



● ELLEN PASTORINO
● SUSANN DOYLE-PORTILLO

WHAT IS PSYCHOLOGY?

Foundations, Applications,
and Integration

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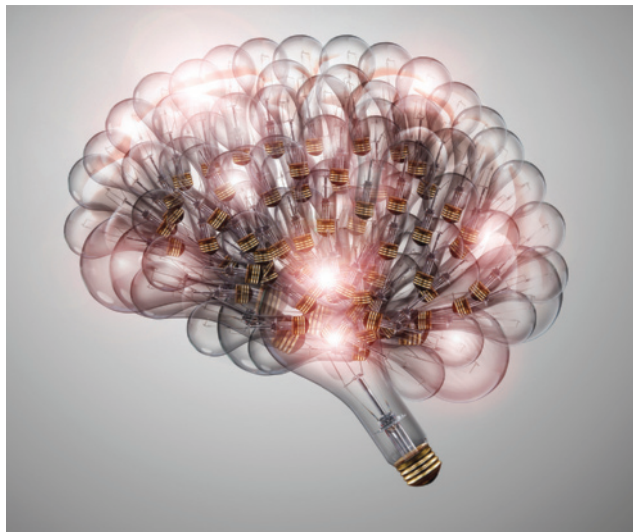
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What Is Psychology?

Foundations, Applications & Integration



Ellen Pastorino | Valencia College

Susann Doyle-Portillo | University of North Georgia



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For Ellie Joan

You are beautiful — from the inside out.

You are fierce — chase your dreams.

You are loved — deeply and always.

—Nona

*For my husband, Eulalio Ortiz Portillo. Tú eres mi vida
y mi alma.*

—Susann Doyle-Portillo

About the Authors



Ellen E. Pastorino (Ph.D., Florida State University, 1990) is a developmental psychologist who established her teaching career at Gainesville State College in Georgia. As a tenured professor, she created and developed the college's Teaching and Learning Center, working with faculty to promote student learning. For the past 20 years, she has been teaching at Valencia College in Orlando, Florida. Here, too, she has worked with faculty in designing learning-centered classroom practices. Ellen has won numerous teaching awards, including the University of Georgia Board of Regents Distinguished Professor, the NISOD Excellence in Teaching Award, and Valencia's Teaching and Learning Excellence Award. Ellen has published articles in the *Journal of Adolescent Research* and *Adolescence* and actively participates in many regional and national teaching conferences. However, her main passion has always been to get students excited about the field of psychology. Ellen is a member of the Association for Psychological Science (APS) and she served for 10 years as the Discipline Coordinator of Psychological Sciences at Valencia's Osceola campus. She has authored test banks, instructor manuals, and student study guides. While working as a consultant for IBM Corporation, she developed numerous educational materials for teachers and students. Her current interests include reaching underprepared students and educating psychology undergraduate majors about potential job and career prospects. Ellen strives to balance her professional responsibilities with her love of physical fitness and family life.



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Together, we have more than 50 years of experience teaching Introductory Psychology. We have each spent the bulk of our careers teaching multiple sections of Introductory Psychology each semester—it is our bread and butter, so to speak. So, it’s a good thing that Introductory Psychology is also our favorite course. Contrary to what many may think of professors teaching the same course over and over, it never grows old for us. Teaching Introductory Psychology allows us to touch on many different aspects of our fascinating field and to work with diverse students from all walks of life, such that no two classes are ever alike.

The uniqueness of each class is just one of the challenges that keeps us excited about teaching this course. There are others. Introductory Psychology classes are often full of students who are just beginning their college careers—some are fresh from high school; others are returning, nontraditional students who’ve been out of the classroom for several years. They come to us with the desire to learn about psychology, but often they face serious obstacles. Some are overworked in their personal lives. Some have lingering academic challenges. And most expect learning to be easier than we know it to be. A big part of our mission is to help students overcome these obstacles and obtain success.

Our Mission: Motivating Students to Read

Getting students to read their textbook in preparation for classes and exams is one of the biggest problems we face as instructors. Like many professors, our experience has been that few students read assigned chapters prior to class, and some even fail to read the chapters by the time they take exams. For years, we have tried various methods of motivating students to read—pop quizzes, reading quizzes, test questions from material in the book but not covered in class, and so on. None of these methods seemed to have much of an impact on students.

Students’ free time is, of course, in short supply. And when they do have free time, reading a textbook doesn’t always seem like an attractive option. Students often find their texts difficult to read, boring, and full of content that is far removed from the concerns of their daily lives. One of us overheard students speaking before class the second week of the semester. One student asked those

sitting around him if they had read the reading assignment—most replied they had not. He then said, “I read it, but man, I have no idea what they were saying in that chapter!” If we want students to read their textbooks, we will have to give them books that they will want to read, and that means giving them a book that they can understand and one that they find relevant enough to be worth the time it takes to read. Motivating students to read is our primary mission, and we wrote *What Is Psychology? Foundations, Applications and Integration* to give students a textbook that they would find interesting to read, easy to read, and memorable.

Our Mission: Giving Students an Integrated View of Psychology that Aligns with APA Guidelines

Getting students to read their textbook is a primary goal of all instructors. Another important goal is providing students with a comprehensive and integrated view of the field of psychology. We have long advocated for a “Big Picture” approach to the teaching of psychology, and our previous editions of *What Is Psychology?* emphasized the integrated nature of psychology as a field. Through the use of case studies that were woven throughout the chapters and through continually referring to material in other chapters, *What Is Psychology?* encouraged students to see psychology as a whole rather than as a sum of many parts.

The need to provide Introductory Psychology students with an integrated view of psychology has also been recognized by the American Psychological Association (APA). In March 2014, the APA released guidelines for strengthening the Common Core in the Introductory Psychology course. A prominent theme in these guidelines is that all Introductory Psychology courses should present students with a “big picture” view of psychology that integrates the different perspectives that psychologists take in examining mental processes and behavior. Furthermore, in presenting this integrated view of psychology, Introductory Psychology courses should highlight the common themes that tie the different perspectives or areas of psychology

together—themes that include the scientific method of research, diversity and variations seen in human behavior, the applicability of psychology to real life, and the ethics that guide psychological research and practice.

This call for a Common Core in introductory courses places the Introductory Psychology course in line with the broader *APA Guidelines for the Undergraduate Psychology Major Version 2.0* (APA, 2013). These new guidelines for the major contain the learning goals that students should attain by the time they complete an undergraduate degree in psychology. Each of these goals is broken down into a series of specific learning outcomes that are divided into two levels. The first level defines goals that students should attain during their first three or four “foundational” psychology courses, while the second level defines goals for what students should achieve by the completion of their degree program. Introductory psychology is clearly often the first foundation course taken by students who may take just a few psychology classes or decide to major in the field. These goals are numerically indexed; for example, the first learning outcome under Goal 1 is Learning Outcome 1.1.

A Summary of the New APA Learning Goals

Goal 1: Knowledge Base in Psychology

Learning Outcomes 1.1–1.3 pertain to students’ acquisition of the key concepts, domains, and applications of psychology.

