TRAPPED IN A MINE, 33 MEN FACED DEATH...and how their remarkable story relates directly to this course

Thursday, August 5, 2010: It was a crisp morning in Chile’s sand-swept Atacama Desert. The mouth of the San José copper mine was quiet and still, just a black hole in the side of a mountain. You would never know an avalanche was brewing inside. That morning, 33 men entered that dark hole thinking they would go home to their families at the end of their 12-hour shift. Unfortunately, this is not how the story unfolded (Franklin, 2011).

At about 11:30 a.m., a loud splintering sound reverberated through the mine’s dim caverns. Approximately 2 hours later, a section of tunnel collapsed some 1,300 feet underground (a depth of 4 football fields), sending a whoosh of stones and dirt howling through the shaft (Associated Press, 2010, August 25; Franklin, 2011). As miners scrambled through dark passageways slipping on loose rocks and gravel, the mountain shook again, delivering a fresh downpour of debris. The final cave-in, occurring hours later,
ended with an enormous thunk—the sound of a massive 700,000-ton boulder plugging their only viable escape (Franklin, 2011).

The miners trapped inside began making their way to *el refugio*, a safety shelter half a mile underground at the base of the mine. About the size of a studio apartment, the shelter contained two oxygen tanks, a few medical supplies, and enough food to sustain 10 miners for 2 days. Once all 33 men had arrived, they closed the doors, turned off their lamps to save energy, and began to ponder what had just occurred. As journalists throughout the world would soon report, they had been buried alive (Franklin, 2011).

Take a minute and put yourself in the place of the Chilean miners. There you are crowded among 32 sweaty men in a small, dark hole half a mile beneath the earth’s surface, where the temperature is approximately 90°F and the humidity 90% (Cohen, 2011). The main supply of drinking water is tainted with oil and dirt, and your daily food ration amounts to one spoonful of canned tuna fish and a few sips of milk (Franklin, 2011). Crouched on the wet rock floor, you wonder what your family is doing. Surely, they will worry when you don’t show up for dinner tonight. Maybe a rescue team is on its way. But maybe not.

**How Is It Relevant?**

At this point, you may be wondering how this story relates to the study of psychology. Like any human story, the Chilean miner saga has *everything* to do with psychology. In fact, many of its themes relate directly to content in the coming chapters. You could study the men’s experience from a *stress and health* perspective (Chapter 12), exploring how being trapped in the mine impacted their health and well-being, or how their behaviors were *motivated* by a variety of needs (Chapter 9). You might examine how the miners’ *personalities* impacted their behaviors (Chapter 10), or take the *social psychology* perspective by investigating relationships and group dynamics (Chapter 11). *Memory* is another angle, as traumatic memories may increase the risk of developing a *psychological disorder*, which could lead to the need for *treatment* (Chapters 6, 13, and 14). Venture into these pages, and you will see how psychology is germane to all human stories, including your own.

Now that we have established that psychology is relevant, let’s familiarize ourselves with the field.

*To get an idea what it was like inside the mine, go to YouTube and search the phrase “Chilean miners refuge.”*

The story of the Chilean miners is largely based on Jonathan Franklin’s *33 Men: Inside the Miraculous Survival and Dramatic Rescue of the Chilean Miners*. Publisher: G.P. Putnam’s Sons.
This Is the Field, and These Are the Players

LO 1 Define psychology.

Psychology is the scientific study of behavior and mental processes. Running, praying, and shouting were observable behaviors the miners displayed when the mountain collapsed, all potentially a focus of study in psychology. And although their thoughts and emotions were not observable, they too are valid topics of psychological research. Psychologists are scientists who work in a variety of fields, each of which centers on the study of behavior and underlying mental processes. People often associate psychology with therapy, and many psychologists do provide therapy. These counseling psychologists and clinical psychologists might also research the causes and treatments of psychological disorders (Chapters 13 and 14; Appendix B: Careers in Psychology). But clinical practice is just one slice of the gigantic psychology pie. There are psychologists who spend their days in the lab studying interactions between people, and those who assess the capabilities of children in schools. Psychologists may be found poring over brain scans in major medical centers, studying crimes and their perpetrators, analyzing how humans interact with products and technology, and working with athletes to enhance their performance. Did you know, for example, that the U.S. Olympic Committee employs sport psychologists to help athletes meet their full potential (Psychology, n.d.)?

