Psychology

An Exploration

5th Edition

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Fifth Edition

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About Revel and This Course

About This Course

When students are engaged deeply, they learn more effectively and perform better in their courses. This simple fact inspired the creation of Revel: an immersive learning experience designed for the way today's students read, think, and learn. Built in collaboration with educators and students nationwide, Revel is the newest, fully digital way to deliver respected Pearson content.

Revel enlivens course content with media interactives and assessments—integrated directly within the authors' narrative—that provide opportunities for students to read about and practice course material in tandem. This immersive educational technology boosts student engagement, which leads to better understanding of concepts and improved performance throughout the course.

Learn more about REVEL
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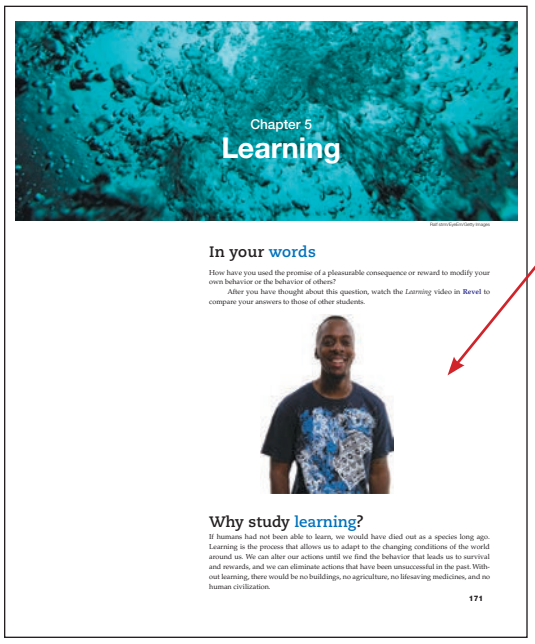
Content Highlights

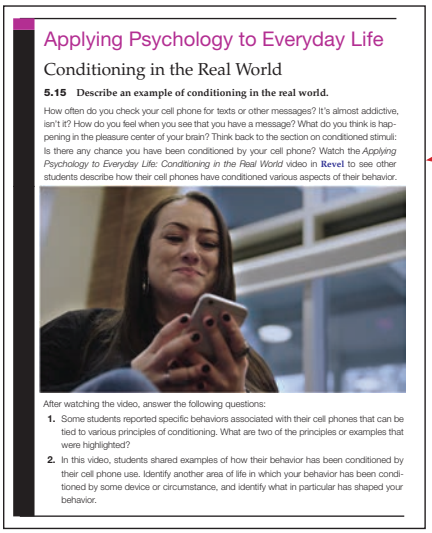
Our goal is to awaken students' curiosity and energize their desire to learn by having them read and engage with the material. The fifth edition builds upon the Revel experience, with particular focus on the application of psychological principles to students' lives. A completely revised feature, *Applying Psychology to Everyday Life*, features students describing in their own words the intersection of concepts in psychology with their personal experiences in daily life. With the dynamic learning aids of previous editions as a foundation, digital materials for this edition allow students to experience figures, graphs, and tables as part of an active learning process. Instead of simply looking and reading, the student is *doing* things with the digital materials. This format will truly help students engage in the learning process and will also help instructors make classroom presentations more vivid and attention grabbing.

DYNAMIC VIDEOS AND ARTWORK



Chapter-Opening Student Voice Videos

Chapters open with videos in which psychology students share personal stories about how the chapter theme directly applies to their lives.


Applying Psychology to Everyday Life

Conditioning in the Real World

5.15 Describe an example of conditioning in the real world.

How often do you check your cell phone for texts or other messages? It's almost addictive, isn't it? How do you feel when you see that you have a message? What do you think is happening in the pleasure center of your brain? Think back to the section on conditioned stimuli: Is there any chance you have been conditioned by your cell phone? Watch the *Applying Psychology to Everyday Life: Conditioning in the Real World* video in **Revel** to see other students describe how their cell phones have conditioned various aspects of their behavior.

After watching the video, answer the following questions:

1. Some students reported specific behaviors associated with their cell phones that can be tied to various principles of conditioning. What are two of the principles or examples that were highlighted?
2. In this video, students shared examples of how their behavior has been conditioned by their cell phone use. Identify another area of life in which your behavior has been conditioned by some device or circumstance, and identify what in particular has shaped your behavior.

Applying Psychology to Everyday Life Pearson Originals Video Series

Fifteen new videos have been filmed for this edition. These videos show current college students discussing where they see a variety of key concepts from introductory psychology in their own lives, from being conditioned by their cell phones to overcoming test anxiety to finding mental health resources on campus. This new Pearson Originals video series invites students to reflect on how psychology applies to their everyday experiences in an accompanying interactive.

Biological Artwork and Animations

Designed especially for Revel, biological artwork is designed in a contemporary aesthetic and includes detailed reference figures as well as animations of key biological processes.

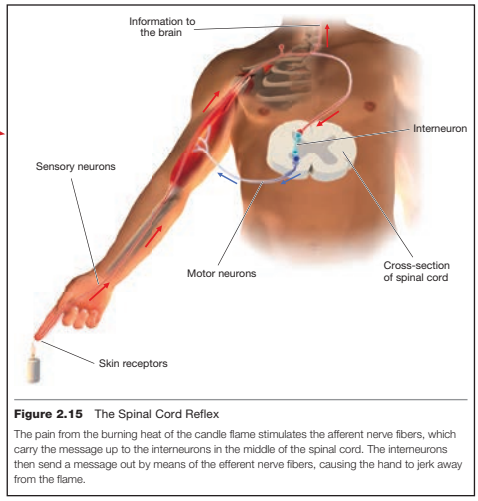
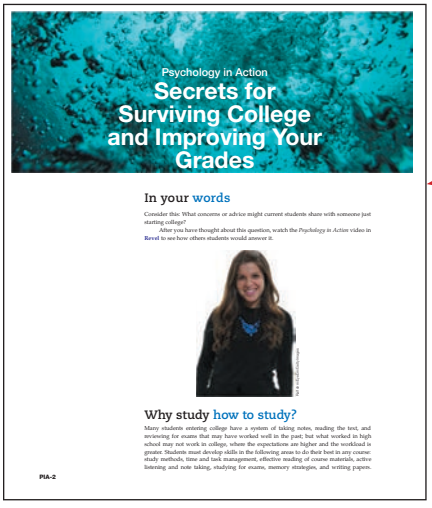


Figure 2.15 The Spinal Cord Reflex

The pain from the burning heat of the candle flame stimulates the afferent nerve fibers, which carry the message up to the interneurons in the middle of the spinal cord. The interneurons then send a message out by means of the efferent nerve fibers, causing the hand to jerk away from the flame.

EMPHASIS ON APA LEARNING GOALS

We have used the APA goals and assessment recommendations as guidelines for structuring our content. For the fifth edition, we have placed even greater emphasis on these goals.


Psychology in Action

Secrets for Surviving College and Improving Your Grades

In your words

Consider this: What concerns or advice might current students share with someone just starting college?

After you have thought about this question, watch the *Psychology in Action* video in **Revel** to see how others students would answer it.

Why study how to study?

Many students entering college have a system of taking notes, reading the text, and reviewing for exams that may have worked well in the past; but what worked in high school may not work in college, where the expectations are higher and the workload is greater. Students must develop skills in the following areas to do their best in any course: study methods, time and task management, effective reading of course materials, active listening and note taking, studying for exams, memory strategies, and writing papers.

PIA-2

Psychology in Action Chapter

Structured around eight modules, this chapter addresses many of the APA learning goals for the undergraduate major. Each module is accompanied by a study tip video.

APA Goal 2: Scientific Inquiry and Critical Thinking

Spare the Rod, Spoil the Child?

Addresses APA Learning Objectives 2.1: Use scientific reasoning to interpret psychological phenomena; 2.2: Demonstrate psychology information literacy; and 2.5: Incorporate sociocultural factors in scientific inquiry.

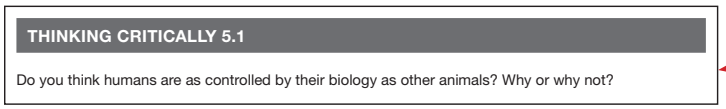
To spank or not to spank has been a controversial issue for many years now. In the past, across many cultures, spanking a child for misbehavior was an accepted form of discipline, but with the rise in both awareness and incidence of child abuse, critical thinking demands asking the next question: Does it work, or does it do more harm than good?

Finland was the second country in the world (after Sweden) to enact a law that banned any kind of physical punishment of children, including by their own parents. This law was put into effect in 1983. The results of a survey conducted nearly 30 years later on a sample of 4,609 males and females between the ages of 15 and 80 years of age showed a significant decrease in reports of physical discipline (e.g., being beaten with an object or slapped) among those participants who were born after the law went into effect. There were also far fewer murdered children. Those participants who had been exposed to more physical punishment than average were found to be more likely to abuse alcohol and suffer from mental health issues such as depression and were also more likely to be divorced or to have attempted suicide (Österman et al., 2014). In countries where a ban against corporal punishment has been enacted or rates of such punishment have declined, there has also been a decrease in child abuse (Finkelhor et al., 2019; Gershoff & Lee, 2020; Zolotor & Puzia, 2010). In this case, it definitely seems that physical punishment such as spanking actually does more harm.

In the last 45 years in the United States, spanking has decreased as a means of disciplining children but is still used by the parents of about 80 percent of preschool-aged children. While in addition to Finland and Sweden, and most recently Japan, 56 other countries have officially banned corporal punishment in about the same time period (see **Figure 5.7**), spanking is still common across many cultures (Global Initiative to End All Corporal Punishment of Children, 2018; Runyan et al., 2010; Zolotor & Puzia, 2010; Zolotor et al., 2011). Regardless of country of origin, research has found that spanking and other forms of harsh physical discipline are more common in places where income is low and parents are less educated (Runyan et al., 2010).

Chapter Feature on APA Goal 2: Scientific Inquiry and Critical Thinking

Each chapter includes a special feature that reinforces scientific inquiry and critical thinking skills. Students are introduced to a psychological topic and then encouraged to practice their skills using a hands-on interactive example.

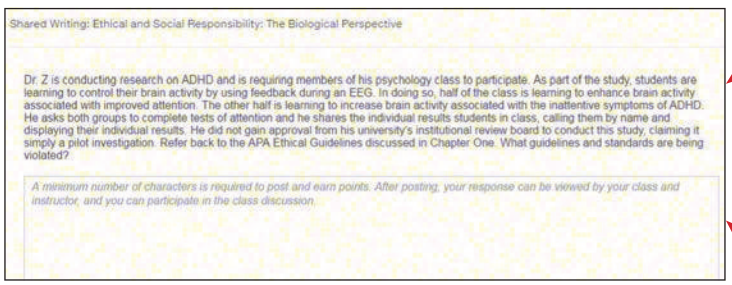


THINKING CRITICALLY 5.1

Do you think humans are as controlled by their biology as other animals? Why or why not?

Thinking Critically Journal Prompts

Journal Prompts in Revel allow students to write short critical thinking–based journal entries about the chapter content. By reinforcing critical thinking, the prompts offer another way to expose students to the skills covered in APA Goal 2: Scientific Inquiry and Critical Thinking.



Shared Writing: Ethical and Social Responsibility: The Biological Perspective

Dr. Z is conducting research on ADHD and is requiring members of his psychology class to participate. As part of the study, students are learning to control their brain activity by using feedback during an EEG. In doing so, half of the class is learning to enhance brain activity associated with improved attention. The other half is learning to increase brain activity associated with the inattentive symptoms of ADHD. He asks both groups to complete tests of attention and he shares the individual results students in class, calling them by name and displaying their individual results. He did not gain approval from his university's institutional review board to conduct this study, claiming it simply a pilot investigation. Refer back to the APA Ethical Guidelines discussed in Chapter One. What guidelines and standards are being violated?

A minimum number of characters is required to post and earn points. After posting, your response can be viewed by your class and instructor, and you can participate in the class discussion.

Shared Writing Prompts Focused on APA Goal 3: Ethical and Social Responsibility in a Diverse World

Shared Writing Prompts in each chapter in Revel foster collaboration and critical thinking skills by providing students the opportunity to write a brief response to a chapter-specific question and engage in peer-to-peer feedback on a discussion board. In this edition, Shared Writing Prompts focus on topics related to APA Goal 3: Ethical and Social Responsibility in a Diverse World.

Shared Writing Prompt Focused on APA Goal 5: Professional Development

An additional Shared Writing Prompt in Appendix B: Applied Psychology and Psychological Careers provides students with the opportunity to reflect on their personal career goals in light of the knowledge they have gained throughout the course.

EMBEDDED INTERACTIVE CONTENT

Interactive content has been fully incorporated into all aspects of the title in Revel, allowing students a more direct way to access and engage with the material.

Figure 5.11 Bandura's Bobo Doll Experiment

In Albert Bandura's famous Bobo doll experiment, the doll was used to demonstrate the impact of observing an adult model performing aggressive behavior on the later aggressive behavior of children.

Watch **Videos** of topics as they are explained.

Interactive Figures and Tables walk students through some of the more complex processes in psychology and offer students the ability to evaluate their knowledge of key topics.

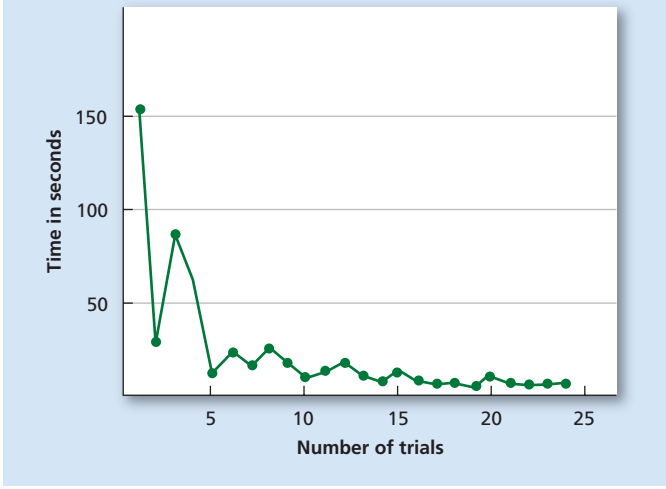
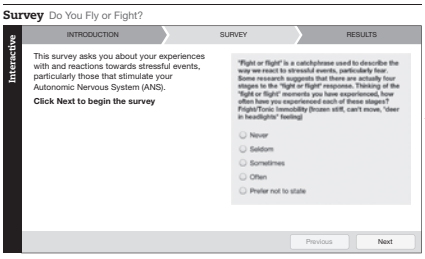


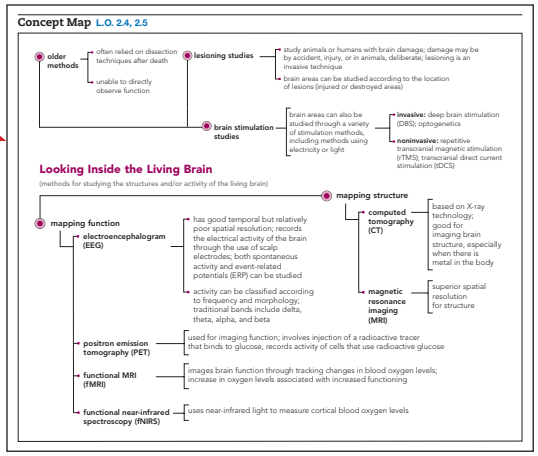
Figure 5.5 Graph of the Time to Learn in Thorndike's Experiment

This is one of the earliest "learning curves" in the history of the experimental study of conditioning. The time required by one of Thorndike's cats to escape from the puzzle box gradually decreased with trials but with obvious reversals. See the interactive version of this figure in Revel.



Simulate **experiments** and answer **surveys** right from the narrative.

Reinforce connections across topics with **Concept Maps**.



Concept Map L.O. 2.4, 2.5

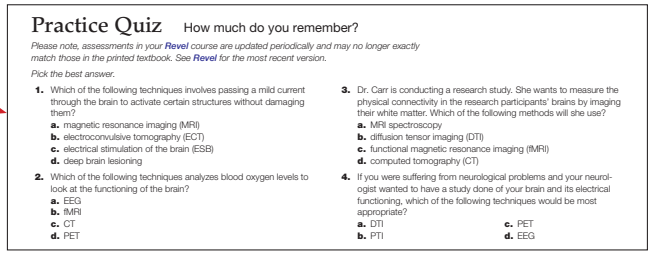
- **older methods**
  - often relied on dissection techniques after death
  - unable to directly observe function
- **lesioning studies**
  - study animals or humans with brain damage; damage may be by accident, injury, or in animals, deliberate; lesioning is an invasive technique
  - brain areas can be studied according to the location of lesions (injured or destroyed areas)
- **brain stimulation studies**
  - brain areas can also be studied through a variety of stimulation methods, including methods using electricity or light
    - **invasive:** deep brain stimulation (DBS); optogenetics
    - **noninvasive:** repetitive transcranial magnetic stimulation (rTMS); transcranial direct current stimulation (tDCS)

Looking Inside the Living Brain

(methods for studying the structures and/or activity of the living brain)

- **mapping function**
  - **electroencephalogram (EEG)**
    - has good temporal but relatively poor spatial resolution; records the electrical activity of the brain through the use of scalp electrodes; both spontaneous activity and event-related potentials (ERP) can be studied
    - activity can be classified according to frequency and morphology; traditional bands include delta, theta, alpha, and beta
  - **positron emission tomography (PET)**
    - used for imaging function; involves injection of a radioactive tracer that binds to glucose, records activity of cells that use radioactive glucose
  - **functional MRI (fMRI)**
    - images brain function through tracking changes in blood oxygen levels; increase in oxygen levels associated with increased functioning
  - **functional near-infrared spectroscopy (fNIRS)**
    - uses near-infrared light to measure cortical blood oxygen levels
- **mapping structure**
  - **computed tomography (CT)**
    - based on X-ray technology; good for imaging brain structure, especially when there is metal in the body
  - **magnetic resonance imaging (MRI)**
    - superior spatial resolution for structure

Take **Practice Quizzes** as you read.