- 1.1 Describe key concepts, principles, and overarching themes in psychology
- 1.2 Develop a working knowledge of psychology’s content domains
- 1.3 Describe applications of psychology

Goal 2: Scientific Inquiry and Critical Thinking

Learning Outcomes 2.1–2.5 pertain to students’ understanding and use of the scientific method, information literacy, integrative thinking, and use of sociocultural factors in scientific inquiry.

- 2.1 Use scientific reasoning to interpret psychological phenomena
- 2.2 Demonstrate psychology information literacy
- 2.3 Engage in innovative and integrative thinking and problem solving
- 2.4 Interpret, design, and conduct basic psychological research
- 2.5 Incorporate sociocultural factors in scientific inquiry

Goal 3: Ethical and Social Responsibility in a Diverse World

Learning Outcomes 3.1–3.3 pertain to students’ understanding and use of ethical standards to build interpersonal relationships and communities.

- 3.1 Apply ethical standards to evaluate psychological science and practice
- 3.2 Build and enhance interpersonal relationships
- 3.3 Adopt values that build community at local, national, and global levels

Goal 4: Communication

Learning Outcomes 4.1–4.3 pertain to students’ demonstration of effective writing, presentation, and interpersonal communication skills.

- 4.1 Demonstrate effective writing for different purposes
- 4.2 Exhibit effective presentation skills for different purposes
- 4.3 Interact effectively with others

Goal 5: Professional Development

Learning Outcomes 5.1–5.5 pertain to students’ demonstration of the skills and knowledge necessary to meet their career goals in psychology, including self-management skills, project management skills, and the applicability of psychology to various professional pursuits.

- 5.1 Apply psychological content and skills to career goals
- 5.2 Exhibit self-efficacy and self-regulation
- 5.3 Refine project-management skills
- 5.4 Enhance teamwork capacity
- 5.5 Develop meaningful professional direction for life after graduation

As professors who also teach advanced courses in psychology, we firmly agree with the APA that students should be taught to see psychology as a unified whole rather than as a series of discrete areas of study. When students enter advanced courses with a unified understanding of Introductory Psychology, they are much more likely to be successful. And students who continue to build this big picture understanding of psychology throughout their coursework are the most successful in attaining their career goals at graduation. For this reason, we are very excited to introduce this new fourth edition of *What Is Psychology? Foundations, Applications, and Integration*. This edition retains the best features from our previous texts that have motivated thousands of students to actually read and learn psychology. Just as the third edition focused on strengthening


the three themes represented in the subtitle: foundations, applications, and integration, this fourth edition is structured around the guidelines set forth in the *APA Guidelines for the Undergraduate Psychology Major Version 2.0*, and the recommendations made by the APA's Board of Educational Affairs (BEA) Working Group to Strengthen the Common Core. While the APA 2.0 guidelines suggest learning outcomes for college psychology courses, the Common Core proposes an optimal course structure to provide the best introduction to the field of psychology (APA, 2014).

What Is Psychology? Foundations, Applications, and Integration

What Is Psychology? Foundations, Applications, and Integration 4e retains all the pedagogical features of our previous edition, as well as a new feature designed to further strengthen students' mastery of the scientific methods that form the ultimate foundation of our field.

Foundations: Content Organized Around the Foundational Areas of Psychological Research

What Is Psychology? Foundations, Applications, and Integration 4e is organized around the foundational areas of psychology emphasized by the APA in the Common Core discussions. The text opens with the ultimate foundation of psychology, the scientific research methods that inform all study of mental processes and behavior. An understanding of the research methods that psychologists use is essential to building a comprehensive understanding of psychology.

Unfortunately, all too often, students tend to forget the research methods they learn in the first chapter as they are reading and studying subsequent chapters in the text. To remedy this, we have included a new feature in this edition. Throughout all chapters in the text, students will be exposed to scientific reasoning questions. These questions can be found periodically both in the quizzes that follow each section and in the end-of-chapter quizzes, where they are marked with this special icon . These questions are written using concepts relevant to the topics of the chapter, and they give the student the opportunity to review the research methods learned in Chapter 1. For example, a scientific reasoning question from Chapter 10 reads:

Dr. Jones wants to test the hypothesis that being with one's own in-group (as opposed to being in the company of out-group members) increases the likelihood that one will express having racial prejudices. To test this hypothesis, Dr. Jones interviews White participants in the presence of White confederates and Black participants in the presence of Hispanic confederates. In conducting this study,

Dr. Jones has inadvertently introduced a confounding variable into his study. What is it?

- a. Participant race
- b. Confederate race
- c. Experimenter race
- d. There are no confounds in this study

Scientific reasoning questions in other chapters may ask students to identify independent and dependent variables, types of research designs being used, types of hypotheses being tested, and so on. By continually reinforcing the use of research methods in psychology, this feature helps students to build a strong foundation in their understanding of the science underlying psychology.

In addition to understanding the scientific foundations of psychology, students must also master the schools of thought and content areas of psychology that have emerged in our field. Accordingly, the remaining chapters of the text are organized around four foundational content areas: the *biological, cognitive, developmental and social, and physical and mental health* areas of psychology. Content is divided to follow these topical sections of psychology while creating manageable chunks of related material, allowing professors to easily align their content with testing during the semester or quarter:

Chapter 1: The Science of Psychology

Part 1: Foundations in Biological Psychology:

- Chapter 2: Neuroscience
- Chapter 3: Sensation and Perception
- Chapter 4: Consciousness
- Chapter 5: Motivation and Emotion

Part 2: Foundations in Cognitive Psychology

- Chapter 6: Learning
- Chapter 7: Memory
- Chapter 8: Cognition, Language, and Intelligence

Part 3: Foundations in Developmental and Social Psychology

- Chapter 9: Human Development
- Chapter 10: Social Psychology
- Chapter 11: Personality

Part 4: Foundations in Physical and Mental Health

- Chapter 12: Health, Stress, and Coping
- Chapter 13: Mental Health Disorders
- Chapter 14: Mental Health Therapies

Applications: Integrating Psychology Through the Use of Case Studies

One of the best ways to motivate students to read is to capture their curiosity from the very beginning. If psychology is interesting for students, they will read. Each

of our previous texts drew rave reviews from students for the use of attention-grabbing case studies at the opening of each chapter. In *Foundations, Applications, and Integration 4e*, we continue this tradition. Each of the four foundational sections of the text opens with a case study that illustrates how the content covered in the chapters of that part helps us understand the behavior and mental processes of a real-life person. The case studies are compelling stories of people who have faced life's challenges with courage and grace. For example, the biological part opens with the case study of Jean-Dominique Bauby, a man who wrote a moving book that was later turned into a movie, *The Diving Bell and the Butterfly*, while in a state of locked-in syndrome that left him completely paralyzed save the ability to blink his left eye. The developmental and social psychology part begins with the story of Hongyong Baek, a woman who survived many challenges, including the Korean War and devastating personal losses, but still managed many triumphs in her lifetime. Each of the case studies is woven throughout all of the chapters of that part of the book, providing students with a view of the content that is both integrated and applied to real life. By using one case study to tie all of the related chapters together, students are encouraged to see the material as a whole rather than as a series of disparate parts; and in doing so, they begin forming an integrated “big picture” of psychology.

