

PSYCHOLOGY

Themes & Variations

11th Edition

WAYNE WEITEN

11TH EDITION

Psychology

Themes and Variations

Wayne Weiten

University of Nevada, Las Vegas



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Psychology: Themes and Variations,
Eleventh Edition
Wayne Weiten

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Beth and T. J., this one is for you

About the Author

Wayne Weiten is a graduate of Bradley University and received his Ph.D. in social psychology from the University of Illinois, Chicago in 1981. He has taught at the College of DuPage and Santa Clara University, and currently teaches at the University of Nevada, Las Vegas. He has received distinguished teaching awards from Division Two of the American Psychological Association (APA) and from the College of DuPage. He is a Fellow of Divisions 1 and 2 of the American Psychological Association and a Fellow of the Midwestern Psychological Association. In 1991, he helped chair the APA National Conference on Enhancing the Quality of Undergraduate Education in Psychology. He is a former President of the Society for the Teaching of Psychology and the Rocky Mountain Psychological Association. In 2006, one of the national teaching awards given annually by the Society for the Teaching of Psychology was named in his honor. Weiten has conducted research on a wide range of topics, including educational measurement, jury decision-making, attribution theory, pressure as a form of stress, and the technology of textbooks. He is also the co-author of *Psychology Applied to Modern Life: Adjustment in the 21st Century* (with Dana S. Dunn & Elizabeth Yost Hammer, Cengage, 2018, 12th ed.). Weiten also co-authored a chapter on the Introductory Psychology course for *The Oxford Handbook of Psychology Education* (Weiten & Houska, 2015).

To the Instructor

If I had to sum up in a single sentence what I hope will distinguish this text, the sentence would be this: I have set out to create a *paradox* instead of a *compromise*.

Let me elaborate. An introductory psychology text must satisfy two disparate audiences: professors and students. Because of the tension between the divergent needs and preferences of these audiences, textbook authors usually indicate that they have attempted to strike a compromise between being theoretical versus practical, comprehensive versus comprehensible, research oriented versus applied, rigorous versus accessible, and so forth. However, I believe that many of these dichotomies are false. As Kurt Lewin once remarked, “What could be more practical than a good theory?” Similarly, is rigorous really the opposite of accessible? Not in my dictionary. I maintain that many of the antagonistic goals that we strive for in our textbooks only *seem* incompatible and that we may not need to compromise as often as we assume.

In my estimation, a good introductory textbook is a paradox in that it integrates characteristics and goals that appear contradictory. With this in mind, I have endeavored to write a text that is paradoxical in three ways. First, in surveying psychology’s broad range of content, I have tried to show that our interests are characterized by diversity *and* unity. Second, I have emphasized both research *and* application and how they work in harmony. Finally, I have aspired to write a book that is challenging to think about *and* easy to learn from. Let’s take a closer look at these goals.

Goals

1. *To show both the unity and the diversity of psychology’s subject matter.* Students entering an introductory psychology course are often unaware of the immense diversity of subjects studied by psychologists. I find this diversity to be part of psychology’s charm, and throughout the book I highlight the enormous range of questions and issues addressed by psychology. Of course, our diversity proves disconcerting for some students, who see little continuity between such disparate areas of research as neuroscience, motivation, cognition, and abnormal behavior. Indeed, in this era of specialization, even some psychologists express concern about the fragmentation of the field.

However, I believe that there is considerable overlap among the subfields of psychology and that we should emphasize their common core by accenting their connections and similarities. Consequently, I portray psychology as an integrated whole rather than a mosaic of loosely related parts. A principal goal of this text, then, is to highlight the unity in psychology’s intellectual heritage (the themes) as well as the diversity of psychology’s interests and uses (the variations).

2. *To illuminate the process of research and its intimate link to application.* For me, a research-oriented book is not one that bulges with summaries of many studies but one that enhances students’ appreciation of the logic and excitement of empirical inquiry. I want students to appreciate the strengths of the empirical approach and to see scientific psychology as a creative effort to solve intriguing behavioral puzzles. For this reason, the text emphasizes not only *what* we know (and don’t know) but also *how* we attempt to find out. It examines methods in some detail and encourages students to adopt the skeptical attitude of a scientist and to think critically about claims regarding behavior.

Learning the virtues of research should not mean that students cannot also satisfy their desire for concrete, personally useful information about the challenges of everyday life. Most researchers believe that psychology has a great deal to offer those outside the field and that psychologists should share the practical implications of their work. In this text, practical insights are carefully qualified and closely tied to data so that students can see the interdependence of research and application. I find that students come to appreciate

the science of psychology more when they see that worthwhile practical applications are derived from careful research and sound theory.

3. *To make the text challenging to think about and easy to learn from.* Perhaps most of all, I have sought to create a book of ideas rather than a compendium of studies. I consistently emphasize concepts and theories over facts, and I focus on major issues and tough questions that cut across the subfields of psychology (for example, the extent to which behavior is governed by nature, nurture, and their interaction), as opposed to parochial debates (such as the merits of averaging versus adding in impression formation). Challenging students to think also means urging them to confront the complexity and ambiguity of our knowledge. Thus, the text doesn't skirt gray areas, unresolved questions, and theoretical controversies. Instead, readers are encouraged to contemplate open-ended questions, to examine their assumptions about behavior, and to apply psychological concepts to their own lives. My goal is not simply to describe psychology but to stimulate students' intellectual growth.

However, students can grapple with “the big issues and tough questions” only if they first master the basic concepts and principles of psychology—ideally, with as little struggle as possible. In my writing, I never let myself forget that a textbook is a tool for teaching. Accordingly, I have taken great care to ensure that the book's content, organization, writing, illustrations, and pedagogical aids work in harmony to facilitate instruction and learning.

Admittedly, these goals are ambitious. If you're skeptical, you have every right to be. Let me explain how I have tried to realize the objectives I have outlined.

Special Features

This text has a variety of unusual features, each contributing in its own way to the book's paradoxical nature. These special features include unifying themes, Personal Application sections, Critical Thinking Application sections, Reality Checks, exercises that challenge students to identify independent and dependent variables in studies, a didactic illustration program, an integrated running glossary, Concept Checks, Key Learning Goals, Concept Charts, and Practice Tests.

Unifying Themes

Chapter 1 introduces seven key ideas that serve as unifying themes throughout the text. The themes serve several purposes. First, they provide threads of continuity across chapters that help students see the connections among various areas of research in psychology. Second, as the themes evolve over the course of the book, they provide a forum for a relatively sophisticated discussion of enduring issues in psychology, thus helping to make this a “book of ideas.” Third, the themes focus a spotlight on a number of basic insights about psychology and its subject matter that should leave lasting impressions on your students. In selecting the themes, the question I asked myself (and other professors) was, “What do I really want students to remember five years from now?” The resulting themes are grouped into two sets.

THEMES RELATED TO PSYCHOLOGY AS A FIELD OF STUDY

Theme 1: Psychology is empirical. This theme is used to enhance the student's appreciation of psychology's scientific nature and to demonstrate the advantages of empiricism over uncritical common sense and speculation. I also use this theme to encourage the reader to adopt a scientist's skeptical attitude and engage in more critical thinking about information of all kinds.

Theme 2: Psychology is theoretically diverse. Students are often confused by psychology's theoretical pluralism and view it as a weakness. I don't downplay or apologize for our field's theoretical diversity because I honestly believe it is one of our greatest strengths. Throughout the book, I provide concrete examples of how clashing theories have stimulated productive research, how converging on a question from several perspectives can yield increased understanding, and how competing theories are sometimes reconciled in the end.

Theme 3: Psychology evolves in a sociohistorical context. This theme emphasizes that psychology is embedded in the ebb and flow of everyday life. The text shows how the spirit of the times has often shaped psychology's evolution and how progress in psychology leaves its mark on our society.

THEMES RELATED TO PSYCHOLOGY'S SUBJECT MATTER

Theme 4: Behavior is determined by multiple causes. Throughout the book, I emphasize and repeatedly illustrate that behavioral processes are complex and that multifactorial causation is the rule. This theme is used to discourage simplistic, single-cause thinking and to encourage more critical reasoning.

Theme 5: People's behavior is shaped by their cultural heritage. This theme is intended to enhance students' appreciation of how cultural factors moderate psychological processes and how the viewpoint of one's own culture can distort one's interpretation of the behavior of people from other cultures. The discussions that elaborate on this theme do not simply celebrate diversity. They strike a careful balance, accurately reflecting the research in this area, while highlighting both cultural variations and similarities in behavior.

Theme 6: Heredity and environment jointly influence behavior. Repeatedly discussing this theme permits me to explore the nature versus nurture issue in all its complexity. Over a series of chapters, students gradually learn how biology shapes behavior, how experience shapes behavior, and how scientists estimate the relative importance of each. Along the way, students will gain an in-depth appreciation of what we mean when we say that heredity and environment interact.

Theme 7: Our experience of the world is highly subjective. All of us tend to forget the extent to which we view the world through our own personal lens. This theme is used to explain the principles that underlie the subjectivity of human experience, to clarify its implications, and to repeatedly remind readers that their view of the world is not the only legitimate view.

After introducing all seven themes in Chapter 1, I discuss different sets of themes in each chapter as they are relevant to the subject matter. The connections between a chapter's content and the unifying themes are highlighted in a standard section near the end of the chapter in which I reflect on the "lessons to be learned" from the chapter. The discussions of the unifying themes are largely confined to these "Reflecting on the Chapter's Themes" sections. I have not tried to make every chapter illustrate a certain number of themes. Rather, the themes were allowed to emerge naturally, and I found that two to five surfaced in any given chapter. The chart on page viii shows which themes are highlighted in each chapter. Color-coded icons at the beginning of each chapter and in each "Reflecting on the Chapter's Themes" section indicate the specific themes featured in each chapter.