Psychology is a broad scientific field that includes various perspectives and subfields, many of which correspond to chapters in this book (Figure 0.2). Chapter 1, for example, dives into the subfield of experimental psychology, exploring how psychologists design and carry out studies. Some of the content may surprise you: For instance, you probably know that if people are given a sugar pill but believe they are being treated with a medicine, they often experience benefits similar to those conferred by the drug—but did you know they can also experience similar side effects (Colloca, 2017)? Understanding such concepts is...
important for psychologists conducting experiments, medical professionals caring for patients, and business people working in the pharmaceutical industry. Another chapter in this book, Chapter 8, is devoted to the subfield of developmental psychology, which centers on growth and change throughout the human life span. Researchers in this subfield study a range of characteristics across people of different ages; for example, they may compare how young adults and older adults express positive emotions (Rohr, Wieck, & Kunzmann, 2017), or how health behaviors change starting in high school and through the twenties (Ames, Leadbeater, & MacDonald, 2018). Knowledge of human development is crucial for psychologists working with children, nurses caring for the elderly, social workers dealing with families, and virtually any professional who interacts with people.

**Isn’t Psychology Just Common Sense?**

**LO 2 Describe the hindsight bias and how it leads to misconceptions about psychology.**

In our own classes, we find that many students begin the course with misconceptions about psychology. Research suggests this problem is relatively common, and not limited to college students (Ferguson, 2015; Hughes, Lyddy, & Lambe, 2013). Before taking psychology, students fall for about 50% of the psychological myths they have heard; for example, “alcohol kills brain cells” (it doesn’t kill them, but it can damage structures important for communication between them); “humans have five senses” (we have more than five senses); and “suicides are especially likely during the Christmas holidays” (the rate of suicide is at its lowest in the month of December; CDC, 2013; Furnham & Hughes, 2014, pp. 258–259). Through careful research, psychologists have determined that many common assumptions about behaviors are simply not true. Popular culture abounds with psychological myths conveying “misinformation about human nature” (Lilienfeld, Lynn, Ruscio, & Beyerstein, 2010, p. 43). Discover some of these popular misconceptions in **Table 0.1**. Have you fallen for any of them?

In addition to clinging to misconceptions, many students assume that psychology is simply “common sense,” or a collection of knowledge that any reasonably smart person can pick up through everyday experiences. The problem is that common sense and “popular wisdom” are not always correct (Lilienfeld, 2012). For

<table>
<thead>
<tr>
<th>Myth</th>
<th>Reality</th>
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<tbody>
<tr>
<td>“Blowing off steam” or expressing anger is good for you.</td>
<td>Unleashing anger actually may make you more aggressive (Lilienfeld et al., 2010).</td>
</tr>
<tr>
<td>Most older people live sad and solitary lives.</td>
<td>People actually become happier with age (Lilienfeld et al., 2010).</td>
</tr>
<tr>
<td>Punishment is a great way to change behavior in the long term.</td>
<td>Punishment can lead to unwanted results (see Chapter 5). Myths like this can have a lasting impact on perceptions of discipline (Furnham &amp; Hughes, 2014).</td>
</tr>
<tr>
<td>Eating “comfort foods” makes you feel happier.</td>
<td>So-called comfort foods are not unique in their mood-enhancing effects; it appears that a wide variety of foods can improve our moods (Wagner, Ahlstrom, Redden, Vickers, &amp; Mann, 2014).</td>
</tr>
<tr>
<td>Listening to Mozart and other classical music will make an infant smarter.</td>
<td>There is no solid evidence that infants who listen to Mozart are smarter than those who do not (Hirsh-Pasek, Golinkoff, &amp; Eyer, 2003).</td>
</tr>
</tbody>
</table>

Here are a few examples of commonsense “wisdom” that have been debunked by psychological research.
Are You Ready for This?

example, common sense might suggest that bystanders are more inclined to help a person in distress when others are nearby; the more people present, the more likely someone will offer aid. But research has repeatedly shown that the opposite occurs—bystanders are less likely to offer aid when many people are around. This “bystander effect” is not observed in all situations; for example, helping behaviors may depend on the thought processes of the people involved and the number of helpers needed (Greitemeyer & Mügge, 2015; Thomas, De Freitas, DeScioli, & Pinker, 2016). Nevertheless, this is a case in which common sense does not match the findings of psychological research.

The impression that psychological findings are obvious might be related to the hindsight bias, or the “I knew it all along” feeling (Chapter 7). When a student learns about the results of a psychology study, she may believe she knew it all along because it seems logical in retrospect. But could she have predicted the outcome beforehand? Not necessarily. We fall prey to the hindsight bias in part because we are constantly seeking to explain events. Once something occurs (for example, we hear about the findings of a study), we come up with a way to explain it, and then everything seems to make sense (Lilienfeld, 2012). If you like sports, you may fall prey to the hindsight bias when you “Monday morning quarterback,” that is, point out how players and coaches could have avoided mistakes in a game you watched. Sure, you may come up with solutions that never occurred to the coaches and players, but unlike you, they did not have the luxury of thinking about it for several hours! In other words, they did not have hindsight.

