Chapter 1

Psychology and the Challenges of Life

OUTLINE

Did You Know that...

- Module 1.1: Psychology and Adjustment
- Module 1.2: Human Diversity and Adjustment
- Module 1.3: Critical Thinking and Adjustment
- Module 1.4: How Psychologists Study Adjustment
- Module 1.5: Adjustment and Modern Life: Becoming a Successful Student

RECITE! RECITE! RECITE!
B

eth, 22, a fourth-year chemistry major, has been accepted to medical school in Boston. She wants to do cancer research, but this goal means another seven or eight years at the grindstone. Kevin, her fiancé, has landed a solid engineering position in “Silicon Valley,” California. He wants Beth to come with him, take a year to start a family, and then go to medical school in California. But Beth hasn’t applied to medical school in California, and there’s no sure bet that she would “get in” there. If she surrenders her educational opportunity now, another one might not come along. Should she demand that Kevin accompany her to Boston, even though he hasn’t been offered work there? Would he go? What if he gives up his golden opportunity and their relationship falters because of resentment? Also, she wonders how long she can safely put off childbearing. Though she thinks of herself as “a kid,” her biological clock is ticking and she won’t be finishing her medical training—assuming she goes to medical school—until she’s past 30. And what if having children even then threatens to prevent her from getting established in her career? Beth has just been accepted to medical school—shouldn’t she be happy?

John, 21, is a business student who is all business. Every day he reads the Wall Street Journal and the business pages of the New York Times. He is dedicated to his books and invests most of his energy in trying to construct a solid academic record so that he will get his career off on the right foot. He represents the first generation in his African-American family to attend college, and he is determined to do college right. But sometimes he wonders why he bothers; he thinks of himself as one of those people who “just can’t take tests.” He begins to shake two days before a test. His thoughts become jumbled when the papers are distributed. He finds himself wondering if his professors will attribute poor grades to his ethnicity. By the time the papers are on his desk, his hand is shaking so badly that he can hardly write his name. His grades suffer.
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Maria, 19, is a first-year college student. She has seen the TV talk shows and has gone to the R-rated films. She has read the books and the magazine articles about the new sexual openness, but her traditional Mexican-American upbringing has given her a strong sense of right and wrong. Yet she perceives herself as well-acculturated to the dominant, but more liberal, contemporary American culture. Yet despite the social and sexual pressures she finds in the dominant culture and her desire to “fit in,” she would prefer to wait for Mr. Right. At the very least, she is not going to allow social pressure to prevent her from carefully sorting out her values and her feelings. The young man she has been seeing, Mark, has been patient—from his point of view. But lately he’s been pressuring Maria, too. He has told Maria they have more than a fly-by-night relationship and that other women are more willing to “express their sexual needs” with him. Maria’s girlfriends say they understand her feelings. Yet they tell her that they fear that Mark will eventually turn elsewhere. Quite frankly, Maria is concerned about more than virginity; she also thinks about sexually transmitted infections such as genital herpes and AIDS. After all, Mark is 22 years old and she doesn’t know every place he’s been. True, they can take precautions, but what is completely safe? In any event, Maria does not want to be pressured.

Lisa, 20, a hard-working college junior, is popular with faculty, dutiful with relatives. She works out regularly and is proud of her figure. But Lisa also has a secret. When she is sipping her coffee in the morning, she hopes that she won’t go off the deep end again, but most of the time she does. She usually starts by eating a doughnut slowly; then she eats another, picking up speed; then she voraciously downs the remaining four in the box. Then she eats two or three bagels with cream cheese. If there is any leftover pizza from the evening before, that goes down too. She feels disgusted with herself, but she hunts through her apartment for food. Down go the potato chips, down go the cookies. Fifteen minutes later she feels as though she will burst and cannot take in anymore. Half nauseated she finds her way to the bathroom and makes herself throw up the contents of her binge eating. Tomorrow, she tells herself, will be different. But deep inside she suspects that she will buy more doughnuts and more cookies, and that tomorrow might be much the same. She worries that she may be bulimic and in need of professional help.

David, 32, is not sleeping well. He wakes before dawn and cannot get back to sleep. His appetite is off, his energy level is low, he has started smoking again. He has a couple of drinks at lunch and muses that it’s lucky that any more alcohol makes him sick to his stomach—otherwise, he’d probably be drinking too much, too. Then he thinks, “So what difference would it make?” Sometimes he is sexually frustrated; at other times he wonders whether he has any sex drive left. Although he’s awake, each day it’s getting harder to drag himself out of bed in the morning. This week he missed one day of work and was late twice. His supervisor has suggested in a nonthreatening way that he “do something about it.” David knows that her next warning will not be unthreatening. It’s been going downhill since Sue walked out. Suicide has even crossed David’s mind. He wonders if he’s going crazy.

Beth, John, Maria, Lisa, David—each of them is experiencing a challenge to adjustment and growth.

We face many challenges in life. For example, Beth is experiencing role conflict. She wants to attend medical school but also wants to maintain the relationship with Kevin and start a family. Although she might become a physician, she would probably retain the primary responsibility for child-rearing. Even women who have become officers of their companies typically manage the household and childcare responsibilities. Kevin is not a chauvinist, however. As it turns out, he accompanies Beth to Boston and looks for work there.

John’s challenge is test anxiety, plain but not-so-simple. Years of anxiety and fluctuating grades have led to a vicious cycle: He becomes so anxious that he often finds
himself paying more attention to his bodily sensations and his troubled thoughts than to the test items themselves. His distraction then leads to poor grades and heightens his anxiety. His concerns have prevented him from performing up to his full potential. Fortunately, there is a notice on a bulletin board that his college counseling center is offering a program to help students with test anxiety.

