

Psychology

Sixth Edition

Saundra K. Ciccarelli
Gulf Coast State College

J. Noland White
Georgia College & State University



Portfolio Manager: TBD
Content Producer: Lisa Mafrici
Portfolio Manager Assistant: Caroline Fassett
Content Developer: Carolyn Schweitzer
Senior Executive Product Marketing
Manager: Christopher Brown
Senior Field Marketing Manager: Debi Henion
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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.

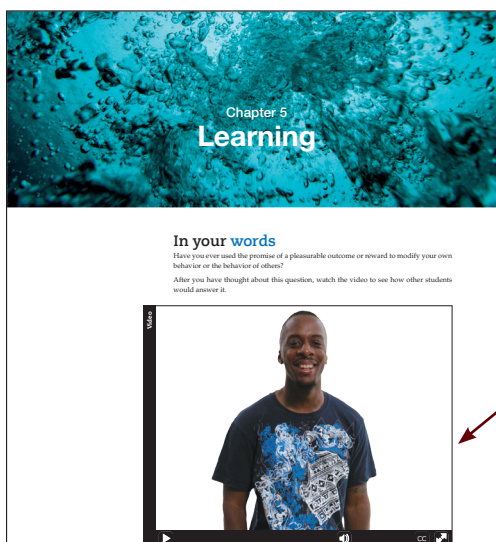
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Content Highlights

Our goal is to awaken students' curiosity and energize their desire to learn by having them read and engage with the material. The sixth 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. A new Revel-only appendix examines the research findings and methods of industrial-organizational psychologists. It also provides resources for learning more about a career in the I-O field with a focus on APA Goal 5: Professional Development. 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

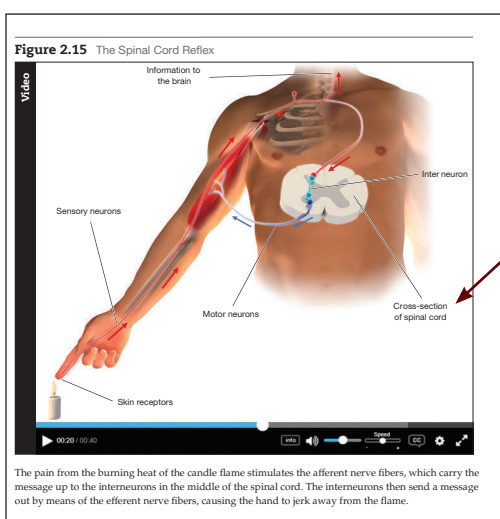


Chapter-Opening Student Voice Videos

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 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.

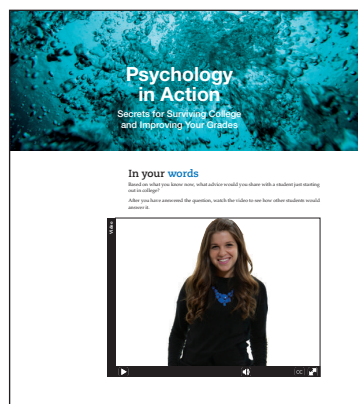


Biological Artwork and Animations

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.

Emphasis on APA Learning Goals

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



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

Perceptual Influences on Metacognition

Addresses APA Learning Objective 2.3: Engage in innovative and integrative thinking and problem-solving.

As you can see, what we perceive as being real does not always match the actual visual stimulus we are presented with. Perceptual information can also influence how we think about a given object. For example, many of us assume things that are larger weigh more than things that are smaller. The color of an object can also have an influence (De Camp, 1917). Darker objects are often appraised to be heavier than comparable objects that are lighter in color (Walker et al., 2010). Both of these are examples of stimulus influences on perceptual expectations. But what about stimulus influences on expectations for a cognitive task, like assessing how well we will be able to remember something?

Metacognition is thinking about thinking. It includes being aware of our own thought processes, such as evaluating how well we actually understand something or how well we will remember something. For example, the font size of a given word appears to have an effect. In one study, words that were printed in a larger font were rated as being more memorable than words appearing in a smaller font (Rhodes & Castel, 2008). In other words, when evaluated as part of a sequential list, Psychology might be rated as being more memorable than macroeconomics. At least it was for one of your authors during college. Despite the initial ratings on memorability, when tested later, word font size did not yield significant effects on recall (Rhodes & Castel, 2008).

Research also suggests that students often report using study strategies, such as focusing primarily on bold or italicized terms in a textbook (Gurung, 2003, 2004), or over-reliance on strategies such as highlighting. These are methods that have less of an overall positive impact on retention of material, especially when compared to more robust study and memory strategies. See [PIA.6](#) and [Learning Objectives 6.5, 6.6](#).

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.

Critical Thinking Journal Prompts

Journal Prompts 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.

THINKING CRITICALLY 5.1

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

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 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, allowing students a more direct way to access and engage with the material.

Figure 5.11 Bandura's Bobo Doll Experiment

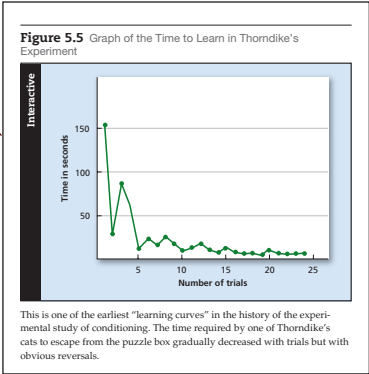
Video

Bandura's Bobo Doll: Observational Learning

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.



Survey Do You Fly or Fight?

Interactive

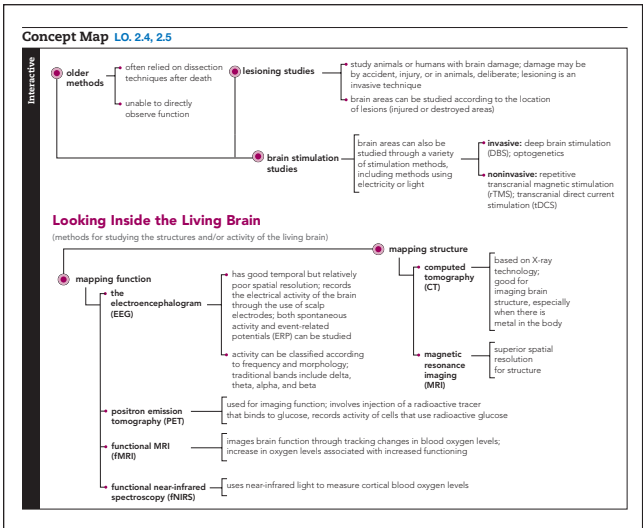
This survey asks you about your experiences with and reactions towards stressful events, particularly those that activate your Autonomic Nervous System (ANS). Click Next to begin the survey.

Right or fight? is a catchphrase used to describe the way we react to stressful events, particularly fear. Some researchers think there are actually four "right or fight" moments you experience. Thinking of the right or fight moments you experienced, how often do you experience each of these stages? (circle the number)

- ☐ Never
- ☐ Sometimes
- ☐ Often
- ☐ Prefer not to state

Previous Next

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



Reinforce connections across topics with **Interactive Concept Maps**.
Take **Practice Quizzes** as you read.

Practice Quiz How much do you remember?

Pick the best answer.

- 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 (ESS)
d. deep brain lesioning
- 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
- Dr. Roll 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)
- 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

THINKING CRITICALLY 2.2

Some people think that taking human growth hormone (HGH) supplements will help reverse the effects of aging. If this were true, what would you expect to see in the news media or medical journals? How would you expect HGH supplements to be marketed as a result?

Writing Prompts allow students to write about the chapter content and receive auto-feedback.

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*, 6e, 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

Essays 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. Powered by Pearson’s Intelligent Essay Assessor (IEA), this powerful tool uses scores assigned by human raters to several hundred representative student essays, all written in response to a particular essay prompt or question. By using computational modeling, IEA mimics the way in which human readers score. In study after study comparing the performance of IEA to that of skilled human graders, the quality of IEA’s assessment equals or surpasses that of humans.

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:

Interactive PowerPoint Slides (ISBN 9780135182574) bring the Ciccarella/White design into the classroom, drawing students into the lecture and providing appealing interactive activities, visuals, and videos. The slides are built around the text’s learning objectives and offer direct links to interactive exercises, simulations, and activities.

Standard Lecture PowerPoint Slides (ISBN 9780135182604) 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 9780135182703) These slides contain only the photos, figures, and line art from the textbook.

Instructor’s Resource Manual (ISBN 9780135182635) offers learning objectives, chapter rapid reviews, detailed chapter lecture outlines, lecture launchers, activities, assignments, handouts, and a per-chapter list of Revel videos, Journal Prompts, Shared Writing Prompts, and Writing Space Prompts found in the Revel product.

Test Bank (ISBN 9780135182642) 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 9780135182628) 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.

Student Print Reference Edition Within Revel Students have the option to purchase a Print Reference Edition, which is a convenient, three-hole punched, loose-leaf text. This print edition is designed to be a helpful supplement for students; it contains the entire narrative, figures, images, and photographs. However, to experience all of the interactive and assessment components of the program, students must access the Revel program.

Revel Combo Code (ISBN 9780135583630): If you need to purchase print materials and Revel Access from your campus bookstore, the Revel Combo Code provides the Revel access code plus the loose-leaf print reference (delivered by mail).