Students sometimes insist that life has already taught them all they need to know about psychology. Learning from experience is a critical ability that helps us survive and adapt, but it cannot take the place of scientific findings. Suppose a man believes he knows everything about child development because he has raised three children. This type of anecdotal evidence, or personal observation, is valuable, but it is not the same as studying family members like an objective scientist. As you learn more about the human mind, you will see that it is quite prone to errors (Chapters 6 and 7).

It’s a Science

Unlike common sense, which is based on casual observations, psychology is a science in the true sense of the word. Science is a systematic approach to gathering knowledge through careful observation and experimentation. It requires analyzing data and sharing results in a manner that permits others to duplicate and therefore verify work. Just like chemistry, biology, and all scientific disciplines, psychology is grounded in research using the scientific method. Did you know that many colleges categorize psychology as a part of their STEM (science, technology, engineering, and math) programs? As you read through this textbook, you will encounter examples of how psychology employs many of the essential components of science, including the peer-review process, evidence with citations, replication of research, and the use of theories, hypotheses, and statistical analyses.

Now that we have established what psychology is and isn’t, why not get a sense of your knowledge coming into the course? How much do you really know about the science of psychology?
DIDN’T SEE THAT COMING

WHAT DO YOU KNOW?  Many students are surprised to discover how often their commonsense knowledge is at odds with scientific findings. See how much you know by taking the quiz below, and then checking your answers on page 0-6.

Chapter 1: Introduction to the Science of Psychology
1. Who is considered the “father” of psychology?
   a. Sigmund Freud  c. Wilhelm Wundt
   b. William James  d. Edward Titchener

Chapter 2: Biology and Behavior
2. Which of the following statements about the brain is FALSE?
   a. People are born with all the brain cells they will ever have.
   b. “Seeing stars” after a blow to the head is likely caused by disruption of activity in the occipital lobes.
   c. Albert Einstein’s brain weighed the same as that of the average person.
   d. People can function normally in their day-to-day lives even with an entire hemisphere of their brain missing.

Chapter 3: Sensation and Perception
3. Which of the following statements about sensation is FALSE?
   a. Our ability to detect faint stimuli (the sound of a mosquito buzzing, for example) is partly dependent on our psychological state.
   b. The human eye has a blind spot.
   c. Advertisers can get people to buy products by using subliminal messages.
   d. Male testosterone levels are affected by the smell of female armpit secretions.

Chapter 4: Consciousness
4. Which of the following statements about sleep is TRUE?
   a. Drinking alcohol helps you get better sleep.
   b. The blue light emitted by smartphones and tablets interferes with the activity of the sleep hormone melatonin.
   c. Yawning indicates that someone is exhausted.
   d. You can catch up on days or weeks of sleep loss with one night of “super-sleep.”

Chapter 5: Learning
5. Research suggests that childhood exposure to media violence is associated with later aggressive behaviors. This is an example of a:
   a. cause-and-effect relationship.  c. correlation.
   b. prosocial relationship.  d. conditioned emotional response.

Chapter 6: Memory
6. Which of the following statements about memory is FALSE?
   a. Adults can “remember” events that never happened after viewing doctored photos that portray the fake events.
   b. Memories are located in specific regions of the brain.
   c. Researchers study sea slugs to learn about the neural changes underlying memory formation.
   d. A string around your finger is not a good reminder to do something.

Chapter 7: Cognition, Language, and Intelligence
7. When comparing the cognitive abilities of males and females, researchers have found that:
   a. girls tend be better than boys at mental rotation tasks.
   b. boys tend to perform better than girls on tests of verbal ability.
   c. men and women differ significantly in their cognitive abilities.
   d. men and women are far more alike than different in cognitive abilities.

Chapter 8: Human Development
8. Which of the following statements about human development is FALSE?
   a. There are times in fetal development when the brain is producing approximately 250,000 new neurons per minute.
   b. Happiness generally decreases with age, and negative emotions are more frequent in the elderly.
   c. By the age of 6, most children have a vocabulary that represents learning about one new word every 2 hours awake.
   d. Poor attachment during infancy can have long-term health consequences, influencing the development of illnesses like asthma and diabetes.

