared two objects of different weights, holding one weight in each hand. They could clearly describe their experiences of each weight and which one was heavier, but they could not describe the mental process of judging which one was heavier. As Marbe put it, the thought process of comparing the weights did not form a conscious "image." Thus, not only did introspection fail to yield reliable, consistent observations of the mind at work, but it also appeared that some of the mind's work was not even open to introspection.

To appreciate the full implications of the discovery of imageless thought, let's have a close look at a more recent study. Imagine that you are one of the shoppers that psychologists Timothy Wilson and Richard Nesbitt invited to examine four pairs of silk stockings hanging on a rack. The shoppers were asked a deceptively simple question: "Which pair is the highest quality, and why?" (Wilson & Nisbett, 1978). The results can be found in ● Figure 1.1. As you can see, the order in which the stockings were displayed strongly influenced which pair was chosen.

What's important here is that all the stockings were objectively identical. Also, each pair appeared equally often in each of the four serial positions. This was achieved by changing the order of the four pairs before each shopper made a choice. This made it impossible that the pair in position D was actually consistently of better quality.

If the shoppers were introspectively aware of the underlying psychological processes that resulted in their choices, they surely would have identified serial position as a relevant factor. Amazingly, while serial position *objectively* influenced the shoppers' choice, no shopper gave serial position as a *subjective* reason for his or her choice. Apparently, you are not always the best judge of why you behave the way you do (Wilson, 2004). That is, even when introspection does yield information, there is no guarantee that the information is accurate.

What reasons did the shoppers give? If you think about it, it *would* be odd to hear someone say, "The pair in position D are the best because they are on the far right." Apparently, not knowing exactly why they made their choice, the shoppers gave the sorts of reasons that you (and they) might expect a thoughtful shopper to give: smoothness, visual appearance, color, weave, and so on. They gave plausible but incorrect answers such as, "I chose the pair in position D because they were the sheerest and most elastic."

Scientific observation An empirical investigation structured to answer questions about the world in a systematic and intersubjective fashion (i.e., observations can be reliably confirmed by multiple observers).

Stimulus Any physical energy that an organism senses.

Introspection Personal observation of your own thoughts, feelings, and behavior.

Structuralism Study of sensations and personal experience analyzed as basic elements.

Imageless thought An old term describing the inability of introspectionists to become subjectively aware of some mental processes; an early term describing the cognitive unconscious.

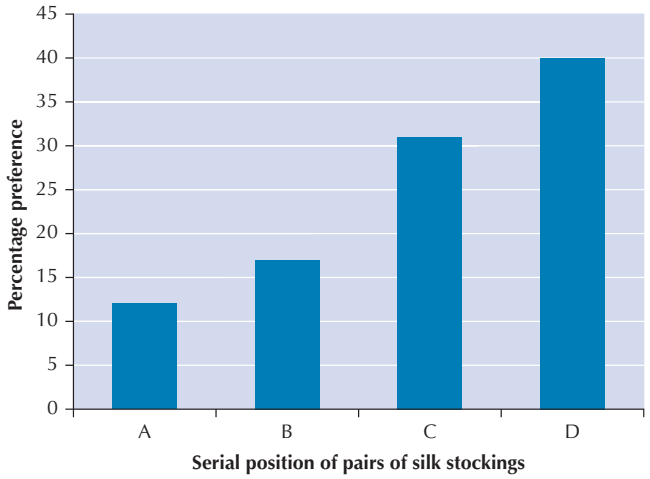


Figure 1.1 The effects of serial position on preference. The four pairs of silk stockings in this experiment were labeled A, B, C, and D, from left-to-right. The results clearly show that the serial position of the individual pairs of stockings, that is, where each pair appeared in the "lineup," influenced shopper's preferences. (Data adapted from Wilson & Nisbett, 1978.)

Wilson and Nisbett's finding is only one of hundreds of similar reports, dating back to Marbe. Taken together, they confirm that much of our thinking actually takes place in the **cognitive unconscious**, a part of the mind of which we are subjectively unaware and which is therefore not open to introspection (see, e.g., Bar-Anan, Wilson, & Hassin, 2010; Nisbett & Wilson, 1977). We will encounter the cognitive unconscious many times during our exploration of psychology. (■ For example, in Chapter 7 we explore the accuracy of police lineups. Given what you now know, just imagine being arrested on suspicion of committing a murder … and being assigned to position D in a four-person lineup.)

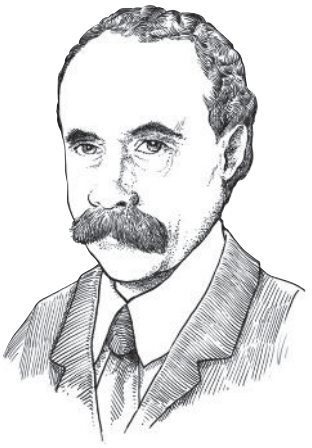
So does imageless thought take place in the cognitive unconscious? Precisely! Try it for yourself. Close your eyes and extend both hands palms up while a friend gives you two objects of different weights, one in each outstretched palm. You will certainly become aware of the sensations associated with each object and should notice that you *immediately* know which is heavier. It will just "pop into your mind." But *how* did you decide this? Marbe couldn't know it in 1901, but by documenting an example of the *cognitive unconscious* in action, he set in motion a debate that would eventually result in the rejection of introspectionism.