Integration: The Big Picture

To further facilitate the development of an integrated, “big picture” view of psychology in students, each chapter closes with a section called Integrating Psychology: The Big Picture. In this section, we revisit the part case study and use it as a vehicle for both reviewing the content of the chapter(s) of the section and previewing the content of the coming chapter(s). Through *Integrating Psychology: The Big Picture*, students begin to see that all of the material fits together—what has been learned informs what is yet to be learned.

Numerical Indexing Allows for Easy Cross-Referencing

Throughout the text, numeric indexing is used to help students quickly locate relevant information. All primary and secondary heads for the chapter are also numerically indexed with a sequential code. For example, here is the indexing for a portion of Chapter 2 content:

- 2.1 Billions of Neurons: Communication in the Brain
 - 2.1.1 The Anatomy of the Neuron

- 2.1.2 Signals in the Brain: How Neurons Fire Up
- 2.1.3 Jumping the Synapse: Synaptic Transmission

This numeric coding scheme allows for relevant material to be indexed back to the applicable section of the text, tying content to each section heading. Through numbering, the learning objectives, quizzes, review summaries, and visual summaries at the ends of each chapter are easy to reference to a specific location within the text. Numeric coding also makes it easy for instructors to assign specific portions of chapters, and for students to find that material across media, creating a smoother experience when moving around in the physical text or between the text and digital formats. Through the use of these numeric codes, students can quickly tie content from a variety of sources back to specific sections of the text.

Learning Objectives that Are Aligned with the APA Learning Goals and Outcomes

Each chapter opens with the Learning Objectives, which are numerically indexed to the appropriate Learning Goal and Learning Outcome in the new *APA Guidelines for the Undergraduate Psychology Major Version 2.0* (APA, 2013). Learning Objectives are also numerically indexed to the section heading of the chapter in which the relevant material is covered. This allows both the instructor and the student to quickly assess which objectives are covered in each discrete section of the text, and which APA program outcomes are being addressed in that section. For example, here is a sample of the learning objectives for Chapter 8. The index numbers on the left refer to the relevant sections of the chapter. The codes on the right relate the learning objectives to the specific APA Learning Outcomes.

- 8.1 Describe how we represent knowledge in our memory. (APA 1.1, 1.2, 1.3)
- 8.1 Describe how we organize knowledge in our memory. (APA 1.1, 1.2, 1.3)
- 8.2 Describe the different types of problems we face in life and the ways in which we may try to solve them. (APA 1.1, 1.2, 1.3)
- 8.2 Describe common obstacles to problem solving. (APA 1.1, 1.2, 1.3)
- 8.3 Describe the processes of deductive and inductive reasoning. (APA 1.1, 1.2, 1.3, 2.1)
- 8.3 Describe the factors that affect decision making. (APA 1.1, 1.2, 1.3)
- 8.3 Describe the process of judgment and heuristics that bias our judgments. (APA 1.1, 1.2, 1.3, 3.3)

Diversity: Making Psychology Relevant for All People

There is little doubt that students learn best when they become personally invested in the material they are reading and studying. However, for this to occur, students must actually find the material to be applicable to their lives. Given that today's college students are a diverse group of people, writing a text that is relevant to today's students means writing a text that embraces their diversity. Diversity and variations in human behavior are also themes that are emphasized in the APA Common Core guidelines and the *APA Guidelines for the Undergraduate Psychology Major*. Understanding psychology means understanding the behavior and mental processes of *all* people.

Appropriately, we wrote our book with inclusion in mind. Throughout the text we use examples of real people (such as those whose stories open each foundational section) who reflect the diversity seen in our classrooms. Where applicable, we have cited and highlighted research that reflects many aspects of diversity, including gender, racial diversity, sexual orientation, cultural diversity, age and generational differences, socioeconomic levels, and physical and/or mental health challenges. In all, we reference people from well over 120 countries and/or cultural groups.

An Engaging Narrative Writing Style Makes Difficult Material Easier to Understand

Motivating a student to read the text is, of course, a primary concern of professors. But reading the text does no good if the student does not understand what he or she has read. The student comment we mentioned previously is very telling: he read the assignment, but he did not understand it. We doubt this did much to encourage him to approach his next reading assignment! A major goal of this text is to bring psychology to the student by making it understandable, and to do so without sacrificing content. We believe that it is not necessary to condescend to students to get them to understand. Rather, you just have to explain difficult concepts thoroughly and clearly.

Throughout the text, we have adopted an engaging narrative writing style that will not intimidate students. Difficult concepts (such as neural transmission and classical conditioning) are given extended description, and many real-life examples are used to illustrate and clarify our points. The language we use in the text strongly reflects the way we speak to our students during class. We also include a pronunciation glossary so students will know how to correctly pronounce the more difficult, unfamiliar terms.

We attempted to use our prose to tell students the story of psychology, as opposed to a mere litany of theories and

research findings. Throughout the text, we directly address students as “you” and refer to ourselves as “we” to help draw students into a conversation about psychology. And through that conversation, we provide students with an accessible and engaging story. Throughout the process of writing this text, many faculty reviewers and students have consistently praised our writing style for its clarity and accessibility. One reviewer commented that it was obvious that this text was written by authors who have spent much time in the classroom in front of students.

Enhancing Motivation and Learning by Making Psychology Practical

A key point in getting students to read a text and retain what they've read is making the material applicable to their lives. When information is associated with the self, it becomes more easily retrieved from memory. So, when students can see how psychology relates to their personal lives, they are much more likely to find it interesting and a lot less likely to forget it. Throughout the text, we have made a concerted effort to use practical, everyday examples to illustrate the concepts.

What Is Psychology? Foundations, Applications, and Integration 4e includes Psychology Applies to Your World, a feature that emphasizes the personal relevance of psychology by showing students that an understanding of psychology can help them to better understand their world. Psychology Applies to Your World topics include the dangers of flakka and bath salts (Chapter 4), the obesity epidemic (Chapter 5), the duplex mind and prejudice (Chapter 10), and the use of taste aversion to help people cope with chemotherapy and alcoholism (Chapter 6).

Enhancing Student Learning by Encouraging Active Learning and Self-Assessment

Many of our students learn best when they engage in active rather than passive learning. We have made a concerted effort to get students involved with the material as they read. By remaining engaged, students will be more motivated to read, and they will likely retain the information in memory much better.

Engage Yourself!

The Engage Yourself! active learning feature asks students to do hands-on activities to illustrate important chapter concepts. Active learning not only encourages students to see the personal relevance of the material, it also helps students elaborate the material in memory by connecting it to personal experience. Examples of Engage Yourself!

activities include having students examine their attributional biases when making judgments about celebrities (Chapter 10), illustrating the effects of elaborative rehearsal on memory for song lyrics (Chapter 7), and an activity that demonstrates the brain's predisposition to perceive faces (Chapter 9).

Quiz Yourself

Another feature, Quiz Yourself, appears after each major section of the chapter. Quiz Yourself allows students to actively assess their learning by asking them to apply the material of the preceding section to answer several multiple choice questions. Most of the Quiz Yourself questions are application questions that apply the material to practical situations. For example, in Chapter 10, Social Psychology, we use the following question to test the student's understanding of attribution theory:

Jasper was quick to assume that Susan was intelligent when he saw that she earned an A on her last psychology exam. However, when Jasper earned an A on his history test, he was not so quick to assume that he was intelligent. Which of the following biases in social cognition *best* explains Jasper's behavior?