Chapter 9: Motivation and Emotion
9. Which of the following statements about happiness is NOT true?
   a. Family traditions make the holidays less pleasurable and reduce happiness.
   b. The simple act of smiling can make a person feel happier.
   c. Being completely absorbed in challenging tasks can promote happiness.
   d. Recording positive thoughts and feelings of gratefulness can increase happiness.
Chapter 10: Personality
10. Which of the following statements about birth order is TRUE?
   a. Firstborn children are conscientious and high achieving, and become leaders in the workforce.
   b. Youngest children are coddled by their parents, but tend to be rebellious as they grow up.
   c. Middle children get lost in the family shuffle, so they learn to be self-sufficient.
   d. Researchers have been unable to find any consistent connections between birth order and specific personality characteristics.

Chapter 11: Social Psychology
11. Social psychology research suggests all the following EXCEPT:
   a. People working in groups are more likely to slack off when individual contributions are hard to ascertain.
   b. The male hormone testosterone plays a role in aggressive behavior.
   c. Attractive people are generally perceived as being more intelligent.
   d. Women and men show similar degrees of physical aggression.

Chapter 12: Stress and Health
12. Which of the following is NOT a characteristic associated with living a long, healthy life?
   a. strong social support
   b. alcohol abstinence
   c. incorporating natural movement into daily life
   d. eating until one feels 80% full

Chapter 13: Psychological Disorders
13. Insanity is a legal determination of the degree to which people are responsible for their criminal behaviors. Those deemed legally insane are thought to have had little or no control over their behaviors at the time they committed their crimes. In what percentage of U.S. criminal cases is the insanity defense used?
   a. 1%  b. 5%  c. 10%  d. 15%

Chapter 14: Treatment of Psychological Disorders
14. Which of the following statements about psychological treatment is TRUE?
   a. Only medical doctors can prescribe medications for people with psychological disorders.
   b. Neurosurgery is no longer used as a treatment for psychological disorders.
   c. Some antidepressants increase the risk of suicidal thoughts and behaviors among a small number of teenagers.
   d. Self-help groups such as Alcoholics Anonymous are typically run by licensed psychologists.


This Is Critical

How did you do? If you are like most students entering the class, you did not pass with flying colors, and that is 100% okay! The point of introductory psychology is for students to learn core concepts and develop psychological literacy, or “the ethical application of psychological skills and knowledge” (Murdoch, 2016, p. 189)—an important goal, according to the American Psychological Association (APA, 2013a). A student who has achieved psychological literacy can responsibly apply the lessons learned in psychology to everyday life. Suppose someone tells you the following: “People with mental illness are dangerous and prone to committing violent crimes.” If you have a high degree of psychological literacy, you will not automatically accept this as truth, but draw on your psychology knowledge and thoughtfully assess the claim: Actually, the research suggests that only a small percentage of crimes are clearly attributable to symptoms of psychological disorders; in fact, people who struggle with mental illness are more likely to be victims of violence than perpetrators of violence (Desmarais et al., 2014; Peterson, Skeem, Kennealy, Bray, & Zvonkovic, 2014; Skeem, Kennealy, Monahan, Peterson, & Applebaum, 2016). Psychological literacy is not just about tapping into acquired knowledge; it also hinges on critical thinking.
Are You a Critical Thinker?

Critical thinking involves weighing pieces of evidence, and considering the source and quality of information before accepting it as valid. But it goes far beyond verifying the facts (Davies, 2015; Yanchar, Slife, & Warne, 2008). The process also entails synthesizing evidence (bring it together), thinking beyond definitions, focusing on underlying concepts and applications, and being open-minded and skeptical at the same time. Like any scientific discipline, psychology is driven by critical thinking—disciplined thinking that is clear, rational, and always open to the consideration of new ideas. INFOGRAPHIC 1.2 on page 16 shows how critical thinking is useful for tackling problems, even ones that may at first seem unrelated to psychology.

Critical thinking is an invaluable skill, whether you are a psychologist planning an experiment, a citizen preparing to vote in an election, or a student trying to earn a good grade in psychology class. Has anyone ever told you that choosing “C” on a multiple-choice question is your best bet when you don’t know the answer? Research suggests this is not a winning strategy (Skinner, 2009). Accepting this type of advice without thinking critically can be a barrier to developing better strategies. Next time you’re offered a tempting morsel of folk wisdom, think before you bite: Is there solid scientific evidence to support this claim? Table 0.2 explains how a critical thinker would evaluate a commonsense claim.

The American Psychological Association (APA) views critical thinking as an essential skill for all undergraduate psychology majors. To achieve the APA’s goal of Scientific Inquiry and Critical Thinking, students must be able to think critically about psychological claims, determine whether a source is objective (free of bias) and credible, and distinguish between real science and pseudoscience (APA, 2013a). To understand the meaning of pseudoscience, let’s take a quick trip back into the Chilean miner story.