Practice Quiz How much do you remember?

*Please note, assessments in your **Revel** course are updated periodically and may no longer exactly match those in the printed textbook. See **Revel** for the most recent version.*

Pick the best answer.

1. Which of the following techniques involves passing a mild current through the brain to activate certain structures without damaging them?
   a. magnetic resonance imaging (MRI)
   b. electroconvulsive tomography (ECT)
   c. electrical stimulation of the brain (ESB)
   d. deep brain lesioning
2. Which of the following techniques analyzes blood oxygen levels to look at the functioning of the brain?
   a. EEG
   b. fMRI
   c. CT
   d. PET
3. Dr. Carr is conducting a research study. She wants to measure the physical connectivity in the research participants' brains by imaging their white matter. Which of the following methods will she use?
   a. MRI spectroscopy
   b. diffusion tensor imaging (DTI)
   c. functional magnetic resonance imaging (fMRI)
   d. computed tomography (CT)
4. If you were suffering from neurological problems and your neurologist wanted to have a study done of your brain and its electrical functioning, which of the following techniques would be most appropriate?
   a. DTI
   b. PTI
   c. PET
   d. EEG

Teaching and Learning Resources

It is increasingly true today that as valuable as a good textbook is, it is still only one element of a comprehensive learning package. The teaching and learning package that accompanies *Psychology: An Exploration*, 5e, is the most comprehensive and integrated on the market. We have made every effort to provide high-quality instructor resources that will save you preparation time and will enhance the time you spend in the classroom.

FOSTERING CRITICAL THINKING THROUGH WRITING

Writing Solutions in Revel enable educators to integrate writing—among the best ways to foster and assess critical thinking—into the course without significantly impacting their grading burden. With more flexible grading option, instructors can create and grade their own prompts, or they can use a Pearson-created prompt, grade the first batch of assignments, and let the assisted auto-scoring functionality in Revel do the rest.

INSTRUCTOR'S RESOURCE CENTER

The following supplements can be downloaded from the Instructor's Resource Center website (**www.pearsonhighered.com/irc**) as well as accessed from the Resources tab in the Revel course:

Video PowerPoint Slides (ISBN 9780135199664**)** bring the Ciccarelli/White design into the classroom, drawing students into the lecture and providing appealing visuals and videos. The slides are built around the text's learning objectives and provide additional engagement to enhance any lecture or assignment.

Standard Lecture PowerPoint Slides (ISBN 9780135199657**)** These accessible PowerPoint slides provide an active format for presenting concepts from each chapter and feature relevant figures and tables from the text.

Art PowerPoint Slides (ISBN 9780135199671**)** These slides contain only the photos, figures, and line art from the text.

Instructor's Resource Manual (ISBN 9780135199787) offers learning objectives, chapter rapid reviews, detailed chapter lecture outlines, lecture launchers, activities, assignments, handouts, and a per-chapter list of Revel videos, Thinking Critically Journal Prompts, Shared Writing Prompts, and Writing Space Prompts found in the Revel product.

Test Bank (ISBN 9780135199619**)** contains more than 5,000 questions and each chapter of the test bank includes a Total Assessment Guide (TAG), an easy-to-reference grid that organizes all test questions by Learning Objective and Skill Level. Each question is mapped to the textbook by learning objective and the major text section, or topic. Questions are additionally assigned with the appropriate skill level and difficulty level and the American Psychological Association (APA) learning objective.

Pearson MyTest (ISBN 9780135199718**)** The Test Bank is also available through Pearson MyTest, a powerful assessment generation program that helps instructors easily create and print quizzes and exams. Questions and tests can be authored online, allowing instructors ultimate flexibility. For more information, go to **www.PearsonMyTest.com**.

Learning Outcomes and Assessment

Learning Objectives

Based on APA recommendations, each chapter is structured around detailed learning objectives. All of the instructor and student resources are also organized around these objectives, making the text and resources a fully integrated system of study. The flexibility of these resources allows instructors to choose which learning objectives are important in their courses as well as on which content they want their students to focus.

Learning Objectives

5.1 Define the term learning.

5.2 Identify the key elements of classical conditioning as demonstrated in Pavlov's classic experiment.

5.3 Apply classical conditioning to examples of phobias and taste aversions.

5.4 Identify the contributions of Thorndike and Skinner to the concept of operant conditioning.

5.5 Differentiate between primary and secondary reinforcers and positive and negative reinforcement.

5.6 Identify the four schedules of reinforcement.

5.7 Identify the effects that punishment has on behavior.

5.8 Explain the concepts of discriminant stimuli, extinction, generalization, and spontaneous recovery as they relate to operant conditioning.

5.9 Describe how operant conditioning is used to change nonhuman animal and human behavior.

5.10 Explain the concept of latent learning.

5.11 Explain how Köhler's studies demonstrated that nonhuman animals can learn by insight.

5.12 Summarize Seligman's studies on learned helplessness.

5.13 Describe the process of observational learning.

5.14 List the four elements of observational learning.

5.15 Describe an example of conditioning in the real world.

Goals and Standards

In recent years, many psychology departments have been focusing on core competencies and how methods of assessment can better enhance students' learning. In response, the American Psychological Association (APA) established recommended goals for the undergraduate psychology major beginning in 2006 with a set of 10 goals, and revised again in 2013 with a new set of 5 goals. Specific learning outcomes were established for each of the goals, and suggestions were made on how best to tie assessment practices to these goals. In writing this title, we have used the APA goals and assessment recommendations as guidelines for structuring content and integrating the teaching and homework materials. For details on the APA learning goals, assessment guidelines, and other resources, see APA's Office of Precollege and Undergraduate Education, **apa.org/ed/precollege/undergrad/index**.

Given the significant role and prevalence of the Introductory Psychology course in many college and university curriculums, APA's Board of Educational Affairs (BEA) formed an Introductory Psychology Initiative (IPI) steering committee. The APA-IPI has worked to identify a set of learning outcomes specific to the Introductory Psychology course. At the time this edition is being finished, those outcomes have not yet been finalized. However, in examining early drafts, the proposed major areas and outcomes are addressed in multiple ways throughout this text. The proposed *APA-IPI Learning Outcomes for Introductory Psychology* currently encompass *Psychology Content*—identifying basic concepts and research findings, *Scientific Thinking*—solving problems using psychology methods, and *Key Themes*—providing examples of psychology's integrative themes. You can learn more about the APA-IPI at **apa.org/ed/precollege/undergrad/introductory-psychology-initiative**.

APA Correlation for Ciccarelli/White *Psychology: An Exploration*, 5e

APA GUIDELINES FOR THE UNDERGRADUATE PSYCHOLOGY MAJOR: VERSION 2.0

Goal 1: Knowledge Base in Psychology

Intro: PIA.1–PIA.6

Ch 1: 1.1–1.5, 1.13; Applying Psychology to Everyday Life: Critical Thinking and Social Media

Ch 2: 2.1–2.15; Applying Psychology to Everyday Life: Minimizing the Impact of Adult Attention-Deficit/Hyperactivity Disorder

Ch 3: 3.1–3.16; Applying Psychology to Everyday Life: Using Your Senses to Be More Mindful

Ch 4: 4.1–4.10, 4.15; Applying Psychology to Everyday Life: Can You Really Multitask?

Ch 5: 5.1–5.15; Applying Psychology to Everyday Life: Conditioning in the Real World

Ch 6: 6.1–6.14; Applying Psychology to Everyday Life: Using Elaborative Rehearsal to Make Memories More Memorable

Ch 7: 7.1–7.15; Applying Psychology to Everyday Life: Recognizing Cognitive Biases

Ch 8: 8.2–8.18; Applying Psychology to Everyday Life: Not an Adolescent, But Not Yet an Adult?

Ch 9: 9.1–9.11; Applying Psychology to Everyday Life: What Is Holding You Back from Keeping Track?

Ch 10: 10.1–10.16; Applying Psychology to Everyday Life: Looking at Groups

Ch 11: 11.1–11.18; Applying Psychology to Everyday Life: Informally Assessing Personality

Ch 12: 12.1–12.17; Applying Psychology to Everyday Life: Taking the Worry Out of Exams

Ch 13: 13.1–13.14; Applying Psychology to Everyday Life: Reducing the Stigma of Seeking Help

Appendix A: A.1–A.6

Appendix B: B.1–B.8

Goal 2: Scientific Inquiry and Critical Thinking

Ch 1: 1.6–1.12; APA Goal 2: Scientific Inquiry and Critical Thinking: A Sample Experiment

Ch 2: 2.4, 2.5; APA Goal 2: Scientific Inquiry and Critical Thinking: Phineas Gage and Neuroplasticity; Classic Studies in Psychology: Through the Looking Glass—Spatial Neglect

Ch 3: APA Goal 2: Scientific Inquiry and Critical Thinking: Perceptual Influences on Metacognition

Ch 4: 4.11–4.14; APA Goal 2: Scientific Inquiry and Critical Thinking: Weight Gain and Sleep

Ch 5: 5.2, 5.5, 5.8, 5.10, 5.11, 5.15; Classic Studies in Psychology: Biological Constraints on Operant Conditioning; APA Goal 2: Scientific Inquiry and Critical Thinking: Spare the Rod, Spoil the Child?

Ch 6: Classic Studies in Psychology: Sperling's Iconic Memory Test; Classic Studies in Psychology: Elizabeth Loftus and Eyewitnesses; APA Goal 2: Scientific Inquiry and Critical Thinking: Effects of Supplements on Memory

Ch 7: 7.7, 7.8; APA Goal 2: Scientific Inquiry and Critical Thinking: A Cognitive Advantage for Bilingual Individuals?; Classic Studies in Psychology: Terman's "Termites"

Ch 8: 8.1, 8.7, 8.10, 8.17; Classic Studies in Psychology: Harlow and Contact Comfort; APA Goal 2: Scientific Inquiry and Critical Thinking: The Facts About Immunizations

Ch 9: Classic Studies in Psychology: The Angry/Happy Man; APA Goal 2: Scientific Inquiry and Critical Thinking: Cultural Differences in the Use of Praise as a Motivator

Ch 10: 10.10, 10.11; Classic Studies in Psychology: Brown Eyes, Blue Eyes; APA Goal 2: Scientific Inquiry and Critical Thinking: Cults and the Failure of Critical Thinking

Ch 11: 11.16, 11.17; Classic Studies in Psychology: Geert Hofstede's Four Dimensions of Cultural Personality; APA Goal 2: Scientific Inquiry and Critical Thinking: Personality, Family, and Culture

Ch 12: 12.1, 12.3; APA Goal 2: Scientific Inquiry and Critical Thinking: Learning More: Psychological Disorders

Ch 13: APA Goal 2: Scientific Inquiry and Critical Thinking: Does It Work? Psychological Treatment

Appendix A: A.1–A.6

Goal 3: Ethical and Social Responsibility

Intro: PIA.8; Shared Writing: Psychology in Action

Ch 1: 1.11, 1.12; Shared Writing: The Science of Psychology

Ch 2: Shared Writing: The Biological Perspective

Ch 3: Shared Writing: Sensation and Perception

Ch 4: Shared Writing: Consciousness

Ch 5: 5.3, 5.7, 5.9; Shared Writing: Learning

Ch 6: Shared Writing: Memory

Ch 7: 7.6, 7.9, 7.10; Classic Studies in Psychology: Terman's "Termites"; Shared Writing: Cognition

Ch 8: Shared Writing: Development Across the Life Span

Ch 9: 9.6–9.9; Classic Studies in Psychology: The Angry/Happy Man; Shared Writing: Motivation, Stress, and Emotion

Ch 10: 10.10, 10.11; Scientific Inquiry and Critical Thinking: Cults and the Failure of Critical Thinking; Classic Studies in Psychology: Brown Eyes, Blue Eyes; Shared Writing: Social Psychology

Ch 11: Shared Writing: Theories of Personality

Ch 12: Shared Writing: Psychological Disorders

Ch 13: Shared Writing: Psychological Therapies

Goal 4: Communication

Intro: PIA.7

Ch 7: 7.11, 7.13

Ch 10: 10.1–10.4, 10.8–10.9, 10.16; Applying Psychology to Everyday Life: Looking at Groups

Goal 5: Professional Development

Intro: PIA.1–PIA.6

Ch 1: 1.4

Ch 7: Applying Psychology to Everyday Life: Recognizing Cognitive Biases

Ch 9: 9.1, 9.4, 9.8, 9.13; Applying Psychology to Everyday Life: What Is Holding You Back from Keeping Track?

Ch 10: 10.1–10.4, 10.8–10.9

Appendix B: B.1–B.8; Shared Writing: Careers

APA Goals are reinforced throughout the program with Learning Tools: Thinking Critically Journal Prompts, Shared Writing, Essays to Assign, Experiment Simulations, Video Quizzes, and the instructor's teaching and assessment package.

Source: Based on APA Guidelines for the Undergraduate Psychology Major, Version 2.0. *American Psychological Association* (2013). http://www.apa.org/ed/precollege/undergrad/index.aspx

About the Authors

SAUNDRA K. CICCARELLI is a professor emeritus of psychology at Gulf Coast State College in Panama City, Florida. She received her Ph.D. in developmental psychology from George Peabody College of Vanderbilt University, Nashville, Tennessee. She is a member of the Association for Psychological Science. Originally interested in a career as a researcher in the development of language and intelligence in developmentally delayed children and adolescents, Dr. Ciccarelli had publications in the *American Journal of Mental Deficiency* while still at Peabody. However, she discovered a love of teaching early on in her career. This led her to the position at Gulf Coast State College, where she taught Introductory Psychology and Human Development for more than 30 years. Her students loved her enthusiasm for the field of psychology and the many anecdotes and examples she used to bring psychology to life for them. Before writing this title, Dr. Ciccarelli authored numerous ancillary materials for several introductory psychology and human development texts.

J. NOLAND WHITE is a professor of psychology at Georgia College & State University (Georgia College), Georgia's public liberal arts university, located in Milledgeville. He received his A.A. in psychology from Macon State College and both his B.S. and M.S. in psychology from Georgia College. After receiving his Ph.D. in counseling psychology from the University of Tennessee, he joined the faculty of Georgia College in 2001. He teaches Introductory Psychology, Psychology of Adjustment, Behavioral Neuroscience, Advanced Behavioral Neuroscience, Counseling and Clinical Psychology, Senior Seminar, and a section of Advanced Research Methods focusing on psychophysiology. He has an active lab and, with his students, is investigating the psychophysiological characteristics and neuropsychological performance of adults with and without ADHD. Dr. White frequently presents at teaching conferences and has been a member of several national teaching-centered committees and task forces, including the American Psychological Association's (APA) Summit on National Assessment in Psychology (SNAP). He is active in APA's Division 2: Society for the Teaching of Psychology (STP) and will complete his second term as Director of STP's Departmental Consulting Service at the end of 2021. He is also currently serving on the Committee of Examiners for the GRE Psychology Test. In April 2008, he was a recipient of the Georgia College Excellence in Teaching Award. Dr. White is also a licensed psychologist and has worked with adolescents and adults in a variety of clinical and community settings.

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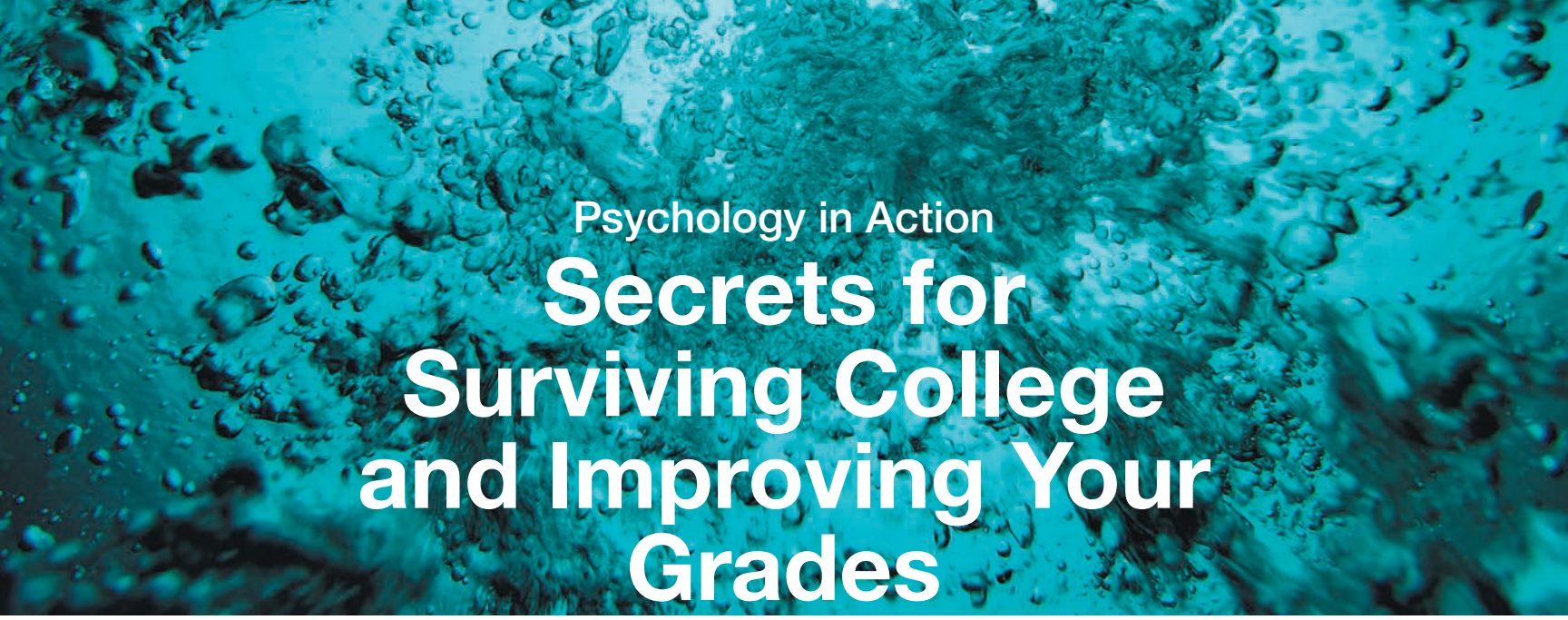


Psychology in Action

Secrets for Surviving College and Improving Your Grades

Ralf strm/EyeEm/Getty Images

In your words

Consider this: What concerns or advice might current students share with someone just starting college?