Personal Applications

To reinforce the pragmatic implications of theory and research stressed throughout the text, each chapter includes a Personal Application section that highlights the practical side of psychology. Each Personal Application devotes two to three *pages* of text (rather than the usual box) to a single issue that should be of special interest to many of your students. Although most of the Personal Application sections have a "how to" character, they continue to review studies and summarize data in much the same way as the main body of each chapter. Thus, they portray research and application not as incompatible polarities but as two sides of the same coin. Many of the Personal Applications—such as those on finding and reading journal articles, understanding art and illusion, and improving stress management—provide topical coverage unusual for an introductory text.

Critical Thinking Applications

A great deal of unusual coverage can also be found in the Critical Thinking Applications that follow the Personal Applications. These applications are based on the assumption

Unifying Themes Highlighted in Each Chapter

Chapter	THEME						
	1 Empiricism	2 Theoretical Diversity	3 Sociohistorical Context	4 Multifactorial Causation	5 Cultural Heritage	6 Heridity & Environment	7 Subjectivity of Experience
1. The Evolution of Psychology							
2. The Research Enterprise in Psychology							
3. The Biological Bases of Behavior							
4. Sensation and Perception							
5. Variations in Consciousness							
6. Learning							
7. Human Memory							
8. Cognition and Intelligence							
9. Motivation and Emotion							
10. Human Development Across the Life Span							
11. Personality							
12. Social Behavior							
13. Stress, Coping, and Health							
14. Psychological Disorders							
15. Treatment of Psychological Disorders							

that critical thinking skills can be taught. They do not simply review research controversies, as is typically the case in other introductory texts. Instead, they introduce and model a host of critical thinking skills, such as looking for contradictory evidence or alternative explanations; recognizing anecdotal evidence, circular reasoning, hindsight bias, weak analogies, and false dichotomies; evaluating arguments systematically; and working with cumulative and conjunctive probabilities.

The specific skills discussed in the Critical Thinking Applications are listed in the accompanying table (see page ix), where they are organized into five categories using a taxonomy developed by Halpern (1998). In each chapter, some of these skills are applied to topics and issues related to the chapter's content. For instance, in the chapter that covers drug abuse (Chapter 5), the concept of alcoholism is used to highlight the immense power of definitions and to illustrate how circular reasoning can seem so seductive. Skills that are particularly important may surface in more than one chapter, so students see them applied in a variety of contexts. For example, in Chapter 7 students learn how hindsight bias can contaminate memory, and in Chapter 11 they see how hindsight can distort analyses of personality. Repeated practice across chapters should help students spontaneously recognize the relevance of specific critical thinking skills when they encounter certain types of information.

Taxonomy of Skills Covered in the Critical Thinking Applications

Verbal Reasoning and Argument Analysis Skills	
Understanding the way definitions shape how people think about issues	Chapter 5
Identifying the source of definitions	Chapter 5
Avoiding the nominal fallacy in working with definitions and labels	Chapter 5
Understanding the elements of an argument	Chapter 9
Recognizing and avoiding common fallacies, such as irrelevant reasons, circular reasoning, slippery slope reasoning, weak analogies, and false dichotomies	Chapters 9 and 10
Evaluating arguments systematically	Chapter 9
Understanding how Pavlovian conditioning can be used to manipulate emotions	Chapter 6
Developing the ability to detect conditioning procedures used in the media	Chapter 6
Recognizing social influence strategies	Chapter 12
Judging the credibility of an information source	Chapter 12
Skills in Thinking as Hypothesis Testing	
Looking for alternative explanations for findings and events	Chapters 1 and 10
Looking for contradictory evidence	Chapters 1 and 3
Recognizing the limitations of anecdotal evidence	Chapters 2 and 15
Understanding the need to seek disconfirming evidence	Chapter 7
Understanding the limitations of correlational evidence	Chapters 10 and 13
Understanding the limitations of statistical significance	Chapter 13
Recognizing situations in which placebo effects might occur	Chapter 15
Skills in Working with Likelihood and Uncertainty	
Utilizing base rates in making predictions and evaluating probabilities	Chapter 13
Understanding cumulative probabilities	Chapter 14
Understanding conjunctive probabilities	Chapter 14
Understanding the limitations of the representativeness heuristic	Chapters 8 and 14
Understanding the limitations of the availability heuristic	Chapters 8 and 14
Recognizing situations in which regression toward the mean may occur	Chapter 15
Understanding the limits of extrapolation	Chapter 3
Decision-Making and Problem-Solving Skills	
Recognizing framing effects	Chapter 8
Understanding loss aversion	Chapter 8
Using evidence-based decision making	Chapter 2
Recognizing the bias in hindsight analysis	Chapters 7 and 11
Seeking information to reduce uncertainty	Chapter 13
Making risk-benefit assessments	Chapter 13
Generating and evaluating alternative courses of action	Chapter 13
Recognizing overconfidence in human cognition	Chapter 7
Understanding the limitations and fallibility of human memory	Chapter 7
Understanding how contrast effects can influence judgments and decisions	Chapter 4
Recognizing when extreme comparators are being used	Chapter 4

Reality Checks

Each chapter includes three or four Reality Checks that address common misconceptions related to psychology and provide direct refutations of the misinformation. These Reality Checks are sprinkled throughout the chapters, appearing adjacent to the relevant material. Examples of misconceptions that are dispelled include the myth that B. F. Skinner raised his daughter in a Skinner box, which led to her becoming severely disturbed (Chapter 1); the notion that people use only 10% of their brains (Chapter 3); the assumption that people who are color blind see the world in black and white (Chapter 4); and the idea that it is dangerous to awaken someone who is sleepwalking (Chapter 5).

The impetus for this feature was a fascinating article in *Teaching of Psychology* by Patricia Kowalski and Annette Taylor (2009). This article summarized evidence that students typically come into introductory psychology with a variety of misconceptions and that, for the most part, they tend to leave the course with their misconceptions intact. To see if this problem could be ameliorated, they tested the impact of direct refutations on students' misconceptions in the introductory course. Their data suggested that explicit repudiations of erroneous ideas reduce students' misconceptions more effectively than the simple provision of correct information. Since then, other studies have supported this conclusion (Kowalski & Taylor, 2017; LaCaille, 2015). With that evidence in mind, I decided to craft this feature that explicitly confronts and disputes common fallacies that range from oversimplified to profoundly inaccurate. Because the Reality Checks mostly supplement the normal coverage in the text, I chose to keep them concise. For the most part, they can be found in the margins of the pages.

Identifying Independent and Dependent Variables

Experimentation is the foundation of psychological science. In light of this reality, it would be nice if our students left their introductory courses with an enhanced understanding of the experimental method. Most of us work toward this goal, but I often hear instructors lament the difficulty their students experience in sorting out independent variables (IVs) from dependent variables (DVs). These crucial concepts are introduced in the coverage of research methods in our introductory texts, but in subsequent chapters there often is little effort to explicitly identify the IVs and DVs in the countless studies that are described. To help students gain a greater understanding of these fundamental concepts, I have developed a new feature titled “Identifying Independent and Dependent Variables.” This feature first appears in Chapter 2 after the experimental method has been described and then is found in all subsequent chapters. Generally, there are three to five of these features in each chapter. As the title, suggests, these thinking exercises ask students to figure out what were the IVs and DVs in studies that are described in the normal flow of the text. These learning aids appear in the margins adjacent to the descriptions of the experimental studies that are the focus of each exercise. The answers to these exercises can be found in Appendix A in the back of the book. I suspect that students will find these exercises somewhat challenging, but if they follow through with them they will see many concrete examples of IVs and DVs throughout the book, which should gradually build their ability to recognize independent and dependent variables.

A Didactic Illustration Program

When I first outlined my plans for this text, I indicated that I wanted every aspect of the illustration program to have a genuine didactic purpose and that I wanted to be deeply involved in its development. In retrospect, I had no idea what I was getting myself into, but it has been a rewarding learning experience. In any event, I have been intimately involved in planning every detail of the illustration program. I have endeavored to create a program of figures, diagrams, photos, and tables that work hand in hand with the prose to strengthen and clarify the main points in the text.

The most obvious results of our didactic approach to illustration are the Illustrated Overviews that combine tabular information, photos, diagrams, and sketches to

provide exciting overviews of key ideas in the areas of methods, sensation and perception, learning, personality theory, psychopathology, and psychotherapy. But I hope you will also notice the subtleties of the illustration program. For instance, diagrams of important concepts (conditioning, synaptic transmission, EEGs, experimental design, and so forth) are often repeated in several chapters (with variations) to highlight connections among research areas and to enhance students' mastery of key ideas. Numerous easy-to-understand graphs of research results underscore psychology's foundation in research, and photos and diagrams often bolster each other (for example, see the treatment of classical conditioning in Chapter 6). Color is used carefully as an organizational device, and visual schematics help simplify hard-to-visualize concepts (see, for instance, the figure explaining reaction range for intelligence in Chapter 8). All of these efforts have gone toward the service of one master: the desire to make this an inviting book that is easy to learn from.

Integrated Running Glossary

An introductory text should place great emphasis on acquainting students with psychology's technical language—not for the sake of jargon, but because a great many of our key terms are also our cornerstone concepts (for example, *independent variable*, *reliability*, and *cognitive dissonance*). This text handles terminology with a running glossary embedded in the prose itself. The terms are set off in **blue boldface italics**, and the definitions follow in **blue, boldface roman type**. This approach retains the two advantages of a conventional running glossary: Vocabulary items are made salient, and their definitions are readily accessible. However, it does so without interrupting the flow of discourse while eliminating redundancy between text matter and marginal entries.

Concept Checks

To help students assess their mastery of important ideas, Concept Checks are sprinkled throughout the book. In keeping with my goal of making this a book of ideas, the Concept Checks challenge students to apply ideas instead of testing rote memory. For example, in Chapter 6 the reader is asked to analyze realistic examples of conditioning and identify conditioned stimuli and responses, reinforcers, and schedules of reinforcement. Many of the Concept Checks require the reader to put together ideas introduced in different sections of the chapter. For instance, in Chapter 4 students are asked to identify parallels between vision and hearing. Some of the Concept Checks are quite challenging, but students find them engaging, and they report that the answers (available in Appendix A in the back of the book) are often illuminating.