Maria’s challenges also involve conflict—conflict with Mark and conflict within herself. She decides not to be pressured into a sexual relationship, and it happens that Mark turns elsewhere. It hurts, but Maria is confident that other men who are more sensitive to her values will understand and appreciate her.

Lisa faces the challenge of dealing with **bulimia nervosa**, an eating disorder discussed in Chapter 5. The causes of eating disorders are complex and not fully understood, but they appear to be related to social pressures young women in our society face in adhering to unrealistic standards of thinness. Lisa does seek treatment, but only after her dentist informs her that the enamel on her teeth has begun to decay due to repetitive vomiting. Treatment is helpful in reducing episodes of binge eating and vomiting, but she continues to experience occasional lapses. “I’m on the right track,” she says, “but I’ve still got a way to go.”

David faces the challenges posed by another type of psychological disorder, depression. Feelings of depression are normal following a loss, such as the end of a relationship, but David’s feelings have lingered. His friends tell him that he should get out and do things, but David is so down that he hasn’t the motivation. After much prompting, David consults a psychologist who, ironically, also pushes him to get out and do things—pleasant events of the sort described in Chapter 9. The psychologist also shows David that part of his problem is that he thinks of himself as a loser who is just destined to fail in all his endeavors.

Beth, John, Maria, Lisa, and David all need to make adjustments to cope with the challenges in their lives. The challenges of life touch us all at one time or another. That is what this book is about: adjusting to challenges as we get on with the business of living—growing, learning, building relationships, making sense of our value systems, establishing careers, making ends meet, and striving to feel good about ourselves. This book portrays our quest for self-development and brings psychological knowledge to bear on problems that may block self-development. Some of these problems, such as anxiety, depression, or obesity, are personal in nature. Some involve intimate relation-
ships and sexuality. Some involve the larger social context—the workplace, prejudice and discrimination, community disasters, pollution, and urban life.

Most challenges offer us the opportunity not merely to adjust, but also to grow. We can grow in many ways, such as expanding our interests, our knowledge and skills, our self-awareness, and our ways of coping with the challenges we face. In this book you will learn how you can apply psychological knowledge to help you meet the challenges you face in life as well as to grow in directions that help you enrich your life and relate more effectively to others. You will also learn about the professional helpers and when and how to seek their intervention. This knowledge is important because life in the new millennium has in many ways become more challenging than ever.

In this chapter we first define the science of psychology and see that it is well-suited to gathering information about, and suggesting applications for, our own adjustment and growth. We explore the richness of human diversity—facets of ourselves that contribute to our uniqueness and enable us to experience a sense of cultural pride. We discuss critical thinking, a scientific approach to life that enables us to analyze the claims and arguments of others to determine what is true and what is false. Then we examine the scientific procedures that psychologists use in gathering knowledge. Finally, we explore what psychologists have learned about student success—how we can study effectively, how we can make use of time spent in class, how we can ace tests, and how we can manage time to fit in academic responsibilities and leisure activities.
up our own household. Coping with a major exam, a job interview, or the death of a loved one also pose adjustment challenges. There are many ways we might adjust to these kinds of demands, such as by making efforts to form new friendships when we move away from home, developing effective study skills, rehearsing what we’ll say in a job interview, or seeking help from others in coping with a significant loss.

Sometimes we rely on ineffective coping strategies. We might pretend that problems do not exist. We may put a term paper out of our minds for weeks (or months). We might convince ourselves that we’re sure to get that job because other people will naturally recognize our superior skills and talents. We might deal with emotional problems by dulling our feelings through the use of alcohol or other drugs. Or we might drift in a state of despair by telling ourselves that our problems are just so immense that there’s no point to trying to cope with them.

More constructively, we can see the pressures and problems we face for what they are. Then we can make decisions and formulate plans that will allow us to cope with them the best we can.

**Touchpoints in Our Study of Adjustment**

To get our bearings, let us address three core issues that underlie our study of adjustment.

**Adjustment and Personal Growth:**

*Two Aspects of the Psychology of Adjustment*

Literally speaking, to adjust is to change so as better to conform to, or meet, the demands of one’s environment. Adjustment is essentially reactive. It’s like a tennis game: The environment serves up the balls and we return them as best we can. When we adjust, we respond to pressures that require us to adapt. But the psychology of adjustment goes beyond adjusting to environmental demands. It also addresses issues of personal growth. Whereas adjustment is reactive, personal growth is proactive.

Our study of the psychology of adjustment is based on the premise that people are not merely reactors to their environments. People are also actors. Things not only happen to us. We also make things happen. Not only does the environment affect us. We also affect the environment. In fact, we create novel environments to suit our needs.

We must extend the psychology of adjustment to accommodate the creative and active components of the human experience—the ability to grow or develop as a person. Not only do we react to stress, we also act upon our environment in meeting our needs and pursuing our goals.

To achieve psychological fulfillment, we need to act, not merely react. We need to fill our lives with meaning and expand ourselves in directions that may not be even known today. Personal growth is more of a journey than a final destination, a process of development in which we continually examine who we are, where we are going, and what we want our lives to become.