After you have thought about this question, watch the *Psychology in Action* video in **Revel** to see how others students would answer it.

Ralf strm/EyeEm/Getty Images

Why study how to study?

Many students entering college have a system of taking notes, reading the text, and reviewing for exams that may have worked well in the past; but what worked in high school may not work in college, where the expectations are higher and the workload is greater. Students must develop skills in the following areas to do their best in any course: study methods, time and task management, effective reading of course materials, active listening and note taking, studying for exams, memory strategies, and writing papers.

Another aspect of being a successful student involves being an ethical one. How can you use the materials you find for a research paper, for example, without committing *plagiarism* (claiming the words of someone else as your own)? This introduction presents various techniques aimed at maximizing your knowledge and skills in each of these important areas.

Learning Objectives

PIA.1 Identify four methods of studying.

PIA.2 Describe some strategies for time and task management.

PIA.3 Describe how to read a textbook so that you get the most out of your reading efforts.

PIA.4 Identify the best methods for taking notes and listening in class.

PIA.5 Describe how to approach studying for exams.

PIA.6 Explain how using mnemonics can help you improve your memory for facts and concepts.

PIA.7 Describe the key steps in writing papers for college.

PIA.8 Identify some of the key ethical considerations you'll face as a student.

Antonio Guillem/Shutterstock

Some students find it helpful to listen to the content in addition to reading it. This is especially true when learning a new language. This woman is listening to an audio recording from her text as she follows along and takes notes.

PIA.1 Study Skills

PIA.1 Identify four methods of studying.

I want to get better grades, but it seems that no matter how hard I study, I end up not doing as well as I'd hoped. Is there some trick to getting good grades?

Many students say their grades are not what they want them to be. They may make the effort, but they still don't achieve the grades they want. A big part of the problem is that students are rarely taught *how* to study.

We learn a lot during our lives, and using only one method of studying probably isn't going to work for everyone. Students may have preferences for a particular study method or may find it useful to use a combination of methods:

- *Verbal study methods* involve the use of words, expressed either through writing or speaking. For instance, after you read about a topic, you might put it into your own words, or you might write out longer, more detailed versions of the notes you took in class.
- *Visual study methods* involve the use of pictures or images. Students using these methods may look at or create charts, diagrams, and figures to master the content.
- *Auditory study methods* are for students who prefer to learn by hearing information. Listening to a recording of a lecture is a good example.
- *Action study methods* are for those people who use the motion of their own bodies to help them remember key information. For instance, you might construct a three-dimensional model to gain a better understanding of a topic.

Watch the video *Study Methods* in **Revel** for more information on study methods.

THINKING CRITICALLY PIA.1

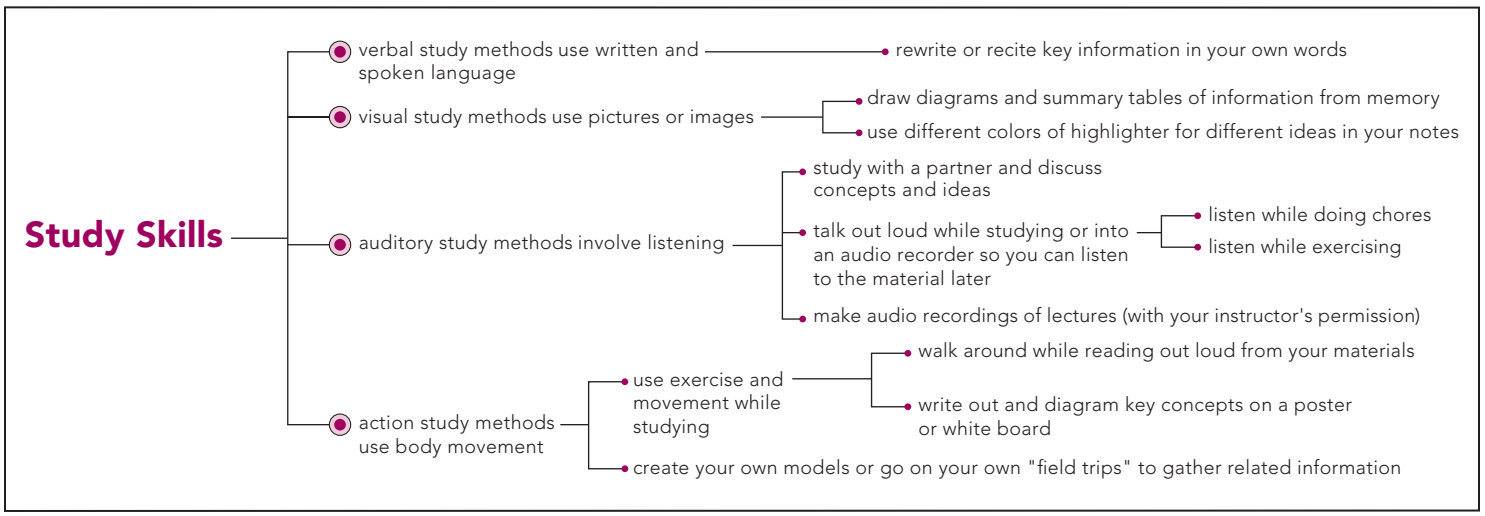
Describe some other ways in which the various study methods can be put to use.

Table PIA.1 lists some ways in which you can study. All the methods in this table are good for students who wish to improve both their understanding of a subject and their grades.

Table PIA.1 Multiple Study Methods

Verbal Methods (involve speaking or writing)	Visual Methods (involve pictures, images)	Auditory Methods (involve listening)	Action Methods (involve physical activity)
Use flash cards to identify main points or key terms, or use the flash cards in Revel.	Make flash cards with pictures or diagrams to aid recall of key concepts.	Join or form a study group or find a study partner so you can discuss concepts and ideas.	Sit near the front of the classroom to help maintain eye contact with the instructor. If online, give yourself room to walk around while studying. Take notes by making pictures or charts to help you remember key terms and ideas.
Write out or recite key information in whole sentences or phrases in your own words.	Make charts and diagrams and sum up information in tables.	Take advantage of the various videos and audio recordings in Revel.	Read out loud or use the audio feature in Revel while walking around.
When looking at diagrams, write out a description.	Use different colors of highlighter for different sections of information in text, e-text, or notes.	Make speeches about key topics you are learning.	While exercising, listen to recordings of important information, either your own or those in Revel.
Use physical or electronic "sticky" notes to remind yourself of key terms and information.	Visualize charts, diagrams, and figures.	Record class lectures (with permission). Take notes on the lecture sparingly, using the recording to fill in parts you might have missed.	Write out key concepts on a large board or poster.
Practice spelling words or repeating facts you need to remember.	Trace letters and words to remember key facts.	Read notes, text, or study materials out loud into a digital recorder, and listen to them while exercising or doing chores.	Make your own flash cards, using different colors and diagrams, and lay them out in order on a large surface.
Rewrite things from memory.	Use the interactive figures and tables available in Revel.	When learning something new, state or explain the information in your own words out loud or to a study partner.	Make a three-dimensional model.
Study with a friend, talking out the concepts.	Redraw things from memory.	Use musical rhythms as memory aids, or put information to a rhyme or a tune.	Spend extra time in the lab.
			Go to off-campus areas such as a museum or historical site to gain information.

Concept Map L.O.PIA.1



Practice Quiz How much do you remember?

*Please note, assessments in your **Revel** course are updated periodically and may no longer exactly match those in the printed textbook. See **Revel** for the most recent version.*

Pick the best answer.

1. A detective trying to solve a crime reconstructs the crime scene by using foods from his dinner table. He uses ears of corn to represent the cars, mashed potatoes to form the sides of the road, and so on. What study method best fits the method this detective seems to be using to think about the events of the crime?

a. verbal
b. visual
c. auditory
d. action

2. Denzel's friend has advised him to study with techniques like using flash cards, writing out important points in his own words and then reciting them, using sticky notes to emphasize important points, and creating descriptions of figures and images. Denzel's friend is recommending using ____ study methods.

a. auditory
b. action
c. visual
d. verbal

PIA.2 Managing Time and Tasks

PIA.2 Describe some strategies for time and task management.

One of the hardest tasks for students (and many others) is managing their time. Procrastination, the tendency to put off tasks until some later time that often does not arrive, is the enemy of time management. Here are some strategies to help you defeat procrastination (The College Board, 2011):

- Make a map of your long-term goals. If you are starting here, what are the paths you need to take to get to your ultimate goal?
- Use a calendar to keep track of class times, time devoted to studying, time for writing papers, work times, social engagements, everything! Use the calendar app on your phone, tablet, or computer—or all three.
- Before you go to bed, plan your next day, starting with when you get up. Make a list of your tasks and prioritize them for that day. Mark tasks off as you do them.
- If you have big tasks, break them down into smaller, more manageable pieces. For example, if you have to write a paper, divide the task into smaller ones, such as making an outline or writing the introductory paragraph. How do you eat an elephant? One bite at a time.
- Do small tasks, like taking a practice quiz or writing the first paragraph of a paper, in those bits of time you might otherwise dismiss: riding the bus to school or work, waiting in a doctor's office, and so on.

- Build in some play time—all work and no play pretty much ensures you will fail at keeping your schedule. Use play time as a reward for getting tasks done.
- Get plenty of sleep. Getting enough sleep is a necessary step in managing your tasks. Eating right and walking or stretching between tasks is a good idea, too.
- If your schedule falls apart, don't panic—just start again the next day. Even the best time managers have days when things don't go as planned.

Another problem that often interferes with time management is the myth that we can effectively multitask. In today's world of technological interconnectedness, people tend to believe they can do more than one task at a time. The fact, however, is that the human mind is not meant to multitask, and trying to do so not only can lead to car wrecks and other disasters but also may result in changes in how individuals process and retain information, and not for the better. One study challenged college students, who were either very experienced or not experienced at multitasking, to perform experiments that involved task switching, selective attention, and working memory (Ophir et al., 2009). The "chronic multitaskers" failed miserably at all three tasks. The results seemed to indicate that frequent multitaskers use their brains less effectively, even when focusing on a single task. Other research supports observations that chronic, or heavy media multitaskers, individuals who frequently use multiple media simultaneously, have difficulty ignoring distracting information, experience negative effects on their long-term retention of materials, have lower GPAs, and can act as a distraction to other students in the classroom (Alghamdi et al., 2020; Cain & Mitroff, 2011; Jamet et al., 2020; Junco & Cotton, 2012; Murphy, 2019; Sana et al., 2013; Uncapher et al., 2016, 2017). See Learning Objectives 6.1, 6.4, and 6.5.

Researchers also have found that people who think they are good at multitasking are actually not (Sanbonmatsu et al., 2013), while other studies strongly suggest that even those familiar with using multiple media, such as video gamers, are just as unsuccessful as those who are not as familiar when multitasking in other areas such as texting or talking while driving (Donohue et al., 2012; Stavrinos et al., 2019). In short, it's better to focus on one task and only one task for a short period of time before moving on to another than to try to do two things at once. Watch the video *Managing Time* in **Revel** for some good ideas in managing tasks and time.

Besides being aware of how to manage your time, what else can you do to make sure you complete the tasks you need to finish or address the commitments you've made? Many students find it difficult to keep track of all of their assignments and projects and to remember everything they are supposed to do—and when to do them. Keeping on task can be especially challenging when you might not be thrilled about doing some of them in the first place. Common pitfalls such as distractions, being too busy, and being overloaded can also wreak havoc on the best of intentions (Allen et al., 2018).

The book *Getting Things Done: The Art of Stress-Free Productivity* by David Allen and his "Getting Things Done" (or GTD) methodology can provide a useful structure for a wide range of people who need help in, well, getting things done (Allen, 2001, 2008). Many students finish their first year of college with grades much lower than they expected. With a system like GTD, you may improve your chances of success during the first year, and beyond.

The GTD method consists of five stages of processing your "stuff" into actual outcomes, identifying "next actions" you can take to gain and maintain control of your tasks and commitments. The five stages of the GTD method are as follows:

1. Capture anything and everything that has your attention by writing it down or entering it into your phone, tablet, or computer, getting it out of your head and

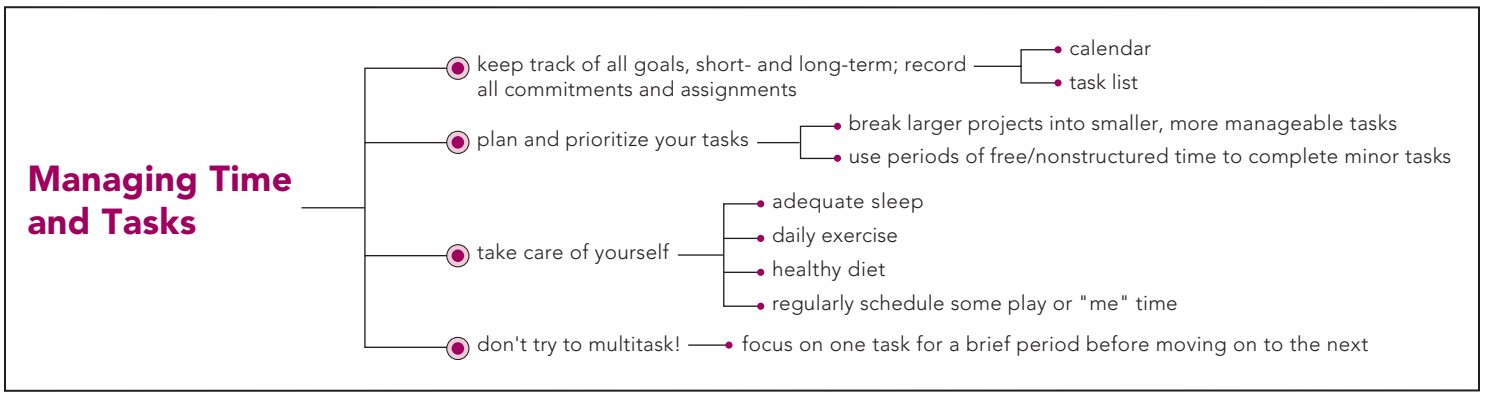
collected in one place. This place can be a digital location like an app or a paper-based spot such as a notebook.

2. Define what you can take action on and identify the next steps. For example, instead of "do my research paper," identify actionable next steps such as "pinpoint topic, collect articles, schedule meeting to discuss ideas with classmates." Use the "two-minute rule": if whatever you need to do takes less than 2 minutes, go ahead and do it.
3. Organize information and reminders into categories or contexts, based on how and when you need them. For example, if you need to send an email or text message to your group partners, you probably need to have your phone or computer to do so; "phone" or "computer" might be a context that you use.
4. Complete weekly reviews of your projects, next actions, and new items. To get things done, you need to review what you need to do.
5. Do your next actions in the appropriate context or time frame for doing so.

Adapted from David Allen's *Getting Things Done: The Art of Stress-Free Productivity* (Revised edition, 2015) and *Making It All Work* (2008), and from *Getting Things Done for Teens: Take Control of Your Life in a Distracting World* (Allen et al., 2018).

Watch the video *The GTD Method* in Revel to learn more.

Concept Map L.O.PIA.2



Practice Quiz How much do you remember?

*Please note, assessments in your **Revel** course are updated periodically and may no longer exactly match those in the printed textbook. See **Revel** for the most recent version.*

Pick the best answer.

1. Which of the following is a suggestion to help you with time management skills?

a. When you have a big project to complete, try to complete it all at once rather than breaking it down into smaller pieces so that you don't put it off until later.

b. Try to focus only on short-term goals, since looking at long-term goals can be defeating and upsetting.

c. Build in some play time, using it as a reward for getting tasks done.

d. If your schedule falls apart, make sure to panic immediately!

2. What does the research show in regard to multitasking?

a. Chronic multitaskers have developed strategies that allow them to use their brains more effectively.

b. Chronic multitasking may be related to less effective ways of processing different types of information.

c. Multitasking is effective, but only if you limit the number of tasks to 5 or fewer.

d. Video gamers are better at multitasking in all areas of life.

PIA.3 Reading the Text: Textbooks Are Not Meatloaf

PIA.3 Describe how to read a textbook so that you get the most out of your reading efforts.

No matter what the study method, students must read the textbook or other assigned materials to be successful in the course. (While that might seem obvious to some, many students think that taking notes on lectures or slide presentations is enough.) This section discusses how to read textbooks—whether in print or online—for understanding rather than just to "get through" the material.

Students make two common mistakes in regard to reading a textbook:

1. Many students don't read the textbook *before* watching or attending the lecture that covers that material. Trying to get anything out of a lecture without having read the material first is like trying to find an unfamiliar place without using GPS or any kind of directions. It's easy to get lost. This is especially true because most instructors assume that students have read the assignment. The instructors then use the lecture to discuss in detail the information students supposedly got from the reading. If the students have not done the reading, the instructor's lecture isn't going to make a lot of sense.
2. Many students try to read the textbook material the same way they would read a novel: They start at the beginning and read continuously. With a novel, it's easy to do this because the plot is usually interesting and people want to know what happens next, so they keep reading. It isn't necessary to remember every little detail—all they need to remember are the main plot points. One could say that a novel is like meatloaf—some meaty parts with lots of filler. Meatloaf can be eaten quickly, without even chewing for long. With a textbook, the material may be interesting but not in the same way that a novel is interesting. A textbook is a big, thick steak—all meat, no filler. Just as a steak has to be chewed to be enjoyed and to be useful to the body, textbook material has to be "chewed" with the mind. You have to read slowly, paying attention to every morsel of meaning.