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 <i>learning</i> .	5.8	Explain the concepts of discriminant stimuli, extinction, generalization, and spontaneous recovery as they relate to operant conditioning.
5.2	Identify the key elements of classical conditioning as demonstrated in Pavlov’s classic experiment.	5.9	Describe how operant conditioning is used to change animal and human behavior.
5.3	Apply classical conditioning to examples of phobias, taste aversions, and drug dependency.	5.10	Explain the concept of latent learning.
5.4	Identify the contributions of Thorndike and Skinner to the concept of operant conditioning.	5.11	Explain how Köhler’s studies demonstrated that animals can learn by insight.
5.5	Differentiate between primary and secondary reinforcers and positive and negative reinforcement.	5.12	Summarize Seligman’s studies on learned helplessness.
5.6	Identify the four schedules of reinforcement.	5.13	Describe the process of observational learning.
5.7	Identify the effect that punishment has on behavior.	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, <https://www.apa.org/ed/precollege/undergrad/index>.

APA Correlation for Ciccarelli/White *Psychology*, 6e

APA Guidelines for the Undergraduate Psychology Major: Version 2.0

APA LEARNING OUTCOMES AND OBJECTIVES

TEXT LEARNING OBJECTIVES AND FEATURES

Goal 1: Knowledge Base in Psychology

Demonstrate fundamental knowledge and comprehension of major concepts, theoretical perspectives, historical trends, and empirical findings to discuss how psychological principles apply to behavioral problems.

- 1.1** Describe key concepts, principles, and overarching themes in psychology.

1.2 Develop a working knowledge of the content domains of psychology

1.3 Describe applications that employ discipline-based problem solving

Intro: PIA.1–PIA.6

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

Ch 2: 2.1–2.14, and Applying Psychology to Everyday Life: Minimizing the Impact of Adult Attention-Deficit/Hyperactivity Disorder

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

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

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

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

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

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

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

Ch 10: 10.1–10.10 and Applying Psychology to Everyday Life: Avoiding Myths About Sexuality and Sexual Behavior

Ch 11: 11.1–11.14 and Applying Psychology to Everyday Life: Coping with Stress in College

Ch 12: 12.1–12.16 and Applying Psychology to Everyday Life: Looking at Groups

Ch 13: 13.1–13.18 and Applying Psychology to Everyday Life: Informally Assessing Personality

Ch 14: 14.1–14.17 and Applying Psychology to Everyday Life: Taking the Worry Out of Exams

Ch 15: 15.1–15.14 and Applying Psychology to Everyday Life: Reducing the Stigma of Seeking Help

Appendix A: A.1–A.6

Appendix B: B.1–B.8

Appendix C: C.1–C.10

Goal 2: Scientific Inquiry and Critical Thinking

Understand scientific reasoning and problem solving, including effective research methods.

- 2.1** Use scientific reasoning to interpret behavior

2.2 Demonstrate psychology information literacy

2.3 Engage in innovative and integrative thinking and problem-solving

2.4 Interpret, design and conduct basic psychological research

2.5 Incorporate sociocultural factors in scientific inquiry

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, 5.6, 5.7, 5.11, 5.14, and 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, 8.17; Classic Studies in Psychology: The Visual Cliff; 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: 10.7; Classic Studies in Psychology: Masters and Johnson’s Observational Study of the Human Sexual Response; APA Goal 2: Scientific Inquiry and Critical Thinking: Sexting and Sex in Adolescents

Ch 11: APA Goal 2: Scientific Inquiry and Critical Thinking: Homeopathy: An Illusion of Healing

Ch 12: 12.10, 12.11; Classic Studies in Psychology: Brown Eyes, Blue Eyes; APA Goal 2: Scientific Inquiry and Critical Thinking: Cults and the Failure of Critical Thinking

Ch 13: 13.16, 13.17; 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 14: 14.1, 14.3; APA Goal 2: Scientific Inquiry and Critical Thinking: Learning More: Psychological Disorders

Ch 15: APA Goal 2: Scientific Inquiry and Critical Thinking: Does It Work? Psychological Treatment

Appendix A: A.1–A.6

Appendix C: C.2

Goal 3: Ethical and Social Responsibility

Develop ethically and socially responsible behaviors for professional and personal settings.

- 3.1** Apply ethical standards to psychological science and practice

3.2 Promote values that build trust and enhance interpersonal relationships

3.3 Adopt values that build community at local, national, and global levels

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, 9.7; Classic Studies in Psychology: The Angry/Happy Man; Shared Writing: Motivation and Emotion

Ch 10: 10.10; Applying Psychology to Everyday Life: Avoiding Myths About Sexuality and Sexual Behavior; Shared Writing: Sexuality and Gender

Ch 11: Shared Writing: Stress and Health

Ch 12: 12.10, 12.11; 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 13: Shared Writing: Theories of Personality

Ch 14: Shared Writing: Psychological Disorders

Ch 15: Shared Writing: Psychological Therapies

Goal 4: Communication

Demonstrate competence in written, oral, and interpersonal communication skills and be able to develop and present a scientific argument.

- 4.1** Demonstrate effective writing in multiple formats

4.2 Exhibit effective presentation skills in multiple formats

4.3 Interact effectively with others

Intro: PIA.7

Ch 7: 7.11, 7.13

Ch 12: 12.1–12.4, 12.8–12.9, 12.16, and Applying Psychology to Everyday Life: Looking at Groups

Goal 5: Professional Development

Apply psychology-specific content and skills, effective self-reflection, project management skills, teamwork skills and career preparation to support occupational planning and pursuit.

- 5.1** Apply psychological content and skills to professional work

5.2 Exhibit self-efficacy and self-regulation

5.3 Refine project management skills

5.4 Enhance teamwork capacity

5.5 Develop meaningful professional direction for life after graduation

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, 9.11, and Applying Psychology to Everyday Life: What Is Holding You Back from Keeping Track?

Ch 11: 11.10–11.14

Ch 12: 12.1–12.4, 12.8–12.9

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

Appendix C: C.1–C.10

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 American Psychological Association and 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. Outside of the lab, Dr. White is engaged in collaborative research examining the effectiveness of incorporating various technologies in and out of the college classroom to facilitate student learning. He also serves as a mentor for other faculty wanting to expand their use of technology with their classes. 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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Sandy Ciccarelli
Gulf Coast State College
Panama City, Florida
sandy243@comcast.net

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Noland White
Georgia College & State University
Milledgeville, Georgia
noland.white@gcsu.edu

Psychology in Action

Secrets for Surviving College
and Improving Your Grades

In your words

Based on what you know now, what advice would you share with a student just starting out in college?

After you have thought about the question, watch the video to see how other students would answer it.



Why study how to study?

Many students entering college have developed a system of taking notes, reading the textbook, and reviewing for exams that may have worked pretty well in the past; but what worked in grade school and high school may not work in college, where the expectations from teachers are higher and the workload is far greater. Students should develop skills in the following areas in order to do their absolute best in any college 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. One final aspect of being a successful student involves being an ethical student—exactly how can you use the materials you find for your research paper, for example, without committing the sin of *plagiarism* (claiming the work of someone else as your own)?

This introduction presents various techniques and information aimed at maximizing knowledge and skills in each of these eight areas. In addition, brief videos are available on each of these topics. These topics address aspects of the American Psychological Association’s (APA) undergraduate learning goals. APA Goal 2 (Scientific Inquiry and Critical Thinking) is addressed in [Chapter One](#) and is the basis of a feature in every chapter.

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.



Some students find it helpful to hear 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 textbook as she follows along and looks at the figures and photos.

PIA.1 Study Skills

PIA.1 Identify four methods of studying.

I want to make better grades, but sometimes it seems that no matter how hard I study, the test questions turn out to be hard and confusing and I end up not doing very well. Is there some trick to getting good grades?

Many students would probably say their grades are not what they want them to be. They may make the effort, but they still don't seem to be able to achieve the higher grades they wish they could earn. A big part of the problem is that despite many different educational experiences, students are rarely taught how to study.

We learn many different kinds of things during our lives, and using only one method of learning 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 different 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 learning 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. There are also those who prefer to learn by hearing the information (*auditory learning methods*). Listening to a recording of a lecture is a good example. Finally, there are people who use the motion of their own bodies to help them remember key information (*action learning methods*). For instance, you might construct a three-dimensional model to gain a better understanding of a topic.