**Nature versus Nurture: Is Biology Destiny?**

Psychologists are concerned about the degree to which our traits and behavior patterns reflect our nature, or genetic factors, and our nurture, or environmental influences. Physical traits such as height, race, and eye color are biologically transmitted from generation to generation by genes. Genes are segments of DNA (deoxyribonucleic acid), the stuff of which our chromosomes are composed. Genes give rise to our biological structures and physical traits.

- **Gene** The basic unit of heredity, consisting of a segment of deoxyribonucleic acid (DNA).
- **Chromosome** A strand of DNA that consists of genes. People normally have 23 pairs of chromosomes.
But is biology destiny? The answer is complex: Your authors take the position that our traits and behaviors reflect the interaction of our genetic potential (and our genetic limitations) with environmental influences and personal choice. It has been clear that genes play roles in the development of physical disorders such as heart disease and cancer. Now it appears that genetic factors are involved in nearly all human traits and behavior. Examples include intelligence, sociability, shyness, social dominance, aggressiveness, leadership, thrill seeking, effectiveness as a parent or a therapist, even interest in arts and crafts (e.g., Cabib et al., 2000; Cacioppo et al., 2000; Plomin et al., 1997; Plomin & Crabbe, 2000). Genetic influences also contribute to most of the adjustment problems we face in coping with stressful demands, such as emotional disorders involving anxiety and depression, and even criminal or antisocial behavior (Kendler et al., 2000a, 2000b; Plomin, 2000; Plomin & Crabbe, 2000; Sullivan et al., 2000). Genes also play a contributing role in the development of obesity and vulnerability to addiction to substances such as alcohol and nicotine (Devlin et al., 2000; McLellan et al., 2000; Nurnberger et al., 2001; Wall et al., 2001; Wood, Vinson, & Sher, 2001; Wing & Polley, 2001). That said, psychological problems also reflect life experiences and the choices we make in dealing with the situations we face (Sullivan et al., 2000).

Studies of pairs of twins carried out by psychologist David Lykken (1996) suggest that people even inherit a tendency toward a certain level of happiness. Despite the ups and downs of experience, people tend to drift back to their usual levels of cheerfulness or grumpiness. Factors such as availability of money, level of education, and marital status may be less influential than heredity when it comes to human happiness. (But let’s face it: At the very least, having money means that one needn’t worry about money.)

Although genetic factors play a role in psychological adjustment and effective behavior, they do not in themselves give rise to specific behavior patterns. Genes create a predisposition or likelihood, not a certainty, that certain traits, behaviors, abilities, or psychological disorders will develop (Frank & Kupfer, 2000; Sapolsky, 2000). Genetic predispositions interact with other factors, such as learning experiences, stress, and personal choice in determining our traits, behaviors, disorders, and the like. For example, although people may have a genetic predisposition toward becoming dependent on various substances, including alcohol, cocaine, and nicotine, peer pressures and other psychological factors may be just as important as genes in determining whether people experiment with them or become addicted to them (Dick et al., 2001).

Genetic factors can be powerful influences; for example, our genetic codes do not permit us to fly or breathe underwater. But in many cases human adjustment ability can modify the impact of genes. For example, we can build airplanes and submarines (or scuba gear). Biology is not destiny. The degree to which you marshal your inherited resources to adjust and develop your potential is largely up to you.

The Clinical Approach versus the Healthy-Personality Approach

Most psychology-of-adjustment textbooks are written according to one of two major approaches—a clinical approach or a healthy-personality approach. The clinical approach primarily focuses on ways in which psychology can help people overcome personal problems and cope with stress. The healthy-personality approach primarily focuses on healthful patterns of personal growth and development, including social and vocational development. The book you are holding in your hands was written with awareness of both approaches to the psychology of adjustment. We examine both effective and ineffective ways of coping with stress. But there is equal emphasis on optimizing our potentials through preventive and self-actualizing behavior. We aim to be comprehensive and balanced in our approach, to provide ample theory, research, and applications for coping and for optimal development.
Psychologists focus mainly on individual people and are committed to the dignity of the individual. Yet psychologists also recognize that we cannot understand individuals without an awareness of the richness of human diversity (Basic Behavioral Science Task Force, 1996b). People differ from one another in many ways. We differ in ethnic-unity, cultural background, gender, lifestyles, and so on. When it comes to studying the psychology of adjustment, we need to consider the role of diversity in how we cope with the challenges we face and develop our unique potentials.

**Ethnic Diversity**

The nation and the world at large contain more kinds of people and more ways of doing and viewing things than most of us might imagine. One kind of diversity involves people’s **ethnic groups**. But just what is an “ethnic group”? Ethnic groups are subgroups within the general population who have a common cultural heritage, as distinguished by factors such as their customs, race, language, and common history.

One reason for studying ethnic diversity is that the experiences of various ethnic groups in the United States highlight the impact of social, political, and economic factors on human behavior and development. As we will see, factors such as discrimination and prejudice affect traditionally identified minority groups more than others. Some health concerns also affect some groups more than others.
Who We Are Today, Who We Will Be Tomorrow

By the year 2005, about 30% of U.S. residents will be members of traditional ethnic or racial minority groups (see Figure 1.1). In Canada, non-White minorities comprise about 15% of the population (The Daily Statistics Canada, 1998). However, the traditional meaning of the word “minority” has been turned on its head, as White Americans of European ancestry (European Americans) now constitute a minority of the population in many U.S. cities. Today, the American and Canadian populations can be likened to a multicultural salad bowl (Frible, 1997). Non-Whites already comprise a majority in the nation’s most populous state, California, and Texas is quickly following suit (Meachan, 2000; Purdum, 2001; Schmitt, 2001c). Canada is also becoming increasingly ethnically diverse, although not quite at the same rate as the United States.