Gestalt Psychology

Imagine playing "Happy Birthday" on a flute and then on a guitar. The guitar duplicates none of the flute's sounds. Yet the melody is still recognizable—so long as the *relationship* between the notes remains the same.

Now imagine what would happen if you played the notes of "Happy Birthday" in the correct order, but at a rate of one per hour. What would you have? Nothing! The separate notes would no longer be a melody. Perceptually, the melody is more than the individual notes that define it.

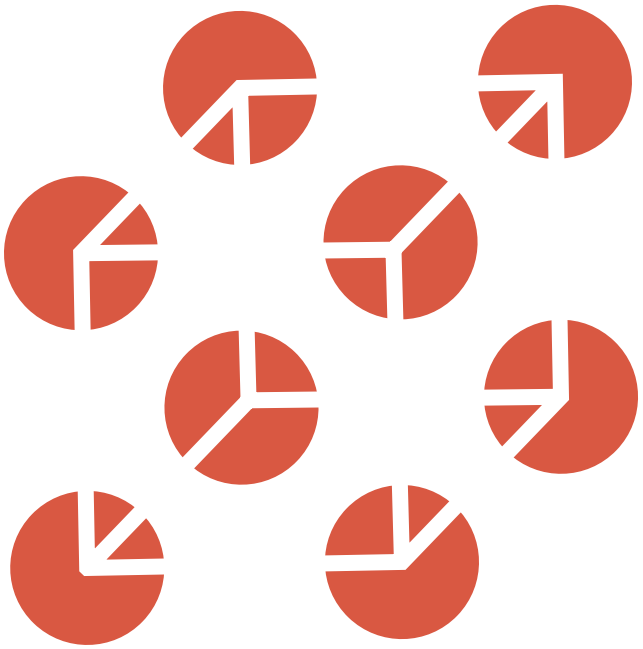
Observations like these launched the Gestalt school of thought. German psychologist Max Wertheimer (VERT-himer) was the first to advance the Gestalt viewpoint. It is inaccurate, he said, to introspectively analyze psychological events into pieces, or elements, as the structuralists tried to do. Accordingly, **Gestalt psychology** studied experiences of thinking, learning, personality, and perception as whole units, not by analyzing them into parts as structuralists did. Gestalt psychology also inspired a type of psychotherapy (■ see Section 15.3). Their slogan was, "The whole is greater than the sum of its parts." In fact, the German word *Gestalt* means form, pattern, or whole.



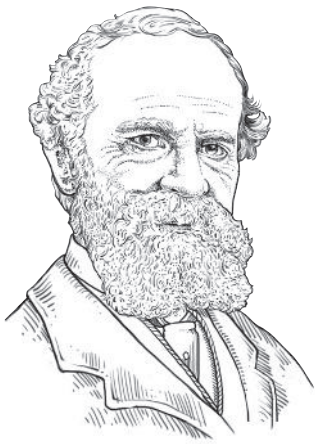
Max Wertheimer (1880–1941). Wertheimer first proposed the Gestalt viewpoint to help explain perceptual illusions. He later promoted Gestalt psychology as a way to understand not only perception, problem solving, thinking, and social behavior, but also art, logic, philosophy, and politics.

Functionalism

American scholar William James further broadened psychology to include animal behavior, religious experience, abnormal behavior, and other interesting topics. James's brilliant first book,



This design is entirely made up of broken circles. However, as the Gestalt psychologists discovered, our perceptions have a powerful tendency to form meaningful patterns. Because of this tendency, you will probably see a cube in this design, even though it is only an illusion. Your whole perceptual experience exceeds the sum of its parts.



William James (1842–1910). William James was the son of philosopher Henry James, Sr., and the brother of novelist Henry James. During his long academic career, James taught anatomy, physiology, psychology, and philosophy at Harvard University. James believed strongly that ideas should be judged in terms of their practical consequences for human conduct.

Principles of Psychology (1890), helped establish the field as a separate discipline (Kardas, 2014).

James's interest in how the mind functions to help us adapt to the environment grew into **functionalism**, a school of psychology that considers behaviors in terms of active adaptations. James regarded consciousness as an ever-changing *stream* or *flow* of images and sensations, not a set of lifeless building blocks, as the structuralists claimed.

The functionalists admired Charles Darwin, who deduced that creatures evolve in ways that favor survival. According to Darwin's principle of **natural selection**, physical features that help plants and animals adapt to their environments are retained in evolution. Similarly, the functionalists wanted to find out how the mind, perception, habits, and emotions help us adapt and survive.