So how do you do that? Probably one of the best-known reading methods is called SQ3R, first used by F. P. Robinson in a 1946 book *Effective Study*. The letters S-Q-R-R-R stand for: Survey, Question, Read, Recite, Recall/Review.

stylephotographs/123RF

Before reading any chapter in a text, survey the chapter by reading the outline and the section headings.

SURVEY

When you survey a text, you look at the chapter you've been assigned to read. Read the outline, learning objectives, or other opening materials. Then scan the chapter and read the headings of sections, and look at tables and figures. Quickly read through the chapter summary if one is provided.

It might sound like it takes too much time to do this, but you should just be skimming at this point—a couple of minutes is all it should take. Why do this at all? Surveying the chapter, or "previewing" it, helps you form a framework in your head around which you can organize the information in the chapter when you read it in detail. Organization is one of the main ways to improve your memory for information. See Learning Objective 6.5.

QUESTION

After previewing the chapter, read the heading for the first section. *Just* the first section! Try to think of a question based on this heading that the section should answer as you read. For example, in Chapter One there's a section titled "Pavlov, Watson, and the Dawn

of Behaviorism." You could ask yourself, "What did Pavlov and Watson do for psychology?" or "What is behaviorism?" In this text, we present a list of learning objectives for the key concepts in the chapter that you can be use with the SQ3R method. Student questions are also highlighted throughout the chapters that can serve the same purpose. Now when you read the section, you aren't *just* reading—you're reading to *find an answer*. That makes the material easier to remember later.

READ

Now read the section, looking for the answers to your questions. As you read, take notes by making an outline of the main points and terms in the section. This is another area where some students make a mistake. They assume that highlighting words and phrases is as good as writing notes. One study comparing the difference between highlighting and note taking on exam grades found that students who wrote their own notes during the reading of a text or while listening to a lecture scored significantly higher on their exam grades than students who merely highlighted the text, and later research suggests that the same is true of using just the highlighting feature of e-texts (Ben-Yehudah & Eshet-Alkalai, 2018; Boyd & Peeler, 2004). Highlighting requires no real mental effort (no "chewing," in other words), but writing the words down yourself requires you to read the words in depth and to understand them. When we study memory, you'll learn more about the value of processing information in depth. See Learning Objective 6.2.

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As you read, take notes. Write down key terms and try to summarize the main points of each paragraph and section in the chapter. These notes will be useful when you later review the chapter material.

RECITE

It may sound silly, but reciting out loud what you can remember from the section you've just read is another good way to process the information more deeply. How many times have you thought you understood something, only to find that when you tried to explain it to someone, you didn't understand it at all? Recitation forces you to put the information in your own words—just as writing it in notes does. Writing it down accesses your visual memory; saying it out loud gives you an auditory memory for the same information. If you have ever learned something well by teaching it to someone else, you already know the value of recitation. If you feel self-conscious about talking to yourself, talk into a voice recording app—it's a great way to review later.

Now repeat the Question, Read, and Recite steps for each section, taking a few minutes' break after every two or three sections. Why take a break? There's a process that has to take place in your brain when you are trying to form a permanent memory for information, and that process takes a little time. When you take a break every 10 to 20 minutes, you are giving your brain time to accomplish this process. A break will help you avoid a common problem in reading texts—finding yourself reading the same sentence over and over again because your brain is too overloaded from trying to remember what you just read.

RECALL / REVIEW

Finally, you've finished reading the chapter. If you've used the guidelines listed previously, you'll only have to read the chapter as thoroughly this one time instead of having to read it over and over throughout the semester and just before exams. Once you've read the chapter, take a few minutes to try to remember as much of what you learned while reading it as you can. A good way to do this is to take any practice quizzes available. For this text, we offer both practice quizzes within the print text and online quizzes and study materials in **Revel**. If there are no quizzes, read the chapter summary in detail, making sure that you understand everything in it. If there's anything that's confusing, go back to that section in the chapter and read again until you understand it.

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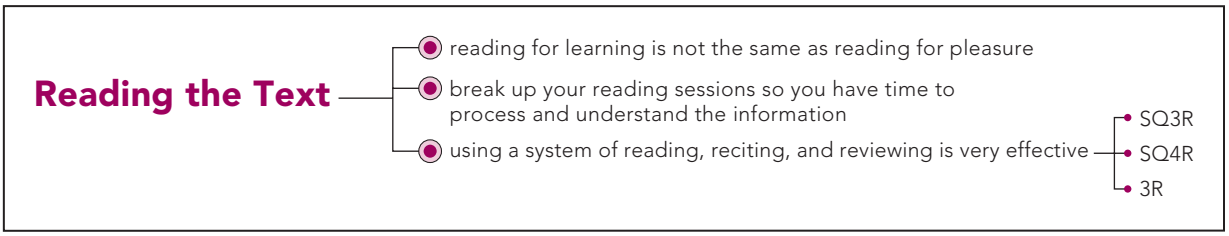
After reading a chapter section, take time to reflect on what the information means and how it might relate to real-world situations.

Some educators and researchers now add a fourth R: *Reflect*. To reflect means to try to think critically about what you have read by trying to tie the concepts into what you already know, thinking about how you can use the information in your own life, and deciding which of the topics you've covered interests you enough to look for more information about it (Richardson & Morgan, 1997). For example, if you have learned about the genetic basis for depression, you might better understand why that disorder seems to run in your best friend's family. See Learning Objective 12.5.

Reading textbooks in this way means that, when it comes time for the final exam, all you will have to do is carefully review your notes to be ready for the exam—you won't have to read the entire textbook all over again. What a time saver!

Recent research suggests that the most important steps in this method are the three Rs: Read, Recite, and Review. In two experiments with college students, researchers found that when compared with other study methods such as rereading and note-taking study strategies, the 3R strategy produced superior recall of the material (McDaniel et al., 2009). The video *Reading the Text* in **Revel** gives a good visual summary of how to get more out of your reading.

Concept Map L.O.PIA.3



Practice Quiz How much do you remember?

*Please note, assessments in your **Revel** course are updated periodically and may no longer exactly match those in the printed textbook. See **Revel** for the most recent version.*

Pick the best answer.

1. As you read the text material, you should
- **a.** use a highlighter so that you don't waste time writing notes.
- **b.** avoid taking notes while reading so that you can concentrate on the material.
- **c.** make an outline of the main points and key terms.
- **d.** read the entire chapter all at once.

2. Reagan has surveyed the material, developed questions to consider, and begun reading the material to find the answers to her questions. What should she do next?
- **a.** Recite out loud what she can remember from the section she just read.
- **b.** Reread the material a second time.
- **c.** Review the material from the chapter that she has read.
- **d.** Retain the material by committing it to memory.

PIA.4 Getting the Most Out of Lectures

PIA.4 Identify the best methods for taking notes and listening in class.

Mastering course content means you have to attend the lectures. Even if lectures are online, you have to attend or watch them. But just attending or watching is not enough; you have to process the information just as you have to process the text material. To get the most out of lectures, you need to take notes on the content, and taking notes involves more than just writing down the words the instructor says or printing out the PowerPoint slides.

One important fact you must remember: PowerPoint slides are not meant to be notes; they are merely talking points that help the instructor follow a particular sequence in lecturing. Typically, the instructor will have more to say about each point on the slide,

and that is the information students should be writing down. In Table PIA.1, the suggestion to use highlighters of different colors is not meant to replace taking notes but instead to supplement the notes you do take.

How should you take notes? As stated earlier, you should try to take notes while reading the chapter (*before* attending the lecture) by writing down the main points and the vocabulary terms (*in your own words* as much as possible). This forces you to think about what you are reading. The more you think about it, the more likely it is that the concepts will become a part of your permanent memory. See Learning Objective 6.5.

Taking notes while listening to the lecture is slightly different. First, you should have your notes from your earlier reading in front of you, and it helps to leave plenty of space between lines to add notes from the lecture.

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Here are two things that instructors love to see: attentive looks and note taking during the lecture. And for the student who learns better just listening, a small digital recorder (used with permission) can help for later review of the lecture. How should these students have prepared before coming to this class?

THINKING CRITICALLY PIA.2

What are some reasons why not relying on the instructor's PowerPoints might be beneficial in committing information to memory?

There is an art to really listening to someone, too, often called *active listening*. Active listeners make eye contact with the speaker and sit facing the speaker in a place where they can easily hear and see the speaker. Active listeners focus on what is being said rather than how the speaker looks or sounds (not always an easy task). They also ask questions when they do not understand something or need a clarification. Asking questions during a lecture is a good way to stay engaged in actively processing the speaker's message. Watch the video *Lecture Notes* in **Revel** for more information.

Ask your instructor if you can bring a digital recorder to class to record the lecture. You will then be able to listen during the class and use the recording to take notes from later. Some students may prefer to jot down diagrams, charts, and other visual aids along with their written notes. When you have good notes, taken while reading the text and from the lectures, you will also have ready-made study aids for preparing to take exams. The next section deals with the best ways to study for exams.

Concept Map L.O.PIA.4

Getting the Most Out of Lectures

- read your textbook and take notes before class so you can focus on the lecture; in the lecture only take notes on the most important ideas
- take notes and write information in your own words; create diagrams or charts
- engage in active listening; focus on what is being discussed and ask questions for clarification

Practice Quiz How much do you remember?

*Please note, assessments in your **Revel** course are updated periodically and may no longer exactly match those in the printed textbook. See **Revel** for the most recent version.*

Pick the best answer.

1. To maximize success, which method of note taking should Juan use?

a. He should take notes in his own words as much as possible.
b. He should write down every word from the PowerPoint slides used in class.
c. He should highlight the text rather than write his own notes.
d. He should make sure that his notes contain the exact words used by his instructor.

2. Skylar maintains eye contact when listening to her instructors. She also places herself so that she can see and hear the instructors. Additionally, she works to listen to the content of the lecture instead of focusing on how they look or what they are wearing. Skylar would be described as a(n)

a. aggressive listener.
b. passive listener.
c. active listener.
d. social listener.

Dinis Tolipov/123 RF

Could this be you? The early morning sunlight peeking in, the scattered materials, the remnants of multiple doses of caffeine, and the general look of fatigue and despondence are all hallmarks of that hallowed yet useless student tradition, cramming. Don't let this happen to you.

PIA.5 Studying for Exams: Cramming Is Not an Option

PIA.5 Describe how to approach studying for exams.

Inevitably, the time will come when your instructor wants evidence that you have learned the material to which you have been exposed. There is a right way to study for a test, believe it or not. Here are some things to remember when preparing for an exam, whether it's a quiz, a unit test, a midterm, or a final (Carter et al., 2005; Reynolds, 2002):

- **Timing is everything.** One of the worst things students can do is to wait until the last minute to study for an exam. (This is known as *massed* practice—not a good idea.) Remember the analogy about "chewing" the steak? (Just as a steak has to be chewed to be enjoyed and to be useful to the body, textbook material has to be "chewed" with the mind.) The same concept applies to preparing for an exam: You have to give yourself enough time. Space out your study sessions, a technique called *distributed practice*. If you've read your text material and taken good notes as discussed in the previous sections, you'll be able to save a lot of time in studying for the exam, but you still need to give yourself ample time to go over all of those notes. The time management tips given earlier in this chapter will help you prioritize your studying.
- **Find out as much as you can about the type of test and the material it will cover.** The type of test can affect the way in which you want to study the material. An objective test, for example, such as multiple-choice or true/false, is usually fairly close to the text material, so you'll want to be very familiar with the wording of concepts and definitions in the text, although this is not a suggestion to just memorize a lot of material.

These kinds of tests can include one of three types of questions:

- **Factual:** Questions that ask you to remember a specific fact from the text material. For example, "Who built the first psychological laboratory?" requires that you recognize a person's name. (The answer is "Wilhelm Wundt.")
- **Applied:** Questions that ask you to use, or apply, information presented in the text. For example, consider the following question:

  Ever since she was scared by a dog as a young child, Angelica has been afraid of all dogs. The fact that she is afraid not only of the original dog but of all types of dogs is an example of

  a. stimulus generalization.
  b. stimulus discrimination.
  c. spontaneous recovery.
  d. shaping.

  This question requires you to take a concept (in this case, generalization) and apply it to a real-world example.
- **Conceptual:** Questions that demand that you think about the ideas or concepts presented in the text and demonstrate that you understand them by answering questions like the following: "Freud is to _____ as Watson is to _____." (The answers could vary, but a good set would be "the unconscious" and "observable behavior.")

Notice that although memorizing facts might help on the first type of question, it isn't going to help on the last two. Memorization doesn't always help on factual questions either because the questions are sometimes worded quite differently from the text. It is far better to understand the information rather than be able to "spit it back" without understanding it. "Spitting it back" is memorization; understanding it is true learning. See Learning Objective 6.2. There are different levels of analysis for information you are

trying to learn, and the higher the level of analysis, the more likely you are to remember (Anderson et al., 2001; Bloom, 1956). *Factual questions* are the lowest level of analysis: knowledge. *Applied questions* are a higher level and are often preferred by instructors for that reason—it's hard to successfully apply information if you don't really understand it. *Conceptual questions* are a kind of analysis, a level higher than either of the other two. Not only do you have to understand the concept, you have to understand it well enough to compare and contrast it with other concepts. They might be harder questions to answer, but in the long run, you will get more "bang for your buck" in terms of true learning.

Subjective tests, such as essay tests and short-answer exams, require not only that you are able to recall and understand the information from the course but also that you are able to organize it in your own words. To study for a subjective test means that you need to be familiar with the material *and* that you need to be able to write it down. Make outlines of your notes. Rewrite both reading and lecture notes and make flash cards, charts, and drawings. Practice putting the flash cards in order. Talk out loud or study with someone else and discuss the possible questions that could be on an essay test. You might find that only a few of these methods work best for you, but the more ways in which you try to study, the better you will be able to retrieve the information when you need it. It may sound like a big investment of your time, but most students vastly underestimate how long it takes to study—and fail to recognize that many of these techniques are doable when first reading the textbook assignment and preparing for the classroom lecture. DON'T CRAM!

You might also look at old tests (if the instructor has made them available) to see what kinds of questions are usually asked. If this is not possible, pay close attention to the kinds of questions on the first exam so you will know how to prepare for future tests. Write your own test questions as if you were the instructor. Not only does this force you to think about the material the way it will appear on the test, it also provides a great review tool. Other helpful advice:

- **Use SQ3R.** You can use the same method you used to read the text material to go over your notes. Skim through your notes, try to think of possible test questions, recite the main ideas and definitions of terms, either out loud, into an app, or to a friend or study group. Review by summarizing sections of material or by making an outline or flash cards that you can use.
- **Use the concept maps if provided.** When surveying the chapter, look over any concept maps. **Concept maps** are a visual organization of the key concepts, terms, and definitions found in each section and are an excellent way to "see" how various concepts are linked together (Carnot et al., 2001; Novak, 1995; Wu et al., 2004). (In this text, they are provided at the end of each major section, just before the quizzes). Concept maps are also a great way to review the chapter once you have finished reading it, just to check for understanding—if the concept maps don't make sense, then you've missed something and need to go back over the relevant section. You can also make your own concept maps as you take notes on the chapter. A good resource for the background behind concept maps and how to use them is at **cmap.ihmc.us/docs/theory-of-concept-maps.php**.
- **Take advantage of all the publisher's test and review materials.** Practice helps, and most textbooks come with a study guide or a Web site. Those materials should have practice quizzes available—take them. We offer practice quizzes and tests in both the print and **Revel** versions of this text. **Revel** also offers a variety of opportunities for students to quiz themselves on the information in tables, figures, and graphs. The more types of quiz questions you try to answer, the more successful you will be at interpreting the questions on the actual exam. You'll also get a good idea of the areas that you need to review. And remember, retrieval practice, or actually testing your recall through tests or quizzes, is a great way to improve

concept map
an organized visual representation of knowledge consisting of concepts and their relationships to other concepts.

Juice Images254/Alamy Stock Photo

Many students studying for exams ignore one of the most valuable resources to which they have access: the instructor. Most instructors are happy to answer questions or schedule time for students who are having difficulty understanding the material.

Katarzyna Białasiewicz/123RF

Sleep has been shown to improve memory and performance on tests, so get a good night's sleep before every exam.

long-term learning (Cogliano et al., 2019; Karpicke, 2012; Karpicke & Blunt, 2011), even when just thinking about the information or rehearsing it in your mind (Smith et al., 2013)! Retrieval practice works better than simply restudying. The key is testing your retrieval of information, not your recognition of information.