Presently, Hispanics and African Americans comprise the largest minority groups in the United States, with each accounting for about 12%-13% of the population (Sachs, 2001; Rodriguez, 2001). Asian/Pacific Islanders account for about 4% of the U.S. population, whereas Native Americans constitute about 0.8%. The two fastest-growing U.S. population groups are Hispanic Americans (whom we refer to as Latino and Latina Americans) and Asian Americans — groups whose numbers increased during the 1990s by more than 60% and 48%, respectively (Clemetson, 2000; Schmitt, 2001a, b).

We can compare the present racial/ethnic mix in the United States with the ethnic distribution we expect by the year 2050 (see Figures 1.1 and 1.2). By the middle of the century, Whites will constitute but a slim majority of the population.

Not only is American society becoming increasingly diverse, but many people today reject traditional distinctions in defining their racial or ethnic identities. Increasing numbers of people in the United States and Canada consider themselves biracial, multiracial, or multietnic, including such prominent individuals as the golfer Tiger Woods, the baseball player Derek Jeter, and the singer Mariah Carey (Meacham, 2000; Miller, 2000; See, 1999). People with multiracial identities are not so easily classified according to traditional racial distinctions. By the year 2000, nearly seven million Americans identified themselves as multiracial (Schmitt, 2001b, c). Moreover, young people today are twice as likely to describe themselves as multiracial than were their parents (Takahashi, 2001).


Human Diversity

The science of psychology is mainly directed toward understanding the behavior and mental processes of the individual. However, we cannot understand the individual without referring to her or his cultural traditions and race, the language spoken in the home, and her or his common history with one or more ethnic groups. Females and males, and individuals from different ethnic backgrounds face different issues in adjustment. How does your ethnic background affect your adjustment?

Adjustment in the New Millennium


- White (Non-Hispanic): 69.3%
- Hispanic: 13.3%
- African American: 12.3%
- Asian/Pacific Islander: 4.3%
- Native American: 0.8%

Ethnic/Racial Breakdown of U.S. Population in Year 2050 (projected)

- White (Non-Hispanic): 52.8%
- Hispanic: 24.3%
- African American: 13.2%
- Asian/Pacific Islander: 8.9%
- Native American: 0.8%
Another reason for examining the role of ethnic diversity is the dramatically changing ethnic composition of our society, as discussed in the Adjustment in the New Millennium feature in this module. Studying human diversity also enables students to appreciate the rich cultural heritages and historical problems of the many ethnic groups in our society. Another reason for studying diversity concerns psychological intervention and consultation. Psychologists are called upon to help people of all ethnic groups solve personal problems, for example. How can psychologists hope to understand the aspirations and problems of individuals from an ethnic group without understanding the history and cultural heritage of that group? How can psychologists understand African Americans or Latino and Latina Americans, for example, without sensitivity to the histories of prejudice to which members of these ethnic groups have been exposed? Moreover, should psychologists from the European American majority attempt to practice psychotherapy with people from ethnic minority groups? If so, what kinds of special education or training might they need to do so? What is meant by “culturally sensitive” forms of psychotherapy? We address these issues in Chapter 9.

Gender

Gender is the state of being male or being female. Gender is a psychosocial concept, not a biological concept. The term “sex” refers to the biological division between male and female, as when we describe the sexual organs that distinguish the reproductive anatomy of men and women (not gender organs). A person’s gender is not simply a matter of her or his anatomy or chromosomal sex. Gender is wrapped up with a complex web of cultural expectations and social roles about how we are expected to act as women or men. But how can sciences such as psychology and medicine hope to understand the experience of being a woman in our society when most research has been conducted with men, by men, and for the benefit of men (Matthews et al., 1997)?

Reflect

What kind of impact does your ethnic background have on your daily life?

What kinds of prejudices have you or women in your life experienced that are related to gender?
Just as there have been historic prejudices against members of ethnic minority groups, so too have there been prejudices against women. The careers of women have been traditionally channeled into domestic chores, regardless of their talents, wishes, or abilities. Not until relatively modern times were women in Western cultures provided opportunities to pursue higher educational opportunities. Even today, women in many parts of the world are prevented from pursuing educational and training opportunities afforded to men.

Women in colonial times in the United States were not permitted to attend college. It wasn’t until 1833 that college doors were opened to women, when Oberlin College became the first school of higher education to welcome women. Women did not have an easy go of it in the early days of psychology. The earliest female pioneer in psychology, Christine Ladd-Franklin (1847–1930), was denied her doctoral degree—not because she lacked credits or failed to complete her thesis. No, she was denied because she was a woman and women were not expected to pursue advanced degrees. Yet the proverbial tide has changed. Today, about two-thirds of the undergraduate degrees and doctorates in psychology are granted to women (Kohout, 2001; Kyle, 2000). Figure 1.3 shows the rising proportion of female doctoral degree recipients in psychology in recent years.

Today it is also the norm for women to be in the workforce. However, as we see in Chapter 14, women continue to be paid less than men in comparable positions.

Other Meanings of Diversity

Human diversity touches upon many differences between people, such as age, physical ability, and sexual orientation. Older people, disabled people, and gay males and lesbians have all suffered from various forms of discrimination.

Our focus on human diversity throughout the text will help us to better understand and fully appreciate the true extent of human behavior and mental processes. This broader view of psychology—and the world—is enriching for its own sake and heightens the accuracy and scope of our presentation.