Watch Study Methods



THINKING CRITICALLY PIA.1

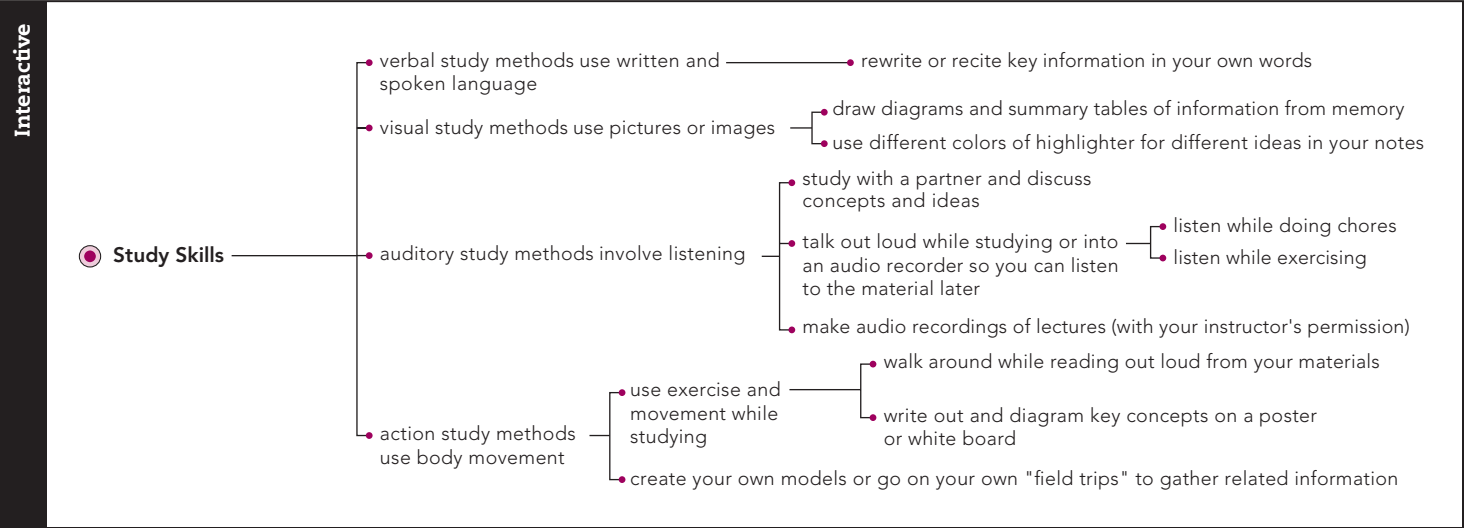
Describe some other ways in which the various study methods can be put to use.

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

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. Write out or recite key information in whole sentences or phrases in your own words. When looking at diagrams, write out a description. Use physical or electronic "sticky" notes to remind yourself of key terms and information. Practice spelling words or repeating facts to be remembered. Rewrite things from memory.	Make flash cards with pictures or diagrams to aid recall of key concepts, or use the flash cards in Revel. Make charts and diagrams and sum up information in tables. Use different colors of highlighter for different sections of information in text, e-text, or notes. Visualize charts, diagrams, and figures. Trace letters and words to remember key facts. Use the interactive figures and tables available in Revel. Redraw things from memory.	Join or form a study group or find a study partner so you can discuss concepts and ideas. Take advantage of the various videos and audio recordings in Revel. Make speeches. Record class lectures (with permission). Take notes on the lecture sparingly, using the recording to fill in parts you might have missed. Read notes, text, or study materials out loud into a digital recorder, and listen to them while exercising or doing chores. When learning something new, state or explain the information in your own words out loud or to a study partner. Use musical rhythms as memory aids, or put information to a rhyme or a tune.	Sit near the front of the classroom. 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. Read out loud, or use the audio feature in Revel while walking around. Study with a friend. While exercising, listen to recordings of important information, either your own or those in Revel. Write out key concepts on a large board or poster. Make your own flash cards, using different colors and diagrams, and lay them out in order on a large surface. Make a three-dimensional model. 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?

Pick the best answer.

1. In an episode of a popular television program, a detective reconstructs a crime scene by using various 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 method of learning best fits the method this character seems to be using to think about the events of the crime?

a. verbal

b. visual

c. auditory

d. action
2. Drew has been advised by a learning expert to study employing 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. Drew's tutor is recommending the use of _____ 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 biggest failings of college students (and many others) is managing the time for all the tasks involved. Procrastination, the tendency to put off tasks until some later time that often does not arrive, is the enemy of time management. There are some strategies to defeating 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 and prioritizing your tasks for that day. Mark tasks off as you do them.
- Go to bed. 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 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.
- 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 enduring myth that we can effectively multitask. In today's world of technological interconnectedness, people tend to believe they can learn to 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 different types of information, and not for the better. One study challenged college students to perform experiments that involved task switching, selective attention, and working memory (Ophir et al., 2009). The expectation was that students who were experienced at multitasking would outperform those who were not, but the results were just the opposite: 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, even when instructed to do so (Cain & Mitroff, 2011). Heavy media multitaskers also have reduced performance on tasks requiring working memory, or keeping things in mind, which subsequently has a negative effect on long-term memory, affecting both encoding and retrieval of information (Uncapher et al., 2016). See [Learning Objectives 6.1, 6.4, 6.5](#).

Yet other studies have found that college students who multitask while studying or in class tend to have lower grade point averages or performance than students who do not multitask (Junco & Cotton, 2012; Rosen et al., 2013; Uncapher et al., 2017; Wood et al., 2012). Furthermore, multitasking during class has a negative impact on those around the multitasker. Not only do students who multitask with laptops in class have impaired comprehension of the class material, but students who can see the students' screens also have lower performance (Sana et al., 2013). Researchers also have found that people who think they are good at multitasking are actually not (Sanbonmatsu et al., 2013), while still another study indicates that video gamers, who often feel their success at gaming is training them to be good multitaskers in other areas of life such as texting or talking while driving, are just as unsuccessful at multitasking as nongamers (Donohue et al., 2012). 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.

Besides being aware of how to best manage your available 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 college students find it difficult to keep track of all of their class assignments and projects and to remember all of the things they are supposed to do—and when to do them. Keeping on task can be especially challenging when you might not be exactly 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).

Watch Managing Time



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 college 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 actually take to gain and maintain control of your tasks and commitments. The five stages of the GTD method are:

- 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 on your phone or computer or a paper-based spot such as a folder, a notebook, a set of index cards, or the like.
- 2. Process and 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.

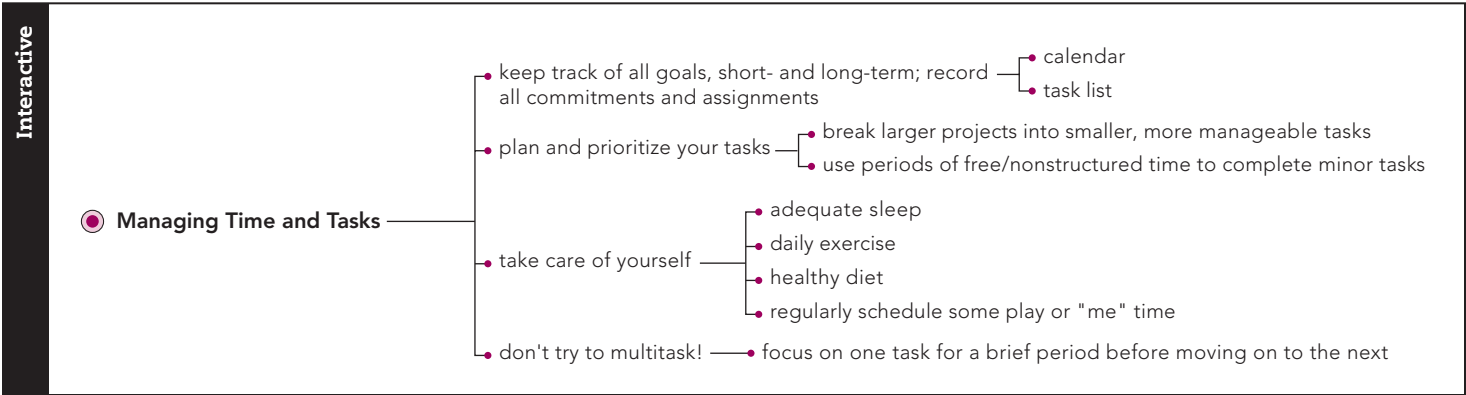
Adapted from David Allen’s *Getting Things Done: The Art of Stress-Free Productivity* (2001) and *Making It All Work* (2008), and from *Getting Things Done for Teens: Take Control of Your Life in a Distracting World* (Allen et al., 2018).

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

Watch The GTD Method



Concept Map L.O. PIA.2



Practice Quiz How much do you remember?

Pick the best answer.

1. Which of the following is *not* a question that students should ask themselves in order to maximize their studying effectiveness?
 - a. How can I most effectively highlight while I am reading my textbook?
 - b. How should I improve my memory for facts and concepts?
 - c. How can I best manage my time and avoid procrastination?
 - d. How can I write good term papers?
2. 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!
3. 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 course materials to be successful in the course. (While that might seem obvious to some, many students today seem to think that just taking notes on lectures or slide presentations will be enough.) This section deals with 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. The first mistake is simple: Many students don't bother to read the textbook *before* watching the lecture that will cover that material. Trying to get anything out of a lecture without having read the material first is like trying to find a new, unfamiliar place without using a GPS or any kind of directions. It's easy to get lost. This is especially true because of the assumption that most instructors make when planning their lectures: They take for granted that the students have already read the assignment. The instructors then use the lecture to go into detail about the information the students supposedly got from the reading. If the students have not done the reading, the instructor's lecture isn't going to make a whole lot of sense.

The second mistake most students make when reading textbook material is to try to read it 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 very 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

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, as some experts call 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](#).



Robert Kneschke/Fotolia

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

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’ve presented a list of learning objectives for the key concepts in the chapter that can be used with the SQ3R method. There are also student questions 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 much easier to remember later on.

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 big mistake. They assume that highlighting words and phrases is as good as writing notes. One of the author’s former students conducted research on the difference between highlighting and note taking, and her findings were clear: 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 (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](#).



Wavebreakmedia/Shutterstock

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 and completely. 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?



Frank Merfort/Shutterstock

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

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 digital recorder—it’s a great way to review later.