For more information, a variety of excellent resources on effective study strategies, and tips on how to apply them for students and teachers alike, visit the *The Learning Scientists*, **learningscientists.org**, and *Retrieval Practice*, **retrievalpractice.org**. Another great resource is an article written for college students, *Optimizing Learning in College: Tips From Cognitive Psychology* (Putnam et al., 2016), available at **doi.org/10.1177/1745691616645770**

- **Make use of the resources.** If you find that you are having difficulty with certain concepts, go to or contact the instructor well in advance of the exam for help. (This is another good reason to manage your study time so that you aren't trying to do everything in a few hours the night before the exam.) There are help centers on most college and university campuses with people who can help you learn to study and organize your notes, or tutor you in the subject area.
- **Don't forget your physical needs.** Studies have shown that not getting enough sleep is bad for memory and learning processes (Stickgold et al., 2001; Vecsey et al., 2009; Whitehurst et al., 2020). Try to stop studying an hour or so before going to bed at a reasonable time to give your body time to relax and unwind. Get a full night's sleep if possible. Do not take sleep-inducing medications or drink alcohol, as these substances prevent normal stages of sleep, including the stage that seems to be the most useful for memory and learning (Davis et al., 2003). Do eat breakfast; hunger is harmful to memory and mental performance. A breakfast heavy on protein and light on carbohydrates is the best for concentration and recall (Arrasyid, 2019; Dani et al., 2005; Pollitt & Matthews, 1998).
- **Use your test time wisely.** When taking the test, don't allow yourself to get stuck on a question that you can't seem to answer. If an answer isn't clear, skip that question and move on to others. After finishing all the questions you can answer easily, go back to the ones you skipped and try again to answer them. This accomplishes several things: You get to experience success in answering the questions you can answer, which makes you feel more confident and relaxed; other questions on the test might act as memory cues for the information you need for the questions you skipped; and once you are more relaxed, you may find that the answers to those questions are now clear because anxiety is no longer blocking them. This is a way of reducing stress by dealing directly with the problem, one of many ways of dealing effectively with stress. See Learning Objective 9.5. Watch the *Exam Prep* video in **Revel** for more help.

THINKING CRITICALLY PIA.3

Many elementary and secondary school programs now offer breakfast to their students. What foods would benefit these children the most and why?

Concept Map L.O.PIA.5

Studying for Exams

- spacing out studying sessions (distributed practice) is more effective than cramming (massed practice); start early!
- knowing what kind of test questions to expect can help guide study efforts
- retrieval practice, testing your recall through tests or quizzes, works much better than simply rereading, restudying, or relying on recognition methods
- use effective time management strategies, both when studying and while taking exams
- don't forget to take care of yourself by getting enough sleep, proper nutrition, and exercise

Practice Quiz How much do you remember?

*Please note, assessments in your **Revel** course are updated periodically and may no longer exactly match those in the printed textbook. See **Revel** for the most recent version.*

Pick the best answer.

1. Which category is the following question an example of? *True or False: Psychology is the study of behavior and mental processes.*
   a. factual question
   b. conceptual question
   c. applied question
   d. critical question

2. Simply spitting information back out on a test is likely more indicative of _____, while truly understanding information is more indicative of actual.
   a. memorization, learning.
   b. learning, memorization.
   c. behavior, action.
   d. a process, gift.

3. Jaden is studying for his first psychology exam. What should he do to ensure he remembers all that he has studied?
   a. Begin studying many days in advance to give his brain time to commit the material to memory and repeatedly test his retrieval of information.
   b. Memorize as much of the information as possible.
   c. Study all night long before the exam—he can sleep after the test.
   d. Wait to study until just before the scheduled exam, so that the information will be fresh in his mind.

PIA.6 Improving Your Memory

PIA.6 Explain how using mnemonics can help you improve your memory for facts and concepts.

Everyone needs a little memory help now and then. Even memory experts use strategies to help them perform their unusual feats of remembering. These strategies may be unique to that individual, but there are many memory "tricks" that are quite simple and available for anyone to learn and use. A memory trick or strategy to help people remember is called a **mnemonic**, from the Greek word for memory. Below are examples of a few mnemonics, some of which may be familiar:

mnemonic
a strategy or trick for aiding memory.

- **Linking.** Make a list in which items to be remembered are linked in some way. If trying to remember a list of the planets in the solar system, for example, a person could string the names of the planets together like this: *Mercury* was the messenger god, who carried lots of love notes to *Venus*, the beautiful goddess who sprang from the *Earth's* sea. She was married to *Mars*, her brother, which didn't please her father *Jupiter* or his father *Saturn*, and his uncle *Uranus* complained to the sea god, *Neptune* (see **Figure PIA.1**). That sounds like a lot, but once linked in this way, the names of the planets are easy to recall in proper order.

Figure PIA.1 Linking Method

- **The peg-word method.** In this method, it is necessary to first memorize a series of "peg" words, numbered words that can be used as keys for remembering items associated with them (see **Figure PIA.2**). A typical series of peg words is:

One is a bun.	Three is a tree.	Five is a hive.	Seven is heaven.	Nine is a line.
Two is a shoe.	Four is a door.	Six is bricks.	Eight is a gate.	Ten is a hen.

Figure PIA.2 Peg Word Method

Figure PIA.3 Loci Method

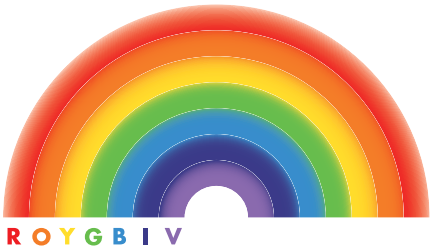


Figure PIA.4 Verbal/Rhythmic Organization Method

To use this method, each item to be remembered is associated with a peg word and made into an image. For instance, if you are trying to remember the parts of the nervous system, you might picture the brain stuck inside a bun, the spinal cord growing out of a shoe or with shoes hanging off of it, and the peripheral nerves as the branches of a tree.

- **The method of loci (LOW-kee or LOW-si).** In this method, the person pictures a very familiar room or series of rooms in a house or other building. Each point of the information is then made into an image and "placed" mentally in the room at certain locations. For example, if the first point was about military spending, the image might be a soldier standing in the doorway of the house throwing money out into the street. Each point would have its place, and all the person would need to do to retrieve the memories would be to take a "mental walk" around the house (see **Figure PIA.3**).
- **Verbal/rhythmic organization.** How do you spell relief? If, when spelling a word with an *ie* or an *ei* in it, you resort to the old rhyme "I before E except after C, or when sounded as A as in neighbor or weigh," you have made use of a verbal/rhythmic organization mnemonic. "Thirty days hath September, April, June, and November . . . " is another example of this technique. Setting information into a rhyme aids memory because it uses verbal cues, rhyming words, and the rhythm of the poem itself to aid retrieval. Sometimes this method is accomplished through making a sentence by using the first letters of each word to be remembered and making them into new words that form a sentence. The colors of the rainbow are ROY G. BIV (red, orange, yellow, green, blue, indigo, and violet; see **Figure PIA.4**). The notes on the treble clef of the musical staff are "Every Good Boy Does Fine." There are countless examples of this technique.
- **Put it to music (a version of the rhythmic method).** Some people have had success with making up little songs, using familiar tunes, to remember specific information. The best example of this? The alphabet song.

Watch the video *Improve Memory* in **Revel** for more information on how to improve your memory.

Concept Map L.O.PIA.6

Improving Your Memory

- using mnemonics, or specific memory strategies, can help you improve your memory for facts and concepts
- various strategies
  - linking
  - peg word
  - method of loci
  - verbal organization or rhyming
  - use of music

Practice Quiz How much do you remember?

*Please note, assessments in your **Revel** course are updated periodically and may no longer exactly match those in the printed textbook. See **Revel** for the most recent version.*

Pick the best answer.

1. Which of the following is NOT one of the mnemonic techniques described in this chapter?
a. method of loci
b. rote memorization
c. linking
d. peg word

2. "My very excellent mother just served us nine pizzas" is a mnemonic for remembering the order of the planets in our solar system (including poor, downgraded Pluto, of course). What kind of mnemonic is this?
a. method of loci
b. linking
c. peg-word
d. verbal/rhythmic organization

PIA.7 Writing Papers

PIA.7 Describe the key steps in writing papers for college.

Several steps are involved in writing a paper, whether it be a short paper or a long one. You should begin all of these steps well in advance of the due date for the paper (not the night before):

1. **Choose a topic.** The first step is to choose a topic for your paper. In some cases, the instructor may have a list of acceptable subjects, which makes your job easier. If that is not the case, don't be afraid to go to your instructor during office hours and talk about possible topics. Try to choose a topic that interests you—one you would like to learn more about. The most common mistake students make is to choose subject matter that is too broad. For example, the topic "emotions" could fill several books. A narrower focus might discuss a single aspect of emotions in detail. Again, your instructor can help you narrow down your topic choices.
2. **Do the research.** Find as many sources as you can that have information about your topic. Don't limit yourself to textbooks or the Internet. Go to your school library and ask the librarian to point you in the direction of some good scientific journals that would have useful information on the subject. Be careful about using the Internet to do research: Not everything on the Internet is correct or written by experts—avoid other students' papers and "encyclopedia" Web sites that can be written and updated by darn near anyone.
3. **Take notes.** While reading about your topic, take careful notes to remember key points and write down the reference that will go along with the reading. References for psychology papers are usually going to be in APA (American Psychological Association) style, which can be found at **apastyle.apa.org**.

   Taking good notes helps you avoid using the materials you find in their exact or nearly exact form, a form of cheating we discuss later in this chapter.
4. **Decide on the thesis.** The thesis is the central message of your paper—the message you want to communicate to your audience—which may be your instructor, your classmates, or both, depending on the nature of the assignment. Some papers are persuasive, which means the author is trying to convince the reader of a particular point of view, such as "Autism is not caused by immunizations." Some papers are informative, providing information about a topic to an audience that may have no prior knowledge, such as "Several forms of autism have been identified."
5. **Write an outline.** Using your notes from all your readings, create an outline of your paper—a kind of "road map" of how the paper will go. Start with an introduction (e.g., a brief definition and discussion of autism). Then decide what the body of the paper should be. If your paper is about a specific type of autism, your outline might include sections about the possible causes of that type. The last section of your outline should be some kind of conclusion. For example, you might have recommendations about how parents of a child with autism can best help that child develop as fully as possible.
6. **Write a first draft.** Write your paper using the outline and your notes as guides. If using APA style, place citations with all of your statements and assertions. Failure to use citations (which point to the particular reference work from which your information came) is also a common mistake that many students make.

   It is very important that you avoid plagiarism, as discussed in Step 3. When you use a source, you are supposed to explain the information you are using in your own words *and* cite the source, as in the following example:

   Androgynous people can make decisions based on the situation's demands rather than being masculine or feminine, which allows them to be more flexible in everyday behavior and career choices (Amillano et al., 2020).

David MG/Shutterstock

In earlier times, people had to write or type their first, second, and sometimes third drafts on paper. Computers allow you to easily edit and revise—and save paper. This also means there is no good excuse for failing to write a first draft and proofreading your work.

Your paper's reference section would have the following citation:

Amillano, A., Baniandrés, J., & Gartzia, L. (2020). Integral human development through servant leadership and psychological androgyny. In R. Aguado & A. Eizaguirre (Eds.), *Virtuous cycles in humanistic management: From the classroom to the corporation* (pp. 57–75). Springer International Publishing. https://doi.org/10.1007/978-3-030-29426-7_4

7. **Let it sit.** Take a few days (if you have been good about starting the paper on time) to let the paper sit without reading it. Then go back over and mark places that don't sound right and need more explanation, a citation, or any other changes. This is much easier to do after a few days away from the paper; the need to reword will be more obvious.
8. **Write the revised draft.** Some people do more than one draft, while others do only a first draft and a final. In any case, revise the draft carefully, making sure to check your citations—and your spelling!

Watch the video *Paper Writing* in **Revel** for a visual aid to writing papers for your courses.

Concept Map L.O.PIA.7

Writing Papers

- quality papers often require timely preparation, research, planning, and outlining; write an initial draft followed by a revised draft
- don't forget to proofread and to use your spelling and grammar checker

Practice Quiz How much do you remember?

*Please note, assessments in your **Revel** course are updated periodically and may no longer exactly match those in the printed textbook. See **Revel** for the most recent version.*

Pick the best answer.

1. Lizbeth has developed and researched a topic for her paper. What should she do next?

a. Begin writing a rough draft of her paper.
b. Begin writing as if her first draft will be her final draft.
c. Develop an outline as a road map to help her stay on track when writing her paper.
d. Let everything sit for a couple of days before beginning her rough draft.

2. Which of the following would be a more manageable topic for a term paper?

a. mental illness
b. learning
c. causes of schizophrenia
d. human development

PIA.8 Your Ethical Responsibility as a Student

PIA.8 Identify some of the key ethical considerations you'll face as a student.

plagiarism
copying someone else's ideas or exact words (or a close imitation of the words) and presenting them as your own.

Many students have committed **plagiarism**, copying someone else's ideas or exact words (or a close imitation of the words) and presenting them as your own. When you use someone else's work in your paper, you have to give them credit for that work. If you don't, you have committed plagiarism, whether you meant to do so or not, and this is theft. In taking credit for someone else's work, you hurt yourself and your reputation in a number of ways. You don't actually learn anything (because if you don't put it in your own words, you haven't really understood it), which means you aren't giving yourself

the chance to develop the skills and knowledge you will need in your future career. You also put your integrity and honesty under close scrutiny. Plagiarism shows disrespect for your peers as well—they did their own work and expected you to do the same (Bašić et al., 2019; Pennsylvania State University, 2014).

How can you avoid plagiarizing? First, remember that if you want to use the actual words from your source, you should put them inside quotation marks and then include the reference or citation, including page numbers. If you want to use the ideas but don't want to plagiarize, try taking brief notes on the source material (preferably from more than one source) and then use your notes—not the actual source—to write the ideas in your own words. See **Table PIA.2** for some helpful resources.

Another ethical responsibility you have as a student is to not cheat. Most schools have honor codes about academic integrity, and cheating can have severe consequences. Cheating can involve copying answers from someone else's test, stealing tests to get the answers before the exam, working with others on assignments that are supposed to be completed independently, or even having someone else take your test for you, among others.

Sadly, cheating in school is very common. A survey of more than 23,000 American high school students (private, public, and charter school students) conducted by the Josephson Institute Center for Youth Ethics (2012) found that more than half of the students admitted to cheating on an exam at least once, and more than a fourth said they had cheated more than once. Cheating at the college or university level also happens more often than it should, and even the most prestigious universities are not immune: In 2012, Harvard University investigated more than 125 undergraduates for plagiarism and other forms of cheating (Galante & Zeveloff, 2012).

Research suggests many students do not report classmates who are cheating unless there is a cost for remaining silent, such as a lower grade for themselves (Yachison et al., 2018). And even students who individually have negative attitudes toward cheating may see cheating with and for peers to be acceptable (Pulfrey et al., 2018). Students who are from a collectivistic culture (a culture that stresses the needs of the group over the needs of an individual, such as China or Japan) may not view working in groups to study or write papers as cheating (Zhang & Yin, 2020).

In the long run, both plagiarism and cheating hurt you far more than they provide any temporary relief. See the *Ethics* video in **Revel** for another view.

Table PIA.2 Tools and Resources for Avoiding Plagiarism

Turnitin.com Resources for Students: **turnitin.com/resources**
Grammar and Plagiarism Checker: **grammarly.com/plagiarism-checker**
Purdue Online Writing Lab: **owl.purdue.edu/owl/purdue_owl.html**
Indiana University Writing Tutorial Service: **wts.indiana.edu/writing-guides/plagiarism.html**
Accredited Schools Online: **accreditedschoolsonline.org/resources/preventing-plagiarism/**

Concept Map L.O.PIA.8

Your Ethical Responsibility as a Student

- maintain academic integrity for yourself and others; take responsibility for your learning and education; do not take shortcuts
- do your own work and make sure you understand what constitutes academic dishonesty; do not plagiarize someone else's work and do not cheat

Practice Quiz How much do you remember?

*Please note, assessments in your **Revel** course are updated periodically and may no longer exactly match those in the printed textbook. See **Revel** for the most recent version.*

Pick the best answer.

1. Michael is writing a paper for psychology. One of his sources is a text in which the following statement appears: When a deeply depressed mood comes on fairly suddenly and either seems to be too severe for the circumstances or exists without any external cause for sadness, it is called major depressive disorder. Which of the following would NOT be an acceptable way for Michael to use this material in his paper?

a. Put the entire sentence in quotation marks and cite the author and textbook information where he found the quote.
b. Summarize the ideas in the sentence in his own words.
c. Use only part of the information, but make sure he uses his own language.
d. All of the answer choices are correct.

2. In the Josephson Center survey, how many students reported cheating at least once?

a. about one fourth
b. a little more than half
c. a little more than three fourths
d. The survey found no reported incidences of cheating.

Psychology in Action Summary

Study Skills

PIA.1 Identify four methods of studying.

- Research has shown that using multiple methods to study is useful and effective.
- Four common study methods are verbal, visual, auditory, and action methods.

Managing Time and Tasks

PIA.2 Describe some strategies for time and task management.

- Making or using a calendar of prioritized tasks, breaking down tasks into smaller ones, and avoiding multitasking are some ways to improve time management.
- The stages of the Getting Things Done (GTD) method involves capturing, processing, organizing, reviewing, and doing the tasks to which you have committed.

Reading the Text: Textbooks Are Not Meatloaf

PIA.3 Describe how to read a textbook so that you get the most out of your reading efforts.

- Textbooks must be read in a different way from novels.
- The SQ3R method is an excellent way to approach reading a textbook: survey, question, read, recite, and review.

Getting the Most Out of Lectures

PIA.4 Identify the best methods for taking notes and listening in class.

- Notes should be in your own words and written or typed. Highlighting in the text or on handouts is not as helpful as actually writing words.
- When taking notes from a lecture, be prepared by having the notes from your reading in front of you; some people may benefit from recording the lecture and taking notes after.

Studying for Exams: Cramming Is Not an Option

PIA.5 Describe how to approach studying for exams.

- Don't wait until the last minute to study.
- Find out about the types of questions on the exam.
- Use concept maps, the SQ3R method, and publishers' practice-test materials.
- Engage in retrieval practice; test your recall, not just recognition, of content often.
- Get plenty of sleep and eat breakfast, preferably something with protein.

Improving Your Memory

PIA.6 Explain how using mnemonics can help you improve your memory for facts and concepts.

- Memory strategies called mnemonics include methods that use imagery, rhymes, linking, and even music to improve memory.

Writing Papers

PIA.7 Describe the key steps in writing papers for college.