Key Learning Goals

To help students organize, assimilate, and remember important ideas, each major section of every chapter begins with a succinct set of Key Learning Goals. The Key Learning Goals are found adjacent to the level-one headings that begin each major section. The Key Learning Goals are thought-provoking learning objectives that should help students focus on the key issues in each section.

Concept Charts

At the end of each chapter, we have replaced conventional narrative summaries with more conceptual and concise Concept Charts. The chapter Concept Charts are color-coded, hierarchically organized overviews that create “snapshots” of the chapters that allow students to quickly see the relationships between ideas and sections. These materials will help your students review the details of the chapter coverage while also seeing the “big picture” in terms of chapter organization.

Practice Tests

In addition to the answers to the Concept Checks and the answers to the new feature on identifying independent and dependent variables, Appendix A at the back of the book

includes a Practice Test for each chapter in the text. These 12-item multiple-choice Practice Tests should give students realistic assessments of their mastery of specific chapters and valuable practice taking the type of test that many of them will face in the classroom (if the instructor uses the Test Bank). This feature grew out of some research I conducted on students' use of textbook pedagogical devices (see Weiten, Guadagno, & Beck, 1996). This research indicated that students pay scant attention to some standard pedagogical devices. When I grilled my students to better understand this finding, it quickly became apparent that students are pragmatic about pedagogy. Essentially, their refrain was "We want study aids that will help us pass the next test." With this mandate in mind, I devised the Practice Tests. They should be useful because I took most of the items from Test Banks for previous editions. This feature takes advantage of the *testing effect*, which shows that taking a test on material increases performance on a subsequent exam even more than studying or rereading for an equal amount of time (Batsell et al., 2017; Roediger & Karpicke, 2018). Of course, additional quizzes and tests can be found online in MindTap to provide further help to your students as they attempt to assimilate the content of each chapter.

In addition to the special features just described, the text includes a variety of more conventional "tried and true" features. The back of the book contains a standard *alphabetical glossary*. Opening *outlines* preview each chapter, I make frequent use of *italics for emphasis*, and I depend on *frequent headings* to maximize organizational clarity. The preface for students describes these pedagogical devices in more detail.

Content

The text is divided into 15 chapters that follow a traditional ordering. The chapters are not grouped into sections or parts, primarily because such groupings can limit your options if you want to reorganize the order of topics. The chapters are written in a way that facilitates organizational flexibility because I always assume that some chapters might be omitted or presented in a different order.

The topical coverage in the text is relatively conventional, but there are some subtle departures from the norm. For instance, Chapter 1 presents a relatively "meaty" discussion of the evolution of ideas in psychology. This coverage of history lays the foundation for many of the crucial ideas emphasized in subsequent chapters. The historical perspective is also my way of reaching out to the students who find that psychology isn't what they expected. If we want students to contemplate the mysteries of behavior, we must begin by clearing up the biggest mysteries of them all: "Where did these rats, statistics, synapses, and genes come from, what could they possibly have in common, and why doesn't this course bear any resemblance to what I anticipated?" I use history as a vehicle to explain how psychology evolved into its modern form and why misconceptions about its nature are so common.

I also devote an entire chapter (Chapter 2) to the scientific enterprise—not just the mechanics of research methods but the logic behind them. I believe that an appreciation of the nature of empirical evidence can contribute greatly to improving students' critical thinking skills. Ten years from now, many of the "facts" reported in this book will have changed, but an understanding of the methods of science will remain invaluable. An introductory psychology course by itself isn't going to make a student think like a scientist, but I can't think of a better place to start the process.

Changes in the 11th Edition

A good textbook must evolve with the field of inquiry it covers, as well as new directions in higher education. Although the professors and students who used the first 10 editions of this book did not clamor for alterations, there are some changes. First and foremost, this book represents a blended version of the full-length and briefer versions that

preceded it. The last decade has seen a pronounced trend toward greater brevity in textbooks in psychology (Weiten & Houska, 2015), as well as many other fields. This trend is not limited to undergraduate texts, as I have also witnessed it in the medical textbooks that I often consult on topics such as neuroscience, sleep, pediatrics, and psychiatry. This new emphasis on brevity made the retention of separate versions of different length unnecessary. Hence, in writing the 10th edition of this book, I used the previous briefer version as the starting point. However, in many places I was able to further condense the coverage from the briefer version, allowing me to import a variety of topics that formerly appeared only in the full-length version. So, the result was something more than just the next edition of the briefer version: It was a fusion of the two previous versions, although its length (in words) was close to recent editions of the briefer version. This edition continues to follow the model begun in the 10th edition and remains similar in length to previous briefer versions.

You will also find a variety of other changes in this edition. The most prominent change is the addition of the new feature: Identifying Independent and Dependent Variables, which I have already described. I think this feature will contribute greatly to my goal of helping students better understand the logic and nature of experimental research. The graphic design of the text has been refreshed and improved in a variety of ways. We have strived for a cleaner, less cluttered look. In the figure captions we have added a small pointer to clarify the connection between the figure caption and the accompanying image. We have redesigned the Reality Checks to enhance readability, and we have taken a new approach to highlighting the specific themes emphasized in each chapter. We have also refreshed the treatments of the level-one headings and the Key Learning Goals.

Of course, the book has been thoroughly updated to reflect recent advances in the field. One of the exciting things about psychology is that it is not a stagnant discipline. It continues to move forward at what seems a faster and faster pace. This progress has necessitated a host of specific content changes that you'll find sprinkled throughout the chapters. Also reflecting this progress, roughly 1,400 of the reference citations in the book are new to this edition.

While the book was in production, the world was hit with the worst pandemic in the last century. COVID-19 disrupted people's lives in unprecedented ways. People were asked to give up their social lives, many were forced to work from home, many others lost their jobs. Stress levels increased dramatically. The coronavirus was an invisible enemy. Not being able to reliably discern which situations were safe and which were dangerous was particularly unnerving. Research psychologists responded to this crisis by collecting data on many aspects of our changed lives. Studies of the pandemic's effects on behavior began to accumulate quickly. In July and August of 2020, I took stock of the burgeoning research and decided to make quite a few last-minute additions to the book manuscript, to highlight the insights that were emerging. These additions were integrated into chapters throughout the book, where relevant. I ended up making 31 insertions across 10 chapters. Some of this coverage involves psychologists' expert conjecture about possible effects of the pandemic rather than hard data. But even the studies with empirical data may be subject to revision, as they were conducted very early in the pandemic, which continues to evolve. That said, I do think the pandemic additions will make the book more topical and more relevant for your students. In any event, the following list is a partial list of specific changes in each chapter.

Chapter 1: The Evolution of Psychology

- New discussion of the maturation of positive psychology
- New mention of how the subjectivity of experience can explain many perplexing phenomena
- New research on the pervasive and persistent nature of overconfidence among students
- New evidence on how sleep deprivation undermines cognitive functioning
- New research showing that sacrificing sleep for additional study can result in reduced performance on exams

- New discussion of the trade-off between reading speed and comprehension
- New research showing that class attendance is a surprisingly strong predictor of course grades
- New study on how much class time students waste surfing the Internet
- New study showing that taking class notes in longhand is superior to taking notes on a laptop
- New research suggesting that revising lecture notes after class can enhance their value

Chapter 2: The Research Enterprise in Psychology

- New example of how correlation is no assurance of causation
- New example of naturalistic observation illustrating an innovative method for looking at ethnic differences in sociability
- New example of naturalistic observation focusing on landmark study of corporal punishment in the home
- New example of case study research highlighting interesting study of addictive investment trading
- New example of single-subject case study
- New example of survey research focusing on increased stress levels in response to the pandemic
- New example of survey research linking Facebook usage to procrastination among college students
- New information on the falling response rate to research surveys
- Expanded discussion of the sampling bias inherent in dependence on college student samples
- New discussion of how the migration from landline phones to cell phones is hampering survey research
- New research on placebo effects showing that they are susceptible to social influence
- New discussion of the Open Science Collaboration (OSC) project on the reproducibility of psychological research
- New coverage of various critiques of the OSC reproducibility project and the controversy about a replication crisis in psychology
- New research on whether participants are troubled by two types of deception in research
- Updated discussion of the ethics of animal research

Chapter 3: The Biological Bases of Behavior

- New examples of research on the role of glia in information transmission in the nervous system
- New study linking myelin production to learning
- New discussion undermining the oversimplified notion that dopamine is the brain's "pleasure chemical"
- New research showing the cerebellum may be involved in a broader range of behavioral functions than previously believed
- New data on the structural makeup of the cerebellum
- New studies on how specific types of learning can lead to changes in brain structure, illustrating the plasticity of the brain
- New research on factors that promote and inhibit the process of neurogenesis
- New mention of difficulties in replicating some findings on oxytocin and social behavior
- New theory regarding how oxytocin may indirectly foster prosocial behavior
- New coverage of genome-wide association studies
- New data on the popularity of the erroneous concept that people are right- or left-brained
- Revised take-away message for the Critical Thinking Application

Chapter 4: Sensation and Perception

- Updated information on the functions of the what and where pathways in vision
- New discussion of memory for colors
- New data on the prevalence of color-blindness
- New coverage of individual differences in the perception of colors
- New discussion of the Internet frenzy over "the dress," which was perceived as white-gold by some people and blue-black by others
- New summary of the empirical studies of "the dress" and the resultant explanations for this perceptual mystery
- New findings on inattentional blindness
- New coverage of how motivational states can distort perceptions of distance

- Updated coverage of concerns about hearing loss among young people from listening to loud music through headphones
- New discussion of how much smell contributes to the perception of flavor
- Updated coverage of research suggesting that humans can distinguish from among more than 1 trillion odors
- New discussion of the link between chronic pain and addiction to opiate drugs