Now repeat the Question, Read, and Recite instructions 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 the 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 entire 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 that might be available. For this text, we offer both practice quizzes within the print text and online quizzes and study materials in the e-text. 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.

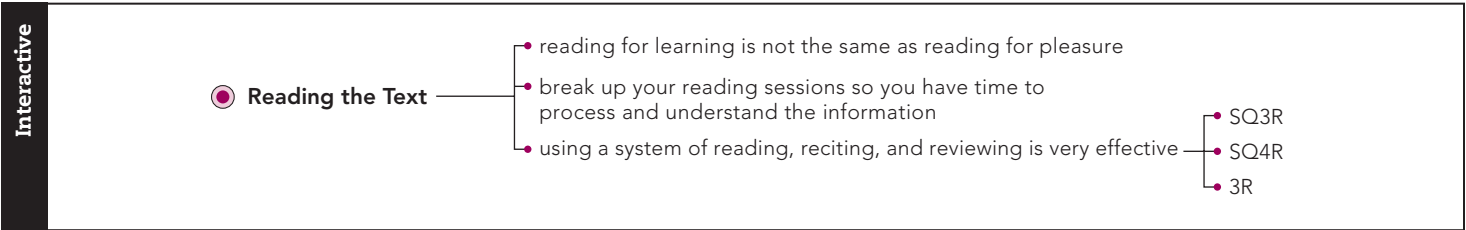
Some educators and researchers now add a fourth R: *Reflect*. To reflect means to try to think critically about what you have read by trying to tie the concepts into what you already know, thinking about how you can use the information in your own life, and deciding which of the topics you’ve covered interests you enough to look for more information on that topic (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 14.5](#).

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).

Watch Reading the Text



Concept Map L.O. PIA.3



Practice Quiz How much do you remember?

Pick the best answer.

1. What does the S in SQ3R stand for?
 - a. survey
 - b. study
 - c. synthesize
 - d. stand
2. 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.
3. 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.

As mentioned earlier, mastering course content means you have to attend the lectures. Even if lectures are online, you have to read or watch them. But just attending or reading 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 quite a bit more than just writing down the words the instructor says or printing out the PowerPoint slides.

One very important fact you must remember: PowerPoint slides are not meant to be notes at all; 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 listening to and 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 a slightly different procedure. 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. A major mistake made by many students is to come to the lecture without having read the material first. This is an EXTREMELY BAD IDEA. If you come to the lecture totally unprepared, you will have no idea what is important enough to write down and what is just the instructor's asides and commentary. Reading the material first gives you a good idea of exactly what is important in the lecture and reduces the amount of notes you must take.

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) and ask questions



FatCamera/Stock/Getty Images

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?

Watch Lecture Notes



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.

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

Interactive

● 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?

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. accomplished student.

b. passive listener.

c. active listener.

d. social listener.
- 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 some hard evidence that you have truly learned at least some of 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 good 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. 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. 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.
-
- 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.
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- **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 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 at all 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, make sure you pay close attention to the kinds of questions asked on the first exam so you will know how to



Juice Images/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 Bialasiewicz/123RF

Holding your eyes open is not going to help you study when you are this tired. Sleep has been shown to improve memory and performance on tests, so get a good night's sleep before every exam.

Concept maps

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

prepare for future tests. Write out 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 a digital recorder, 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 in studying important concepts.
- **Use the concept maps if provided.** When surveying the chapter, make sure you look over any concept maps. (In this text, they are provided at the end of each major section of the chapters, just before the practice quizzes). **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). They 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/Publications/ResearchPapers/TheoryCmaps/TheoryUnderlyingConceptMaps.htm.
- **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 in both the print and Revel versions of this text. The Revel e-text 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 very 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 long-term learning (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 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, 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). 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 (Benton & Parker, 1998; Dani et al., 2005; Pollitt & Matthews, 1998; Stubbs et al., 1996).

- **Use your test time wisely.** When taking the test, don't allow yourself to get stuck on one question that you can't seem to answer. If an answer isn't clear, skip that question and go on to others. After finishing all of the questions you can answer easily, go back to the ones you have skipped and try to answer them again. 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 exact information you need for one of those questions you skipped; and once you are more relaxed, you may find that the answers to those seemingly impossible 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 11.10](#).

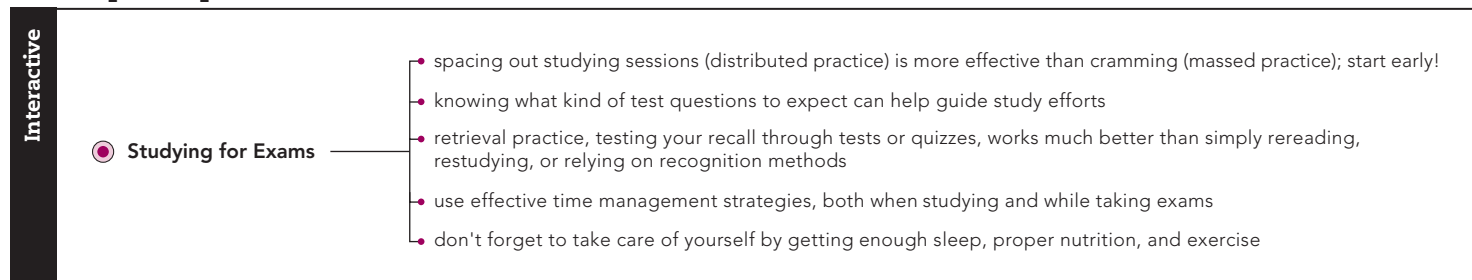
Watch Exam Prep



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



Practice Quiz How much do you remember?

Pick the best answer.

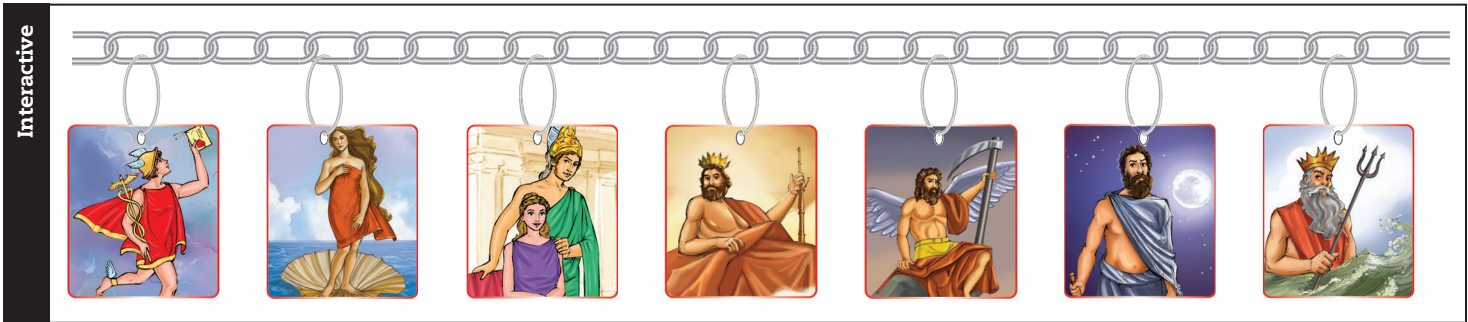
- Which category is the following question an example of? *True or False: Psychology is the study of behavior and mental processes.*
 - factual question
 - conceptual question
 - applied question
 - critical question
- Which questions are the highest level of analysis and often considered the hardest to answer on a test?
 - factual
 - applied
 - conceptual
 - true/false
- Jaden is studying for his first psychology exam. What should he do to ensure he remembers all that he has studied?
 - Begin studying many days in advance to give his brain time to commit the material to memory and repeatedly test his retrieval of information.
 - Memorize as much of the information as possible.
 - Study all night long before the exam—he can sleep after the test.
 - Wait to study until just before the scheduled exam, so that the information will be fresh in his mind.
- What is the value of retrieval practice?
 - It allows students more opportunities to study.
 - It helps increase long-term learning.
 - It assists only in preparing for essay-based exams.
 - No research exists to prove that retrieval practice is effective.
- Simply spitting information back out on a test is likely more indicative of _____, while truly understanding information is more indicative of actual _____.
 - memorization, learning
 - learning, memorization
 - behavior, action
 - a process, a gift

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. Take a look at **Figure PIA.1** to see examples of a few of the more popular mnemonics, some of which may sound familiar:

Figure PIA.1 Popular Mnemonics



- **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*. That sounds like a lot, but once linked in this way, the names of the planets are easy to recall in proper order.

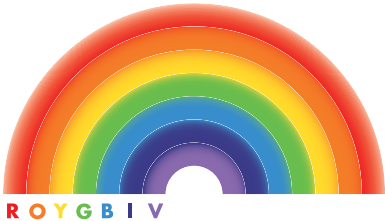


- **The peg-word method.** In this method, it is necessary to first memorize a series of “peg” words, numbered words that can be used as keys for remembering items associated with them. A typical series of peg words is:

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

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.



mnemonic
mnemonic a strategy or trick for aiding memory.