- The fundamental attribution error
- The self-serving bias
- The social desirability bias
- The actor/observer bias

To answer this question, the student must not only understand the different attribution biases, but he or she must also be able to think analytically about them in applying these concepts to a very common student-oriented scenario. Scientific reasoning questions can also be found sprinkled throughout the Quiz Yourself quizzes, serving to further help students integrate scientific reasoning into the big picture of psychology. These questions are marked with a circle for easy identification.

You Review

Each chapter features at least one You Review table that summarizes key points of a particular topic. For example, in Chapter 12, the transmission modes, symptoms, and treatments of sexually transmitted infections are summarized. In Chapter 8, gender differences on some cognitive tasks are highlighted.

What Do You Know? Assess Your Understanding

In addition to the Quiz Yourself questions at the end of each major section of the chapter, we have included a more extensive self-assessment for students at the end of each chapter. This assessment, What Do You Know?

Assess Your Understanding, includes a 20-question multiple choice practice test (with the answers provided) that allows students to evaluate their retention and understanding of the entire chapter. In most cases, these quizzes also contain scientific reasoning questions. By self-assessing, students can better judge which concepts and/or sections of the chapter they should target for further study.

Use It or Lose It: Applying Psychology Questions

In addition to the multiple choice section, the end-of-chapter assessments also include Use It or Lose It: Applying Psychology, a series of essay or short-answer questions that require students to further elaborate and integrate their knowledge by applying what they have learned to a real-world problem or question. An example question from Chapter 2 reads:

- Jean-Dominique Bauby was still able to think, feel, and remember the events of his life after a stroke left him in a permanent state of locked-in syndrome. Now that you know something about the brain, can you explain why he retained these abilities?

Critical Thinking for Integration Questions

Also included in the end-of-chapter assessments are Critical Thinking for Integration questions. These essay or short-answer questions tap into the need to get students to integrate their learning by specifically asking them to use information from different chapters to solve problems and answer questions. An example question from Chapter 5 reads:

- How might learning theories (Chapter 6) be used to design a therapy aimed at helping people to overcome obesity?

Are You Getting the Big Picture?

A visual summary of the chapter, entitled "Are You Getting the Big Picture?" is also included in the end-of-chapter material to allow students to grasp the big picture of the chapter. All of the major concepts and theories of the chapter are brought together in a graphical format in the visual summary that also uses thumbnail images as reminders. This tool will be especially helpful to students who prefer to learn through visual means.

Chapter-by-Chapter Changes to Content

As psychologists know, our field is dynamic and ever-changing. To stay abreast of current knowledge and offer our students the most accurate understanding of psychology possible, the research cited in *What Is Psychology?*

Foundations, Applications, and Integration 4e has been thoroughly updated. In addition, the new edition also includes key updates to some of the pedagogical features of the text. Here is a chapter-by-chapter summary of some of the important changes in this new text.

Chapter 1: The Science of Psychology

- Updated data on undergraduate degrees in psychology, and on women and minorities in the field of psychology
- Revised Engage Yourself! activity on misconceptions about behavior to include a misconception for each chapter
- Extended explanations on flexibility in employment opportunities for psychology majors and on employment of psychologists in other discipline areas such as computer science, law, hotel management, zoology, urban research, and political science
- A thorough updating of all content, including 14 new references

Chapter 2: Neuroscience

- Thoroughly updated research with 35 new references
- Included the distinction between Vegetative States and Locked-in Syndrome in opening case study
- Added secretion of cerebrospinal fluid to the duties performed by glia cells
- Clarified that myelin results from glia cells that wrap around the neuron
- New Psychology Applies to Your World: Can Exposure to WiFi Hotspots Affect the Brain? Box
- Removed the gun analogy for the all-or-none principle
- Added the concept of neuromodulators to the discussion of neurotransmitters
- Updated coverage on acetylcholine (ACh), dopamine, gamma amino butyric acid (GABA), and serotonin
- Added coverage of the controversy over whether MDMA can be used to treat posttraumatic stress disorder (PTSD), major depressive disorder, and other mental health issues
- Clarified that endorphins are generally conceptualized as neuromodulators rather than neurotransmitters
- Updated coverage on the cerebellum to include more recent research on its function in emotion and its connection to mental health issues
- Updated coverage on neuroplasticity in the hippocampus
- Updated coverage on the corpus callosum and lateralization in the brain
- Updated coverage of Phineas Gage to include the controversy on how impaired he was by his injuries
- Added 4 scientific reasoning questions

Chapter 3: Sensation and Perception

- Thoroughly updated the research with 41 new references
- Updated the research on the debate over whether or not ESP exists
- Updated the section on photopigments to include new research on photopigments and non-visual functioning in the body
- Included a study showing that recent tongue temperature affects taste sensitivity
- Included research on ethnic differences in taste sensitivity
- Added research on the presence of vomeronasal organs in modern humans
- Added research on pheromones and alcohol consumption
- Added information on the correlation between olfactory deficits and impaired recognition of facial expressions of emotion in people with bipolar disorder
- Added coverage of the gate control theory of pain
- Added coverage of the #TheDress viral phenomenon as an example of color constancy processes
- Clarified that camouflage utilizes several of the Gestalt principles of perception
- Added research on artistic ability and poor binocular depth perception
- Added 6 scientific reasoning questions

Chapter 4: Consciousness

- An extensive updating of the research, including 68 new references
- Addition of new FDA-approved medicine for insomnia and Inspire Upper Airway Stimulator for sleep apnea
- Additional focus on Veteran's and sleep apnea
- Research investigating the link between chronic sleep disruptions and the risk of Alzheimer's disease is discussed
- Changed substance dependence to substance use disorder
- Introduced flakka in Psychology Applies to Your World topic that focuses on bath salts
- Included a discussion on the correlational research between marijuana and psychosis
- Added 3 scientific reasoning questions
- Improved Figure 4.4 to show distinct sleep stages

Chapter 5: Motivation and Emotion

- Thoroughly updated the research with 69 new references
- Included research on stress during development and optimal stress levels in adulthood
- Included coverage of Harrigan and Commons (2015) stage and value reconceptualization of Maslow's hierarchy of needs

- Changed the Engage Yourself! feature to contain useful information on preventing the spread of STIs
- Added coverage on ghrelin, loneliness, and eating to the discussion of hunger
- Added coverage on the timing of eating, liver function, and overeating
- Updated the glycemic index (GI) coverage to include information on the limited usefulness of GI in predicting postmeal blood sugar levels
- Included coverage of how cholecystokinin (CCK) works with insulin to affect satiety in the brain
- Introduced the idea that fat or adipose tissue can be viewed as an endocrine organ rather than merely an energy storage system in the body
- Updated statistics on the prevalence of obesity and overweight persons worldwide
- Added a study linking genetic markers to time-of-day eating effects on weight loss
- Included new coverage of critiques of the thrifty-gene hypothesis
- Included coverage of online fat-shaming
- Updated statistics on same-sex marriage laws
- Added 2 scientific reasoning questions
- Introduced updated research on the limits of STM capacity
- Introduced a new Engage Yourself! demonstration on the effects of chunking on short-term memory capacity
- Removed the dual-coding system key term from the discussion of STM in favor of a discussion of multiple encoding strategies used in STM
- Added the episodic buffer to the working memory model and created a better figure illustrating it
- Added coverage of diet, exercise, and sleep to the section on improving your memory
- Added coverage of “survival processing” to the section on improving your memory
- Updated the research on gender and autobiographical memory
- Updated information on the damage to H.M.’s brain based on post-mortem evaluation
- Updated information on the effects of concussions on the brain and mental health
- Included new research on motivated forgetting
- Updated coverage on the biology of memory
- Added 2 scientific reasoning questions