Chapter 5: Variations in Consciousness

- Expanded discussion of mind wandering in relation to social media and effective learning
- New mention of how the suprachiasmatic nucleus (SCN) of the hypothalamus regulates a multiplicity of downstream biological clocks
- New findings on how traveling westward produces less jet lag than traveling eastward
- New discussion of *social jet lag* produced by mismatch of sleep times on workdays versus off days
- New research on how the pandemic led to interesting changes in sleep patterns
- New coverage of how adolescents' sleep patterns are out of synch with early school start times
- Revised discussion of how sleep changes in older people, including new graphic on their shift toward morningness
- New data on the economic costs of inadequate sleep
- New research on the acute effects of sleep restriction to five hours per night
- New mention of National Sleep Foundation consensus recommendations regarding drowsy driving
- New findings on sleep loss in relation to hunger and eating behavior
- New data from a recent survey by the Centers for Disease Control and Prevention on the percentage of people who get adequate sleep
- New mention of how sleeping pills may produce residual sedation on subsequent days that can lead to drowsy driving
- New discussion of clinical guidelines for insomnia treatment which recommend cognitive-behavioral therapy as the first line of treatment
- New research showing how the day residue can influence dreams
- New analysis of how dreams tend to reflect significant concerns from waking life rather than everyday trivia
- New study showing how ambient sounds during a rapid eye movement period may be incorporated into dreams
- New information on psychological problems and physical ailments treatable with hypnosis
- New discussion of the revised APA definition of hypnosis
- New coverage of cognitive benefits of meditation
- New study of mindfulness meditation as treatment for fibromyalgia
- New research reporting unpleasant psychological experiences attributed to meditation
- New discussion of how efforts to combat prescription painkiller abuse has driven users to transition to heroin
- New data on the prevalence of cannabis use in the United States
- New laboratory research on the effects of LSD
- Revised discussion of the neural bases of drug addiction
- Revised and expanded discussion of the risks of cannabis use

Chapter 6: Learning

- New discussion of how cues associated with drug use can become conditioned stimuli that elicit compensatory conditioned responses
- New coverage of how compensatory conditioned responses in heroin users can explain how customary or normal doses can cause overdoses
- New findings on how evaluative conditioning can influence attitudes about products and activities
- Revised discussion of the debate about whether evaluative conditioning can occur without awareness
- New research linking corporal punishment to increased aggression and other negative outcomes
- New discussion of how the evidence on corporal punishment does not mean that parents should avoid nonphysical punishments

- New coverage of Ohman and Mineka’s evolved module for fear learning
- New coverage of how humans’ evolutionary wiring may have contributed to the widespread anxiety seen in the wake of the coronavirus pandemic
- New research showing how superstitions can be created in the lab through noncontingent reinforcement
- New findings on the situations that are most likely to foster superstitious behavior
- New discussion of how people often realize that a superstition does not make sense, but they still allow the irrational belief to influence their behavior
- Coverage of observational learning includes new study showing that the link between media violence and increased aggression is seen across a variety of cultures
- New data and graphic estimating the degree to which media violence accounts for variation in aggressive behavior
- New findings linking risk-glorifying video games to real-life risk taking among adolescents
- New research reporting that time spent planning video games is associated with enhanced intellectual functioning among children
- New research questioning the wisdom of the practice of pairing commercial products with sexual imagery

Chapter 7: Human Memory

- New example (using Apple logo) of how people fail to encode information they are exposed to
- New findings on cell phones and distracted driving
- New findings on chronic multitasking and academic performance
- New research on how working with familiar chunks results in improved memory
- New discussion of possibility that the capacity of short-term memory may be flexible rather than fixed
- New 10-year follow-up data on flashbulb memories of 9/11
- New data on the tip-of-the-tongue phenomenon
- New study of the misinformation effect involving alteration of participants’ original memory reports
- New discussion of the adaptive value of forgetting in relation to emotional regulation
- New false memory study that emulates the bases for false confessions of crimes
- New discussion of whether memory implantation studies overestimate the ease with which false memories can be created
- Update on H.M.’s autopsy
- Revised coverage of how the hippocampus contributes to long-term memory
- New research showing that retrieval of a specific memory reinstates patterns of neural activity seen during learning
- New findings relating effortful learning to neurogenesis
- New discussion of how episodic memories of the past guide thinking about the future
- New findings on prospective memory in relation to age and smartphone use
- New research showing training in the method of loci can greatly increase memory for lists
- Revised discussion of eyewitness confidence in relation to accuracy

Chapter 8: Cognition and Intelligence

- New discussion of inconsistencies in findings on the bilingual advantage in attentional control
- Updated coverage of whether bilingualism delays the onset of Alzheimer’s disease
- New research on whether the Eskimo language has a richer vocabulary for describing snow than the English language
- Revised conclusion regarding the viability of the linguistic relativity hypothesis
- New research on the association between “aha” experiences and insight solutions
- New discussion of the special process view versus the business-as-usual view of insight
- New findings on the use of analogies in the creative development of new products
- New discussion of how many inventions were inspired by analogies to processes in nature
- New discussion of how mind wandering can serve as an incubation period in problem solving
- New research on factors that influence the likelihood of choice overload
- New discussion of the bidirectional causal relations underlying the correlation between IQ and educational progress
- New coverage of how personality and self-regulation can predict grades
- New coverage of recent meta-analyses of the Flynn effect
- Revised discussion of the possible explanations for the Flynn effect

- Expanded discussion of the effects of poverty on brain development
- New findings on socioeconomic status and IQ
- New findings on the correlation between IQ and brain volume
- New data on the link between higher IQ and longevity
- Revised discussion of the relationship between intelligence and creativity
- New discussion of how heavy media coverage of the pandemic may have led to overestimates of health risks due to the availability heuristic
- New discussion of how the optimism bias may have led people to underestimate their risks during the coronavirus pandemic
- New analysis of how gain-framed messages may be more effective than loss-framed messages in encouraging preventive health measures
- New findings on loss aversion

Chapter 9: Motivation and Emotion

- Updated statistics on the prevalence of obesity
- New discussion of how children respond to food marketing cues and how the rise of media cooking shows may stimulate increased eating
- New discussion of how overeating makes a much larger contribution to obesity than lack of exercise, and how one-half of the public believes just the opposite
- New data on the frequency of sexual activity and general well-being
- Expanded discussion of sexual orientation as a continuum
- New research on trends over time in the acceptance of homosexuality and the prevalence of same-sex activity
- Updated estimate of the heritability of sexual orientation
- New findings on gender disparities in fluidity of sexual orientation
- Reassessment of impact bias in affective forecasting
- New research that undermines the view that basic emotions are universal across cultures
- New data on cultural disparities in the prevalence and intensity of specific emotions
- Updated estimate of the correlation between income and happiness
- New coverage of income inequality and subjective well-being
- Revised assessment of the extent to which people around the world are happy
- Updated discussion of finding that people derive more happiness from experiential than material purchases
- New research on how people who prioritize time over money tend to be happier than those who do the opposite
- New discussion of gender and subjective well-being

Chapter 10: Human Development Across the Life Span

- Updated data on the threshold of viability
- New data on the number of babies born addicted to narcotics
- New findings on the effects of smoking in pregnant women
- New critique of the concept of fetal origins of adult disease
- Expanded discussion of maternal sensitivity and infant attachment
- New findings on culture and attachment
- New findings on the role of baby talk and repetition of words in language development
- Updated data on vocabulary growth
- New research on how language development is influenced by how much young children are read to
- New critique of the idea that adolescent risk taking is rooted in neurological development
- Expanded coverage of research on emerging adulthood as a new stage of development
- New discussion of the relevance of emerging adulthood to the working-class poor
- New data on personality changes in late adulthood (people's 70s and 80s)
- New data on equity in housework loads and couples' sexual satisfaction
- New data on factors that make the transition to parenthood easier
- New research showing that parents with children under the age 18 reported significantly higher levels of stress than other adults during the pandemic
- New coverage of how subjective age changes in relation to chronological age
- Updated data on the prevalence of dementias and Alzheimer's disease
- Additional discussion of the modest practical impact of normal memory decline in older adults

- Expanded discussion of brain-training programs intended to slow cognitive decline in older adults
- New findings on the prevalence of positive emotions among people facing imminent death
- New analysis of how the pandemic disrupted normal mourning rituals, which may lead to an increase in prolonged, dysfunctional grief reactions
- New data on the lack of gender differences in the size of the hippocampus and the amygdala

Chapter 11: Personality

- New information on gender differences in the Big Five traits
- New research on how well individuals' personality traits fit with job demands to influence occupational success
- New findings on how agreeableness fosters prosocial behavior
- New research relating pandemic hoarding to two of the Big Five traits
- New findings on the functions and consequences of defensive behavior
- New research on the effects of a repressive coping style
- New findings on the relationship between birth order and personality
- New mentions of the influence of Jungian and Adlerian approaches to therapy
- Updated overview of the correlates of self-efficacy
- New discussion of how the pandemic may have altered individuals' motivational focus in terms of Maslow's hierarchy of needs
- New discussion of how Maslow's pyramid was not created by Maslow himself
- New coverage of misconceptions regarding Maslow's hierarchy of needs
- Revised assessment of the empirical status of Maslow's hierarchy of needs
- New research on lay subjects' perceptions of what self-actualization means
- Updated overview of genetic mapping studies of personality traits
- Revised analysis of why narcissists crave approval and admiration
- New coverage of narcissism in relation to other personality traits and culture
- New coverage of grandiose versus vulnerable narcissism
- New coverage of the association between collective narcissism and the tendency to believe conspiracy theories about the coronavirus
- New discussion of how the COVID-19 pandemic created a powerful, world-wide manipulation of mortality salience, with unknown consequences
- New discussion of how interdependent views of self may be common in certain pockets of American society
- New, more favorable meta-analytic findings on the validity of Rorschach scoring