- **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/

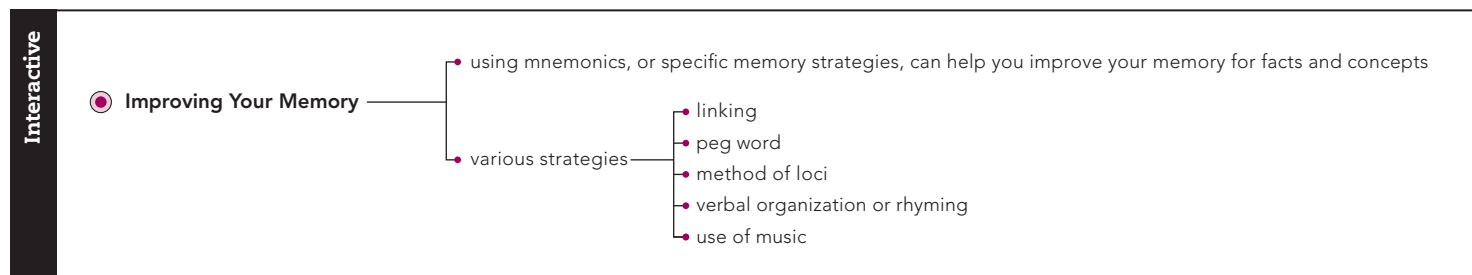
rhythmic organization mnemonic. “Thirty days hath September, April, June, and November ...” is another example of this technique. Setting information into a rhyme aids memory because it uses verbal cues, rhyming words, and the rhythm of the poem itself to aid retrieval. Sometimes this method is accomplished 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). The notes on 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 Improve Memory



Concept Map L.O. PIA.6



Practice Quiz How much do you remember?

Pick the best answer.

- Which of the following is NOT one of the mnemonic techniques described in this chapter?
 - method of loci
 - rote memorization
 - linking
 - peg-word
- “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?

<ol style="list-style-type: none"> method of loci linking 	<ol style="list-style-type: none"> peg-word verbal/rhythmic organization
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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 some 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. 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 very careful about using the Internet to do research: Not



David Molina G/Shutterstock

In earlier times, people actually had to write or type their first, second, and sometimes third drafts on real paper. The advent of computers with word-processing programs that allow simple editing and revision has no doubt saved a lot of trees from the paper mill. This also means there is no good excuse for failing to write a first draft and proofreading one's work.

everything on the Internet is correct or written by true 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 www.apastyle.org.

Taking good notes helps you avoid using the materials you find in their exact or nearly exact form, a form of cheating we'll discuss more in a later module of 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, for example, 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:

In one study comparing both identical and fraternal twins, researchers found that stressful life events of the kind listed in the SRRS were excellent predictors of the onset of episodes of major depression (Kendler & Prescott, 1999).

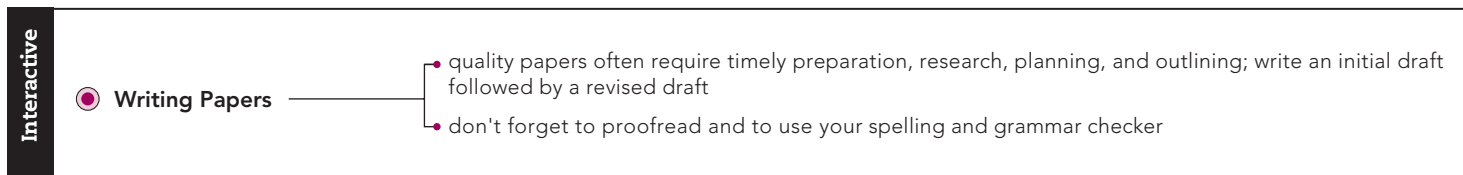
Your paper's reference section would have the following citation: Kendler, K. S., & Prescott, C. A. (1999). A population-based twin study of lifetime major depression in men and women. *Archives of General Psychiatry*, 56(1), 39-44. [Author's note: The number in front of the parentheses is the volume of the journal, the one inside is the issue number, and the last numbers are the page numbers of that article.]

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 Paper Writing



Concept Map L.O. PIA.7



Practice Quiz

How much do you remember?

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
3. Once you have written the first draft, what should you do?

a. Submit it to the instructor, as your first draft is usually the best effort.

b. Let it sit a few days before going back over it to make corrections.

c. Immediately write the second or final draft before the material gets too stale for you to remember why you wrote it the way you did.

d. Write the outline of the paper, which is easier to do once the paper is already written.

PIA.8 Your Ethical Responsibility as a Student

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

Many students have committed the sin of **plagiarism**, the copying of someone else's ideas or exact words (or a close imitation of the words) and presenting them as your own. When you cite 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 as a person under close scrutiny. Plagiarism shows disrespect for your peers as well—they did their own work and expected you to do the same (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.

Table PIA.2 Tools and Resources for Avoiding Plagiarism

Turnitin.com Resources for Students: https://www.turnitin.com/resources
Grammar and Plagiarism Checker: https://www.grammarly.com/plagiarism-checker
Purdue Online Writing Lab: https://owl.english.purdue.edu/owl/resource/589/1/
Indiana University Writing Tutorial Service: http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml
Accredited Schools Online: http://www.accreditedschoolsonline.org/resources/preventing-plagiarism/

Another ethical responsibility you have as a student is to not cheat. Most colleges and universities have honor codes about academic integrity, and cheating of any kind can have some fairly severe consequences. Cheating can involve copying answers from someone else's test as you look over their shoulder, stealing tests to get the answers before the exam, working collectively with others on assignments that are supposed to be completed individually and independently, or even having someone else take your test for you, among others. Sadly, cheating in school is still very common. A survey of more than 23,000 American high school students (private, public, and charter school students)

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

Watch Ethics



conducted by the Josephson Institute Center for Youth Ethics (2012) found that in 2012, 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). When it does occur, research results suggest many students will 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). In the long run, both plagiarism and cheating hurt you far more than they provide any temporary relief.

Concept Map L.O. PIA.8

Interactive

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?

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 learning methods to study is a useful and effective strategy.
- Four common learning 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 involve 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 or popular books.
- The SQ3R method is an excellent way to approach reading a textbook: survey, question, read, recite, 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, not highlighted in the text or on handouts.
- When taking notes from a lecture, you should be prepared by having the notes from your reading in front of you; some people may benefit from recording the lecture and taking notes afterward.

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.

Test Yourself

Pick the best answer.

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

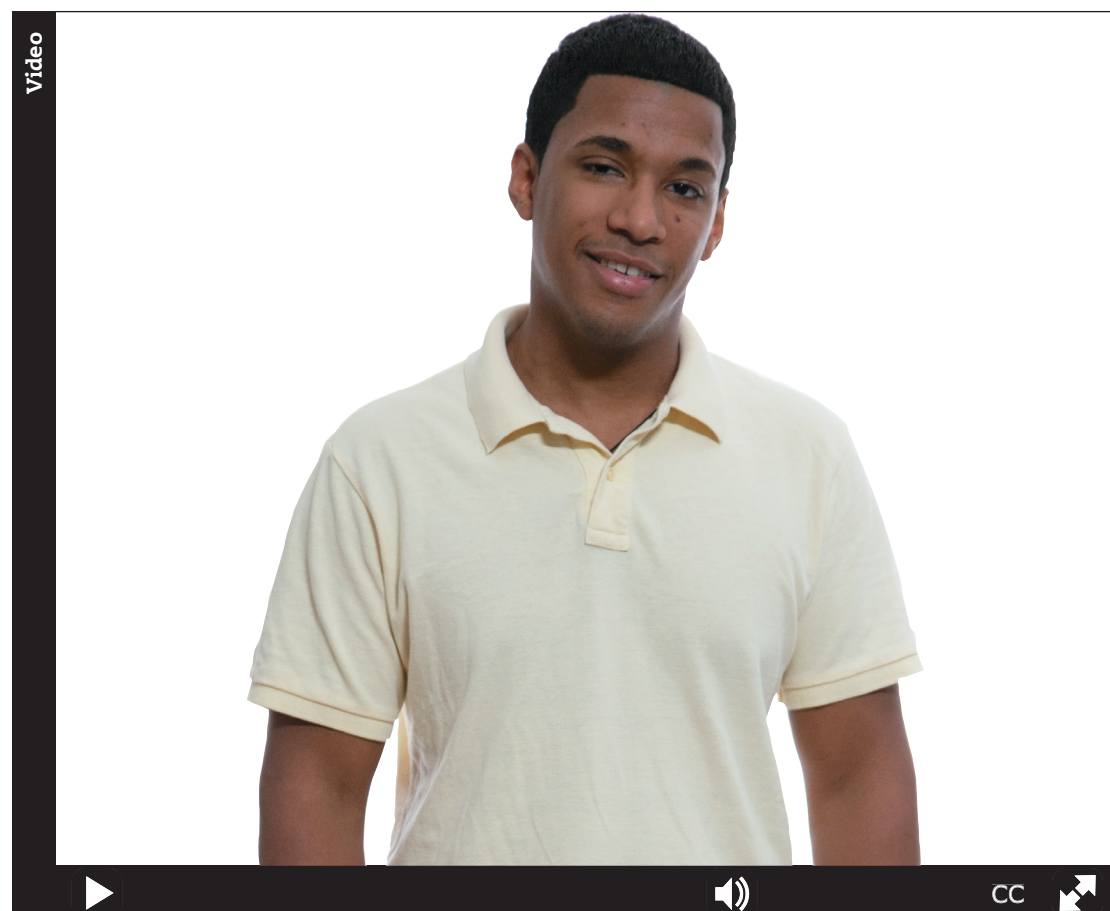
Chapter 1

The Science of Psychology

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 thought about these questions, watch the video to see how other students would answer them.