Chapter 6: Learning

- Thoroughly updated the research with 38 new references
- Added coverage of Prolonged Exposure Therapy and habituation for PTSD
- Clarified observed NS/CS-US latencies in conditioned taste aversions in humans and nonhuman animals
- Added additional research to the discussion of disulfiram treatment for cocaine addiction
- Reworked and extended the Engage Yourself! feature on conditioned taste preferences
- Included additional coverage on the debate over whether or not violent video games increase aggression in players
- Included the American Academy of Pediatrics’ caution to parents concerning media use in children under 2 years of age
- Updated coverage on countries that have banned corporal punishment of children
- Added 4 scientific reasoning questions

Chapter 7: Memory

- Thoroughly updated the research with 49 new references
- Introduced the idea that explicit memory is typically verbal and implicit memory is nonverbal earlier to highlight this distinction throughout the chapter
- Included nonprocedural examples of implicit memory

Chapter 8: Cognition, Language, and Intelligence

- Thoroughly updated the research with 45 new references
- Included recent brain research that supports the view that at least some features of images are stored verbatim in memory
- Included a discussion of a breakdown of the basic level effect when perception of the stimulus occurs for a very brief period of time
- Included an expanded discussion on learning natural concepts
- Included a new discussion of dialectical reasoning
- Included research linking the concepts of dialectical thinking, linguistic relativity, and perception of self and others
- Added 5 scientific reasoning questions

Chapter 9: Human Development

- Thoroughly updated the chapter with 45 new references
- Included research on the evolutionary value of individual differences in attachment styles
- Presented new research on negative effects of early maturation on males
- Referenced gender stereotyping of male nurses and legalization of same-sex marriage
- Updated data on World Age Trends for females at first marriage
- Added 2 scientific reasoning questions

Chapter 10: Social Psychology

- Thoroughly updated the research with 61 new references
- Reverted to the classical term of *cognitive dissonance* throughout the chapter
- Included new coverage of criticisms of the Stanford Prison Experiment
- Clarified the fact that nonconformity was prevalent in Solomon Asch's historic studies on conformity
- Introduced the concept of the duplex mind in a new Psychology Applies to Your World box: The Duplex Mind and Prejudice
- Introduced coverage of polythink to the discussion on groupthink
- Added 6 scientific reasoning questions

Chapter 11: Personality

- Updated the chapter with 14 new references
- Added birth and death dates for all major theorists

Chapter 12: Health, Stress, and Coping

- Thoroughly updated the chapter with more than 45 new references
- HPA-axis added as a key term
- Added section on the research on Type D personality and health
- Added 2 scientific reasoning questions

Chapter 13: Mental Health Disorders

- Thoroughly updated the chapter with more than 60 new references
- Incorporated data from the Mental Health Surveillance Study (MHSS) 2008–2012
- Emphasized the heterogeneity of depressive disorders
- Added research on racial disparities in quality of care for people with schizophrenia
- Added discussion on the correlation between schizophrenia and violence
- Included research on the role of the cerebellum in schizophrenia
- Added 2 scientific reasoning questions

Chapter 14: Mental Health Therapies

- Thoroughly updated the chapter with 27 new references
- Included text therapy services in discussion on technology and therapies
- Updated data on characteristics of people with mental health disorders who seek therapy

- Included discussion on criteria for involuntary commitment
- Added 1 scientific reasoning question

MindTap

MindTap for *What Is Psychology?* creates a unique learning path that fosters increased comprehension and efficiency. It engages students and empowers them to produce their best work—consistently. In MindTap, course material is seamlessly integrated with videos, activities, apps, and more.

For students:

- MindTap delivers real-world relevance, with activities and assignments designed to help students build critical thinking and analytical skills that can be applied to other courses and to their professional lives.
- MindTap serves as a single destination for all course materials so that students can stay organized and efficient and have the necessary tools to master the content.
- MindTap shows students where they stand at all times—both individually and compared to the highest performers in the class. This information helps to motivate and empower performance.

In MindTap, instructors can do the following:

- **Control the content.** Instructors select what students see and when they see it.
- **Create a unique learning path.** In MindTap, the *What Is Psychology? Foundations, Applications, and Integration 4e* text is enhanced with multimedia and activities to encourage and motivate learning and retention, moving students up the learning taxonomy. Materials can be used as is or modified to match an instructor's syllabus.
- **Integrate their own content.** Instructors can modify the MindTap Reader using their own documents or pulling from sources like RSS feeds, YouTube videos, websites, Google Docs, and more.
- **Follow student progress.** Powerful analytics and reports provide a snapshot of class progress, time students spend logging into the course, and completion, to help instructors assess level of engagement and identify problem areas.

Available Supplements

Cengage Learning Testing, powered by Cognero

Cengage Learning Testing Powered by Cognero® is a flexible, online system that allows you to: import, edit, and manipulate content from the text's test bank or elsewhere, including your own favorite test questions; create multiple test versions in an instant; and deliver tests from your LMS, your classroom, or wherever you want.

Online Instructor's Manual

The instructor's manual (IM) contains a variety of resources to aid instructors in preparing and presenting text material in a manner that meets their personal preferences and course needs. It presents suggestions and resources to enhance and facilitate learning.

Online PowerPoints

These vibrant, Microsoft PowerPoint lecture slides provide concept coverage to assist you with your course.

Acknowledgments

Writing a college textbook has been an exhausting yet rewarding experience. We are ordinary college professors who teach three to six classes every semester, so we are often writing in whatever free time we have—weekends, nights, and holidays. We are valued for our contributions to student learning and service to our institutions. And we have grown so much as educators and psychologists in tackling this project. This would not have been possible without the support of many people who deserve our acknowledgment.

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What Is Psychology?