Chapter 12: Social Behavior

- New research on how enduring first impressions based on facial features can be
- New research on reactions to faces in relation to CEO selection and performance
- New data on global increases in individualism
- New findings on similarity among friends
- New research on whether romantic kissing is cross-culturally universal
- New findings on social media use and loneliness, as well as benefits of online social networking
- New discussion of problems associated with use of social media, including experiences of envy and addiction, as well as bullying and harassment
- New study highlights the benefits of taking a one-week break from Facebook
- New research on how the introduction of smartphones may have led to a decline in face-to-face social interaction and increases in loneliness and depression
- New discussion of how people with high mate value leverage that value to snag partners with more desirable characteristics
- New research suggesting that gender differences in mating preferences may be shrinking in reaction to increases in gender equality
- New meta-analysis of the efficacy of fear appeals in persuasion
- New discussion of how the social distancing required by the pandemic thwarted crucial human needs for belongingness
- New discussion of how it is normal for people to underestimate their health risks, thus undermining compliance with public health messages intended to slow the spread of the coronavirus

- New analysis of how efforts to undermine the credibility of mainstream media and scientific expertise may have contributed to people ignoring public health guidelines
- New analysis of how role-modeling by public figures may have influenced compliance with social distancing measures
- New research on how the management of the pandemic became highly politicized leading to substantial differences between liberals and conservatives in social distancing efforts
- New discussion of why some inconsistent cognitions produce dissonance while others do not
- New discussion of how conformity involving informational influence may have been a factor in pandemic hoarding behavior
- New discussion of how competing norms and reactance may have contributed to hoarding during the pandemic
- New introduction to coverage of prejudice/discrimination focusing on recent, high-profile events
- New real-life example of a racial microaggression, along with expanded discussion of the negative repercussions of experiencing prejudice
- New discussion explaining the concept of systemic racism
- New statistics on the effects of systemic racism
- Expanded discussion of the negative repercussions of experiencing prejudice
- New research on how people can detect others' social class based on thin slices of behavior
- New coverage of negative stereotypes associated with lower social class and their pernicious effects
- New discussion of how one stereotype-confirming, negative interaction with a minority person can outweigh many stereotype-disconfirming, positive interactions
- New discussion of how prejudice towards outgroups increases during times of threat, such as the pandemic
- New discussion of how contemporary focus on modern and subtle prejudice has led researchers to ignore blatant and intentional prejudice
- New research on the motivation to intentionally express prejudice

Chapter 13: Stress, Coping, and Health

- New research on how daily hassles increase vulnerability to a variety of psychological disorders
- New discussion of how the pandemic was different from other natural disasters in terms of its stressfulness
- New research showing that the pandemic led to threefold increases in moderate or serious stress in the United States
- New research showing that pandemic-related stress levels were highest among health-care workers, first responders, low-income “essential” workers, parents with young children, and surprisingly—younger adults rather than older adults
- New discussion of the degree to which the pandemic is likely to have a long-term impact on mental health
- New coverage of how the pandemic led to increased frustration, tremendous life changes, and remarkably difficult approach-avoidance conflicts
- New research on how the ability to verbally describe one’s negative emotions can reduce their impact
- New discussion of how severe or chronic stress can remodel brain circuits and increase susceptibility to various physical and psychological maladies
- New description of how stress may lead to alterations in the amygdala, hippocampus, and prefrontal cortex
- New discussion of anger in relation to aggressive behavior
- New coverage of how specific types of stress may undermine immune functioning
- Expanded and updated coverage of how social support can buffer the impact of stressors
- New discussion of how people who *provide* social support also experience beneficial effects
- New coverage of how the pandemic worsened social class disparities in health outcomes
- New findings on smoking and mortality and adjunctive treatments that may enhance smoking-cessation programs
- New description of what represents adequate exercise
- New discussion of the three stages of the HIV infection process
- Updated trends on HIV infection rates

- New discussion of the health repercussions of HIV
- New coverage of the behavioral changes that minimize the risk of HIV infection
- New discussion of pre-exposure prophylaxis (PrEP) with ART drug regimens
- New discussion of what makes for effective communication by health providers and gender disparities in patient-centered communication by physicians
- New data on the effects of adherence and nonadherence to treatment regimens
- New discussion of self-forgiveness as a coping strategy
- New findings on the benefits of relaxation training in relation to use of health care services
- New coverage of how experiencing nature can have beneficial effects on health and well-being

Chapter 14: Psychological Disorders

- New research on why biogenetic explanations of psychological disorders have increased rather than decreased their stigma
- Updated description of agoraphobia
- New information on how much people with OCD have insight into their irrationality and new data on suicide risks associated with OCD
- New discussion of how overgeneralization (in classical conditioning) may contribute to anxiety disorders
- New research linking OCD to deficits in executive function
- New discussion of how pandemic-related contamination fears and cleaning rituals may lead to an increase in obsessive-compulsive disorders
- New discussion of how the trauma of the pandemic may lead to an increased prevalence of PTSD
- Updated description of dissociative identity disorder
- New discussion of uncomplicated depression as a normal reaction to major stress
- New discussion of the likelihood that the pandemic may elevate suicide rates
- New research on the neuroanatomical bases of depression focusing on the amygdala and reward areas in the brain
- New discussion of how rumination may contribute to a variety of disorders in addition to depression
- New research on how hindsight bias may help to fuel self-blame and depression
- New research suggesting that low IQ may amplify genetic risk for schizophrenia
- Updated discussion of the dopamine hypothesis of schizophrenia
- Revised coverage of the link between cannabis use and vulnerability to schizophrenia
- New coverage of how synaptic pruning gone awry might contribute to the structural deterioration in the brain seen in schizophrenia
- New discussion of the broadened DSM-5 diagnostic criteria for autism spectrum disorder
- Revised description of autism spectrum disorder
- Updated discussion of long-term outcomes for autism spectrum disorder
- New analysis of how social distancing measures may be particularly hard on children with autism spectrum disorder
- New discussion of how binge-eating disorder may progress to bulimia or lead to obesity and new coverage of comorbidity in relation to eating disorders
- Revised discussion of personality and eating disorders focusing on neuroticism, perfectionism, and deficits in emotional regulation
- Updated coverage of issues related to involuntary commitment

Chapter 15: Treatment of Psychological Disorders

- New research on the importance of empathy, genuineness, and unconditional positive regard in insight therapies
- New data on the association between the extent of clients' insight and the strength of the therapeutic alliance in relation to favorable treatment outcomes
- New discussion of behavioral activation in cognitive therapy
- New coverage of cognitive bias modification as a cognitive-behavioral treatment
- New findings on the possible link between antidepressant medication and increased suicidality among young people
- New evidence on long-term negative effects of antidepressant drugs
- Revised description of ECT and its prevalence
- New data on the efficacy of ECT
- New discussion of recent FDA ruling on the risk classification for ECT

- New discussion of cultural competence in relation to the treatment of minority patients
- New discussion of cultural humility as an important factor in treating ethnic clients
- New discussion of the need for culturally sensitive treatment for sexual minorities
- New examples of computerized treatments for various disorders
- Revised evaluation of computerized and online treatments as well as smartphone apps
- New discussion of how the pandemic forced psychotherapists to pivot to therapy via online video conferencing
- Revised coverage of the criminalization of mental illness
- New data on the likelihood of therapy being harmful to clients

MindTap

MindTap for *Psychology: Themes and Variations* is an online platform where your students can find a digital version of the book along with a diverse wealth of learning opportunities. In MindTap, you can create a unique learning path to foster increased engagement and comprehension in your students. Text material is seamlessly integrated with videos, activities, and quizzes in MindTap.

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We have added a plethora of valuable new learning opportunities for this edition. For each chapter we have created four to six Complex Learning Activities to bolster students' understanding of the chapter content. These activities present students with brief animations, videos, or textual review materials accompanied by short assessments that can be reported to your gradebook. The Complex Learning Activities provide engaging instructional materials that can function as high-quality homework assignments. Mindful of research on the testing effect, we have also created an extensive battery of additional assessments. Interim quizzes are spread throughout the chapters, and 20-item practice tests are provided for each chapter.

Instructor Resources

Additional instructor resources for this product are available online. Instructor assets include an Instructor's Manual, Educator's Guide, PowerPoint® slides, and a test bank powered by Cognero®. Sign up or sign in at www.cengage.com to search for and access this product and its online resources.

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Wayne Weiten

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To the Student

Welcome to your introductory psychology textbook. In most college courses, students spend more time with their textbooks than with their professors, so it helps if students *like* their textbooks. Making textbooks likable, however, is a tricky proposition. By its very nature, a textbook must introduce students to many complicated concepts, ideas, and theories. If it doesn't, it isn't much of a textbook, and instructors won't choose to use it. Nevertheless, in writing this book, I've tried to make it as likable as possible without compromising the academic content that your instructor demands. I've especially tried to keep in mind your need for a clear, well-organized presentation that makes the important material stand out and yet interesting to read. Above all else, I hope you find this book challenging to think about and easy to learn from. Before you plunge into your first chapter, let me introduce you to the book's key features. Becoming familiar with how the book works will help you to get more out of it.

Key Features

You're about to embark on a journey into a new domain of ideas. Your text includes important features that are intended to highlight certain aspects of psychology's landscape.

Unifying Themes

To help you make sense of a complex and diverse field of study, I introduce seven themes in Chapter 1 that reappear in many variations as we move from chapter to chapter. These unifying themes are meant to provoke thought about important issues and to highlight the connections between chapters. They are discussed at the end of each chapter in a section called "Reflecting on the Chapter's Themes." Icons for the specific themes covered in a chapter appear in these sections (as well as at the beginning of the chapters) to help make the book's thematic structure more prominent.

Personal Applications

Toward the end of each chapter you'll find a Personal Application section that shows how psychology is relevant to everyday life. Some of these sections provide concrete, practical advice that could be helpful to you in your educational endeavors, such as those on improving academic performance, improving everyday memory, and achieving self-control. So, you may want to jump ahead and read some of these Personal Applications early.