**TABLE 0.2 WHAT CRITICAL THINKERS DO**

<table>
<thead>
<tr>
<th>Is it true that “opposites attract”? In other words, are people really drawn to romantic partners different from themselves? To evaluate this claim with critical thinking, you must do the following:</th>
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<tbody>
<tr>
<td><strong>Be skeptical</strong></td>
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<tr>
<td><strong>Think deeply</strong></td>
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<tr>
<td><strong>Draw on existing knowledge</strong></td>
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<td><strong>Ask questions</strong></td>
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<td><strong>Consider alternative explanations</strong></td>
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<tr>
<td><strong>Reflect on your own emotional reactions</strong></td>
</tr>
<tr>
<td><strong>Tolerate uncertainty</strong></td>
</tr>
<tr>
<td><strong>Keep an open mind</strong></td>
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</table>

“Birds of a Feather?”

Do opposites really attract, as the saying goes? Put on your critical thinking cap, and you may begin to question this piece of commonsense “wisdom.” Psychological research suggests that similarity is a better predictor of romantic attraction, as we are drawn to those who share our interests, viewpoints, and values. Age, education, occupation, and even personality tend to be similar among those who are close (Brooks & Neville, 2016; Lott & Lott, 1965; YouYou, Stillwell, Schwartz, & Kosinski, 2017).
THE FIRST 17 DAYS  Immediately following the mine collapse, the 33 trapped miners switched into survival mode. When faced with a life-or-death situation, the brain responds by unloading stress hormones. This “fight-or-flight” response, discussed further in Chapters 2 and 12, leads to a boost of physical energy, alertness, and an overwhelming sense of urgency to deal with a threat. The miners found it difficult to stay calm and think rationally. Some put themselves at great risk to search for escape routes; others impulsively stole cookies and milk from the food cabinet—provisions they knew were supposed to be shared by all (Tobar, 2014).

Several days passed without a sign from the world above, and the miners grew weak and weary. To stretch their food supply, they limited their daily intake to one spoonful of tuna fish, half a glass of milk, and one cracker—about 100 calories (Franklin, 2011). By Day 16, each of the miners had lost about 20 pounds (Healy, 2010, August 23). They had been hearing the hum of drills for days, a sure sign that a recovery effort was under way, but no rescue team had reached the part of the mine where they were trapped. Finally on the 17th day, a miracle came crashing through the roof of their dank dungeon: the tip of a drill bit. The rescue team had found them (Franklin, 2011).

Above ground, rescuers waited anxiously as the drill slowly emerged from the mine. The tip of the bit surfaced with bags of letters attached—clues that at least one man had survived. But the real celebrations began with the discovery of a note scrawled in red marker: “Estamos bien en el refugio los 33” or “We are okay in the shelter, the 33 of us.” It was a miracle: All 33 men were alive (Franklin, 2011, p. 124).

News of the trapped miners was headlined, broadcast, and tweeted across the globe. People were amazed that all the miners had survived, and some tried to understand the events from a mystical perspective. Various believers in numerology, for example, suggested that the number 33 played a special role in the miners’ story.
They noted, for example, that it took 33 days to drill the rescue tunnel for the 33 men, and that the eventual rescue began on 10/13/10, which adds up to 33 (Agence France Presse, 2010, October 14). These pieces of “evidence” may be intriguing, but they are nothing more than coincidence; and if you looked hard enough, you could probably find a different number pattern related to the Chilean miner story.

LO 3 Evaluate pseudopsychology and its relationship to critical thinking.

PSEUDOPSYCHOLOGY In your everyday life, you will encounter many “disciplines,” such as numerology, which present themselves as psychological science but lack scientific backing. They fall into the category of pseudopsychology, an approach to explaining and predicting behavior and events that appears to be psychology but is not supported by objective evidence. Another familiar example is astrology, which uses a chart of the heavens called a horoscope to “predict” everything from the weather to romantic relationships. Surprisingly, many people have difficulty distinguishing between pseudosciences like astrology, and true sciences like psychology, even after earning a college degree (Impey, Buxner, & Antonellis, 2012; Schmaltz & Lilienfeld, 2014).

How then does astrology often seem to be accurate in its descriptions and predictions? Consider this excerpt from a monthly Taurus horoscope: “You can run but you can’t hide from love. . . . Money may flow freely in and out, but you won’t do anything rash or irresponsible with your resources” (Horoscope.com, 2017). If you really think about it, this statement could apply to just about any human being in the world. We can all “run from love.” And, doesn’t money always come and go, requiring us to think carefully about our spending? How could you possibly prove such a statement wrong? You couldn’t. This is one of the many reasons astrology is not science.