Let us now consider how a scientific approach can help you cope with the challenges of life. This approach is characterized by critical thinking.
Psychology is a science, and the psychology of adjustment provides a scientific approach to coping with the challenges of life. One of the hallmarks of the scientific approach is critical thinking. But what is critical thinking?

Critical thinking actually has many meanings. On one level, it means taking nothing for granted. It means not believing things just because they are on the World Wide Web, in print, or because they were uttered by authority figures or celebrities. It means not necessarily believing that it is healthful to express all of your feelings just because a friend in “therapy” urges you to do so. On another level, critical thinking refers to thoughtfully analyzing the statements and arguments of other people. It means examining definitions of terms, examining the premises or assumptions behind arguments, and then scrutinizing the logic with which arguments are developed.

Why is critical thinking essential to your adjustment? Critical thinking will help you determine whether the arguments of a political candidate are to be believed and trusted. Critical thinking will help you decide whether that clever quiz you found online actually measures what it is supposed to measure. Critical thinking can help you decide whether the arguments against eating fatty foods or in favor of “safer sex” apply to you. Critical thinking will help you decide whether a new diet craze has the potential to help you or hurt you. Critical thinking will help you examine the evidence as to whether the latest machine for giving you “abs” of steel is better than the last 10 machines that were supposed to give you abs of steel. Critical thinking will even help you figure out whether your friends’ stories make sense.

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**Review It**

(6) Psychologists recognize that we need to consider the richness of human ________ in our efforts to develop a better understanding of individual behavior.

(7) Subgroups within the general population who have a common cultural heritage are called ________ groups.

(8) ________ is a psychosocial concept that distinguishes masculinity from femininity.

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**Think About It**

How can we gain a better appreciation of adjustment and personal growth by taking into account factors relating to human diversity?

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**Critical Thinking and Adjustment**

- What is critical thinking?
- What are some of the major features of critical thinking?
- How does critical thinking “protect” us from the claims of astrology and other pseudosciences?
Features of Critical Thinking

Let us consider some of the major features of critical thinking that can be of help to you in your college years and beyond:

1. **Maintain a healthy skepticism.** Keep an open mind. Politicians and advertisers try to persuade you. Even research reported in the media or in textbooks may take a certain slant. Extend this principle to yourself. Are some of your own attitudes and beliefs superficial or unfounded? Accept nothing as true until you have examined the evidence.

2. **Examine the definitions of terms.** Some statements are true when a term is defined in one way but not when it is defined in another way. Consider the label on a container of “low-fat” ice cream: “97% Fat Free!” One day at the supermarket we were impressed with an ice cream package’s claims that the product was 97% fat free. Yet when we read the label closely, we found that a 4-ounce serving had 160 calories, 27 of which were contributed by fat. Fat, then, accounted for 27/160ths, or about 17%, of the ice cream’s calorie content. But fat accounted only for 3% of the ice cream’s weight—most of which was calorie-free water weight. The packagers of the ice cream knew that labeling the ice cream as “97% fat free” would make it sound more healthful than “Only 17% of calories from fat.” Read carefully. Think critically.

3. **Examine the assumptions or premises of arguments.** Consider the statement that one cannot learn about human beings by conducting research on nonhuman animals. One premise in the statement seems to be that human beings are not animals. We are, of course. (Would you rather be a plant?)

4. **Be cautious in drawing conclusions from “evidence.”** Self-help books tend to be filled with anecdotes about people who followed the methods in the books and improved their lives. “Psychics” point to predictions that prove to be accurate. Think critically: Do the self-help books report results with everyone who tried the method for losing weight or for achieving psychological well-being, or do they just report successes? Do so-called psychics report their failures or only their successes? Be especially skeptical when you hear “I know someone who...” Ask yourself whether this one person’s reported experience—even if true—is satisfactory as evidence. When examining research findings, consider who paid for the research. Research evidence on the effectiveness of particular drugs may be less persuasive if the studies were underwritten by pharmaceutical companies selling the drugs than by independent researchers.

5. **Consider alternative interpretations of research evidence, especially of evidence that seems to show cause and effect.** What about this research question: “Does alcohol cause aggression?” Later in the chapter we see that evidence shows a clear connection, or “correlation,” between alcohol and aggression. That is, many people who commit violent crimes have been drinking alcohol. But does the evidence show that this connection is causal? Could other factors, such as gender, age, willingness to take risks, or social expectations account both for the drinking and the aggressive behavior?

6. **Don’t oversimplify.** People’s adjustment to the challenges of life can involve complex interactions of genetic influences, situational factors, and personal choice. Consider the question as to whether psychotherapy helps people with adjustment problems. A broad answer to this question—a simple yes or no—might be oversimplifying. It may be more worthwhile to ask, “What type of psychotherapy, practiced by whom, is most helpful for what kind of client and what kind of problem?”

7. **Don’t overgeneralize.** Consider again the statement that one cannot learn about human beings by conducting research on animals. Is the truth of the matter an all-or-nothing issue? Are there certain kinds of information we can obtain about people from research with animals? What kinds of things are you likely to be able to learn only through research with people?
8. **Apply critical thinking to all areas of life.** A skeptical attitude and a demand for evidence are useful not only in college, but are of value in all areas of life. Be skeptical when you are bombarded by TV commercials, when political causes try to sweep you up, when you see the latest cover stories about Elvis and UFO sightings in supermarket tabloids. How many times have you heard the claim “Studies have shown that…”? Perhaps such claims sound convincing, but ask yourself: Who ran the studies? Were the researchers neutral scientists, or were they biased toward obtaining certain results?