Why study psychology?

Psychology not only helps you understand why people (and animals) do the things they do, but it also helps you better understand yourself and your reactions to other people. Psychology can show you 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, a basic understanding of the research methods psychologists use is extremely important because research can be flawed, and knowing how research *should* be done can bring those flaws to light. Finally, the study of psychology and its research methods helps foster 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, and politicians.

Learning Objectives

- | | | | |
|------------|---|-------------|---|
| 1.1 | Describe the contributions of some of the early pioneers in psychology. | 1.8 | Explain how researchers use the correlational technique to study relationships between two or more variables. |
| 1.2 | Summarize the basic ideas and the important people behind the early approaches known as Gestalt, psychoanalysis, and behaviorism. | 1.9 | Identify the steps involved in designing an experiment. |
| 1.3 | Summarize the basic ideas behind the seven modern perspectives in psychology. | 1.10 | Recall two common sources of problems in an experiment and some ways to control for these effects. |
| 1.4 | Differentiate between the various types of professionals within the field of psychology. | 1.11 | Identify some of the common ethical guidelines for doing research with people. |
| 1.5 | Recall the basic criteria for critical thinking that people can use in their everyday lives. | 1.12 | Explain why psychologists sometimes use animals in their research. |
| 1.6 | Recall the five steps of the scientific approach. | 1.13 | Identify strategies for critically evaluating news and other information shared on social media. |
| 1.7 | Compare and contrast some of the methods used to describe behavior. | | |

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 study animals as well. Psychologists study not only what people and animals do but also what happens in their bodies and in their brains as they do it. The study of psychology is not only important 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, health, and even climate change (Cacioppo, 2013; McDonald et al., 2015; Roberto & Kawachi, 2014; 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?* to understand more about your own preconceived notions of people and human behavior.

Survey What Do You Know About Psychology?

Interactive

INTRODUCTION

This survey asks you about your attitudes towards and experiences with a broad range of psychological principles and theories.

Click Next to begin the survey

SURVEY

Some people believe that our behaviors are mainly influenced by biology - by our genes, hormones, and brain chemistry. This is the nature perspective. Others believe that our behaviors are mainly influenced by our environment - by the rewards and punishments we receive, and by the things other people do or say to us. This is the nurture perspective. Which perspective do you agree with more strongly?

☐ Nature is more important.

☐ Nurture is more important.

☐ Nature and nurture are equally important.

☐ Not Sure

RESULTS

Previous Next

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 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 he or she *expects* 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 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

psychology

scientific study of behavior and mental processes.

*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.

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 (von Helmholtz, 1852, 1863) performed groundbreaking experiments in visual and auditory perception. See [Learning Objectives 3.2, 3.6, and 3.8](#).

1.1 In the Beginning: Wundt, Titchener, and James

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

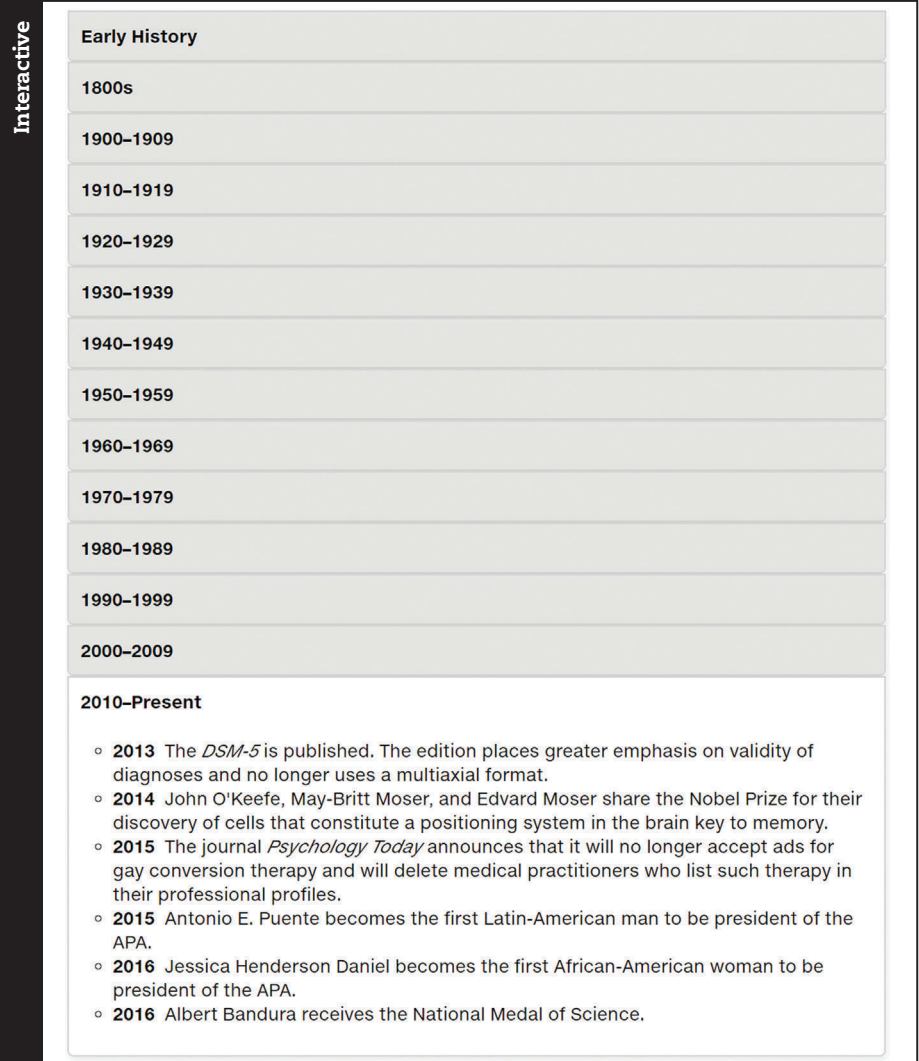
It really all started to come together in a laboratory in Leipzig, Germany, in 1879. It was here that Wilhelm Wundt (VILL-helm Voont, 1832–1920), a physiologist, attempted to apply scientific principles to the study of the human mind. In his laboratory, students from around the world were taught to study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

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

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.

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.

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 started 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 (James, 1890).

Unlike Wundt and Titchener, James was more interested in the importance of consciousness to everyday life than just its analysis. He believed that 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, anyway.

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**. James 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? Animals and people whose behavior helped them to survive would pass those traits on to their offspring, perhaps by teaching or even by some then-unknown mechanism of heredity.* 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).

It is interesting to note that 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. She was allowed to take classes as a guest only. 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, 1980, 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 African American

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.

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

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 African American psychology (Guthrie, 2004). Kenneth and Mamie Clark worked to show the negative effects of school segregation on African 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 African 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 African 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 African 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 women and 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: African American, Asian American, Hispanic Latino, and Native American. For more information, visit <http://www.apa.org/pi/oema/resources/ethnicity-health/psychologists/>.

● Is functionalism still an important point of view in psychology?

In the new field of psychology, functionalism offered an alternative viewpoint to structuralism. 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.

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, some 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 slogan, “The whole is

*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 sees both of these figures as circles rather than as a series of dots or a broken line.

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 fit well with the focus on studying 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 15.3](#).

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 13.2](#).

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 13.4](#).

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 14.1](#).

Freudian **psychoanalysis**, the theory and therapy based on Freud’s ideas, has been the basis of much modern *psychotherapy* (a process in which a trained psychological professional helps a person gain insight into and change his or her behavior), but another major and competing viewpoint has actually been more influential in the field of psychology as a whole.

Gestalt psychology

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

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.

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 “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.