A telltale feature of a pseudopsychology, like any pseudoscience, is its tendency to make assertions so broad and vague that they cannot be refuted (Stanovich, 2013). Astrology, numerology, tarot readings, and other forms of pseudopsychology do not rest on a solid foundation of critical thinking.

You have now learned that psychology is neither common sense nor pseudoscience, but a true science driven by critical thinking. We will soon explore how psychology can help you achieve your education and career goals. But first, let’s discover the fate of the miners. What happened with the rescuers’ effort, and how did the ordeal impact the men’s psychological health?

Why Psychology Is Important

THE RESCUE Tuesday, October 12, 2010: The miners had been dreaming of this day for the past 10 weeks. An elevator-like contraption known as the “Phoenix” would soon be lowered down a rescue tunnel to retrieve them. One by one, each miner would return to the surface of the earth and into the arms of family and friends. There would be a few onlookers, including Chilean President Sebastián Piñera, a thousand journalists, and 1 billion people watching on live television (Craze & Crooks, 2010, October 13).

The rescue effort spanned two days and brought all 33 men to safety. Now everyone wondered how the miners would cope with their new
celebrity status. Reporters, publishing companies, and Hollywood all wanted a piece of Los 33.

As you can imagine, the psychological repercussions of the experience were serious. In addition to reports of nightmares, insomnia, and readjustment difficulties, nearly all of the men are said to have suffered from posttraumatic stress disorder, further discussed in Chapter 13 (Chambers, 2015, October 13; NPR Staff, 2011, August 8; Tobar, 2014, July 7). Even so, the story of Los 33 gives us many reasons to be hopeful. During their time underground, the miners banded together and helped each other survive. As miner Víctor Zamora puts it, “You see the capacity of human beings to be sensitive in critical moments, how a kind of love is born, a bond [cariño], a brotherhood within a moment of danger” (Tobar, 2014, p. 289).

Above ground, rescue workers toiled around the clock to bring Los 33 home; wives, mothers, fathers, siblings, cousins, and friends dropped everything and moved to the Atacama Desert to await the men’s return; and strangers all over the world followed the story’s every turn, shedding tears when they finally watched the miners emerge from the ground. Our capacity for suffering is deep, but so is our well of empathy.

**What’s In It for You?**

The story of the miners, and all the stories in this book, illustrate the most important lesson we hope to impart in the pages to come: Psychology matters to all of us. It matters to 33 miners trapped underground, and it matters to you, a college student trying to survive and thrive in the 21st century (see Table 0.3). What you learn in the upcoming chapters can help you become a more successful student, professional, friend, partner, parent, brother, or sister—a better citizen of the world.
In order to support a family or enjoy a middle-class existence, you need education beyond high school—a minimum of college or technical training. You have already taken care of this yourself—by choosing to attend college.

You need to master the basics of traditional education—math, science, language, and arts. Even in today’s culture of text messaging and emojis, students still need to know how to correspond in a professional manner—for example, writing an e-mail without grammar and punctuation errors. To assist you in achieving this mastery, the key resources are your instructors and the assigned texts. This book was designed for smooth and easy reading. Being a strong reader is a prerequisite for succeeding in today’s information-dense atmosphere.

Regurgitating information on tests is not enough. You must be able to retain and apply the knowledge to real-world scenarios. Your instructor will be essential in this regard, helping you see how psychology relates to real life. To complement your instructor’s efforts, each chapter features several Put Your Heads Together exercises prompting you and your classmates to apply material and generate new ideas in small groups. Active learning is also fostered through Try This exercises and the online, immersive learning activity Your Scientific World.

Your ability to succeed hinges on certain competencies, among them “the ability to think critically about information, solve novel problems” and “communicate and collaborate” (Jerald, 2009, p. 23). Your instructor will provide many opportunities for critical thinking. The text reinforces this effort with the following features: Think Critically, Put Your Heads Together, and Try This.

The ideal way to learn competencies like critical thinking is by integrating them into the larger curriculum; for effective learning, you need context. Throughout the course, your instructor will point out conceptual relationships among different content areas. The Connections features do the same. Strategically placed in the margins, these summaries highlight relationships between topics presented in the current chapter and those presented in earlier chapters. Connections illuminate some of the “big picture” themes in psychology.

To thrive in today’s world, you need what educational experts refer to as “21st-century skills.” The five skills listed here, summarized from Jerald (2009), will help you thrive in an increasingly “complex, competitive, knowledge-based, information-age, technology-driven economy and society” (Hidden Curriculum, 2014, August 26, para. 3). Taking an introductory psychology course will help you cultivate these essential skills.