What effect did functionalism have on contemporary psychology? Functionalism brought the study of animals into psychology. It also promoted educational psychology (the study of learning, teaching, classroom dynamics, and related topics). Learning makes us more adaptable, so the functionalists tried to find ways to improve education. For similar reasons, functionalism spurred the rise of *industrial/organizational* psychology, the study of people at work. (■ Today, educational psychology and industrial/organizational psychology remain two major applied specialties; ■ see Sections 6.5 and 18.1 for more information about these topics.)

Behaviorism

John B. Watson objected strongly to the study of the "mind" or conscious experience and launched a school of thought referred to as **behaviorism**. He believed that introspection was unscientific precisely because there is no objective way to settle disagreements between observers. Watson realized that he could study the behavior of animals even though he couldn't ask animals questions or know what they were thinking (Hergenhahn & Henley, 2014). He simply observed the relationship between any *stimuli* (i.e., events in the environment) and an animal's **response** (any muscular action, glandular activity, or other identifiable aspect of behavior). These observations were objective because they did not involve introspecting based on subjective experience. Why not, he asked, apply the same objectivity to study human behavior? For Watson and many other behaviorists, psychology was *not* the study of mind; it was the study of *behavior*. In this way, the behaviorists championed the use of *observational methods* of gathering data, which are still widely used by psychologists today (■ see Section 1.5).

John B. Watson (1878–1958). Watson's intense interest in observable behavior began with his doctoral studies in biology and neurology. Watson became a psychology professor at Johns Hopkins University in 1908 and advanced his theory of behaviorism. He remained at Johns Hopkins until 1920, when he left for a career in the advertising industry!

Psychologists ever since have agreed with Watson and systematically study behavior directly in order to draw more valid conclusions. Would you say it's true, for instance, that "the clothes make the man"? Or do you believe that "you can't judge a book by its cover"? Why introspect about it? As psychologists, we simply look at some people who are well dressed and some who are not and, through scientific observation, find out who makes out better in a variety of situations.

Watson also adopted Russian physiologist Ivan Pavlov's (ee-VAHN PAV-lahv) concept of *conditioning* to explain most behavior (a *conditioned response* is a learned reaction to a particular stimulus; ■ see Section 6.1). He believed conditioning could be used to change people's actions, and what happened to them as a result. You may not be surprised to learn, then, that Watson famously claimed, "Give me a dozen healthy infants, well-formed, and my own special world to bring them up in, and I'll guarantee to take any one at random and train him to become any type of specialist I might select—doctor, lawyer, artist, merchant-chief, and yes, beggarman and thief" (Watson, 1913/1994).

Would most psychologists today agree with Watson's claim? No. The early behaviorists believed that all responses are *determined* by stimuli. Today, this is regarded as an overstatement. Just the same, by stressing the study of observable behavior, behaviorism helped make psychology a natural science rather than a branch of philosophy.

Cognitive unconscious The part of the mind of which we are subjectively unaware and that is not open to introspection.

Gestalt psychology Study of thinking, learning, and perception in whole units, not by analysis into parts.

Functionalism School of psychology that considers behaviors in terms of active adaptations.

Natural selection Darwin's theory that evolution favors those plants and animals best suited to their living conditions.

Behaviorism School of thought in psychology that emphasizes study of observable actions over study of the mind.

Response Any muscular action, glandular activity, or other identifiable aspect of behavior.

B. F. Skinner (1904–1990). Skinner studied simple behaviors under carefully controlled conditions. In addition to advancing psychology, Skinner hoped that his radical brand of behaviorism would improve human lives.

Radical Behaviorism

The best-known behaviorist, B. F. Skinner (1904–1990), believed that our actions are controlled by rewards and punishments in a process called operant conditioning. Many of Skinner's ideas about learning grew out of his work with rats and pigeons. Nevertheless, he believed that the same laws of behavior apply to humans. (■ See Section 6.2 for more information about operant conditioning.) As a **radical behaviorist**, Skinner not only rejected introspection, he also rejected the concept of *mind* as an inappropriate subject matter for scientific psychology. Skinner believed that behavior can be explained without any reference to mental events such as *thinking* (Schultz & Schultz, 2016).

Behaviorists deserve the credit for much of what we know about learning, conditioning, and the proper use of rewards and punishments. Skinner was convinced that a culture based on positive reinforcement could encourage desirable behavior. He also opposed the use of punishment because it doesn't teach correct responses. Too often, he believed, misguided rewards and punishments lead to destructive actions that create problems such as overpopulation, pollution, and war.