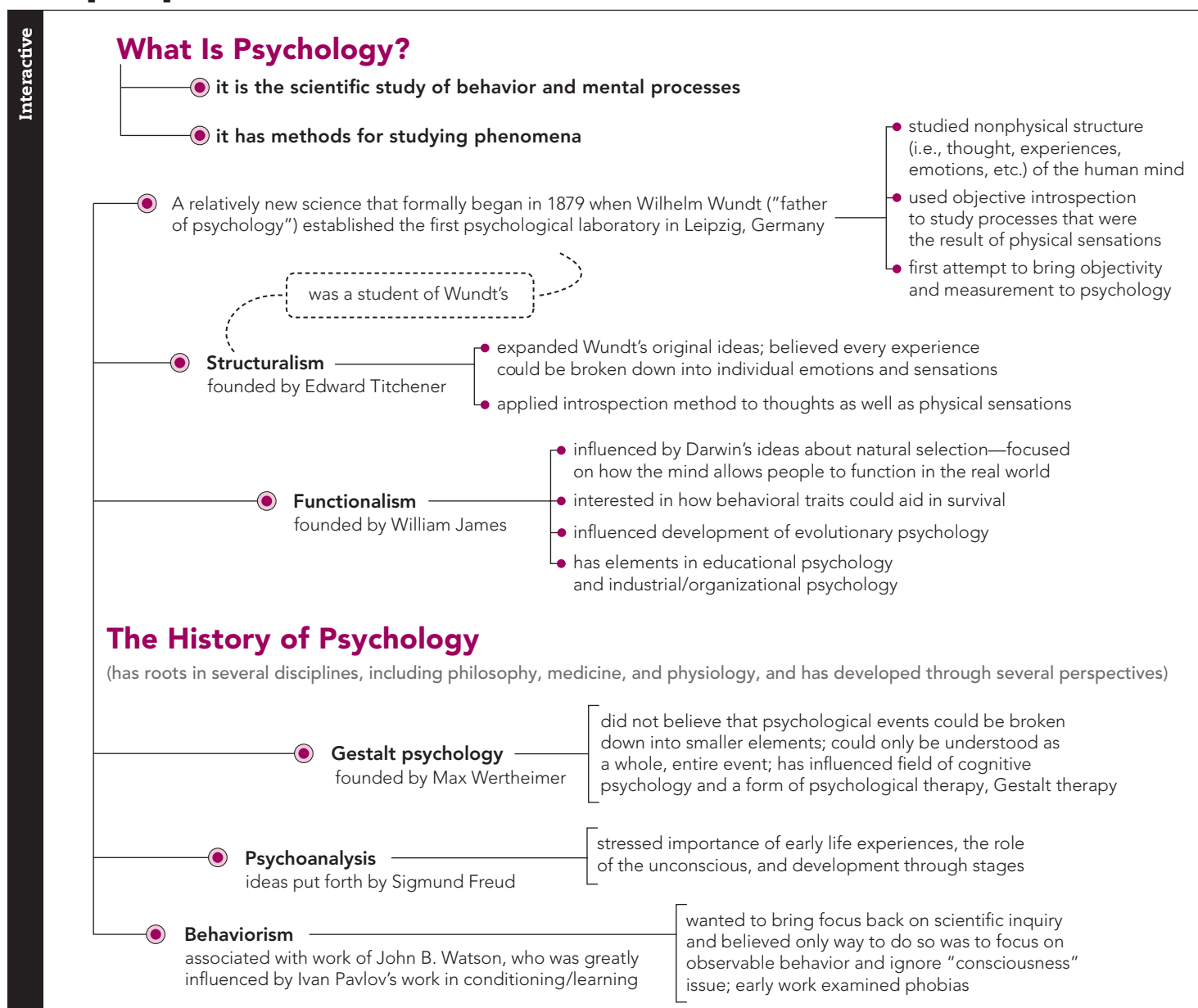
G. Paul Bishop

Mary Cover Jones, one of the early pioneers of behavior 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).

behaviorism

the science of behavior that focuses on observable behavior only.

Concept Map L.O. 1.1, 1.2



Practice Quiz How much do you remember?

Pick the best answer.

- In the definition of psychology, the term *mental processes* means
 - only human behavior.
 - outward or overt actions and reactions.
 - unconscious processes.
 - internal, covert processes.
- Which early psychologist was the first to try to bring objectivity and measurement to the concept of psychology?
 - Sigmund Freud
 - William James
 - John Watson
 - Wilhelm Wundt
- 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"?
 - Sigmund Freud
 - William James
 - John Watson
 - Wilhelm Wundt
- Who was the first woman to complete the coursework for a doctorate at Harvard University?
 - Ruth Howard
 - Margaret Washburn
 - Mary Whiton Calkins
 - Mary Cover Jones
- Which early perspective tried to return to a focus on scientific inquiry by ignoring the study of consciousness?
 - functionalism
 - behaviorism
 - psychoanalysis
 - Gestalt

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* to get a quick overview of the perspectives before we continue.

Watch Diverse 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 of an 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 13.4](#). 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).

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.

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. Psychologists with a **humanistic perspective** 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 exists as a form of psychotherapy aimed at self-understanding and self-improvement. See [Learning Objective 15.3](#).

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.



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 animals to human behavior?

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.

humanistic perspective

the "third force" in psychology that focuses on those aspects of personality that make people uniquely human, such as subjective feelings and freedom of choice.

Swiss psychologist Jean Piaget proposed a theory of cognitive development in infants, children, and adolescents in the middle of the twentieth century, a theory still influential in education (Piaget, 1952, 1962, 1983). See [Learning Objective 8.7](#). 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: Cognition](#).

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 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 (Bronfenbrenner, 1979; Peplau & Taylor, 1997). See [Chapter Twelve: Social Psychology](#). 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 Twelve: Social Psychology](#), 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. This 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 2002, a man under the influence of alcohol sexually assaulted a girl who was mentally challenged while the two were traveling on a train with five other passengers who did nothing to stop the attack; and in 2012, a 20-year-old woman was molested outside a bar in Guwahati for thirty minutes in view of many witnesses who did nothing (Tatke, 2012). India is a country that is culturally quite different from the United States, and individuals in India 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.

*norms: standards or expected behavior.

**phenomenon: a situation that is seen to exist and for which an explanation may be needed.

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.

sociocultural perspective

perspective that focuses on the influence of social interactions, society, and culture on an individual's thinking and behavior; in psychopathology, approach that examines the impact of social interactions, community, and culture on a person's thinking, behavior, and emotions.

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.

In the **biopsychological perspective**, human and animal 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: The Biological Perspective](#). 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 multiple causes (family issues, stress, or trauma, for example), research in biopsychology points clearly to biological factors as one of those causes.

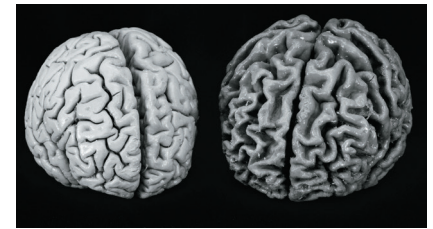
For example, research suggests that human sexual orientation may be related to the developing baby's exposure in the womb to testosterone, especially in females (Breedlove, 2010; Grimbos et al., 2010), as well as the birth order of male children (Puts et al., 2006). The birth order study suggests that 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 10.8](#). The biopsychological perspective plays an even greater role in helping us understand psychological phenomena in other areas. There is clear evidence that genetics play 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 [14.16](#). 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).

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.

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 that 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?

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



Noland White

Compare the two preserved brains above. A “normal” brain is on the left while the one on the right is from someone diagnosed with Alzheimer's disease. Note the narrowed gyri (bulges) and widened sulci (grooves) in the brain on the right. This is due to 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 changes over time as the brain changes. You may also notice the brains are not identical in size. This is due to slight differences between individuals and how individual specimens respond to the preservation and plastination processes.

biopsychological perspective

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

evolutionary perspective

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



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, in one study, researchers 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 (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 to be sure that the children the woman bears are his (Geary, 2000). 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 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), 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. For a look at all seven modern perspectives, their major concepts, and some of the major “players” in each, see **Table 1.1**.

Table 1.1 The Seven Modern Perspectives in Psychology

Perspective	Major Focus and Concepts	Major Theorists
Psychodynamic	Development of sense of self, motivation for social/interpersonal relationships	Sigmund Freud, Carl Gustav Jung, Alfred Adler, Karen Horney, Erik Erikson, Anna Freud
Behavioral	Classical and operant conditioning, concept of reinforcement, focus on observable behavior	Ivan Pavlov, John B. Watson, Edward L. Thorndike, B. F. Skinner
Humanistic	The ability of the individual to direct and control his or her own life, free will, self-actualization	Abraham Maslow, Carl Rogers, Natalie Rogers
Cognitive	Perception, memory, intelligence, thought processes, problem solving, language, learning, the role of the brain and nervous system	Jean Piaget, Noam Chomsky, Elizabeth Loftus, Howard Gardner, Fergus I. M. Craik, Raymond Cattell, Eleanor Rosch
Sociocultural	Relationship between social behavior and the contexts of family, social groups, and culture	Lev Vygotsky, John Darley, Bibb Latané, Albert Bandura, Leon Festinger, Henri Tajfel, Philip Zimbardo, Stanley Milgram
Biopsychological	Influences of genetics, hormones, and the activity of the nervous system on human and animal behavior	Paul Broca, Charles Darwin, Michael Gazzaniga, Roger Sperry, Carl Wernicke, S. Marc Breedlove, Lisa Feldman Barrett
Evolutionary	The biological bases for universal mental characteristics that are shared by all humans	David Buss, Richard Dawkins, Leda Cosmides, Robert Trivers, David C. Geary, Todd K. Shackelford, Daved F. Bjorklund, Anne Campbell, Susan Oyama

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, different focuses, and may have different goals from the typical psychologist.