Now let’s take a minute and home in on that first category: How can knowledge of psychology empower you as a student?

**Explain how studying psychology can help you achieve your academic goals.**

**CAN PSYCHOLOGY HELP YOU BECOME A BETTER STUDENT?** Psychological research has taught us quite a lot about learning, helping identify which study strategies are most effective. Consider, for example, the idea that testing enhances learning (often referred to as the “testing effect”). Research shows that we remember material better after we have been tested on it (Batsell, Perry, Hanley, & Hostetter, 2017). Ideally, tests should be given often. Students generally perform better in a course, and specifically on the final exam, when given ample opportunities to check for understanding and practice retrieving information (Foss & Pirozzolo, 2017). But testing needn’t be restricted to high-stakes exams and stressful pop quizzes. As you will see, we have built assessment into the book by using end-of-section Show What You Know and end-of-chapter Test Prep questions that reward you for reading carefully.
thinking critically, and applying concepts. Answers to the questions in both features are provided at the back of the book, in Appendix C. For more examples of how psychological research directs us toward effective study tools, see Table 0.4 and Infographic 0.1.

Research also suggests that students learn and remember material better when they see how it applies to personal experience, world events, and cultural phenomena (Kember, Ho, & Hong, 2008; Roberson, 2013, September). For example, you might be more interested in learning about depression if you could see how it relates to a familiar everyday activity, like using social media. Does frequent use of Instagram, Twitter, and Facebook increase the risk of suffering from depression? Psychology research is likely to provide some answers, or at least clues about whether a relationship exists, and you might pay more attention to the findings if you saw how they could apply to your life.

Psychology also tells us that active learning exercises increase students’ understanding and retention of material. The Put Your Heads Together features appearing in every chapter prompt you to apply material and generate new ideas in small groups. (Note, these activities will only be fully useful if you have read the material beforehand.) You can also take advantage of the Try This exercises scattered throughout the chapters, which ask you to apply key concepts by performing simple activities. These are typically fast, easy-to-do, and designed to reinforce chapter content.

**Apply This**

<table>
<thead>
<tr>
<th>Technique</th>
<th>What to Do</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Survey</strong></td>
<td>Skim the material to determine what may be useful to you: review questions, learning objectives, chapter summaries. Identify main ideas and concepts.</td>
</tr>
<tr>
<td><strong>Question</strong></td>
<td>Note any questions that arise after your survey. Create an outline to help organize your study based on the questions you generate.</td>
</tr>
<tr>
<td><strong>Read</strong></td>
<td>Read through your chapter, ask questions, and take notes on the content. Remember, studying is not the same as reading.</td>
</tr>
<tr>
<td><strong>Recall</strong></td>
<td>Go over the material you have read in your mind. Identify key facts and concepts. Discuss how other material supports the key facts and concepts.</td>
</tr>
<tr>
<td><strong>Review</strong></td>
<td>Reread the material, and include additional material to enhance your notes. &quot;Teach&quot; the material to someone else.</td>
</tr>
</tbody>
</table>

**Individualize the process**

Break down the reading into small sections you can read, recall, and review effectively.

**Space your study**

Build in breaks and spread the study sessions over time.

**Minimize distractions**

Focus on the task at hand; multitasking while studying diverts attention, resulting in more time spent learning the material.

**Test frequently**

Test yourself frequently. Low-stakes feedback provides an opportunity to learn the material and retain it longer. Work together—collaborative study can be quite effective.

**Sleep**

Get enough rest. Good sleep helps us learn new material and retain it.

Listed here are some practical tips for remembering information you learn in your classes. This advice is largely based on research presented in Chapter 6. Information from Al Firdaus (2012); Roediger, Putnam, & Smith (2011); Rohrer & Taylor (2006).
If you have looked at Table 0.4, you have a sense of which study strategies work, but have you devised a specific course of action? Psychologists recommend that you take stock of all available resources and then map out a study plan (Chen, Chavez, Ong, & Gunderson, 2017). It’s one thing to know what resources are available, but it is just as important to decide how and when you will use them.