These principles of critical thinking guide psychologists’ thinking as they observe behavior, engage in research, or advise clients as to how to improve the quality of their lives. They will also help you adjust to the challenges in your own life. Now let us turn to applying critical thinking skills to two areas very much in the public eye: astrology and self-help books. In the Adjustment in the New Millennium feature on page 16, we focus on another area in which people need to exercise their critical thinking skills: surfing the Internet.

### Thinking Critically About Astrology and Other Pseudosciences

Should you be concerned about your horoscope? Do “psychics” really help police find criminals and evidence? When you are troubled, should you examine the situation critically and solve your problems by yourself? If you believe you might profit from another person’s advice, should you consult an astrologer, a psychic, or a mental health professional like a psychologist?

Psychologists are trained to be critical thinkers. They are skeptical. They insist on seeing the evidence before they will accept people’s claims and arguments as to what is true and what is false. The same procedures can be applied to **pseudosciences** (false sciences) such as astrology. Pseudoscience beckons us from the tabloids at supermarket checkout counters. Each week, there are 10 new sightings of Elvis and 10 new encounters with extraterrestrials. There are 10 new “absolutely proven effective” ways to take off weight and 10 new ways to beat stress and depression. There are 10 new ways to tell if your partner has been cheating and, of course, 10 new predictions by astrologers and psychics.

Let’s focus on one example of pseudoscience—astrology. But first read this personality report. We wrote it about you:

You have your strengths and your weaknesses, but much of the time, you do not give yourself enough credit for your strengths. You are one of those people who has the inner potential for change, but you need to pay more attention to your own feelings so that you can determine the right direction for yourself.

You have many times found yourself to be in conflict as your inner impulses have run up against the limits of social rules and moral codes. Most of the time you manage to resolve conflict in a way that makes sense to you, but now and then you have doubts and wonder whether you have done the right thing. You would often like to be doing two or more things at the same time and you occasionally resent the fact that you cannot.

There is an inner you known to you alone, and you often present a face to the world that does not quite reflect your genuine thoughts and feelings. And now and then you look at the things you have done, and the path that you have taken, and you have some doubt as to whether it is all worth it.

That’s you, all right, isn’t it? It probably sounds familiar enough. The tendency to believe a generalized (but phony) personality report is called the **Barnum effect**, after circus magnate P. T. Barnum, who once declared that a good circus had a “little something for everybody.” The Barnum effect—the tendency for general personality re-

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**Pseudoscience** (soo-doe-sigh-ants) A method or system that claims to have a scientific basis but does not, such as astrology. A false or sham science.

**Barnum effect** The tendency of people to accept overgeneralized descriptions of personality as accurate appraisals of their own personalities.
ports to have a “little something for everybody”—also allows fortune-tellers to make a living. That is, most of us have enough in common so that a fortune-teller’s “revelations” about us may ring true.

Most of us have personality traits in common. But what do tea leaves, bird droppings, palms (of your hands, not on the tropical sands), and the stars have in common? Let us see.

P. T. Barnum also once declared, “There’s a sucker born every minute.” The tendency to believe generalized personality reports has made people vulnerable to fakers and phonies throughout history. It enriches the pocketbooks of people who offer to “read their personalities” and predict their futures based on the movements of the stars and planets through astrology. Astrology has been popular for centuries. Gallup and Newport (1991) report that one person out of four in the United States believes in astrology. Another one in four to five are not sure. Even in an age in which science has proved itself capable of making significant contributions to people’s daily lives and health, more people are likely to check their horoscope than seek scientific information when they have to make a decision!

Astrology is based on the notion that the positions of the sun, the moon, and the stars affect human temperament and human affairs. For example, people born under the sign of Jupiter are believed to be jovial, or full of playful good humor. People born under the sign of Saturn are thought to be gloomy and morose (saturnine). And people born under the sign of Mars are believed to be warlike (martial). One supposedly can also foretell the future by studying the positions of these bodies.

Astrologers maintain that the positions of the heavenly bodies at the time of our birth determine our personality and destiny. They prepare forecasts called horoscopes that are based on our birthdates and indicate what it is safe for us to do. If you get involved with someone who asks for your “sign” (for example, Aquarius or Taurus), he or she is inquiring about your birthdate in astrological terms. Astrologers claim that your sign, which reflects the month during which you were born, indicates whom you will be compatible with. You may have been wondering whether you should date someone of another religion. If you start to follow astrology, you may also be wondering whether it is safe for a Sagittarius to date a Pisces or a Gemini.

Apply principles of critical thinking to the claims of astrologers. For example, does the fact that there may be a long-standing tradition in astrology affect its scientific credibility? Did Nancy Reagan’s (or any other individual’s) belief in astrology affect its scientific credibility? Are the tides of the seas comparable to human personality and destiny?

Psychology is a science. Science demands that beliefs about the behavior of cosmic rays, chemical compounds, cells, people—or the meaning of bird droppings or the movements of the stars—must be supported by evidence. Persuasive arguments and reference to authority figures are not scientific evidence. Astrologers and other pseudo-scientists have made specific forecasts of events, and their accuracy—or lack of it—provides a means of evaluating astrology. Astrological predictions are no more likely to come true than predictions based on chance (Munro & Munro, 2000). That is fact, but does it matter? Will followers of astrology be persuaded by facts?