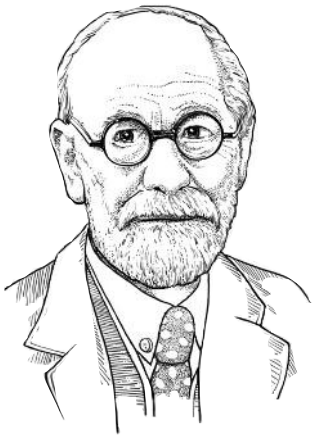
Behaviorism is also the source of behavior therapy, which uses learning principles to change problem behaviors such as overeating, unrealistic fears, or temper tantrums. (■ See Section 15.2 for more information about behavior therapy.)

Psychoanalytic Psychology

As behaviorism's distrust of introspection pushed American psychology to grow more scientific, an Austrian doctor named Sigmund Freud, who also distrusted introspection, was developing radically different ideas that opened new horizons in art, literature, and history, as well as psychology (Barratt, 2013). Freud believed that mental life is like an iceberg: Only a small part is exposed. He called the area of the mind that lies outside personal awareness the *unconscious*. Today, Freud's notion is often referred to as the **dynamic unconscious**, to differentiate it from the concept of the *cognitive unconscious* (Zellner, 2011). According to Freud, our behavior is deeply influenced by unconscious thoughts, impulses, and desires—especially those concerning sex and aggression.

Freud theorized that many unconscious thoughts are *repressed*, or held out of awareness, because they are threatening. But sometimes, he said, they are revealed by dreams, emotions, or slips of the tongue. (Freudian slips are often humorous, as when a student who is late for class says, "I'm sorry I couldn't get here any later.") Because of this, Freud held that you cannot take people's self-reports literally, since much is left out and much of the rest is disguised. To more accurately interpret self-reports, he created **psychoanalysis**, the first fully developed psychotherapy, or "talking cure" to explore unconscious conflicts and emotional problems. (■ See Section 15.1 for more details.)

Like the behaviorists, Freud believed that all thoughts, emotions, and actions are *determined*. In other words, nothing is an accident. If we probe deeply enough, we will find the causes of every thought or action. Unlike the behaviorists, he believed that unconscious processes (not external stimuli) were responsible for what people do. Freud was also among the first to appreciate that childhood affects adult personality (perhaps best expressed in the quote by poet William Wordsworth, "the child is father to the man").



Sigmund Freud (1856–1939). For over 50 years, Freud probed the unconscious mind. In doing so, he altered contemporary views of human nature. His early experimentation with a "talking cure" for hysteria is regarded as the beginning of psychoanalysis. Through psychoanalysis, Freud added psychological treatment methods to psychiatry.

It wasn't long before some of Freud's students modified his ideas. Known as **neo-Freudians** (*neo* means "new" or "recent"), they accepted some of Freud's theory but revised parts of it. Many, for instance, placed less emphasis on sex and aggression and more on social motives and relationships. Some well-known neo-Freudians are Alfred Adler, Anna Freud (Freud's daughter), Karen Horney (HORN-eye), Carl Jung (yoong), Otto Rank (rahnk), and Erik Erikson. Today, Freud's ideas have been altered so much that few strictly psychoanalytic psychologists are left. However, his legacy is still evident in **psychodynamic theory**, which continues to emphasize internal motives, conflicts, and unconscious forces (Moran, 2010).

Cognitive Psychology

When the radical behaviorists rejected introspection as a legitimate scientific method, they also deliberately ignored the role that thinking plays in our lives. This approach was eventually criticized as "throwing the baby out with the bath water." Eventually, behaviorism became less radical, as references to mental processes (thinking, or *cognition*) began to be used to explain even the behavior of animals (Zentall, 2002, 2011). As an example, let's say that a rat frequently visits a particular location in a maze because it offers access to food. A behaviorist would say that the rat visits this location because it is rewarded by the pleasure of eating each time that it goes there. A *cognitive behaviorist* would add that, in addition, the rat *expects* to find food at the location. This is the cognitive part of the rat's behavior.

By the late 1950s, **cognitive psychology** took form as the study of information processing, thinking, reasoning, and problem solving (Goldstein & Brockmole, 2017; Neisser, 1967). Unlike radical behaviorism, cognitive psychology is open to studying the mind and mental events. Like behaviorism (and unlike introspectionism), cognitive psychology relies primarily upon objective observation rather than subjective introspection.

But how can cognitive psychology objectively study subjective mental events without introspection? The answer lies in the concept of *operational definitions*. An **operational definition** defines a scientific concept by stating the specific actions or procedures used to measure it. Suppose, for example, we want to objectively study hunger, a mental event that we all experience subjectively. We might operationally define the intensity of hunger by counting the number of hours of food deprivation. After all, it stands to reason that someone who has not eaten for 12 hours is most likely hungrier than she was after not having eaten for 3 hours.

Here's another example: Suppose we give a list of words to be studied and then, sometime later, ask for the words to be recalled from memory. We could operationally define memory accuracy as the number of words written down correctly divided by the total number of words originally presented. Again, it stands to reason that someone who correctly wrote down only 30 percent of the words has a less accurate memory for those words than someone who correctly wrote down 85 percent of the words.