Critical Thinking Applications

Each Personal Application is always followed by a two-page Critical Thinking Application that teaches and models basic critical thinking skills. I think you will find that these sections are refreshing and interesting. Like the Personal Applications, they are part of the text's basic content and should be read unless you are told otherwise by your instructor. Although the "facts" of psychology will gradually change after you take this course (thanks to scientific progress), the critical thinking skills modeled in these sections should prove valuable for many years to come.

Reality Checks

Students typically come into the introductory psychology course with a variety of misconceptions. To foster a more accurate picture of psychology, each chapter includes three or four Reality Checks that address common misconceptions related to psychology and provide direct refutations of the misinformation. These Reality Checks are sprinkled throughout the chapters, appearing adjacent to the relevant material. Examples of popular misconceptions that are dispelled include the myth that B. F. Skinner raised his

daughter in a Skinner box, which led to her becoming severely disturbed (Chapter 1); the notion that people use only 10% of their brains (Chapter 3); the assumption that people who are color-blind see the world in black and white (Chapter 4); and the idea that it is dangerous to awaken someone who is sleepwalking (Chapter 5). This text feature is based on research suggesting that explicit repudiations of erroneous ideas reduce students' misconceptions more effectively than the simple provision of correct information. For the most part, the Reality Checks can be found in the margins of the pages, but they are a critical component of the text's educational material.

Learning Aids

This text contains a great deal of information. Several learning aids have been incorporated into the book to help you digest it all.

An *outline* at the beginning of each chapter provides an overview of the topics covered in that chapter. Think of the outlines as road maps and bear in mind that it's easier to reach a destination if you know where you're going.

Headings serve as road signs in your journey through each chapter. Four levels of headings are used to make it easy to see the organization of each chapter.

Key Learning Goals, found at the beginning of major sections, can help you focus on the important issues in the material you are about to read.

Concept Charts, found at the end of the chapters, are detailed summaries of each chapter's key ideas. They provide color-coded, hierarchically organized overviews that create "snapshots" of the chapters that allow you to quickly see the relationships between ideas and sections. It's wise to read over these review materials to make sure you've digested the information in the chapter.

Italics (without boldface) are used liberally throughout the text to emphasize crucial points.

Key terms are identified with **italicized blue boldface** type to alert you that these are important vocabulary items that are part of psychology's technical language.

An *integrated running glossary* provides an on-the-spot definition of each key term as it's introduced in the text. These formal definitions are printed in **blue boldface** type. Becoming familiar with psychology's terminology is an essential part of learning about the field. The integrated running glossary should make this learning process easier.

Concept Checks are sprinkled throughout the chapters to let you test your mastery of important ideas. Generally, they ask you to integrate or organize several key ideas or to apply ideas to real-world situations. Although they're meant to be engaging and fun, they do check conceptual *understanding*, and some are challenging. But if you get stuck, don't worry; the answers (and explanations, where they're needed) are in the back of the book in Appendix A.

Illustrations in the text are important elements in your complete learning package. Some illustrations provide enlightening diagrams of complicated concepts; others furnish examples that help flesh out ideas or provide concise overviews of research results. Careful attention to the tables and figures in the book will help you understand the material discussed in the text.

A 12-item *Practice Test* is provided for each chapter that should give you a realistic assessment of your mastery of that chapter and valuable practice in taking multiple-choice tests. These Practice Tests are found in Appendix A.

An *alphabetical glossary* is provided in the back of the book. Most key terms are formally defined in the integrated running glossary only when they are first introduced. So, if you run into a technical term a second time and can't remember its meaning, it may be easier to look it up in the alphabetical glossary.

A Few Footnotes

Psychology textbooks customarily identify the studies, theoretical treatises, books, and articles that information comes from. These *citations* occur (1) when names are followed by a date in parentheses, as in “Smith (2014) found that . . .” or (2) when names and dates are provided together within parentheses as in “In one study (Burke, Martinez, & Jones, 2018), the researchers attempted to. . .” All of the cited publications are listed by author in the alphabetized *References* section in the back of the book. The citations and references are a necessary part of a book’s scholarly and scientific foundation. Practically speaking, however, you’ll probably want to glide right over them as you read. You definitely don’t need to memorize the names and dates.

MindTap

MindTap for *Psychology: Themes and Variations* is an online platform where you can find a digital version of the book along with a diverse wealth of learning opportunities. Text material is seamlessly integrated with videos, activities, and quizzes in MindTap. Mastery learning exercises are available so that you can check your understanding of the key concepts in specific portions of the chapters. This adaptive learning tool gradually zeroes in on the concepts that you may be struggling with. You can quickly and effortlessly search for specific topics throughout the text. If you highlight a chapter, you can collect all your highlighted material and print it out for further study. MindTap can also read the text to you. And if you download the MindTap app, you can have the book read to you wherever you go, even while commuting to school!

A Final Word

I’m pleased to be a part of your first journey into the world of psychology, and I sincerely hope that you’ll find the book as thought provoking and as easy to learn from as I’ve tried to make it. If you have any comments or advice on the book, please write to me in care of the publisher (Cengage, 200 Pier 4 Boulevard, Boston, MA 02210). You can be sure I’ll pay careful attention to your feedback. Finally, let me wish you good luck. I hope you enjoy your course and learn a great deal.

Wayne Weiten

The Evolution of Psychology

- 1.1 Psychology's Early History
- 1.2 Psychology's Modern History
- 1.3 Psychology Today: Vigorous and Diversified
- 1.4 Seven Unifying Themes
- 1.5 **Personal Application** Improving Academic Performance
- 1.6 **Critical Thinking Application** Developing Critical Thinking Skills: An Introduction

Chapter Concept Chart

Themes in this Chapter



Empiricism



Cultural Heritage



Theoretical Diversity



Heredity & Environment



Sociohistorical Context



Subjectivity of Experience



Multifactorial Causation

What is psychology? Why is it worth your time to study? Let me approach these questions by sharing a couple of stories with you.

In 2005, Greg Hogan, a college sophomore, briefly achieved national notoriety when he was arrested for a crime. Greg wasn't anybody's idea of a likely criminal. He was the son of a Baptist minister and the president of his class. He played cello in the university orchestra. He even worked part-time in the chaplain's office. So it shocked everybody who knew Greg when police arrested him at his fraternity house for bank robbery.

It seems that Greg had faked having a gun and made away with over \$2800 from a local bank. His reason? Over a period of months he had lost \$5000 playing poker on the Internet. His lawyer said Greg's gambling habit had become "an addiction" (Dissell, 2005).

Greg eventually entered a clinic for treatment of his gambling problem. In a way, he was lucky—at least he got help. Moshe Pergament, a 19-year-old community college student in Long Island, New York, wasn't so fortunate. Moshe was shot to death after brandishing a gun at a police officer. The gun turned out to be plastic. On the front seat of his car was a note that began, "Officer, it was a plan. I'm sorry to get you involved. I just needed to die." Moshe had just lost \$6000 betting on the World Series. His death was what people in law enforcement call "suicide by cop" (Lindsay & Lester, 2004).

These stories are at the extreme edge of a trend that concerns many public officials and mental health professionals: The popularity of gambling—from lotteries to sports betting to online poker—is booming (Stevens, 2014). College students seem to be leading the way. To some observers, gambling on college campuses has become an "epidemic." Student bookies on some campuses make tens of thousands of dollars a year taking sports bets from other students. Television shows such as *Poker Night in America* are marketed squarely at college-student audiences. Poker sites on the web invite students to win their tuition by gambling online.

For most people, gambling is a relatively harmless—if sometimes expensive—pastime. However, estimates suggest that perhaps as many as 10% of college students develop serious problems with gambling—roughly double the rate observed for older adults (Moore et al., 2013; Nowak & Aloe, 2014). The enormous growth of pathological gambling among young people raises a number of questions. Is gambling dangerous? Can it really be addictive? What is an addiction, anyway? Perhaps



The perplexing problem of pathological gambling, which has increased dramatically among college students in recent years, raises a variety of complicated questions. As you will see throughout this text, psychologists investigate an endless variety of interesting questions.

most critically of all, why do some people become pathological gamblers while the great majority do not?

Psychology is about questions like these. More generally, psychology is about understanding *all* the things we do. All of us wonder sometimes about the reasons underlying people's behavior—why it's hard to diet, why we procrastinate about studying, why we fall in love with one person rather than another. We wonder why some people are outgoing while others are shy. We wonder why we sometimes do things that we know will bring us pain and anguish, whether it's clinging to a destructive relationship or losing our tuition money in a game of Texas Hold 'Em. The study of psychology is about all these things, and infinitely more.

Many of psychology's questions have implications for people's everyday lives. For me, this is one of the field's major attractions—*psychology is practical*. Consider the case of gambling. Pathological gamblers endure all kinds of misery, yet they can't seem to stop. Listen to the anguish of a gambler named Steve: "Over the past two years I have lost literally thousands. . . . I have attempted to give up time after time after time, but failed every time. . . . I have debts around my neck which are destroying mine and my family's life. . . . I just want a massive

light to be turned on with a message saying, “This way to your old life, Steve” (SJB, 2006).

What is the best way to help someone like Steve? Should he join a group like Gamblers Anonymous? Would counseling work? Are there drugs that can help? By probing the whys and hows of human behavior, psychology can help us find answers to pressing questions like these, as well as better understand issues that affect each of us every day. You will see the practical side of psychology throughout this book, especially in the Personal Applications at the ends of chapters. These Applications focus on everyday problems, such as coping more effectively with stress, improving self-control, and dealing with sleep difficulties.

Beyond its practical value, psychology is worth studying because it provides a powerful *way of thinking*. All of us make judgments every day about why people do the things they do. For example, we might think that pathological gamblers are weak willed, or irrational, or just too dumb to understand that the odds are stacked against them. Or we might believe they are in the grip of an addiction that simply overpowers them. How do we decide which of these judgments—if any—are right?