- Key steps in writing a research paper are to choose a topic, read about the topic, take notes on your reading, decide on the central message of your paper, write an outline, complete a first draft, and allow the paper to sit for a few days before going back and writing the final draft.

Your Ethical Responsibility as a Student

PIA.8 Identify some of the key ethical considerations you'll face as a student.

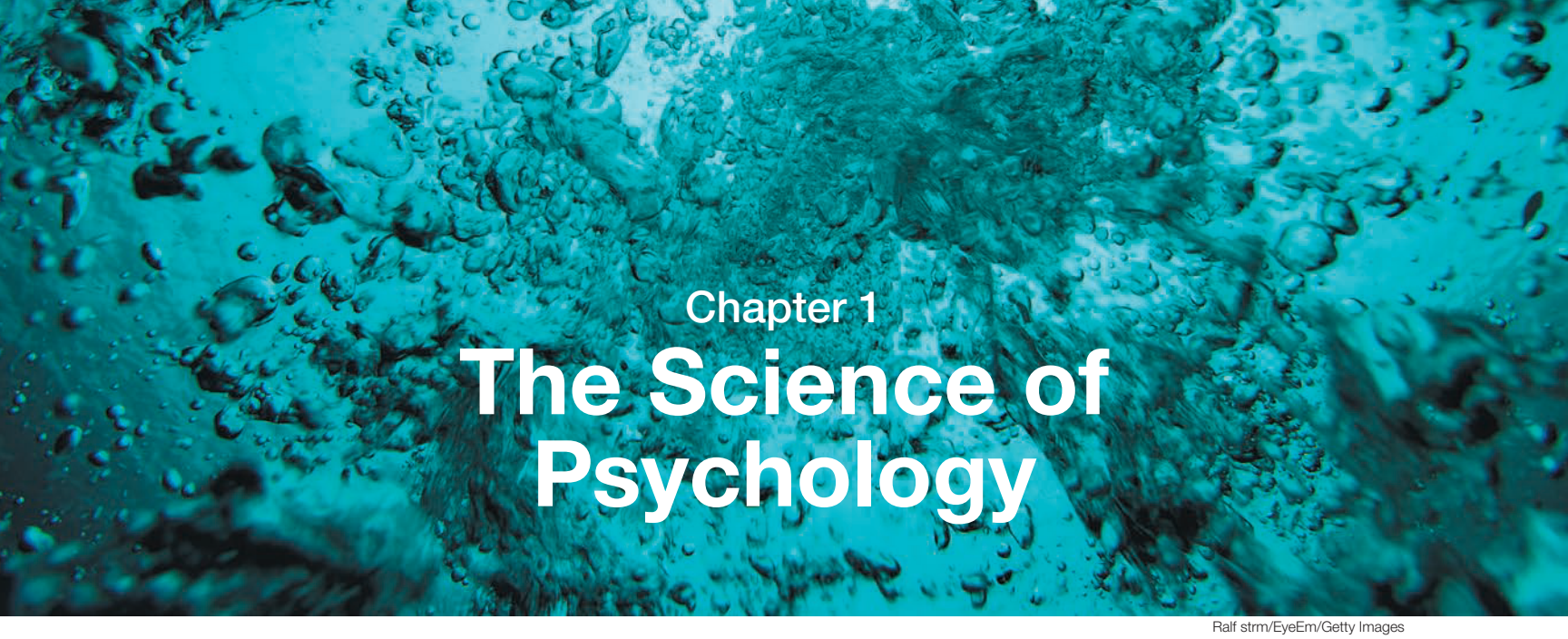
- Plagiarism and cheating in school are harmful to students and disrespectful to others.

Test Yourself

*Please note, assessments in your **Revel** course are updated periodically and may no longer exactly match those in the printed textbook. See **Revel** for the most recent version.*

Pick the best answer.

1. Angel learns best whenever he can see things laid out before him. He uses flash cards and concept maps and often tries to redraw charts and figures from memory. What learning method does Angel seem to prefer?
   a. verbal **c.** auditory
   b. visual **d.** action
2. Which of the following is NOT one of the strategies for defeating procrastination?
   a. Make a map of long-term goals.
   b. Use a calendar.
   c. Stay up all night to finish your task.
   d. Break big tasks down into smaller, more manageable pieces.
3. The first stage of David Allen's Getting Things Done (GTD) method is _____ anything and everything that has your attention.
   a. reviewing **c.** capturing
   b. doing **d.** organizing
4. What learning method gives students the ability to most effectively read and remember material?
   a. chapter summaries **c.** SQ3R
   b. content maps **d.** practice quizzes
5. Which of the following is NOT a mistake often made by students when taking notes?
   a. Taking notes while reading the chapter before going to the lecture.
   b. Highlighting material in the textbook as the instructor lectures.
   c. Making sure you have not read the chapter before the lecture so that the material will be fresher and more memorable.
   d. Using the instructor's presentation slides as your only notes.
6. What type of question requires that you understand the material so well that you are able to compare and contrast it to other material?
   a. factual **c.** conceptual
   b. applied **d.** true/false
7. Your friend tells you to eat breakfast before going to your first psychology exam. What should you tell her?
   a. No thanks. A big meal will probably put me to sleep.
   b. Sounds good. Can I have some cereal and toast?
   c. All I want is some coffee. Caffeine will help me do my best!
   d. Thank you. Just some ham and eggs and maybe a small slice of bread.
8. Kima is stuck on a question while taking her psychology exam. What should she do?
   a. Stay on that question until she can figure out what the answer is.
   b. Go on to the other questions. Maybe she can find a clue to the one she skipped.
   c. Take a guess as to the correct answer. First instincts are usually right.
   d. Review the questions she already has answered to find a clue there.
9. Which mnemonic involves first memorizing a series of numbered words?
   a. linking **c.** method of loci
   b. peg-word **d.** verbal/rhythmic organization
10. Brooklyn has finished a draft of her research paper almost 2 weeks before the date it is due. What should she do now?
    a. Let it sit for a few days before reviewing it.
    b. Complete the final draft immediately while the material is still fresh in her head.
    c. Hand in her rough draft as if it were the final draft. Most students tend to make their paper worse when they revise it.
    d. Start again, since papers finished early tend not to be well written.



Chapter 1

The Science of Psychology

Ralf strm/EyeEm/Getty Images

In your words

How would you define psychology? What do you hope to learn about psychology, yourself, and others after taking this course?

After you have answered the question, watch the video *The Science of Psychology* in **Revel** to compare your answers to those of other students.

Why study psychology?

Psychology not only helps you understand why people (and nonhuman animals) do the things they do, but it also helps you better understand yourself and your reactions to others. Psychology can help you comprehend how your brain and body are connected, how to improve your learning abilities and memory, and how to deal with the stresses of life, both ordinary and extraordinary. In studying psychology, an understanding of the methods used by psychologists is crucial because research can be flawed, and knowing

how research should be done can bring those flaws to light. And finally, psychology and its research methods promote critical thinking, which can be used to evaluate not just research but also claims of all kinds, including those of advertisers, fake news stories and social media posts, pseudoscience, and politicians.

Learning Objectives

1.1 Describe the contributions of some of the early pioneers in psychology.

1.2 Summarize the basic ideas and the important people behind the early approaches known as Gestalt, psychoanalysis, and behaviorism.

1.3 Summarize the basic ideas behind the seven modern perspectives in psychology.

1.4 Differentiate between the various types of professionals within the field of psychology.

1.5 Recall the basic criteria for critical thinking that people can use in their everyday lives.

1.6 Recall the five steps of the scientific approach.

1.7 Compare and contrast some of the methods used to describe behavior.

1.8 Explain how researchers use the correlational technique to study relationships between two or more variables.

1.9 Identify the steps involved in designing an experiment.

1.10 Recall two common sources of problems in an experiment and some ways to control for these effects.

1.11 Identify some of the common ethical guidelines for doing research with people.

1.12 Explain why psychologists sometimes use nonhuman animals in their research.

1.13 Identify strategies for critically evaluating news and other information shared on social media.

1.1–1.2 The History of Psychology

Some people believe psychology is just the study of people and what motivates their behavior. Psychologists do study people, but they also study nonhuman animals. And to better understand what motivates behavior, psychologists study not only what people and nonhuman animals do but also what happens in their bodies and in their brains as they do it. The study of psychology is important not only to psychologists: Psychology is a *hub science*, and findings from psychological research are cited and used in many other fields as diverse as cancer research, climate change, and even dealing with pandemics such as COVID-19 (Bavel et al., 2020; Gruber et al., 2019; McDonald et al., 2015; Rothman et al., 2015; van der Linden et al., 2015). Before examining the field of psychology, participate in the survey *What Do You Know About Psychology?* in **Revel** to understand more about your own preconceived notions of people and human behavior.

psychology
scientific study of behavior and mental processes.

Psychology is the scientific study of behavior and mental processes. *Behavior* includes all of our outward or overt actions and reactions, such as talking, facial expressions, and movement. The term *mental processes* refers to all the internal, covert (hidden) activity of our minds, such as thinking, feeling, and remembering. Why "scientific"? To study behavior and mental processes in both nonhuman animals and humans, researchers must observe them. Whenever a human being observes anyone or anything, there's always a possibility that the observer will see only what they *expect* to see. Psychologists don't want to let these possible biases* cause them to make faulty observations. They want to be precise and to measure as carefully as they can—so they use a systematic** approach to study psychology scientifically.

How long has psychology been around?

Psychology is a relatively new field in the realm of the sciences, only about 140 years old. See **Figure 1.1** for a timeline of the history of psychology. It's not that no one thought about why people and nonhuman animals do the things they do before then; on the contrary, there were philosophers,† medical doctors, and physiologists†† who thought about little else—particularly with regard to people. Philosophers such as Plato, Aristotle, and Descartes tried to understand or explain the human mind and its connection to the physical body (Durrant, 1993; Everson, 1995; Kenny, 1968, 1994). Medical doctors and physiologists wondered about the physical connection between the body and the brain. For example, physician and physicist Gustav Fechner is often credited with performing some of the first scientific experiments that would form a basis for experimentation in psychology with his studies of perception (Fechner, 1860), and physician Hermann von Helmholtz performed groundbreaking experiments in visual and auditory perception (von Helmholtz, 1852, 1863). See Learning Objectives 3.2, 3.6, and 3.8.

For an interactive and more extensive version of this figure, see **Revel**.

1.1 IN THE BEGINNING: WUNDT, TITCHENER, AND JAMES

1.1 Describe the contributions of some of the early pioneers in psychology.

It really all started to come together in a laboratory in Leipzig, Germany, in 1879. It was here that Wilhelm Wundt (VILL-helm Voont, 1832–1920), a physiologist, attempted to apply scientific principles to the study of the human mind. In his laboratory, students from around the world were taught to study the structure of the human mind. Wundt

*biases: personal judgments based on beliefs rather than facts.
**systematic: according to a fixed, ordered plan.
†philosophers: people who seek wisdom and knowledge through thinking and discussion.
††physiologists: scientists who study the physical workings of the body and its systems.

believed that consciousness, the state of being aware of external events, could be broken down into thoughts, experiences, emotions, and other basic elements. In order to inspect these nonphysical elements, students had to learn to think objectively about their own thoughts—after all, they could hardly read someone else's mind. Wundt called this process **objective introspection**, the process of objectively examining and measuring one's own thoughts and mental activities (Asthana, 2015; Rieber & Robinson, 2001). For example, Wundt might place an object, such as a rock, in a student's hand and have the student tell him everything that they were feeling as a result of having the rock in their hand—all the sensations stimulated by the rock. (Objectivity* was—and is—important because scientists need to remain unbiased. Observations need to be clear and precise but unaffected by the individual observer's beliefs and values.)

This was really the first attempt by anyone to bring objectivity and measurement to the concept of psychology. This attention to objectivity, together with the establishment of the first true experimental laboratory in psychology, is why Wundt is known as the father of psychology.

TITCHENER AND STRUCTURALISM IN AMERICA One of Wundt's students was Edward Titchener (1867–1927), an Englishman who eventually took Wundt's ideas to Cornell University in Ithaca, New York. Titchener expanded on Wundt's original ideas, calling his new viewpoint **structuralism** because the focus of study was the structure of the mind. He believed that every experience could be broken down into its individual emotions and sensations (Brennan, 2002). Although Titchener agreed with Wundt that consciousness could be broken down into its basic elements, Titchener also believed that objective introspection could be used on thoughts as well as on physical sensations. For example, Titchener might have asked his students to introspect about things that are blue rather than actually giving them a blue object and asking for reactions to it. Such an exercise might have led to something like the following: "What is blue? There are blue things, like the sky or a bird's feathers. Blue is cool and restful, blue is calm . . . "and so on.

In 1894, one of Titchener's students at Cornell University became famous for becoming the first woman to receive a Ph.D. in psychology (Goodman, 1980; Guthrie, 2004). Her name was Margaret F. Washburn, and she was Titchener's only graduate student for that year. In 1908, she published a book on animal behavior that was considered an important work in that era of psychology, *The Animal Mind* (Washburn, 1908).

Structuralism was a dominant force in the early days of psychology, but it eventually died out in the early 1900s, as the structuralists were busily fighting among themselves over just which key elements of experience were the most important. A competing view arose not long after Wundt's laboratory was established, shortly before structuralism came to America.

Early History

1800s

1900–1909

1910–1919

1920–1929

1930–1939

1940–1949

1950–1959

1960–1969

1970–1979

1980–1989

1990–1999

2000–2009

2010–Present

- **2013** The *DSM-5* is published. The edition places greater emphasis on validity of diagnoses and no longer uses a multiaxial format.
- **2014** John O'Keefe, May-Britt Moser, and Edvard Moser share the Nobel Prize for their discovery of cells that constitute a positioning system in the brain key to memory.
- **2015** The journal *Psychology Today* announces that it will no longer accept ads for gay conversion therapy and will delete medical practitioners who list such therapy in their professional profiles.
- **2015** Antonio E. Puente becomes the first Latin-American man to be president of the APA.
- **2016** Jessica Henderson Daniel becomes the first African-American woman to be president of the APA.
- **2016** Albert Bandura receives the National Medal of Science.

Figure 1.1 Timeline of the History of Psychology

objective introspection
the process of examining and measuring one's own thoughts and mental activities.

structuralism
early perspective in psychology associated with Wilhelm Wundt and Edward Titchener, in which the focus of study is the structure or basic elements of the mind.

*objectivity: expressing or dealing with facts or conditions as they really are without allowing the influence of personal feelings, prejudices, or interpretations.

WILLIAM JAMES AND FUNCTIONALISM Harvard University was the first school in America to offer classes in psychology in the late 1870s. These classes were taught by one of Harvard's most illustrious instructors, William James (1842–1910). James began teaching anatomy and physiology, but as his interest in psychology developed, he began teaching it almost exclusively (Brennan, 2002). His comprehensive textbook on the subject, *Principles of Psychology*, is so brilliantly written that copies are still in print and available as an e-book (James, 1890, 2017).

Unlike Wundt and Titchener, James was more interested in the importance of consciousness to everyday life than just its analysis. He believed the scientific study of consciousness itself was not yet possible. Conscious ideas are constantly flowing in an ever-changing stream, and once you start thinking about what you were just thinking about, what you were thinking about is no longer what you *were* thinking about—it's what you *are* thinking about—and . . . excuse me, I'm a little dizzy. I think you get the picture.

Instead, James focused on how the mind allows people to *function* in the real world—how people work, play, and adapt to their surroundings, a viewpoint he called **functionalism**. (He was heavily influenced by Charles Darwin's ideas about *natural selection*, in which physical traits that help an animal adapt to its environment and survive are passed on to its offspring.) If physical traits could aid in survival, why couldn't behavioral traits do the same? Nonhuman animals and people whose behavior helped them to survive would pass those traits on to their offspring, perhaps by teaching or even by some mechanism of heredity.* (Remember that this was early in the days of trying to understand how heredity worked.) For example, a behavior such as avoiding the eyes of others in an elevator can be seen as a way of protecting one's personal space—a kind of territorial protection that may have its roots in the primitive need to protect one's home and source of food and water from intruders (Manusov & Patterson, 2006) or as a way of avoiding what might seem like a challenge to another person (Brown et al., 2005; Jehn et al., 1999).

functionalism
early perspective in psychology associated with William James, in which the focus of study is how the mind allows people to adapt, live, work, and play.

One of James's early students was Mary Whiton Calkins, who completed every course and requirement for earning a Ph.D. but was denied that degree by Harvard University because she was a woman. Calkins eventually established a psychological laboratory at Wellesley College. Her work was some of the earliest research in the area of human memory and the psychology of the self. In 1905, she became the first female president of the American Psychological Association (Furumoto, 1979, 1991; Zedler, 1995). Unlike Washburn, Calkins never earned the elusive Ph.D. degree despite a successful career as a professor and researcher (Guthrie, 2004).

Women were not the only disadvantaged group to make contributions in the early days of psychology. In 1920, for example, Francis Cecil Sumner became the first Black American to earn a Ph.D. in psychology at Clark University. He eventually became the chair of the psychology department at Howard University and is assumed by many to be the father of Black American psychology (Guthrie, 2004). Kenneth and Mamie Clark worked to show the negative effects of school segregation on Black American children (Lal, 2002). In the 1940s, Hispanic psychologist George (Jorge) Sanchez conducted research in the area of intelligence testing, focusing on the cultural biases in such tests (Tevis, 1994). Other names of noted minorities include Dr. Charles Henry Thompson, the first Black American to receive a doctorate in educational psychology in 1925; Dr. Albert Sidney Beckham, senior assistant psychologist at the National Committee for Mental Hygiene at the Illinois Institute for Juvenile Research in the early 1930s; Dr. Robert Prentiss Daniel, who became president of Shaw University in North Carolina and finally the president of Virginia State College; Dr. Inez Beverly Prosser (1897–1934), who was the first Black American woman to earn a Ph.D. in educational psychology; Dr. Howard Hale Long, who became dean of administration at Wilberforce State College in Ohio; and Dr. Ruth Howard, who was the first

*heredity: the transmission of traits and characteristics from parent to offspring through the actions of genes.