Abraham Maslow (1908–1970). As a founder of humanistic psychology, Maslow was interested in studying people of exceptional mental health. Such self-actualized people, he believed, make full use of their talents and abilities. Maslow offered his positive view of human potential as an alternative to the schools of behaviorism and psychoanalysis.

Humanistic Psychology

For a time, radical behaviorism and psychoanalysis combined to offer the unsettling view that we humans don't consciously know much about ourselves. Eventually, *humanists* like Abraham Maslow and Carl Rogers questioned the Freudian idea that we are ruled solely by unconscious forces. They also were uncomfortable with the radical behaviorist emphasis on conditioning and the rejection of mental events, such as thinking, as appropriate topics for scientific psychology (Schultz & Schultz, 2016).

Each of these two views has a strong undercurrent of **determinism**—the idea that behavior is determined by forces beyond our control. Instead, humanists stress **free will**, our ability to make conscious, voluntary choices. Of course, past experiences and the unconscious do affect us. Nevertheless, humanists believe that people can freely *choose* to live more creative, meaningful, and satisfying lives.

Humanistic psychology, then, is the study of people as inherently good and consciously motivated to learn and improve. Humanists believe that everyone has this potential, and they seek ways to help it emerge. Humanists are interested in psychological needs for love, self-esteem, belonging, self-expression, creativity, and spirituality. Such needs, they believe, are as important as our biological urges for food and water. For example, newborn infants deprived of human love may die just as surely as they would if deprived of food. Maslow's concept of self-actualization is a key feature of humanism. **Self-actualization** refers to the process of fully developing personal potential.

How scientific is the humanistic approach? Initially, humanists were less interested in treating psychology as a science. They stressed subjective factors, such as one's self-image, self-evaluation, and frame of reference. (*Self-image* is your perception of your own body, personality, and capabilities. *Self-evaluation* refers to appraising yourself as good or bad. A *frame of reference* is a mental perspective used to interpret events.) Today, humanists still try to understand how we perceive ourselves and experience the world. However, most now do research to test their ideas, just as other psychologists do (Schneider, Bugental, & Pierson, 2001). Like the very early psychologists, they believe that mental events are important; however, unlike the structuralists, they do not believe that our mental lives can be easily divided into distinct building blocks.

▲ Table 1.2 presents a summary of psychology's early development.

Radical behaviorism A behaviorist approach that rejects both introspection and any study of mental events, such as thinking, as inappropriate topics for scientific psychology.

Dynamic unconscious In Freudian theory, the parts of the mind that are beyond awareness, especially conflicts, impulses, and desires not directly known to a person.

Psychoanalysis Freudian approach to psychotherapy emphasizing the exploration of the unconscious using free association, dream interpretation, resistances, and transference to uncover unconscious conflicts.

Neo-Freudians Psychologists who accept the broad features of Freud's theory but have revised the theory to include the role of cultural and social factors while still accepting some of its basic concepts.

Psychodynamic theory Any theory of behavior that emphasizes internal conflicts, motives, and unconscious forces.

Cognitive psychology The study of information processing, thinking, reasoning, and problem solving.

Operational definition Defining a scientific concept by stating the specific actions or procedures used to measure it. For example, hunger might be defined as the number of hours of food deprivation.

Determinism The idea that all behavior has prior causes that would completely explain one's choices and actions if all such causes were known.

Free will The ability to freely make choices that are not controlled by genetics, learning, or unconscious forces; the idea that human beings are capable of making choices or decisions themselves.

Humanistic psychology Study of people as inherently good and motivated to learn and improve.

Self-actualization The process of fully developing personal potentials.

▲ Table 1.2 The Early Development of Psychology

Perspective	Date	Notable Events
Experimental psychology	1879	• Wilhelm Wundt opens the first psychology laboratory in Germany
	1883	• The first psychology lab in the United States is founded at Johns Hopkins University, in Baltimore, Maryland
	1886	• The first psychology textbook published in the United States; written by John Dewey
Structuralism	1898	• Edward Titchener advances psychology based on introspection
Functionalism	1890	• William James publishes *Principles of Psychology*
	1892	• The American Psychological Association is founded
Psychodynamic psychology	1895	• Sigmund Freud publishes his first studies
	1900	• Freud publishes *The Interpretation of Dreams*
Behaviorism	1906	• Ivan Pavlov reports his research on conditioned reflexes
	1913	• John Watson presents the behaviorist viewpoint
Gestalt psychology	1912	• Max Wertheimer and other researchers advance the Gestalt viewpoint
Humanistic psychology	1942	• Carl Rogers publishes *Counseling and Psychotherapy*
	1943	• Abraham Maslow publishes *A Theory of Human Motivation*
Biopsychology	1949	• Donald Hebb publishes *The Organization of Behavior*
Cognitive psychology	1956	• George Miller publishes *The Magic Number Seven, Plus or Minus Two*

Reflective Practice

The History of Psychological Science: A Trip Through Time

1. The cognitive unconscious is
a. better studied objectively
b. inaccessible through introspection
c. outside subjective awareness
d. all of the above

Match the following psychological approaches with the appropriate historical figure.