Psychologists are committed to investigating questions about human behavior in a scientific way. This means that they seek to formulate precise questions about behavior and then test possible answers through systematic observation. This commitment to testing ideas means that psychology provides a means of building knowledge that is relatively accurate and dependable. It also provides a basis for assessing the assertions we hear every day about behavior, from friends and family, as well as in the popular media. Although most

people probably don’t think about it much, psychology is in the news all the time—in newspapers and magazines, on TV and radio, and on the Internet. Unfortunately, this coverage is often distorted or grossly oversimplified, so that misinformation is commonplace. Thus, many “truisms” about behavior come to be widely believed, when they really are misconceptions or myths. A small sampling of some popular myths related to psychology is shown in **Table 1.1**. In the pages to come we’ll touch upon a host of misconceptions about psychology and provide more accurate, science-based information on these matters. For example, you will learn that the idea that people only use 10% of their brains is utter nonsense (see Chapter 3). Research suggests that the best way to dispel students’ misconceptions is to confront these beliefs head-on and provide a direct refutation (Kowalski & Taylor, 2009). Hence, throughout this book you will find a feature called Reality Checks that will highlight common fallacies and counter them with more accurate, realistic information. The Reality Check features will be found adjacent to relevant material, supplementing the normal text by explicitly attacking naïve, fallacious beliefs.

In the case of gambling, for example, researchers have designed careful studies to probe the relationship of gambling problems to any number of possible influences, such as the link between individuals’ drinking and their gambling (Jauregui, Estévez, & Urbiola, 2016). They have probed deeply into problem gamblers’ minds, looking for distortions in their thinking (Mansueto et al., 2016). They have used state-of-the-art brain-imaging techniques to look for abnormalities in the brains of pathological gamblers (Limbrick-Oldfield et al., 2017). They have even

Table 1.1 Popular Myths Related to Psychology

Myth	Relevant Chapter
Most people use only 10% of their brain power.	Chapter 3
Playing Mozart’s music to infants boosts their intelligence.	Chapter 3
Hypnosis is a unique “trance” state that differs in kind from wakefulness.	Chapter 5
Hypnosis is useful for retrieving memories of forgotten events.	Chapter 7
The polygraph (“lie detector”) test is an accurate means of detecting dishonesty.	Chapter 9
Opposites attract: We are most romantically attracted to people who differ from us.	Chapter 12
People with schizophrenia have multiple personalities.	Chapter 14
A large portion of criminals successfully use the insanity defense.	Chapter 14

SOURCE: Based on Lilienfeld, S.O., Lynn, S. J., Ruscio, J., & Beyerstein, B. L. (2010). *50 great myths of popular psychology: Shattering widespread misconceptions about human behavior*. Malden, MA: Wiley-Blackwell.

looked at whether some people are predisposed by their genes to develop problems with gambling (Lang et al., 2016).

If there is one clear conclusion that emerges from these studies, it is that there is no simple answer to the mystery of pathological gambling. Instead, a full explanation of gambling problems will likely involve many influences that interact in complex ways (Blanco et al., 2015). As you'll see throughout this course, the same is true of most aspects of behavior. In my opinion, this is yet another reason to study psychology: It teaches us a healthy respect for the *complexity* of behavior. In a world that could use more understanding—and compassion—this can be an invaluable lesson.

As you go through this course, I hope you'll come to share my enthusiasm for psychology as a fascinating and immensely practical field of study. Let's begin our exploration by seeing how psychology has evolved from early speculations about behavior to a modern science. By looking at this evolution, you'll better understand psychology as it is today, a sprawling, multifaceted science and profession. We'll conclude our introduction with a look at seven unifying themes that will serve as connecting threads in the chapters to come. The chapter's Personal Application reviews research that provides insights into how to be an effective student. Finally, the Critical Thinking Application discusses how critical thinking skills can be enhanced.

1.1 Psychology's Early History

Psychology's story is one of people groping toward a better understanding of themselves. As the discipline has evolved, its focus, methods, and explanatory models have changed. Let's look at how psychology has developed from philosophical speculations about the mind into a modern research-based science.

The term *psychology* comes from two Greek words, *psyche*, meaning the soul, and *logos*, referring to the study of a subject. These two Greek roots were first put together to define a topic of study in the 16th century, when *psyche* was used to refer to the soul, spirit, or mind, as distinguished from the body (Boring, 1966). Not until the early 18th century did the term *psychology* gain more than rare usage among scholars. By that time it had acquired its literal meaning, “the study of the mind.”

Of course, people have always wondered about the mysteries of the mind. In that sense, psychology is as old as the human race. But it was only about 150 years ago that psychology emerged as a scientific discipline.

A New Science Is Born

Psychology's intellectual parents were the disciplines of *philosophy* and *physiology*. By the 1870s a small number of scholars in both fields were actively exploring questions about the mind. How are bodily sensations turned into a mental awareness of the outside world? Are our perceptions of the world accurate reflections of reality? How do mind and body interact? The philosophers and physiologists who were interested in the mind viewed such questions as fascinating issues *within* their respective fields. It was a German professor, Wilhelm Wundt (1832–1920), who eventually changed this view. Wundt mounted a campaign to make psychology an independent discipline rather than a stepchild of philosophy or physiology (Fuchs & Evans, 2013).

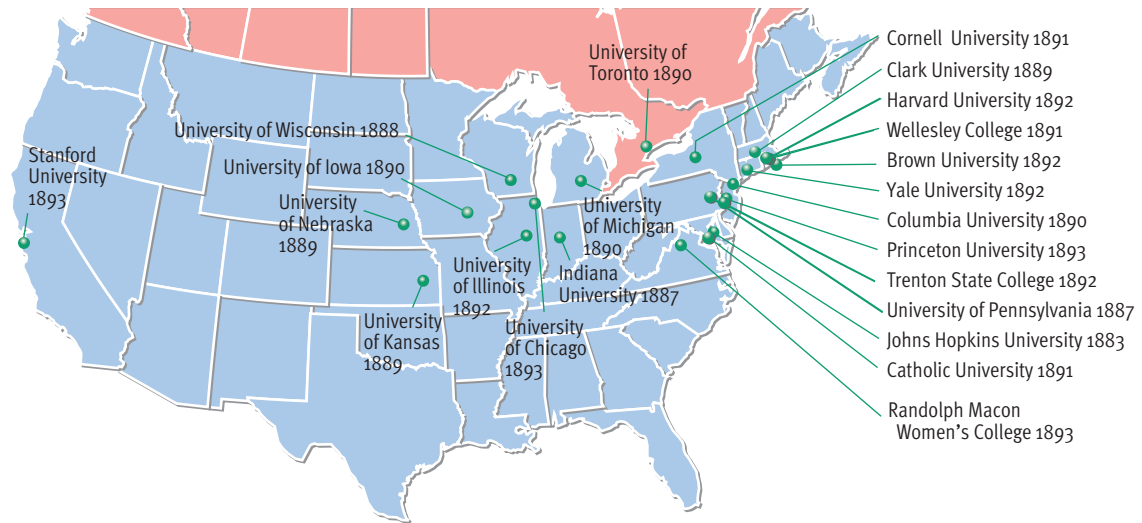
In 1879 Wundt established the first formal laboratory for research in psychology at the University of Leipzig. In recognition of this landmark event, historians have christened 1879 as psychology's “date of birth.” Soon after, in 1881, Wundt established the first journal devoted to publishing research on psychology. All in all, Wundt's campaign was so successful that today he is widely characterized as the founder of psychology (Benjamin, 2014).

Wundt's conception of psychology dominated the field for two decades and was influential for several more. Borrowing from his training in physiology, Wundt (1874)

Key Learning Goals

- Summarize Wundt's contributions to psychology, and describe the chief tenets of structuralism and functionalism.
- Articulate Freud's principal ideas and why they inspired controversy.
- Trace the development of behaviorism, and assess Watson's impact on the evolution of psychology.
- Summarize Skinner's key insights, and explain the emergence of humanism and its underlying philosophy.

► **FIGURE 1.1** Early research laboratories in North America. This map highlights the location and year of founding for the first 23 psychological research labs established in North American colleges and universities. Many of these labs were founded by the students of Wilhelm Wundt. (Based on Benjamin, 2000).



declared that the new psychology should be a science modeled after fields such as physics and chemistry. What was the subject matter of the new science? According to Wundt, it was *consciousness*—the awareness of immediate experience. Thus, *psychology became the scientific study of conscious experience*. This orientation kept psychology focused squarely on the mind. But it demanded that the methods used to investigate the mind be as scientific as those of chemists or physicists (Asthana, 2015).

Many outstanding scholars came to Leipzig to study under Wundt and then fanned out around the world, establishing laboratories that formed the basis for the new science of psychology. The growth of this new field was particularly rapid in North America, where some 23 new psychological research labs sprang up between 1883 and 1893 at the universities shown in **Figure 1.1** (Benjamin, 2014). Although psychology was born in Germany, it blossomed into adolescence in North America.

The Battle of the “Schools” Begins: Structuralism Versus Functionalism




Competing schools of thought exist in most scientific disciplines. Sometimes the disagreements among these schools are sharp. Such diversity in thought is natural and often stimulates enlightening debate. In psychology, the first two major schools of thought, *structuralism* and *functionalism*, were entangled in the first great intellectual battles in the field (Wertheimer, 2012).

Structuralism emerged through the leadership of Edward Titchener, an Englishman who emigrated to the United States in 1892. After training in Wundt’s lab, he taught for decades at Cornell University. **Structuralism was based on the notion that the task of psychology is to analyze consciousness into its basic elements and investigate how these elements are related.** Just as physicists were studying how matter is made up of basic particles, the structuralists wanted to identify the fundamental components of conscious experience, such as sensations, feelings, and images.