Maybe not. Many people seem to need some magic in their lives, even if the “magic” provided by psychics amounts to a heap of garbage (Lillqvist & Lindeman, 1998; Munro & Munro, 2000). Sad to say, even in our age of scientific enlightenment, many people are more comfortable with stories and leaps of faith than they are with objective evidence and statistical probabilities.

Thinking Critically About Self-Help Books: Are There Any Quick Fixes?

Chicken Soup for the Soul; The Road Less Traveled; The 7 Habits of Highly Effective People; The Seven Spiritual Laws of Success; Don’t Say Yes When You Want to Say No; Our Bodies Our Selves; The 8-Week Cholesterol Cure; Treating Type A Behavior and Your Heart; Feeling Good—The New Mood Therapy . . . .
These are just a few of the self-help books that have flooded the marketplace in recent years. Every day, shy people, anxious people, heavy people, stressed people, and confused people scan bookstores and supermarket checkout racks in hope of finding the one book that will provide the answer. How can they evaluate the merits of these books? Some offer useful insights and advice. But others are just plain wrong. How can we separate the helpful wheat from the useless and sometimes harmful chaff?

Unfortunately, there are no easy answers. Many of us believe the things we see in print, and anecdotes about how chubby John lost 60 pounds in 60 days and shy Joni blossomed into a social butterfly in a month have a powerful allure. Especially when we are needy.

Be on guard. A price we pay for freedom of speech is that nearly anything can wind up in print. Authors can make extravagant claims with little fear of punishment. They can lie about the effectiveness of a new fad diet as easily as they can lie about communicating with the departed Elvis Presley or being kidnapped by a UFO.

To help separate the meaningful wheat from the nonsensical chaff, try some critical thinking:

1. **First, don’t judge the book by its cover or its title.** Good books as well as bad books can have catchy titles and interesting covers. Dozens, perhaps hundreds, of books are competing for your attention. It is little wonder, then, that publishers try to do something sensational with the covers.

2. **Avoid books that make extravagant claims.** If it sounds too good to be true, it probably is. No method helps everyone who tries it. Very few methods work overnight. People want the instant cure. The book that promises to make you fit in 10 days will outsell the book that says it will take 10 weeks. Responsible psychologists and health professionals do not make lavish claims.

3. **Check authors’ educational credentials.** Be suspicious if the author’s title is just “Dr.” and is placed before the name. The degree could be a phony doctorate bought through the mail. It could be issued by a religious cult rather than a university or professional school. It is better if the “doctor” has an M.D., Ph.D., Psy.D., or Ed.D. after her or his name, rather than “Dr.” in front of it.

4. **Check authors’ affiliations.** There are no guarantees, but authors who are affiliated with colleges and universities may be more credible than those who are not.

5. **Consider authors’ complaints about the conservatism of professional groups to be a warning.** Do the authors boast that they are ahead of their time? Do they berate professional health organizations as pigheaded or narrow-minded? If so, be suspicious. Most psychologists and other scientists are open-minded. They just ask to see evidence before they jump on the bandwagon. Enthusiasm is no substitute for research and evidence.

6. **Check the evidence reported in the book.** Poor-quality self-help books tend to make extensive use of anecdotes — unsupported stories about the fantastic results achieved with a few individuals. Responsible psychologists and other health professionals check the effectiveness of techniques with carefully constructed samples of people. They carefully measure the outcomes and qualify their statements about their results, such as by saying, “it appears that” and “subjects tended to improve.”

7. **Check the reference citations for the evidence.** Legitimate psychological research is reported in the journals you will find in the reference section of this book. These journals report only research methods and outcomes that meet scientific standards. If there are no reference citations, or if the list of references seems suspicious, you should be suspicious, too.

8. **Ask your instructor for advice.** Ask for advice on what to do, whom to talk to, what to read.

9. **Read textbooks and professional books, like this book, rather than self-help books.** Search the college bookstore for texts in fields that interest you. Try the suggested readings in textbooks.

10. **Stop by and chat with your psychology professor.** Talk to someone in your college or university health center.
Thinking Critically When Surfing Online

Despite the collapse of scores of fly-by-night Internet companies in the early 2000s, Internet usage continues to grow by leaps and bounds. Consider that in 1996 there were 12.5 million people in the United States using the Internet. By 2002, that figure had grown by more than sixfold to 85 million people. The Internet offers a host of services, from e-mail to shopping to news and information. It’s no surprise that an increasing number of people are using online resources. As they click from site to site, they are exposed to a vast repository of information about psychology, self-help, relationships, health, and so on. Like self-help books, much of this information is helpful, but much of it is incomplete, misleading, difficult for the average person to understand, or just plain wrong (Berland et al., 2001; Eysenbach et al., 2003; Hilts, 2001).

The beauty of the Web is that anyone can post information that others can access. Yet this freedom carries with it the risk that the information posted may be inaccurate. Critical thinkers don’t suspend their skeptical attitude when they go online. They check out the credentials of the source by asking questions such as these: Who is posting the material? Is the source a well-respected medical or scientific institution? Or is it an individual or group of individuals with no apparent scientific credentials and perhaps with an axe to grind with the scientific establishment? The trustworthiest online information comes from well-known scientific sources, such as leading scientific journals, government agencies like the National Institutes of Health, and major professional organizations, like the American Psychological Association and the American Psychological Society. Articles in scientific journals undergo a process of peer review in which independent scientists first carefully scrutinize them before they are accepted for publication.