2. Structuralism
3. Humanistic
4. Functionalism
5. Psychoanalytic
6. Radical behaviorism
7. Gestalt
8. Behaviorism

A. Maslow
B. Freud
C. Titchener
D. Wertheimer
E. James
F. Watson
G. Skinner

THINK CRITICALLY

9. Modern sciences like psychology are built on intersubjective observations, which can be verified by two or more independent observers. Based on your reading, evaluate whether structuralism met this standard, giving reasons for your answer.

SELF-REFLECT

- Which of the historical approaches to psychology best matches your own thinking about human thinking and behavior? Why?

Answers: 1. b 2. C 3. A 4. E 5. B 6. G 7. D 8. F 9. No, it did not. Structuralism's downfall was that each observer examined the contents of his or her own mind—which is something that no other person can observe.

1.4 Contemporary Psychological Science and the Biopsychosocial Model

GATEWAYS LEARNING OUTCOMES:
After reading this section you should be able to:

1.4.1 Explain the three perspectives that comprise the biopsychosocial model

1.4.2 Explain the advantages of the biopsychosocial model for describing complex behavior

1.4.3 Explain why early psychological research was prone to gender and culture bias

Today, most psychologists accept that **psychology** is the scientific study of behavior and mental processes (appropriately operationally defined). It is this reliance on objective scientific observation to systematically answer questions about all sorts of behaviors and mental processes that distinguishes psychology from many other fields, such as history, law, art, and business (Stanovich, 2013).

What does "behavior" refer to in that definition of psychology? Any directly observable action or response—eating, hanging out, sleeping, talking, or sneezing—is a *behavior*. So are studying, gambling, watching television, tying your shoes, giving someone a gift, and reading this book. But psychologists haven't left out the mind; they also objectively study mental events, such as dreaming,

thinking, remembering, understanding what you read, and making decisions about stockings (or murder suspects), as well as other mental processes (Jackson, 2016).

Key insights from the early schools of thought continue to influence contemporary psychology. Some early systems, such as structuralism, have disappeared entirely, while new ones have gained prominence. Also, viewpoints such as functionalism and Gestalt psychology have been absorbed into newer, broader perspectives. Freudian psychoanalysis continues to evolve into the broader *psychodynamic view.* Although many of Freud's ideas have been challenged or refuted, psychodynamic psychologists continue to trace our behavior to unconscious mental activity. They also seek to develop therapies to help people lead happier, fuller lives. The same is true of humanistic psychologists, although they stress subjective, conscious experience and the positive side of human nature.

Today, though, one overarching perspective has gained prominence. The **biopsychosocial model** accepts that human behavior, mental processes, and overall well-being are strongly influenced by a combination of *biological*, *psychological*, and *social* factors (Woods, 2019).

Let's take a closer look at the three components of the biopsychosocial model.

The Biological Perspective

The **biological perspective** seeks to explain behavior in terms of biological principles such as genetics, brain processes, and evolution. **Evolutionary psychology** is an approach that emphasizes inherited, adaptive aspects of behavior and mental processes. *Biopsychologists* and others who study the brain and nervous system, such as biologists and biochemists, comprise the broader field of **neuroscience**. Using new techniques, *neuroscientists* are producing exciting insights about how the brain relates to thinking, feelings, perception, abnormal behavior, and other topics.

The Psychological Perspective

The **psychological perspective** views behavior as the result of psychological processes within each person. This view continues to emphasize scientific observation, just as the early psychologists did. However, cognitive psychology has gained prominence in recent years as researchers have devised suitable operational definitions and research methods to objectively study mental processes, such as thinking, memory, language, perception, problem solving, consciousness, and creativity (Reed, 2013). With a renewed interest in thinking, it can be said that psychology has finally "regained consciousness" (Robins, Gosling, & Craik, 1998).

The Social Perspective

The **social perspective** stresses the impact that social contexts, such as crowds, groups, and cultures, have on human behavior. Many characteristics of our social world, such as access to education, ethnicity, religion, and poverty, affect the social norms that guide behavior. **Social norms** are rules that define acceptable and expected behavior for members of various groups.

Putting the Three Perspectives Together

As all-encompassing as this may at first seem, in practice the biopsychosocial model cannot by itself tell us *which* particular biological, psychological, and social factors influence any particular behavior—only more detailed research can yield specific answers. Instead, this model serves as a constant reminder of the value of taking into account multiple perspectives, because doing so allows us to better understand complex human behaviors (▲ Table 1.3). For example, *anorexia nervosa* is an eating disorder involving unrealistic thoughts about body image and behaviors such as excessive exercise and restrictive eating (■ see Section 10.2). To properly understand this disorder using a biopsychosocial model, it's important to fully consider the biological (anomalies on chromosome 12), psychological (high need for control), and social (exposure to idealized body images presented in the media) factors that play a role in triggering this potentially fatal disorder (Hausenblas et al., 2013). Table 1.3 gives an overview of the perspectives associated with the biopsychosocial perspective.