Black American woman to earn a Ph.D. in psychology (not educational psychology) in 1934 from the University of Minnesota (Guthrie, 2004).

Since those early days, psychology has seen an increase in the contributions of all minorities, although the percentages are still small when compared to the population at large. The American Psychological Association's Office of Ethnic Minority Affairs features notable psychologists as part of their *Ethnicity and Health in America Series*. Their Web site provides brief biographies of ethnic minority psychologists and work or research highlights particularly related to chronic health conditions for several ethnic groups: Black American, Asian American, Hispanic–Latinx,* and Native American. For more information, visit **apa.org/pi/oema/resources/ethnicity-health/psychologists/**.

Courtesy of Clark University

Francis Cecil Sumner became the first Black American to earn a Ph.D. in psychology at Clark University.

Is functionalism still an important point of view in psychology?

In the new field of psychology, functionalism offered an alternative viewpoint to the structuralists. But like so many of psychology's early ideas, it is no longer a major perspective. Instead, one can find elements of functionalism in the modern fields of *educational psychology* (studying the application of psychological concepts to education) and *industrial/organizational psychology* (studying the application of psychological concepts to businesses, organizations, and industry), as well as other areas in psychology. See Learning Objective B.6. Functionalism also played a part in the development of one of the more modern perspectives, evolutionary psychology, discussed later in this chapter.

The Drs. Nicholas and Dorothy Cummings Center for the History of Psychology, The University of Akron.

Dr. Inez Beverly Prosser was the first Black American woman to earn a Ph.D. in educational psychology.

1.2 THREE INFLUENTIAL APPROACHES: GESTALT, PSYCHOANALYSIS, AND BEHAVIORISM

1.2 Summarize the basic ideas and the important people behind the early approaches known as Gestalt, psychoanalysis, and behaviorism.

While the structuralists and functionalists argued with each other and among themselves, other psychologists were looking at psychology in several other ways.

GESTALT PSYCHOLOGY: THE WHOLE IS GREATER THAN THE SUM OF ITS PARTS Max Wertheimer (VERT-hi-mer), like James, objected to the structuralist point of view, but for different reasons. Wertheimer believed that psychological events such as perceiving** and sensing† could not be broken down into any smaller elements and still be properly understood. For example, you can take a smartphone apart, but then you no longer have a smartphone—you have a pile of unconnected bits and pieces. Or, just as a melody is made up of individual notes that can only be understood if the notes are in the correct relationship to one another, so perception can only be understood as a whole, entire event. Hence the familiar saying, "The whole is greater than the sum of its parts." Wertheimer and others believed that people naturally seek out patterns ("wholes") in the sensory information available to them.

Wertheimer and others devoted their efforts to studying sensation and perception in this new perspective, **Gestalt psychology**. *Gestalt* (Gesh-TALT) is a German word meaning "an organized whole" or "configuration," which fits well with the focus on studying

Gestalt psychology
early perspective in psychology focusing on perception and sensation, particularly the perception of patterns and whole figures.

*Following examples set forth by Sue et al. (2019) and others, throughout this text, we primarily use the gender-inclusive term "Latinx" (pronounced La-teen-ex) to refer to individuals with ancestry from Spanish-speaking and non-Spanish-speaking South and Central American countries living in the United States. Also, as noted by Sue et al. (2019), we acknowledge individual preferences vary, as some people prefer the term "Hispanic," and some prefer more specific ethnic terms or terms associated with one's country of origin (e.g., Chicana, Costa Rican, Puerto Rican, Salvadoran). Others may prefer Latina, Latino, or Latin@ (American Psychological Association, 2020d; Sue et al., 2019). And while we have attempted to use the term Latinx primarily, some charts, tables, or text citations may use the term *Hispanic* depending on the research or data source.

**perceiving: becoming aware of something through the senses.

†sensing: seeing, hearing, feeling, tasting, or smelling something.

Figure 1.2 A Gestalt Perception

The eye tends to "fill in" the blanks here and see both of these figures as circles rather than as a series of dots or a broken line.

whole patterns rather than small pieces of them. See **Figure 1.2** for an example of Gestalt perceptual patterns. Today, Gestalt ideas are part of the study of *cognitive psychology*, a field focusing not only on perception but also on learning, memory, thought processes, and problem solving; the basic Gestalt principles of perception are still taught within this newer field (Ash, 1998; Köhler, 1925, 1992; Wertheimer, 1982). See Learning Objective 3.14. The Gestalt approach has also been influential in psychological therapy, becoming the basis for a therapeutic technique called *Gestalt therapy*. See Learning Objective 13.3.

SIGMUND FREUD'S THEORY OF PSYCHOANALYSIS It should be clear by now that psychology didn't start in one place and at one particular time. People of several different viewpoints were trying to promote their own perspective on the study of the human mind and behavior in different places all over the world. Up to now, this chapter has focused on the physiologists who became interested in psychology, with a focus on understanding consciousness but little else. The medical profession took a whole different approach to psychology.

> What about Freud? Everybody talks about him when they talk about psychology. Are his ideas still in use?

Sigmund Freud had become a noted physician in Austria while the structuralists were arguing, the functionalists were specializing, and the Gestaltists were looking at the big picture. Freud was a neurologist, a medical doctor who specializes in disorders of the nervous system; he and his colleagues had long sought a way to understand the patients who were coming to them for help.

Freud's patients suffered from nervous disorders for which he and other doctors could find no physical cause. Therefore, it was thought, the cause must be in the mind, and that is where Freud began to explore. He proposed that there is an *unconscious* (unaware) mind into which we push, or *repress*, all of our threatening urges and desires. He believed that these repressed urges, in trying to surface, created the nervous disorders in his patients (Freud et al., 1990). See Learning Objective 11.2.

Freud stressed the importance of early childhood experiences, believing that personality was formed in the first 6 years of life; if there were significant problems, those problems must have begun in the early years.

Some of his well-known followers were Alfred Adler, Carl Jung, Karen Horney, and his own daughter, Anna Freud. Anna Freud began what became known as the ego movement in psychology, which produced one of the best-known psychologists in the study of personality development, Erik Erikson. See Learning Objective 8.8.

Freud's ideas are still influential today, although in a somewhat modified form. He had a number of followers in addition to those already named, many of whom became famous by altering Freud's theory to fit their own viewpoints, but his basic ideas are still discussed and debated. See Learning Objective 11.4.

While some might think that Sigmund Freud was the first person to deal with people suffering from various mental disorders, the truth is that mental illness has a fairly long (and not very pretty) history. For more on the history of mental illness, see Learning Objective 12.1.

psychoanalysis

an insight therapy based on the theory of Freud, emphasizing the revealing of unconscious conflicts; Freud's term for both the theory of personality and the therapy based on it.

One goal of Freudian **psychoanalysis**, the theory and therapy based on Freud's ideas, is to help clients gain insight into their motives and actions. This goal is also the basis of several approaches to modern *psychotherapy*, a process in which a trained psychological professional helps a person change their thoughts, emotions, or behavior in the effort to be healthier (Prochaska & Norcross, 2018; Wampold, 2010). Still, another primary viewpoint in psychology has been more influential on the field as a whole.

PAVLOV, WATSON, AND THE DAWN OF BEHAVIORISM Ivan Pavlov, like Freud, was not a psychologist. He was a Russian physiologist who showed that a *reflex*

(an involuntary reaction) could be caused to occur in response to a formerly unrelated stimulus. While working with dogs, Pavlov observed that the salivation reflex (which is normally produced by actually having food in one's mouth) could be caused to occur in response to a totally new stimulus, in this case, the sound of a ticking metronome. At the onset of his experiment, Pavlov would turn on the metronome and give the dogs food, and they would salivate. After several repetitions, the dogs would salivate to the sound of the metronome *before* the food was presented—a learned (or "conditioned") reflexive response (Klein & Mowrer, 1989). This process was called *conditioning*. See Learning Objective 5.2.

By the early 1900s, psychologist John B. Watson had tired of the arguing among the structuralists; he challenged the functionalist viewpoint, as well as psychoanalysis, with his own "science of behavior," or **behaviorism** (Watson, 1924). Watson wanted to bring psychology back to a focus on scientific inquiry, and he felt that the only way to do that was to ignore the whole consciousness issue and focus only on *observable behavior*—something that could be directly seen and measured. He had read of Pavlov's work and thought that conditioning could form the basis of his new perspective of behaviorism.

Watson was certainly aware of Freud's work and his views on unconscious repression. Freud believed that all behavior stems from unconscious motivation, whereas Watson believed that all behavior is learned. Freud had stated that a *phobia*, an irrational fear, is really a symptom of an underlying, repressed conflict and cannot be "cured" without years of psychoanalysis to uncover and understand the repressed material.

Watson believed that phobias are learned through the process of conditioning and set out to prove it. Along with his colleague Rosalie Rayner, he took a baby, known as "Albert B." or "Little Albert," and taught him to fear a white rat by making a loud, scary noise every time the infant saw the rat until finally just seeing the rat caused the infant to cry and become fearful (Watson & Rayner, 1920). Even though "Little Albert" was not afraid of the rat at the start, the experiment worked very well—in fact, he later appeared to be afraid of other fuzzy things, including a rabbit, a dog, and a sealskin coat. See Learning Objective 5.3.

> This sounds really bizarre—what does scaring a baby have to do with the science of psychology?

Watson wanted to prove that all behavior was a result of a stimulus–response relationship such as that described by Pavlov. Because Freud and his ideas about unconscious motivation were becoming a dominant force, Watson felt the need to show the world that a much simpler explanation could be found. Although scaring a baby sounds a little cruel, he felt that the advancement of the science of behavior was worth the baby's relatively brief discomfort.

A graduate student of Watson's named Mary Cover Jones later decided to repeat Watson and Rayner's study but added training that would "cancel out" the phobic reaction of the baby to the white rat. She duplicated the "Little Albert" study with another child, "Little Peter," successfully conditioning Peter to be afraid of a white rabbit (Jones, 1924). She then began a process of *counterconditioning*, in which Peter was exposed to the white rabbit from a distance while eating a food that he really liked. The pleasure of the food outweighed the fear of the faraway rabbit. Day by day, the situation was repeated with the rabbit being brought closer each time, until Peter was no longer afraid of the rabbit. Jones went on to become one of the early pioneers of behavior therapy. Behaviorism is still a major perspective in psychology today. It has also influenced the development of other perspectives, such as *cognitive psychology*.

George Rinhart/Corbis Historical/Getty Images

American psychologist John Watson is known as the father of behaviorism. Behaviorism focuses only on observable behavior.

behaviorism
the science of behavior that focuses on observable behavior only.

G. Paul Bishop

Mary Cover Jones, one of the early pioneers of behavioral therapy, earned her master's degree under the supervision of John Watson. Her long and distinguished career also included the publication in 1952 of the first educational television course in child development (Rutherford, 2000).

Concept Map L.O. 1.1, 1.2

What Is Psychology?

- **it is the scientific study of behavior and mental processes**
- **it has methods for studying phenomena**

- A relatively new science that formally began in 1879 when Wilhelm Wundt ("father of psychology") established the first psychological laboratory in Leipzig, Germany
  - studied nonphysical structure (i.e., thought, experiences, emotions, etc.) of the human mind
  - used objective introspection to study processes that were the result of physical sensations
  - first attempt to bring objectivity and measurement to psychology

- was a student of Wundt's
- **Structuralism** founded by Edward Titchener
  - expanded Wundt's original ideas; believed every experience could be broken down into individual emotions and sensations
  - applied introspection method to thoughts as well as physical sensations
- **Functionalism** founded by William James
  - influenced by Darwin's ideas about natural selection—focused on how the mind allows people to function in the real world
  - interested in how behavioral traits could aid in survival
  - influenced development of evolutionary psychology
  - has elements in educational psychology and industrial/organizational psychology

The History of Psychology

(has roots in several disciplines, including philosophy, medicine, and physiology, and has developed through several perspectives)

- **Gestalt psychology** founded by Max Wertheimer
  - did not believe that psychological events could be broken down into smaller elements; could only be understood as a whole, entire event; has influenced field of cognitive psychology and a form of psychological therapy, Gestalt therapy
- **Psychoanalysis** ideas put forth by Sigmund Freud
  - stressed importance of early life experiences, the role of the unconscious, and development through stages
- **Behaviorism** associated with work of John B. Watson, who was greatly influenced by Ivan Pavlov's work in conditioning/learning
  - wanted to bring focus back on scientific inquiry and believed only way to do so was to focus on observable behavior and ignore "consciousness" issue; early work examined phobias

Practice Quiz How much do you remember?

*Please note, assessments in your **Revel** course are updated periodically and may no longer exactly match those in the printed textbook. See **Revel** for the most recent version.*

Pick the best answer.

1. In the definition of psychology, mental processes means
- **a.** internal, covert processes.
- **b.** unconscious processes.
- **c.** outward or overt actions and reactions.
- **d.** only human behavior.

2. Which early psychologist was the first to try to bring objectivity and measurement to the concept of psychology?
- **a.** William James
- **b.** Wilhelm Wundt
- **c.** John Watson
- **d.** Sigmund Freud

3. Which of the following early psychologists would have been most likely to agree with the statement, "The study of the mind should focus on how it functions in everyday life"?
- **a.** Sigmund Freud
- **b.** Wilhelm Wundt
- **c.** John Watson
- **d.** William James

4. Who was the first woman to complete the coursework for a doctorate at Harvard University?
- **a.** Mary Whiton Calkins
- **b.** Mary Cover Jones
- **c.** Margaret Washburn
- **d.** Ruth Howard

1.3–1.4 The Field of Psychology Today

Even in the twenty-first century, there isn't one single perspective that is used to explain all human behavior and mental processes. There are actually seven modern perspectives.

1.3 MODERN PERSPECTIVES

1.3 Summarize the basic ideas behind the seven modern perspectives in psychology.

Two of psychology's modern perspectives are updated versions of psychoanalysis and behaviorism, while the others focus on people's goals, thought processes, social and cultural factors, biology, and genetics. Watch the video *Diverse Perspectives* in **Revel** to get a quick overview of the perspectives.

PSYCHODYNAMIC PERSPECTIVE Freud's theory is still used by many professionals in therapy situations. It is far less common today than it was a few decades ago, however, and even those who use his techniques modify them for contemporary use. In the more modern **psychodynamic perspective**, the focus may still include the unconscious mind and its influence over conscious behavior and on early childhood experiences, but with less emphasis on sex and sexual motivations and more emphasis on the development of a sense of self, social and interpersonal relationships, and the discovery of other motivations behind a person's behavior. See Learning Objective 11.4. Some modern psychodynamic practitioners have even begun to recommend that the link between neurobiology (the study of the brain and nervous system) and psychodynamic concepts should be more fully explored (Glucksman, 2006, 2016).

psychodynamic perspective
modern version of psychoanalysis that is more focused on the development of a sense of self and the discovery of motivations behind a person's behavior other than sexual motivations.

BEHAVIORAL PERSPECTIVE Like modern psychodynamic perspectives, behaviorism is still also very influential. When its primary supporter, John B. Watson, moved on to greener pastures in the world of advertising, B. F. Skinner became the new leader of the field.

Skinner not only continued research in classical conditioning, but he also developed a theory called *operant conditioning* to explain how voluntary behavior is learned (Skinner, 1938). In this theory, *behavioral* responses that are followed by pleasurable consequences are strengthened, or *reinforced*. For example, a child who cries and is rewarded by getting his mother's attention will cry again in the future. Skinner's work is discussed later in more depth. See Learning Objective 5.4. In addition to the psychodynamic and behavioral perspectives, there are five newer perspectives that have developed within the last 60 years.

Nina Leen/The LIFE Picture Collection/Getty Images

Behaviorist B. F. Skinner puts a rat through its paces. What challenges might arise from applying information gained from studies with nonhuman animals to human behavior?

HUMANISTIC PERSPECTIVE Often called the "third force" in psychology, humanism was really a reaction to both psychoanalytic theory and behaviorism. If you were a psychologist in the early to mid-1900s, you were either a psychoanalyst or a behaviorist—there weren't any other major viewpoints to rival those two.

In contrast to the psychoanalytic focus on sexual development and behaviorism's focus on external forces in guiding personality development, some professionals began to develop a perspective that would allow them to focus on people's ability to direct their own lives. Humanists held the view that people have *free will*, the freedom to choose their own destiny, and strive for *self-actualization*, the achievement of one's full potential. Two of the earliest and most famous founders of this view were Abraham Maslow (1908–1970) and Carl Rogers (1902–1987). Today, humanism continues to influence the study of personality, approaches to psychotherapy, and the field of positive psychology. See Learning Objective 13.3.

COGNITIVE PERSPECTIVE Cognitive psychology, which focuses on how people think, remember, store, and use information, became a major force in the field in the 1960s. It wasn't a new idea, as the Gestalt psychologists had themselves supported the study of mental processes of learning. The development of computers (which just happened to make pretty good models of human thinking) and discoveries in biological psychology all stimulated an interest in studying the processes of thought. The **cognitive perspective**, with its focus on memory, intelligence, perception, thought processes, problem solving, language, and learning, has become a major force in psychology. See Chapter Seven.

cognitive perspective
modern perspective in psychology that focuses on memory, intelligence, perception, problem solving, and learning.

cognitive neuroscience
study of the physical changes in the brain and nervous system during thinking.

Within the cognitive perspective, the relatively new field of **cognitive neuroscience** includes the study of the physical workings of the brain and nervous system when engaged in memory, thinking, and other cognitive processes. Cognitive neuroscientists use tools for imaging the structure and activity of the living brain, such as magnetic resonance imaging (MRI), functional magnetic resonance imaging (fMRI), and positron emission tomography (PET). See Learning Objective 2.5. The continually developing field of brain imaging is important in the study of cognitive processes.

sociocultural perspective
perspective that focuses on the relationship between social behavior and culture, in which thinking and behavior is seen as the product of learning and shaping within the context of one's family, social group, and culture.