Foundations, Applications & Integration

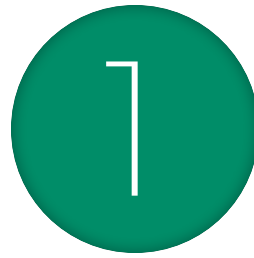


Learning Objectives

- 1.1** Define psychology. (APA 1.1)
- 1.1** Identify common misconceptions about the field of psychology. (APA 2.1)
- 1.2** Identify the four goals of psychological research. (APA 1.1, 2.1)
- 1.2** Outline the steps of the scientific method, and distinguish between predictive and causal hypotheses. (APA 2.1, 2.4)
- 1.2** Describe the advantages and disadvantages of observational, survey, correlational, and experimental research methods and the types of conclusions that can be drawn about behavior from each method. (APA 2.1, 2.2, 2.4, 2.5, 5.1)
- 1.3** Describe the main ethical principles that guide psychologists as they conduct research. (APA 3.1)
- 1.4** Distinguish among the seven modern perspectives of psychology and the eclectic approach, and identify the major historical figures that influenced psychology's development. (APA 1.1, 1.2, 2.1, 2.5, 5.1)
- 1.4** Describe the training of a psychologist, and compare and contrast the different specialty areas of the profession. (APA 1.3, 5.1, 5.5)
- 1.4** Describe how women and minorities have contributed to the field of psychology. (APA 1.2, 3.3)



Greg Hinshale/Corbis



The Science of Psychology

Chapter Outline

- 1.1** What Is Psychology? / 4
- 1.2** The Science of Psychology: Goals, Hypotheses, and Methods / 7
- 1.3** Ethical Principles of Psychological Research / 20
- 1.4** Psychology in the Modern World: Foundations and Growth / 22

Psychology Applies to Your World:

Training to Be a Psychologist / 30

- 1.5** Integrating Psychology: The Big Picture / 32

It was the first day of the semester. Parking, as usual, was a challenge. Christian finally found a spot, parked his car, and headed toward campus. While grabbing a coffee at the college café, he ran into his friend Andrew. “Hey, man, what’s up?” he asked. “Not much,” Andrew replied. “Just getting coffee before I head to class.” “What are you taking?” Christian asked. “Well, I’ve got math and music appreciation tomorrow. Today, I’ve got oceanography and general psychology. I’m heading to the psych class now.” Christian smiled and said, “Cool, I’ve got that psych class now, too.” The two students grabbed their coffees and headed toward the psychology building, continuing their conversation. “What do you think the course will be about?” Andrew asked. “Probably how you feel about things. Ought to be an easy A—like being with Dr. Phil all semester,” Christian joked. Andrew laughed. “Yeah, I guess we’ll see how screwed up we are and get a lot of therapy.” “Speak for yourself,” Christian kidded. “I figure it’s just commonsense stuff, things your parents have been telling you since you were a kid. Shouldn’t be too hard.” Andrew nodded in agreement as they arrived at the classroom. “Let’s take a seat in the back so we don’t have to share our feelings too much,” Christian whispered. The two found a seat in the back and waited for class to begin. ■



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◀ Many students hold misconceptions about the field of psychology.

psychology the scientific study of behavior and mental processes

scientific method a systematic process used by psychologists for testing hypotheses about behavior

1.1 What Is Psychology?

Welcome to the world of **psychology**, the scientific study of behavior and mental processes. But what exactly does that include? Behavior includes actions, feelings, and biological states such as sleeping. Mental processes include problem solving, intelligence, and memory, to name just a few. Psychology is a science because psychologists conduct research in accord with the **scientific method**—a systematic process used to test ideas about behavior. Psychologists analyze the behavior of humans as well as other species.

Psychology is probably one of the few disciplines in which students come to the first class believing they already know much about the topic. We see psychologists and psychiatrists on talk shows (Dr. Phil, Dr. Drew) and listen to them on the radio. We frequently see them depicted on television (*Criminal Minds*, *Bull*) and in the movies (*Silver Linings Playbook*, *Side Effects*, *The Departed*, *A Beautiful Mind*). Many of these portrayals are quite entertaining, but they do not always represent psychology accurately. As a result, the public image of the discipline tends to be distorted.

The purpose of this textbook is to help you develop a deeper understanding of psychology. In this chapter, we explain what psychologists do, how they think, and where they work. It is a general overview of the field of psychology, an introduction to the more specific areas of psychology discussed in subsequent chapters. We describe how psychology is a science, the goals of psychological research, how psychologists study behavior, and what the field is like today.

This textbook follows the recommendations and guidelines of the American Psychological Association (APA, 2014) by emphasizing a common core structure of contemporary psychology. The chapters are arranged into four main parts representing foundational areas in the field of psychology: *biological*, *cognitive*, *developmental and social psychology*, and *physical and mental health*. Each part begins with a real-life story of a person whose life and experiences illustrate the concepts of the chapters that follow. Each chapter ends with an Integrating Psychology: The Big Picture section that ties together the person's story, the contents of the chapter, and the broader core of psychology. We hope that by reading these real-life stories, you will find psychological topics easier to understand and will be better able to apply psychological principles and concepts to your own life. We also hope you will come to appreciate that understanding the mind and behavior is not a simple process but requires the integration of a multitude of perspectives to more fully comprehend humans' experiences.

1.1.1 Correcting Common Misconceptions About the Field of Psychology

You are probably reading this book because you have enrolled in a general psychology course. Your expectations of what you will learn have been influenced by your general impressions of psychology. Much of the psychological information presented in the media focuses on practitioners, therapy, and helping others, and you—like the students in the opening section—may have the impression that psychology is all about how you feel and how you can feel better. Although a large proportion of psychologists counsel or otherwise treat clients, most of these professionals hold a doctorate degree in psychology, which required that they study scientific methodology and complete a considerable amount of research (Wicherski, Michalski, & Kohout, 2009).

Psychology is rooted in scientific research. The information in this book is research based. Every idea put forward in the field is subject to scientific study. You will notice that many statements in this text are followed by names and years in parentheses,

for example (Pastorino, 2018). These text citations refer to the scientific studies on which the stated conclusions are based, with the researcher name(s) and date of the study. The complete research citations can be found in the References section at the end of this book. An example of a complete research citation is shown in ● FIGURE 1.1.

A psychologist's explanation of a particular behavior is generally presented as a theory. A **theory** is an explanation of why and how a behavior occurs. It does not explain a particular behavior for all people, but it provides general guidelines that summarize facts and help us organize research on a particular subject.

We all, at times, fancy ourselves as psychologists. We interact with people all the time, we observe others' behaviors, and we have our own personal experiences. Therefore, we might naturally think that we already know a lot about psychology. People often behave the way we think they will behave, so psychology seems as though it is just common sense. However, we often overlook the examples of behavior that don't confirm our expectations or support our preexisting beliefs. Psychologists systematically test their ideas about behavior using the prescribed methods and procedures we will describe in the next section of this chapter.

Engage Yourself!

Take a look at ● TABLE 1.1 and answer the questions about behavior.

How many of the items did you mark as true? All the statements are false, yet many students have such misconceptions or believe such myths about human behavior. Psychological findings

APA Style:

Author, A. A., Author, B. B., & Author, C. C. (Year). Title of article:

Subtitle of article. Title of Periodical or Journal, Vol #, pages.

Example:

Whitton, S. W., & Whisman, M. A. (2010). Relationship satisfaction instability and depression. *Journal of Family Psychology, 24*, 791–794.

FIGURE 1.1

Reference Citations in Psychology

The References section at the end of this book lists the complete source for each citation. Here is the APA style format for psychological references. The citation for this particular reference would appear in the text as (Whitton & Whisman, 2010).

theory an explanation of why and how a behavior occurs

TABLE 1.1 How Much Do You Know About Behavior?