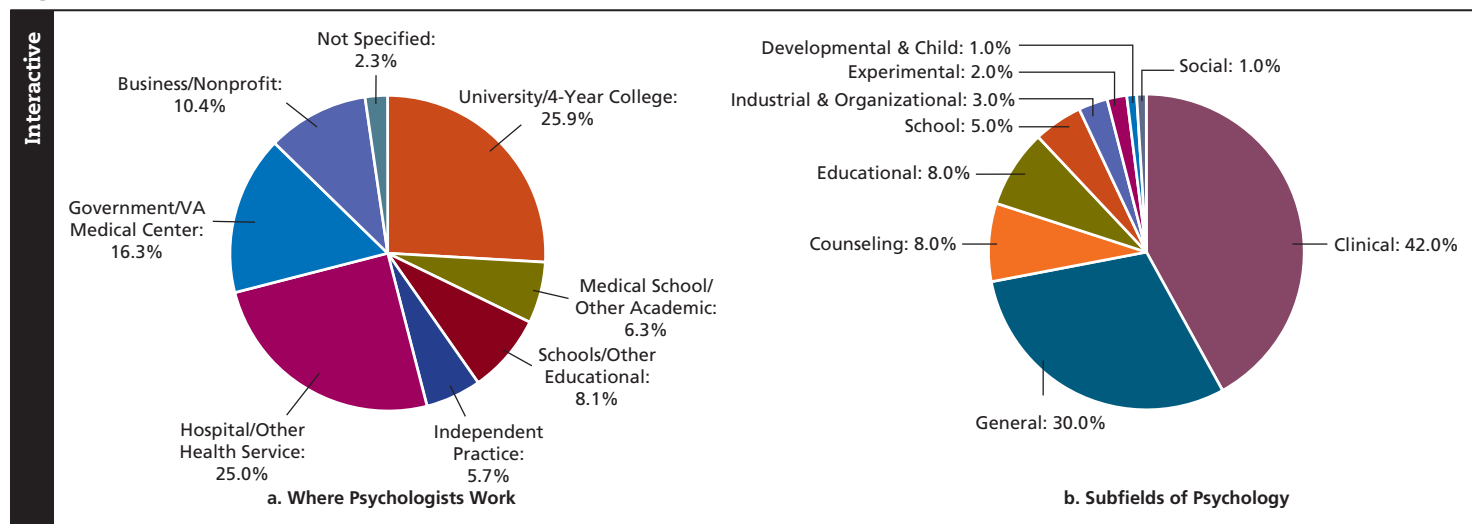
A **psychologist** has no medical training but has a doctorate degree. Psychologists undergo intense academic training, learning about many different areas of psychology before choosing a specialization. Because the focus of their careers can vary so widely, psychologists work in many different vocational* settings. **Figure 1.3a** shows 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.



B. Boissonnet/BSIP/Alamy Stock Photo

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.

Figure 1.3 Work Settings and Subfields of Psychology



(a) 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 and teach at a university or college. (b) This pie chart shows the specialty areas of psychologists who recently received their doctorates.

Source: American Psychological Association. (2016). Psychology Master's and Doctoral Degrees Awarded by Broad Field, Subfield, Institution Type and State (2004–2013): Findings from the Integrated Postsecondary Education Data System. Washington, DC: Author

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. 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 do 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

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

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.

Watch Careers in Psychology

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**, “Subfields of Psychology.”

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 know how many “things” a person can hold in memory at any one time. 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 memory study and use it to develop a new study method for students. Some of the subfields in **Figure 1.3b** tend

to do more basic research, such as experimental and developmental psychologists, while others may focus more on applied research, such as educational, school, and industrial/organizational psychologists.

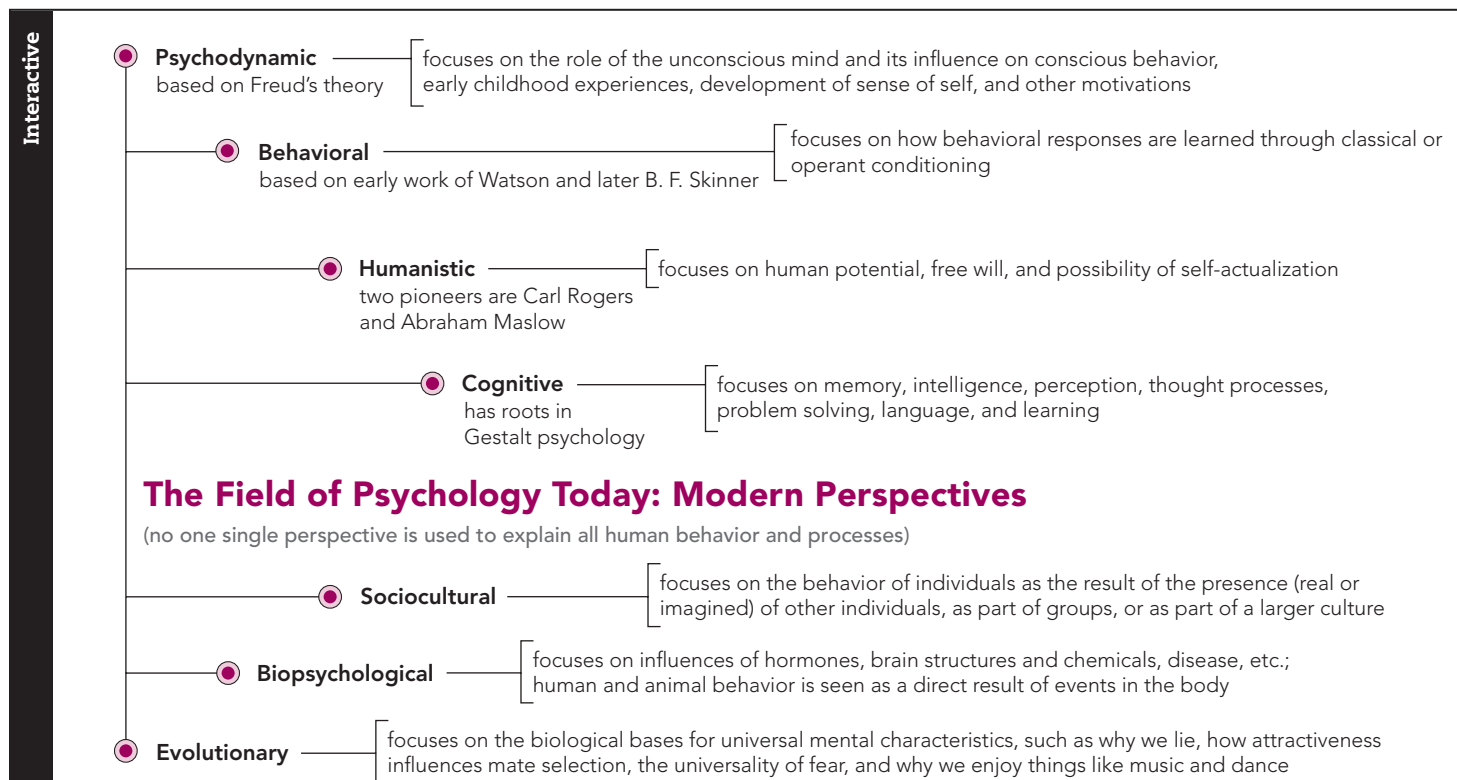
There are many other areas of specialization: Psychology can be used in fields such as health; sports performance; legal issues; business concerns; and even in the design of equipment, tools, and furniture. For a more detailed look at some of the areas in which psychological principles can be applied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

basic research

research focused on adding information to the scientific knowledge base.

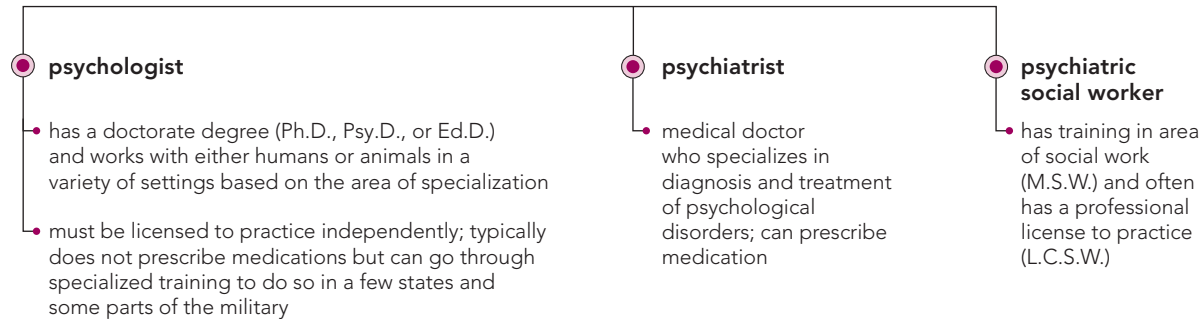
applied research

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

Concept Map L.O. 1.3, 1.4

Psychological Professionals and Areas of Specialization

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



Practice Quiz

How much do you remember?

Pick the best answer.

- Which of the following perspectives focuses on the biological bases of universal mental characteristics?
 - humanistic
 - evolutionary
 - behavioral
 - psychodynamic
- Which perspective offers the best explanation for schizophrenia?
 - behavioral
 - psychodynamic
 - biopsychological
 - humanistic
- Wesley has learned that if he cries with his mother in public, she will often get him a new toy or a piece of candy so as to quiet him. Which of the following perspectives explains Wesley's behavior?
 - biopsychological
 - psychodynamic
 - cognitive
 - behavioral
- Which perspective would a researcher be taking if she were studying a client's early childhood experiences and his resulting development of self?
 - psychodynamic
 - cognitive
 - behavioral
 - evolutionary
- Which of the following professionals in psychology has a doctoral degree that is not in medicine?
 - psychiatrist
 - psychiatric social worker
 - psychiatric nurse
 - psychologist
- If Dr. Swasey is like most psychologists, where does she probably work?
 - business/non-profit
 - independent practice
 - government/VA medical center
 - university/college

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 also sometimes reveal the biases that they may have about certain physical appearances: men with long hair are musicians, people wearing suits are executives, and so on. Psychology is about trying to determine facts, reducing uncertainty and bias, and promoting scientific thinking.

You have hopefully noticed that there are questions designed to help you think a little differently scattered throughout this chapter. Some are actually labeled as “thinking critically” while others appear as part of the captions for the pictures in the chapter. The ability to look carefully and with a critical eye at the information and statements to which we are exposed on a daily basis—in news sources, on the Internet, on the television, or even our phones—is an extremely important one. Let's take a look at why and how *critical thinking* should be emphasized in every aspect of our lives.