Human Diversity and the Biopsychosocial Model

One of the real benefits of a model that considers biological, psychological, and social factors is that it is better able to capture the full range of diversity that we see in human thinking and behavior. Though the study of human diversity is well established in contemporary psychology, it took some time for psychology to realize its importance, and to incorporate it into everyday psychological theory and practice. This delay stemmed mainly from the fact that the founders of psychology were not a very diverse group (you may have noticed that all of the early psychologists mentioned in our look at the history of psychology were Caucasian men). This

Psychology The scientific study of behavior and mental processes.

Biopsychosocial model An approach acknowledging that biological, psychological, and social factors interact to influence human behavior and mental processes.

Biological perspective The attempt to explain behavior in terms of underlying biological principles.

Evolutionary psychology Approach that emphasizes inherited, adaptive aspects of behavior and mental processes.

Neuroscience The broader field of biopsychologists and others who study the brain and nervous system, such as biologists and biochemists.

Psychological perspective The traditional view that behavior is shaped by psychological processes occurring at the level of the individual.

Social perspective The focus on the importance of social contexts in influencing the behavior of individuals.

Social norms Rules that define acceptable and expected behavior for members of a group.

▲ Table 1.3 Perspectives of the Biopsychosocial Model

Biological Perspective

Biopsychological View

Key idea: *Human and animal behavior is the result of internal physical, chemical, and biological processes.*

Seeks to explain behavior through activity of the brain and nervous system, physiology, genetics, the endocrine system, and biochemistry; a neutral, reductionistic, and mechanistic view of human nature.

Evolutionary View

Key idea: *Human and animal behavior is the result of the process of evolution.*

Seeks to explain behavior through principles based on natural selection; a neutral, reductionistic, and mechanistic view of human nature.

Psychological Perspective

Behaviorist View

Key idea: *Behavior is shaped and controlled by one's environment.*

Emphasizes the study of observable behavior and the effects of learning; stresses the influence of external rewards and punishments; a neutral, scientific, and somewhat mechanistic view of human nature.

Cognitive View

Key idea: *Much human behavior can be understood in terms of the mental processing of information.*

Concerned with thinking, knowing, perception, understanding, memory, decision making, and judgment; explains behavior in terms of information processing; a neutral, somewhat computerlike view of human nature.

Psychodynamic View

Key idea: *Behavior is directed by forces within one's personality that are often hidden or unconscious.*

Emphasizes internal impulses, desires, and conflicts—especially those that are unconscious; views behavior as the result of clashing forces within personality; a somewhat negative, pessimistic view of human nature.

Humanistic View

Key idea: *Behavior is guided by one's self-image, by subjective perceptions of the world, and by the need for personal growth.*

Focuses on subjective, conscious experience, human problems, potentials, and ideals; emphasizes self-image and self-actualization to explain behavior; a positive, philosophical view of human nature.

Social Perspective

Social View

Key idea: *Behavior is influenced by one's social and cultural context.*

Emphasizes that behavior is related to the social and cultural environment within which a person is born, grows up, and lives from day to day; a neutral, interactionist view of human nature.

inadvertently introduced narrowness into early psychological theory and research.

For example, Lawrence Kohlberg (1969) proposed an influential theory about how we develop moral values. His studies suggested that women were morally "immature" because, compared to men, they were not as concerned with justice when making moral decisions. Many years later, Carol Gilligan (1982) provided evidence that women were more likely to make moral choices based on caring, rather than justice. When moral decision making is examined from this point of view, it was men who were morally immature. (■ Today, we recognize that both justice and caring perspectives may be essential to adult wisdom. ■ See Section 3.4 for more details.)

There are two main reasons why early psychological theories were prone to this type of **gender bias in research**. The first is that because the majority of early researchers and clinicians were men, women rarely had an opportunity to contribute their perspectives to the research being carried out, or the theories being developed. Without women's input into the research agenda, topics of significant interest to women were also more likely to be ignored by many investigators.

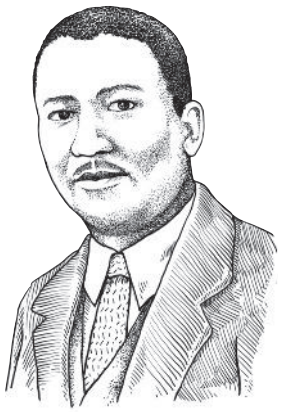
The second issue that contributed to gender bias was the tendency for research to focus on male participants, and to assume that results observed with men would also hold true for women. Without directly studying women, though, it's impossible to know the extent to which this assumption is true. A related problem occurs when researchers combine results from men and women. Doing so can hide important male–female differences. A final problem related to research participants is that unequal numbers of men and women may volunteer for some kinds of research. For example, in studies of sexuality, more male college students volunteer to participate than females (Wiederman, 1999). Conversely, more females than males participate in studies of nursing (Polit & Beck, 2013).