Indicate whether you believe each statement is true (T) or false (F).	
1. We are either left-brain or right-brain thinkers. (Ch.2)	T F
2. We have only five senses. (Ch. 3)	T F
3. During sleep, the brain rests. (Ch. 4)	T F
4. Dieting is an effective way to lose weight. (Ch. 5)	T F
5. Punishment is more effective than reinforcement in producing behavior change. (Ch. 6)	T F
6. Our memory works like a video recorder. (Ch. 7)	T F
7. Intelligence is primarily encoded in our genes. (Ch. 8)	T F
8. Most adults experience a midlife crisis in their 40s or 50s. (Ch. 9)	T F
9. Opposites attract. That is we are most attracted to people who differ from us. (Ch. 10)	T F
10. Personality is set by our teenage years. (Ch. 11)	T F
11. Stress is caused by bad things that happen to you. (Ch. 12)	T F
12. Schizophrenia means you have multiple personalities. (Ch. 13)	T F
13. In order for therapy to be effective, you must confront issues from your childhood. (Ch. 14)	T F

do *not* always confirm our everyday observations about behavior. Only by objectively measuring and testing our ideas and observations about behavior can we determine which ideas are more likely to stand up to scientific scrutiny. Behavior is much more complex than the simple statements in Table 1.1 suggest. (The chapter designation following each statement indicates where in the text each myth is addressed.)

Most students entering a general psychology class, like Christian and Andrew, expect to focus on diagnosing and treating mental disorders. Although some psychologists specialize in mental illness, many others work in academic settings, in the business world, in education, or in government agencies. Psychology is an extremely diverse field, and new specialties are appearing every year. Psychologists are interested in numerous topics, including neuroscience, learning, memory, aging, development, gender, motivation, emotion, sports, criminal behavior, and many other subjects. We cannot cover every area of psychology in this textbook, but we will give you an overview of the main areas of psychological research.

1.1.2 Psychology Will Teach You About Critical Thinking

Because behavior is so complex, psychological theories generally don't definitively explain the behavior of all people. To think like a psychologist, you must think critically, analyzing and evaluating information. You must be able to distinguish true psychological information from **pseudopsychology**. Pseudopsychological findings sound persuasive, but they are not necessarily based on scientific procedures. Their conclusions may go far beyond the scope of their actual data. For example, have you ever heard that people use only 10% of their brains? Many college students believe this false statement despite evidence that shows it is not true (Higbee & Clay, 1998; Lilienfeld, Lynn, Ruscio, & Beyerstein, 2011). To think like a psychologist, you must be skeptical rather than accepting about explanations of behavior.

Critical thinking involves analyzing and evaluating information and applying it to other situations. Critical thinking also makes you an intelligent consumer of information. You will be encouraged to practice this skill throughout the book as you read the chapter and test your mastery of the material in the Quiz Yourself sections at the end of each main topic and in the What Do You Know? Assess Your Understanding questions at the end of each chapter. In the end-of-chapter material, we have also included Use It or Lose It questions. These short-answer questions ask you to apply your knowledge to solve a problem or situation. Immediately following are Critical Thinking for Integration questions that require you to analyze and synthesize concepts from several chapters in order to solve a problem or situation.

Because we all engage in behavior, much of the information in this text will apply to your life. We all dream, remember, like or dislike others, are motivated, have high or low self-esteem, experience sadness, behave aggressively, help others, learn, perceive, and use our senses. Consequently, we recommend that you apply the material in this text to your own behavior as much as possible. This connection will increase your interest in the text, and you will study more effectively.

pseudopsychology psychological information or conclusions that sound scientific but have not been systematically tested using the scientific method

critical thinking thought processes used to evaluate and analyze information and apply it to other situations

1.1 Quiz Yourself

1. Which of the following statements is *true*?
 - a. Psychology is just common sense.
 - b. Psychologists study only mental health disorders.
 - c. Psychologists know why people behave the way that they do.
 - d. Psychologists test ideas about behavior according to the scientific method.
2. Which of the following topics would a psychologist most likely study?
 - a. Weather patterns in Africa
 - b. Memory changes in adults
 - c. Causes of the Vietnam War
 - d. All of the above
3. Which of the following statements is *not* a pseudopsychology claim?
 - a. Transplant organs carry personality traits that are always transferred from donors to receivers.
 - b. Walking on hot coals without burning one's feet requires paranormal abilities.
 - c. You can make a blood clot in your brain disappear by humming.
 - d. Several studies show a relationship between academic achievement and self-esteem.

Answers 1. d; 2. b; 3. d

1.2 The Science of Psychology: Goals, Hypotheses, and Methods

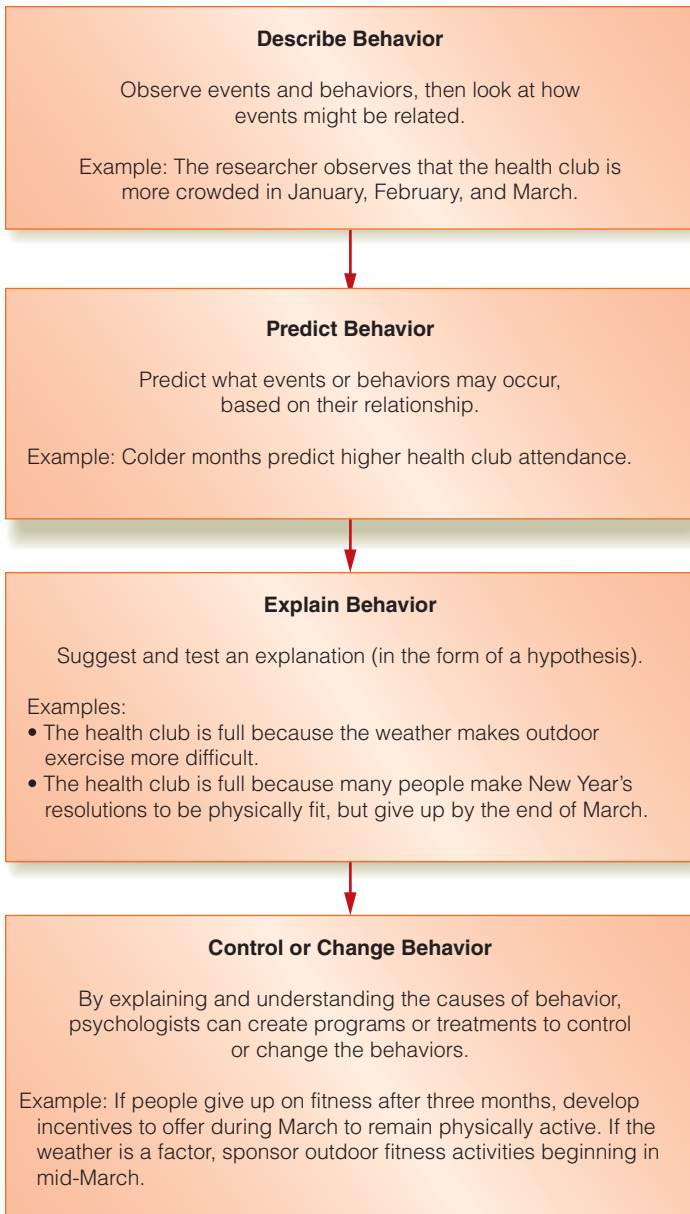
Though psychologists study and emphasize different aspects of behavior, they all share similar goals. The main goals of psychology and psychological research are as follows:

- To describe behavior
- To predict behavior
- To explain behavior
- To control or change behavior

Description involves observing events and describing them. Typically, description is used to understand how events are related to one another. For example, you may notice that your health club tends to get more crowded in the months of January, February, and March. It seems you have to wait longer to use the weight machines or there are more people in the yoga classes. This observation describes an event.