Although the structuralists explored many questions, most of their work concerned sensation and perception in vision, hearing, and touch. To examine the contents of consciousness, the structuralists depended on the method of **introspection, or the careful, systematic self-observation of one’s own conscious experience.** As practiced by the structuralists, introspection required training to make the *subject*—the person being studied—more objective and more aware. Once trained, participants were typically exposed to auditory tones and visual stimuli, and then they were asked to analyze and describe the quality, intensity, and clarity of what they experienced.

The functionalists, were heavily influenced by William James (1842–1910), a brilliant American scholar, who took a different view of psychology’s task. **Functionalism was based on the belief that psychology should investigate the function or purpose of consciousness, rather than its structure.** James argued that the structuralists’ approach missed the real nature of conscious experience. Consciousness, he argued, consists of a continuous *flow* of thoughts. In analyzing consciousness into its “elements,” the structuralists were looking at static points in that flow. James wanted to understand the flow itself, which he called the *stream of consciousness*. Today, people take this metaphorical description of mental life for granted, but at the time it was a revolutionary insight. James went on to make many important contributions to psychology. His landmark book, *Principles of Psychology* (1890), became standard reading for generations of psychologists (Weiten & Wight, 1992).

Whereas structuralists naturally gravitated to the lab, the functionalists were more interested in how people adapt their behavior to the demands of the real world around them. Instead of focusing on sensation and perception, the functionalists began to investigate mental testing, patterns of development in children, the effectiveness of educational practices, and behavioral differences between the sexes. These new topics may have played a role in attracting the first women into the field of psychology (see **Figure 1.2**).

Mary Whiton Calkins (1863–1930)	Margaret Floy Washburn (1871–1939)	Leta Stetter Hollingworth (1886–1939)
Archives of the History of American Psychology, The Center for the History of Psychology, University of Akron	Archives of the History of American Psychology, University of Akron, Akron, Ohio	Archives of the History of American Psychology, University of Akron, Akron, Ohio
		
<p>Mary Calkins, who studied under William James, founded one of the first dozen psychology laboratories in America at Wellesley College in 1891, invented a widely used technique for studying memory, and became the first woman to serve as president of the American Psychological Association in 1905. Ironically, however, she never received her Ph.D. in psychology. Because she was a woman, Harvard University only reluctantly allowed her to take graduate classes as a “guest student.” When she completed the requirements for her Ph.D., Harvard would only offer her a doctorate from its undergraduate sister school, Radcliffe. Calkins felt that this decision perpetuated unequal treatment of the sexes, so she refused the Radcliffe degree.</p>	<p>Margaret Washburn was the first woman to receive a Ph.D. in psychology. She wrote an influential book, <i>The Animal Mind</i> (1908), which served as an impetus to the subsequent emergence of behaviorism and was standard reading for several generations of psychologists. In 1921 she became the second woman to serve as president of the American Psychological Association. Washburn studied under James McKeen Cattell at Columbia University, but like Mary Calkins, she was only permitted to take graduate classes unofficially, as a “hearer.” Hence, she transferred to Cornell University, which was more hospitable toward women, and completed her doctorate in 1894. Like Calkins, Washburn spent most of her career at a college for women (Vassar).</p>	<p>Leta Hollingworth did pioneering work on adolescent development, mental retardation, and gifted children. Indeed, she was the first person to use the term <i>gifted</i> to refer to youngsters who scored exceptionally high on intelligence tests. Hollingworth (1914, 1916) also played a major role in debunking popular theories of her era that purported to explain why women were “inferior” to men. For instance, she conducted a study refuting the myth that phases of the menstrual cycle are reliably associated with performance decrements in women. Her careful collection of objective data on gender differences forced other scientists to subject popular, untested beliefs about the sexes to skeptical, empirical inquiry.</p>

▲ **FIGURE 1.2 Women pioneers in the history of psychology.** Women have long made major contributions to the development of psychology (Milar, 2000; Russo & Denmark, 1987), and today roughly half of all psychologists are female. As in other fields, however, women have often been overlooked in histories of psychology (Furumoto & Scarborough, 1986). The three psychologists profiled here demonstrate that women have been making significant contributions to psychology almost from its beginning—despite formidable barriers to pursuing their academic careers.

SOURCE: Photos courtesy of the Archives of the History of American Psychology, The Center for the History of Psychology, University of Akron.

The impassioned advocates of structuralism and functionalism saw themselves as fighting for high stakes: the definition and future direction of the new science of psychology. Their war of ideas continued energetically for many years. Who won? Most historians give the edge to functionalism. Both schools of thought gradually faded away. But the practical orientation of functionalism fostered the development of two important descendants—behaviorism and applied psychology (Green, 2009). We will discuss both momentarily.

Freud Brings the Unconscious into the Picture

Sigmund Freud (1856–1939) was an Austrian physician whose theories made him one of the most influential—and controversial—intellectual figures of the 20th century. Freud’s (1900, 1933) approach to psychology grew out of his efforts to treat mental disorders. In his medical practice, Freud treated people troubled by psychological problems such as irrational fears, obsessions, and anxieties with an innovative procedure he called *psychoanalysis* (described in detail in Chapter 15). Decades of experience probing into his patients’ lives provided much of the inspiration for Freud’s theory.

His work with patients persuaded Freud of the existence of what he called the *unconscious*. According to Freud, **the unconscious contains thoughts, memories, and desires that are well below the surface of conscious awareness but that nonetheless exert great influence on behavior.** Freud based his concept of the unconscious on a variety of observations. For instance, he noticed that seemingly meaningless slips of the tongue (such as “I decided to take a summer school *curse*”) often appeared to reveal a person’s true feelings. He also noted that his patients’ dreams often seemed to express important feelings that they were unaware of. Knitting these and other observations together, Freud eventually concluded that psychological disturbances are largely caused by personal conflicts existing at an unconscious level. More generally, his **psychoanalytic theory attempts to explain personality, motivation, and mental disorders by focusing on unconscious determinants of behavior.**

Freud’s concept of the unconscious was not entirely new, but he put it on the map for the general population and elaborated on it like never before (Sand, 2014). It is important to emphasize that the concept of the unconscious was a major departure from the prevailing belief that people are fully aware of the forces affecting their behavior. In arguing that behavior is governed by unconscious forces, Freud made the disconcerting suggestion that people are not masters of their own minds. Other aspects of Freud’s theory also stirred up debate. For instance, he proposed that behavior is greatly influenced by how people cope with their sexual urges. At a time when people were far less comfortable discussing sexual issues than they are today, even scientists were offended and scandalized by Freud’s emphasis on sex. Small wonder, then, that Freud was soon engulfed in controversy.

In spite of its controversial nature, Freud’s theory gradually won acceptance, attracting prominent followers such as Carl Jung and Alfred Adler. Important public recognition from psychology came in 1909, when G. Stanley Hall invited Freud to give a series of lectures at Clark University in Massachusetts. By the 1920s psychoanalytic theory was widely known around the world. Although psychoanalytic theory continued to generate heated debate, it survived to become an influential theoretical perspective (Bornstein, Denckla, & Chung, 2013). Today, many psychoanalytic concepts have filtered into the mainstream of psychology (Eagle, 2013).

Watson Alters Psychology’s Course as Behaviorism Makes Its Debut

In the early 1900s, another major school of thought appeared that dramatically altered the course of psychology. Building on earlier insights by others, John B. Watson (1878–1958)



Concept Check 1.1

Understanding the Implications of Major Theories: Wundt, James, and Freud

Check your understanding of the implications of some of the major theories reviewed in this chapter by indicating who is likely to have made each of the following statements. Choose from these theorists: (a) Wilhelm Wundt, (b) William James, or (c) Sigmund Freud. You'll find the answers in Appendix A in the back of the book.

- _____ 1. "He that has eyes to see and ears to hear may convince himself that no mortal can keep a secret. If the lips are silent, he chatters with his fingertips; betrayal oozes out of him at every pore. And thus the task of making conscious the most hidden recesses of the mind is one which it is quite possible to accomplish."
- _____ 2. "The book which I present to the public is an attempt to mark out a new domain of science. . . . The new discipline rests upon anatomical and physiological foundations. . . . The experimental treatment of psychological problems must be pronounced from every point of view to be in its first beginnings."
- _____ 3. "Consciousness, then, does not appear to itself chopped up in bits. Such words as 'chain' or 'train' do not describe it fitly. . . . It is nothing jointed; it flows. A 'river' or 'stream' are the metaphors by which it is most naturally described."

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became an articulate advocate for an approach called *behaviorism* (Malone, 2014). **Behaviorism is a theoretical orientation based on the premise that scientific psychology should study only observable behavior.** It is important to understand what a radical change this definition represents. Watson (1913, 1919) was proposing that psychologists *abandon the study of consciousness altogether* and focus exclusively on behaviors they could observe directly. In essence, he was redefining what scientific psychology should be about.

Why did Watson argue for such a fundamental shift in direction? Because to him, the power of the scientific method rested on the idea of *verifiability*. In principle, scientific claims can always be verified (or disproved) by anyone who is able and willing to make the required observations. However, this power depends on studying things that can be observed objectively. Otherwise, the advantage of using the scientific approach—replacing vague speculation and personal opinion with reliable, exact knowledge—is lost. In Watson's view, mental processes are not a proper subject for scientific study because they are ultimately private events. After all, no one can see or touch another's thoughts. Consequently, if psychology was to be a science, it would have to give up consciousness as its subject matter and become instead the *science of behavior*.

Behavior refers to any overt (observable) response or activity by an organism. Watson asserted that psychologists could study anything that people do or say—shopping, playing chess, eating, complimenting a friend. However, according to Watson they could *not* study scientifically the thoughts, wishes, and feelings that might accompany these behaviors.

Watson's radical reorientation of psychology did not end with his redefinition of its subject matter. He also took an extreme position on one of psychology's oldest and most fundamental questions: the issue of *nature versus nurture*. This age-old debate is concerned with whether behavior is determined mainly by genetic inheritance ("nature") or by environment and experience ("nurture"). To oversimplify, the question is this: Is a great concert pianist or a master criminal born, or made?