**What’s Your Plan?**
To succeed in college, you must identify a set of valuable study strategies. Which of the following tools will help you learn the material and prepare for exams? Check all that apply:

- Attend classes.
- Read assigned material before class.
- Record questions to bring to class.
- Ask questions in class and actively participate in learning activities.
- Review the syllabus regularly.
- Plan ahead for assignments.
  - e.g., create a schedule for your study plan, use instructor-provided templates
- Take notes on key points discussed in class.
  - Write summaries of major sections.
- Complete Show What You Know questions.
  - Discuss material with other students.
  - e.g., in-class activities, study groups
- Use chapter learning objectives to test your understanding.
- Do the Try This exercises on your own.
- Read the Connections to review how the new material relates to previous material.
- Meet with instructor.
  - Use resources provided by instructor.
  - e.g., PowerPoints, LaunchPad, LearningCurve, study guides
- Use Internet resources to complement material.
  - e.g., APA Style guides, instructor-recommended websites
- Complete Test Prep questions.
- Review Infographics.
- Review lecture notes.
  - Make a concept map.
- Use college-wide resources.
  - e.g., reference librarians, tutoring centers
- Take breaks.
- Get enough sleep.
- Eat a balanced diet.

**Planning Pays Off**
Introductory statistics students were asked to think about which resources they would find useful and how they would employ them prior to exam time. The blue bars in the graph represent students who did not complete the exercise (control group), while the red bars represent those who did (experimental group). Throughout the semester, students in the experimental group reflected more on their learning; they reported using resources more successfully; and their course grades were higher by about 3.5–4.5%, or one third of a letter grade (Chen et al., 2017).

Working in groups, A) identify resources in your textbook, class, and college that will help you learn and be successful. B) List the resources you plan to use. C) Discuss how you would create a chart to keep track of assignment due dates, plan your work schedule, and monitor your progress in the course.

**HOW CAN WE HELP YOU?**  
It goes without saying, keep up with your assigned reading and your experience in class will be richer and more rewarding. As you make your way through each chapter, pay attention to the learning objectives (LOs), which serve as benchmarks for gauging your understanding of each section (see Figure 0.1). You can also use learning objectives to pace yourself as a reader. In other words, read from one learning objective to the next, instead of trying to read the entire chapter in one sitting. For added reinforcement, we have tied the learning objectives to the end-of-chapter Summary, Show What You Know, and Test Prep questions. Beginning in Chapter 1, you will see **Connections** features strategically placed in the margins (Figure 0.4). These brief summaries complement what many instructors do in the classroom—point out relationships between topics presented in the current chapter and those presented in earlier chapters. Every chapter also features an **Online Video Profile** to provide a more personal connection with the profile subject. Both components of the video profile, “In Their Own Words” and “You Asked, They Answered,” are available for free online. Finally, for those of you with access to LaunchPad, make sure you take advantage of the LearningCurve adaptive quizzing system with personalized study plans.

**Getting Your Bang for the Buck**

**LO 5** Describe how an understanding of psychology can foster career success.

Approximately 1.5 million students enroll in introductory psychology courses every year (Landrum, 2016; Landrum & Gurung, 2013). Some will pursue psychology careers, but most will explore other academic disciplines or technical fields. Whatever path you choose, we guarantee that the material presented in this class will have some relevance. Throughout the book, we will point out how psychology relates to various career areas. We will also highlight skills required to succeed in a competitive, technology-driven world (Jerald, 2009; Strawser & McCormick, 2017). If you are skeptical about the utility of these skills, consider this study: Pollsters asked over 1,300 recruiters from more than 600 companies what qualifications they seek in college grads. They found strategic thinking, creative problem solving, leadership, and communication to be among the most desired skills across various careers (Levy & Rodkin, 2015). Whether you are interested in nursing, business, art, computer science, or agriculture, keep reading . . . this book is designed to help you.

**Here We Go**

With this introduction, you should have a general sense of what psychology is (and isn’t), why the discipline matters to all of us, and how to get the most out of this course. As you make your way through these pages, you will come across five recurring
themes: nature and nurture, culture, gender, positive psychology, and psychology in the workplace. Take a moment and familiarize yourself with them before you delve into the chapters (Table 0.5).


<table>
<thead>
<tr>
<th>TABLE 0.5</th>
<th>LOOK FOR THESE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme</strong></td>
<td><strong>Key Question</strong></td>
</tr>
<tr>
<td>Nature and nurture</td>
<td>How do heredity and environment interact to influence behavior and mental processes?</td>
</tr>
<tr>
<td>Culture</td>
<td>How does culture shape behavior and mental processes?</td>
</tr>
<tr>
<td>Gender</td>
<td>How does gender impact behavior and mental processes?</td>
</tr>
<tr>
<td>Positive psychology</td>
<td>What is positive about human beings?</td>
</tr>
<tr>
<td>Psychology in the workplace</td>
<td>How does psychology relate to workplace behaviors and environment?</td>
</tr>
</tbody>
</table>

Throughout this textbook, you will come across five recurring topics: nature and nurture, culture, gender, positive psychology, and psychology in the workplace. These are not only important issues in psychology; they are relevant to you as a student and as a person living in the 21st century.