If you observe that two events occur together rather reliably or with a general frequency or regularity, you can make *predictions* about events or anticipate what events may occur. From your observations, you may predict that the health club will be more crowded in January. You may arrive earlier to make sure you get a parking spot or a place in the spinning class.

Although it may be known that two events regularly occur together, that doesn't tell us what *caused* a particular behavior to occur. Winter months do not cause health clubs to become crowded. These two events are related, but one event does not cause the other. Therefore, an additional goal of psychology is to *explain* or understand the causes of behavior. As stated previously, psychologists usually put forth explanations of behavior in the form of theories. A *theory* is an explanation of why and how a particular behavior occurs. We will detail seven types of explanations, or perspectives, later in the chapter. For example, how do we explain higher health-club attendance in the winter months? Is it a behavior that is influenced by the environment? Perhaps health clubs are more crowded

**FIGURE 1.2****Goals of Psychology**

Psychologists attempt to describe, predict, explain, and ultimately control or change behavior.

prediction an expected outcome of how variables will relate

hypothesis an educated guess

because the weather makes outdoor exercise more difficult. Perhaps it is more influenced by motivation as many people at the start of a new year resolve to work out more. As these ideas are tested, more and more causes and predictors of behavior are discovered. Some of these explanations or theories will be modified, some will be discarded, and new ones will be developed.

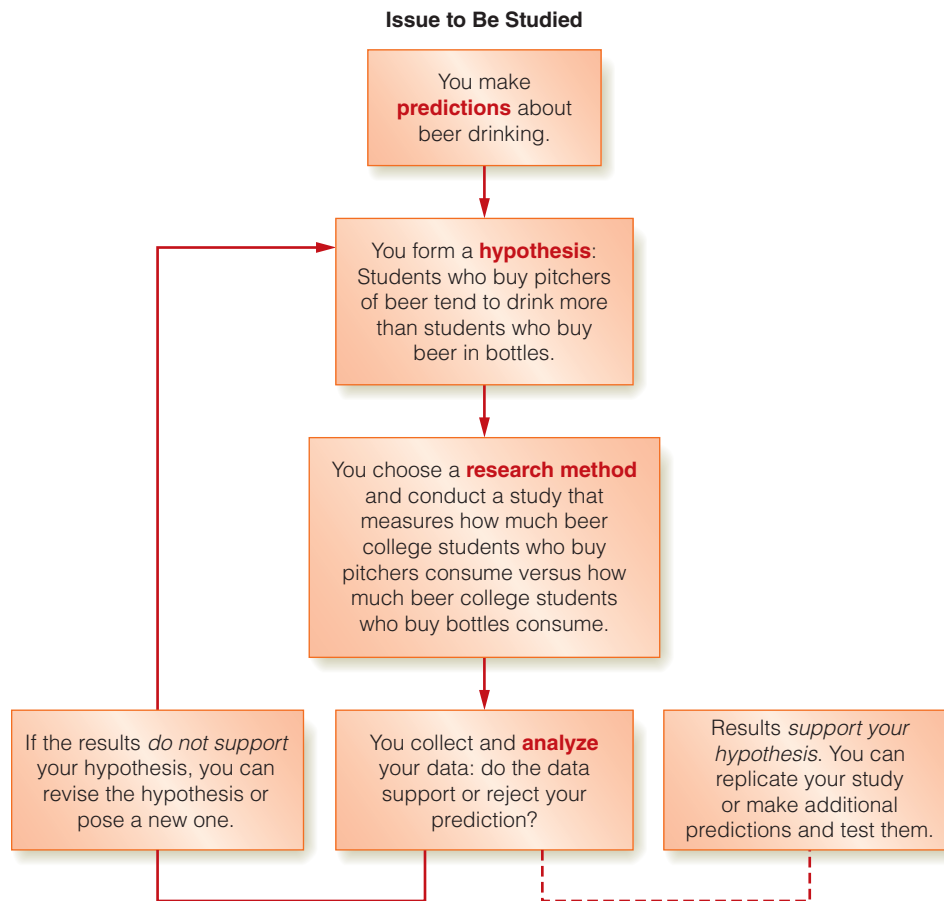
The purpose behind explaining and understanding the causes of behavior is the final goal of psychology, *controlling* or *changing* behavior. It relates to the goal of explanation because one needs to understand what is causing a behavior in order to change or modify it. For example, let's say that the weather is a factor in health-club attendance. Health clubs could offer outdoor fitness activities beginning in mid-March to prevent declining enrollment. Many psychologists go into the field in the hope of improving society. They may want to improve child care, create healthier work environments, or reduce discrimination in society. Such sentiments reflect the goal of control and underscore the potential impact of good research. ● FIGURE 1.2 summarizes the goals of psychology.

1.2.1 Psychologists Are Scientists: The Scientific Method

The purpose of psychological research is to test ideas about behavior. As previously stated, researchers use the *scientific method* when testing ideas about behavior. The scientific method is a set of rules for gathering and analyzing information that enables you to test an idea or hypothesis. All scientists adhere to these same steps even though they may use different techniques within each step. The decisions that scientists make at each step of the scientific method will ultimately affect the types of conclusions they can draw about behavior.

How can the scientific method be used to meet the goals of psychology? Let's say that you have an interest in understanding beer drinking among college students. You want to make some predictions (a goal of psychology) about beer drinking. You use the scientific method to test this idea, as outlined in ● FIGURE 1.3.

1. *Define and describe the issue to be studied.* You might hypothesize that college students who buy pitchers of beer tend to drink more than college students who purchase bottles of beer (a **prediction**). You study previous research in scientific journals on alcohol consumption.
2. *Form a testable hypothesis.* Students who buy pitchers of beer tend to drink more than students who buy beer in bottles. This **hypothesis** must be phrased in a way that can be objectively measured—that is, in such a way that another person can test the same hypothesis to verify or replicate your results.
3. *Choose an appropriate research strategy.* You choose a group of people to observe (college students) and a research method that allows you to measure objectively how much beer students who buy pitchers drink versus how much

**FIGURE 1.3****The Scientific Method**

The scientific method enables researchers to test ideas about behavior.

beer students who buy bottles drink. You decide where your study will be conducted. Will it be in the environment where the behavior naturally occurs (such as the local college bar) or in a laboratory (a more controlled setting)? You decide who you will use as *participants*. Will you use animals or humans? If humans, how will they be selected? If animals, what species will you use?

4. **Conduct the study to test your hypothesis.** Run the study and collect the data based on the decisions in steps 1–3.
5. **Analyze the data to support or reject your hypothesis.** Researchers usually analyze their data using statistics (see Appendix A). If the results do not support your hypothesis, you can revise the hypothesis or pose a new one. If the results do support your hypothesis, you or another team of researchers should *replicate* your study (do the same one again) to increase one’s confidence that the findings support the hypothesis, or make additional predictions and test them. Geller, Russ, and Altomari (1986) actually included this prediction in a larger study on beer drinking among college students and found support for the hypothesis that buying pitchers was associated with consuming larger amounts of beer.

No matter which goal of psychology you are addressing, the process is the same. The goal merely influences the decisions you make when testing an idea through the scientific method. If your goal is description or prediction, your