SOCIOCULTURAL PERSPECTIVE Another modern perspective in psychology is the **sociocultural perspective**, which actually combines two areas of study: *social psychology*, which is the study of groups, social roles, and rules of social actions and relationships, and *cultural psychology*, which is the study of cultural norms,* values, and expectations. These two areas are related in that they are both about the effect that people have on one another, either individually or in a larger group such as a culture (Peplau & Taylor, 1997). See Chapter Ten. Think about it: Don't you behave differently around your family members than you do around your friends? Would you act differently in another country than you do in your native land? Russian psychologist Lev Vygotsky (1978) also used sociocultural concepts in forming his sociocultural theory of children's cognitive development. See Learning Objective 8.7.

The sociocultural perspective is important because it reminds people that the way they and others behave (or even think) is influenced not only by whether they are alone, with friends, in a crowd, or part of a group but also by the social norms, fads, class differences, and ethnic identity concerns of the particular culture in which they live. Cross-cultural research also fits within this perspective. In *cross-cultural research*, the contrasts and comparisons of a behavior or issue are studied in at least two or more cultures. This type of research can help illustrate the different influences of environment (culture and training) when compared to the influence of heredity (genetics, or the influence of genes on behavior).

For example, in a classic study covered in Chapter Ten, researchers Dr. John Darley and Dr. Bibb Latané (1968) found that the presence of other people actually *lessened* the chances that a person in trouble would receive help. The phenomenon is called the "bystander effect," and it is believed to be the result of *diffusion of responsibility*, which is the tendency to feel that someone else is responsible for taking action when others are present. But would this effect appear in other cultures? There have been incidents in India that meet the criteria for the bystander effect: In 2017, a woman was raped in Vizag, India (Lim, 2017). It was during the day, and people walked by or filmed the incident and submitted the videos to the police but did nothing to stop the attack. In 2018, a 65-year-old man from Nepal fell off a train and bled to death (*Times of India*, 2018). Again, people stood by or recorded the incident while doing nothing. Nepal is a country that is culturally quite different from the United States, and individuals in Nepal are typically expected to act for the greater good of others, yet the bystander effect apparently exists even there (Hofstede, 1980; Hofstede et al., 2002). Questions about how human behavior differs or is similar in different social or cultural settings are exactly what the sociocultural perspective asks and attempts to answer, using cross-cultural research.

BIOPSYCHOLOGICAL PERSPECTIVE *Biopsychology*, or the study of the biological bases of behavior and mental processes, isn't really as new a perspective as one might think. Also known as physiological psychology, biological psychology, psychobiology, and behavioral neuroscience, biopsychology is part of the larger field of *neuroscience*: the study of the physical structure, function, and development of the nervous system. Also, the previously discussed field of cognitive neuroscience often overlaps with biopsychology.

biopsychological perspective
perspective that attributes human and nonhuman behavior to biological events occurring in the body, such as genetic influences, hormones, and the activity of the nervous system.

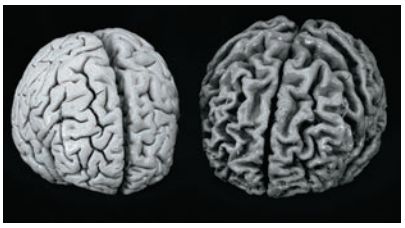
In the **biopsychological perspective**, human and nonhuman behavior is seen as a direct result of events in the body. Hormones, heredity, brain chemicals, tumors, and diseases are some of the biological causes of behavior and mental events. See Chapter Two. Some of the topics researched by biopsychologists include sleep, emotions, aggression, sexual behavior, and learning and memory—as well as disorders. While disorders may have

*norms: standards or expected behavior.

multiple causes (family issues, stress, or trauma, for example), research in biopsychology points clearly to biological factors as one of those causes.

For example, research suggests that human sexual orientation may be related to the developing baby's exposure in the womb to testosterone, especially in females (Breedlove, 2010; Grimbos et al., 2010; Hines et al., 2015), as well as the birth order of male children (Puts et al., 2006; Xu et al., 2019). The birth order study suggests that the more older brothers a male child has, the more likely he is to have a homosexual orientation (Puts et al., 2006). See Learning Objective 9.8.

The biopsychological perspective plays an even greater role in helping us understand psychological phenomena in other areas. There is clear evidence that genetics plays a role in the development of *schizophrenia*, a mental disorder involving delusions (false beliefs), hallucinations (false sensory impressions), and extremely distorted thinking, with recent research pointing to greater risk for those who inherit variants of a gene that plays a role in removing extra connections between neurons in the brain (Flint & Munafò, 2014; Schizophrenia Working Group of the Psychiatric Genomics, 2014; Sekar et al., 2016). See Learning Objectives 2.1 and 12.16. In still another example, the progressive brain changes associated with Alzheimer's disease may begin more than 20 years prior to the onset of the clinical symptoms of dementia (Bateman et al., 2012). To date, no cure exists, and treatments only temporarily assist with some cognitive and behavioral symptoms. Early identification and tracking of cognitive performance in individuals at risk for Alzheimer's disease is one vital component of researchers' efforts to identify potential interventions and treatments for this devastating disease (Amariglio et al., 2015).



Noland White

Compare these two brains. A "normal" brain is on the left while the one on the right is from someone diagnosed with Alzheimer's disease. The narrowed gyri (bulges) and widened sulci (grooves) in the brain on the right are due to the progressive brain cell loss associated with Alzheimer's disease. In the case of dementia and other progressive diseases, one focus of the biological perspective is examining how thinking and behavior change as the brain changes. Note the brains are not identical in size. This is due to slight differences between individuals, and how individual specimens respond to the preservation process.

EVOLUTIONARY PERSPECTIVE The **evolutionary perspective** focuses on the biological bases for universal mental characteristics that all humans share. It seeks to explain general mental strategies and traits, such as why we lie, how attractiveness influences mate selection, why fear of snakes is so common, or why people universally like music and dancing. This approach may also overlap with biopsychology and the sociocultural perspective.

evolutionary perspective
perspective that focuses on the biological bases of universal mental characteristics that all humans share.

In this perspective, the mind is seen as a set of information-processing machines, designed by the same process of natural selection that Darwin (1859) first theorized, allowing human beings to solve the problems faced in the early days of human evolution—the problems of the early hunters and gatherers. For example, *evolutionary psychologists* (psychologists who study the evolutionary origins of human behavior) would view the human behavior of not eating substances that have a bitter taste (such as poisonous plants) as an adaptive* behavior that evolved as early humans came into contact with such bitter plants. Those who ate the bitter plants would die, while those who spit them out survived to pass on their "I don't like this taste" genes to their offspring, who would pass on the genes to *their* offspring, and so on, until after a long period of time, there is an entire population of humans who naturally avoids bitter-tasting substances.

> That explains why people don't like bitter stuff, like the white part of an orange peel, but that's really a physical thing. How would the evolutionary perspective help us understand something psychological like relationships?

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Psychologists with an evolutionary perspective would be interested in how this couple selected each other as partners.

Relationships between men and women are one of the many areas in which evolutionary psychologists conduct research. For example, several groups of researchers have surveyed young adults about their relationships with the opposite sex, asking the participants how likely they would be to forgive either a sexual infidelity or an emotional one (Bendixen et al., 2015a, 2015b; Dunn & Ward, 2020; Shackelford et al., 2002). Evolutionary theory would predict that men would find it more difficult to forgive a woman who had sex with someone else than a woman who was only emotionally involved with someone, because the man wants

*adaptive: having the quality of adjusting to the circumstances or need; in the sense used here, a behavior that aids in survival.

to be sure that the children the woman bears are his (Geary, 2000, 2012). Why put all that effort into providing for children who could be another man's offspring? Women, on the other hand, should find it harder to forgive an emotional infidelity, as they are always sure that their children are their own, but (in evolutionary terms, mind you) they need the emotional loyalty of the men to provide for those children (Buss et al., 1992; Daly et al., 1982; Edlund et al., 2006). The results of these studies support the prediction: Men find it harder to forgive a partner's sexual straying and are more likely to break up with the woman than if the infidelity is purely emotional; for women, the opposite results were found. Other research concerning mating has found that women seem to use a man's kissing ability to determine his worthiness as a potential mate (Hughes et al., 2007; Walter, 2008; Wlodarski & Dunbar, 2013), and men seem to prefer women with more curve in their spines, possibly because it makes them more capable of bearing the weight of pregnancy (Lewis et al., 2015).

You may have realized as you read through the various perspectives that no one perspective has all the answers. Some perspectives are more scientific (e.g., behavioral and cognitive), while others are based more in thinking about human behavior (e.g., psychodynamic and humanistic). Some, like sociocultural, biopsychological, and evolutionary perspectives, are related to each other. Psychologists will often take an *eclectic* perspective—one that uses the "bits and pieces" of several perspectives that seem to best fit a particular situation.

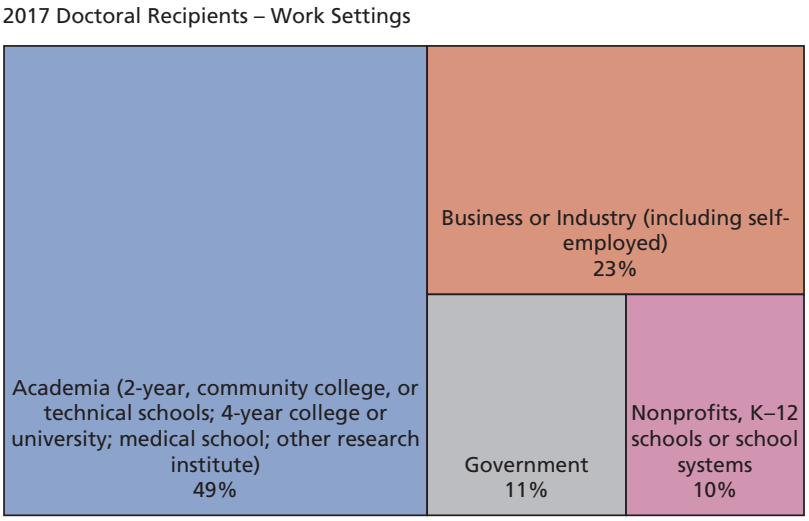

Figure 1.3 Work Settings and Subfields of Psychology

(a) This chart shows the work settings of psychologists who recently received their doctorates. There are many different work settings for psychologists. Although not obvious from the chart, many psychologists work in more than one setting. For example, a clinical psychologist may work in a hospital setting as well as teach at a university or college (Michalski et al., 2011).

(b) This chart shows the specialty areas of psychologists who recently received their doctorates.

Source: (a) National Science Foundation, National Center for Science and Engineering Statistics, Doctorate Recipients in the Social, Behavioral, and Economic Sciences (SBE): 2017, NSF 20-310, **https://www.nsf.gov/statistics/2020/nsf20310/nsf20310.pdf** (b) **https://www.apa.org/workforce/data-tools/degrees-psychology**

THINKING CRITICALLY 1.1

Do you believe that violence is a part of human nature? Is violent behavior something that can someday be removed from human behavior or, at the very least, be controlled? Think about this question from each of the perspectives discussed in this chapter.

1.4 PSYCHOLOGICAL PROFESSIONALS AND AREAS OF SPECIALIZATION

1.4 Differentiate between the various types of professionals within the field of psychology.

Psychology is a large field, and the many professionals working within it have different training, have different foci, and may have different goals from the typical psychologist.

A **psychologist** has no medical training but has a doctorate degree. Psychologists undergo intense academic training, learning about many different areas of psychology before choosing a specialization. Because the focus of their careers can vary so widely, psychologists work in many different vocational* settings. **Figure 1.3a** shows many of the types of settings in which psychologists work. It is important to realize that not all psychologists are trained to do counseling, nor are all psychologists actually counselors. Psychologists who are in the counseling specialization must be licensed to practice in their states.

*vocational: having to do with a job or career.

In contrast, a **psychiatrist** has a medical degree and is a physician who specializes in the diagnosis and treatment (including the prescription of medications) of psychological disorders. A **psychiatric social worker** is trained in the area of social work and usually possesses a master's degree in that discipline. These professionals focus more on the environmental conditions that can have an impact on mental disorders, such as poverty, overcrowding, stress, and drug abuse. There are also *licensed professional counselors* and *licensed marriage and family therapists* who may have a master's or doctoral degree in a variety of areas and provide counseling services relative to their area of training, as well as *substance abuse counselors* who may have an associate's degree or higher depending upon licensing requirements in their state. See Learning Objective B.3.

> You said not all psychologists do counseling. But I thought that was all that psychologists do—what else is there?

Although many psychologists participate in delivering therapy to people who need help, there is a nearly equal number of psychologists who do other tasks: researching, teaching, designing equipment and workplaces, and developing educational methods, for example. Also, not every psychologist is interested in the same area of human—or animal—behavior, and most psychologists work in several different areas of interest, as shown in **Figure 1.3b**.

Those psychologists who do research have two types of research to consider: basic research versus applied research. **Basic research** is research for the sake of gaining scientific knowledge. For example, a researcher might want to examine the effects of distractions on the ability to attend to a mentally demanding task. The other form of research is **applied research**, which is research aimed at answering real-world, practical problems. An applied researcher might take the information from the basic researcher's distraction study and use it to research the dangers of texting while driving. Some of the subfields in Figure 1.3b tend to do more basic research, such as experimental and cognitive psychologists, while others may focus more on applied research, such as educational, school, and industrial/organizational psychologists.

There are many other areas of specialization: Psychology can be used in fields such as health, sports performance, legal issues, business concerns, and even in the design of equipment, tools, and furniture. For a more detailed look at some of the areas in which psychological principles can be applied and a listing of careers that can benefit from a degree in psychology, watch the video *Careers in Psychology* in **Revel** and see Appendix B: Applied Psychology.

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Psychiatric social workers help many kinds and ages of people. The woman on the right might be going through a divorce, dealing with the loss of a spouse, or even recovering from drug abuse.

psychologist
a professional with an academic degree and specialized training in one or more areas of psychology.

psychiatrist
a physician who specializes in the diagnosis and treatment of psychological disorders.

psychiatric social worker
a social worker with some training in therapy methods who focuses on the environmental conditions that can have an impact on mental disorders, such as poverty, overcrowding, stress, and drug abuse.

basic research
research focused on adding information to the scientific knowledge base.

applied research
research focused on finding practical solutions to real-world problems.

Concept Map L.O. 1.3, 1.4

- **Psychodynamic** (based on Freud's theory) — focuses on the role of the unconscious mind and its influence on conscious behavior, early childhood experiences, development of sense of self, and other motivations
- **Behavioral** (based on early work of Watson and later B. F. Skinner) — focuses on how behavioral responses are learned through classical or operant conditioning
- **Humanistic** (two pioneers are Carl Rogers and Abraham Maslow) — focuses on human potential, free will, and possibility of self-actualization
- **Cognitive** (has roots in Gestalt psychology) — focuses on memory, intelligence, perception, thought processes, problem solving, language, and learning

The Field of Psychology Today: Modern Perspectives
(no one single perspective is used to explain all human behavior and processes)

The Field of Psychology Today: Modern Perspectives (*Continued*)

- **Sociocultural** — focuses on the behavior of individuals as the result of the presence (real or imagined) of other individuals, as part of groups, or as part of a larger culture
- **Biopsychological** — focuses on influences of hormones, brain structures and chemicals, disease, etc.; human and animal behavior is seen as a direct result of events in the body
- **Evolutionary** — focuses on the biological bases for universal mental characteristics, such as why we lie, how attractiveness influences mate selection, the universality of fear, and why we enjoy things like music and dance

Psychological Professionals and Areas of Specialization

(people working in the field of psychology have a variety of training experiences and different focuses)

psychologist

- has a doctorate degree (Ph.D., Psy.D., or Ed.D.) and works with either humans or animals in a variety of settings based on the area of specialization
- must be licensed to practice independently; typically does not prescribe medications but can go through specialized training to do so in a few states and some parts of the military

psychiatrist

- medical doctor who specializes in diagnosis and treatment of psychological disorders; can prescribe medication

psychiatric social worker

- has training in area of social work (MSW) and often has a professional license to practice (LCSW)

Practice Quiz How much do you remember?

*Please note, assessments in your **Revel** course are updated periodically and may no longer exactly match those in the printed textbook. See **Revel** for the most recent version.*

Pick the best answer.

1. Which of the following perspectives focuses on the biological bases of universal mental characteristics?
a. humanistic **c.** behavioral
b. evolutionary **d.** psychodynamic

2. Which perspective offers the best explanation for schizophrenia?
a. biopsychological **c.** behavioral
b. psychodynamic **d.** humanistic

3. Kamal has learned that if he cries with his mother in public, she will often get him a new toy or a piece of candy to quiet him. Which of the following perspectives explains Kamal's behavior?
a. behavioral **c.** cognitive
b. psychodynamic **d.** biopsychological

4. Which perspective would a researcher be taking if she were studying a client's early childhood experiences and his resulting development of self?
a. evolutionary **c.** behavioral
b. cognitive **d.** psychodynamic

5. Which of the following professionals in psychology has a doctoral degree, but not in medicine?
a. psychiatric nurse **c.** psychologist
b. psychiatrist **d.** psychiatric social worker

6. If Dr. LeMay is like most psychologists, where does she probably work?
a. university/college **c.** government/VA medical center
b. independent practice **d.** business/nonprofit

1.5–1.10 Scientific Research

Have you ever played the "airport game"? You sit at the airport (bus terminal, mall, or any other place where people come and go) and try to guess what people do for a living based only on their appearance. Although it's a fun game, the guesses are rarely correct. People's guesses