As important as they are, male–female differences are but one type of human diversity. Similar types of bias also arise when it comes to people of different ages, sexual orientations, and ethnic groups (Denmark, Rabinowitz, & Sechzer, 2005; Guthrie, 2004). Perhaps the most general research bias of all becomes clear when you consider that many of psychology's conclusions are based on people who are WEIRD (that is, from **W**estern, **E**ducated, **I**ndustrialized, **R**ich, and **D**emocratic societies). For example, to this day, the vast majority of human participants in psychology experiments are recruited from introductory psychology courses. (This fact led psychologist Edward Tolman to note that much of psychology is

based on two sets of subjects—rats and college freshmen!)

While the reliance on WEIRD research participants does not automatically invalidate the results of psychology experiments, it may place limitations on their implications. According to Henrich, Heine, and Norenzayan (2010), we have a strongly ingrained tendency to assume that what Western researchers discover while studying Western research participants is the norm in human behavior and that the behavior of those in other societies is unusual. However, after a careful review of studies comparing Westerners to people from other societies, these researchers concluded that exactly the opposite is the case. *We* in North America and Western Europe are WEIRD, and so we should be careful about making assumptions that what we learn from studying behavior in our society illuminates the behavior of people in non-Western societies. Too often in the past, the unstated standard for determining what is average, normal, or correct has been the behavior of middle-aged, white, heterosexual, middle-class Western men (Henrich, Heine, & Norenzayan, 2010).

Margaret Washburn (1871–1939). In 1908, Washburn published *The Animal Mind*, an influential textbook on animal behavior. In 1921 she became the second female to serve as President of the American Psychological Association (Mary Whiton Calkins was the first).



Francis Cecil Sumner (1895–1954). Sumner served as chair of the Psychology Department at Howard University and wrote articles critical of the underrepresentation of African Americans in American colleges and universities.

Inez Beverly Prosser (c. 1895–1934). Prosser was one of the early leaders in the debate about how to best educate African-American children.

More recently, though, psychologists have started asking important questions such as: Do the principles of Western psychology apply to people in all cultures? Are some psychological concepts invalid in other cultures? Are any universal? As psychologists have probed such questions, one thing has become clear: **cultural relativity**—the idea that behavior must be judged relative to the values of the culture in which it occurs—can greatly affect our understanding of "other people." Most of what we think, feel, and do is influenced, in one way or another, by the social and cultural worlds in which we live (Baumeister & Bushman, 2017; Henrich, Heine, & Norenzayan, 2010). This includes not just everyday thinking and behavior, but also the diagnosis and treatment of mental disorders (Lum, 2011). To be effective, psychologists must be sensitive to people who are ethnically and culturally different from themselves (Lowman, 2013). (■ See Section 15.1 for a discussion of the impact of culture on therapy.)

It's worth noting that although women and ethnic minorities were long underrepresented among psychologists, there *were* a few pioneers (Minton, 2000). In 1894, Margaret Washburn became the first woman to be awarded a PhD in psychology. By 1906 in the United States, about 1 psychologist in 10 was a woman. In 1920, Francis Cecil Sumner became the first African American man to earn a doctoral degree in psychology. Inez Beverly Prosser, the first African American female psychologist, was awarded her PhD in 1933.

Fortunately, psychology is coming to better reflect human diversity as the proportion of women and racial/ethnic minorities in the psychology workforce continues to increase (American Psychological Association, 2015b). For example, according to a 2014 survey of members of the American Psychological Association (American Psychological Association, 2015a):

- 57 percent of members are women, and 9 percent are racial/ethnic minorities
- 49 percent of members working full time in universities, colleges, and other academic settings are women, and 14 percent are racial/ethnic minorities
- 57 percent of members holding PhD degrees (or equivalent) are women, and 9 percent are racial/ethnic minorities

The American Psychological Association (APA) has also recently recognized the importance of educating the public about diversity in the field of psychology. In conjunction with the Smithsonian Institute, the APA Women's Programs Office has developed the *I Am Psyched!* program to celebrate the role of women of color in psychology. To maximize exposure, *I Am Psyched!* is now a traveling exhibit that has traveled from coast to coast, visiting more than 50 colleges in the United States.

In closing, we should note that the issue of diversity is not solely of academic concern. We are rapidly becoming a multicultural society. By 2044, more than half of all Americans will be members of minority groups such as African American, Hispanic, Asian American, Native American, or Pacific Islander (Colby & Ortman, 2016). In some large cities such as Detroit and Baltimore, minority groups

Gender bias in research A tendency for females and female-related issues to be underrepresented in research, whether psychological or otherwise.

Cultural relativity The idea that behavior must be judged relative to the values of the culture in which it occurs.