Critical thinkers are also wary of product claims for health-related products. People sell virtually anything over the Internet these days. Don’t assume that product claims are scientifically valid. Treat them as a form of electronic advertising, basically an Internet version of a television commercial. In other words, take them with the proverbial grain of salt and keep a tight grip on your wallet. Also, examine offers of money-back guarantees carefully. Read the fine print.

Thinking Critically When Surfing the Web

Critical thinking does not apply only to what you read in newspapers or hear on TV. When you surf the Web, you need to maintain a skeptical attitude and keep a tight hold on your pocketbook. Anyone can post just about anything on the web. Though much of the information on the Web is credible, be wary of information provided by companies that are trying to promote their products or organizations that try to persuade you to adopt their views.

These “guarantees” may not promise that the product will work as advertised. Rather, they might guarantee you’ll get your money back if the product fails, but often there are strings attached. As the expression goes, “Let the buyer beware.” Sad to say, many of us never question the information that comes to us on the printed page or on our computer screens. Yet critical thinkers evaluate assertions and claims for themselves.

Are women better than men at spelling? Are city dwellers less friendly toward strangers than small-town residents? Do laws against discrimination reduce prejudice? Does alcohol cause aggression? Is exercise good for your blood pressure? What are the effects of day care and divorce on children?

Many of us have expressed opinions on questions such as these at one time or another, and psychological and medical theories also suggest a number of possible answers. But psychology is a science, and scientific statements about behavior must be supported by evidence. Strong arguments, reference to authority figures, celebrity endorsements, and even tightly knit theories don’t qualify as scientific evidence. Scientific evidence is obtained by means of the scientific method.

**The Scientific Method: Putting Ideas to the Test**

The scientific method is an organized way that scientists use to test ideas and expand and refine their knowledge based on careful observation and experimentation. It is not
Psychology and the Challenges of Life

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Figure 1.4
The Scientific Method

The scientific method is a systematic way of organizing and expanding scientific knowledge. Daily experiences, common beliefs, and scientific observations all contribute to the development of theories. Psychological theories explain observations and lead to hypotheses about behavior and mental processes. Observations can confirm the theory or lead to its refinement or abandonment.

a recipe that psychologists and other scientists follow, but rather a set of general principles that guides their research.

Psychologists usually begin by formulating a research question. Research questions can have many sources. Our daily experiences, psychological theory, even folklore and intuition all help generate questions for research. But whatever the source of the question, psychologists do not substitute speculation or theorizing for gathering evidence.

A research question may be studied as a question or reworded as a hypothesis (see Figure 1.4). A hypothesis is a specific prediction about behavior or mental processes that is tested through research. One hypothesis about day care might be that preschoolers who are placed in day care will acquire greater social skills in relating to peers than preschoolers who are cared for in the home. A hypothesis about exposure to TV violence might be that elementary school children who watch more violent TV shows tend to behave more aggressively toward their peers.

Psychologists next examine the research question or test the hypothesis through carefully conducted methods of research. For example, they might introduce children who are in day care, and children who are not, to a new child in a child-research center and observe how children in each group interact with the new acquaintance.

Psychologists draw conclusions about their research questions or the accuracy of their hypotheses on the basis of their observations or findings. When evidence accumulates that fails to bear out hypotheses, psychologists may rethink their hypotheses or modify the theories from which they are drawn (see Figure 1.4). Research findings often suggest refinements to psychological theories and, consequently, new avenues of research.

In research on day care, we would probably find that children in day care show greater social skills than children who are cared for in the home (Clarke-Stewart, 1991). We would probably also find that more aggressive children spend more time watching TV violence.

As psychologists draw conclusions from research evidence, they are guided by principles of critical thinking. For example, they do not confuse correlation with causation. Correlation is a statistical association or relationship between variables. Causation means that one variable directly causes or influences another. For example, psychologists may find a significant correlation in children between the amounts of time spent watching violent TV shows and the level of aggressiveness shown in the schoolyard or the classroom. It may be tempting to conclude from this kind of evidence that TV violence causes aggressive behavior. But a selection factor may be at work — because the children studied choose (select) for themselves what they will watch. Perhaps more aggressive children are more likely than less aggressive children to tune in to violent TV shows. As we shall see, psychologists use experimental methods to tease out cause-and-effect relationships.

To better understand the effects of the selection factor, consider a study on the relationship between exercise and health. Imagine that we were to compare a group of people who exercised regularly with a group of people who did not. We might find that the exercisers were physically healthier than the couch potatoes. But could we conclude that exercise is a causal factor in good health? Perhaps not. The selection factor — the fact that one group chose to exercise and the other did not — could also explain the results. Perhaps healthy people are more likely to choose to exercise.

Some psychologists include publication of research reports in professional journals as a crucial part of the scientific method. Researchers are obligated to provide enough details of their work that others will be able to repeat or replicate it to see whether the findings hold up over time and with different subjects. Publication of research also permits the scientific community at large to evaluate the methods and conclusions of other scientists.

Psychologists may attempt to replicate a study in detail to corroborate the findings, especially when the findings are significant for people’s welfare. Sometimes psychologists replicate research methods with different kinds of subjects to deter-
mine, for example, whether findings with women can be generalized to men, whether findings with European Americans can be generalized to ethnic minority groups, or whether findings with people who have sought psychotherapy can be generalized to people at large.

How Psychologists Do Research

Let us now consider the research methods used by psychologists: the case study method, the survey method, the naturalistic observation method, the correlational method, and the experimental method. But first let us draw your attention to the historic underrepresentation of women and minorities in research.

Including Women and Members of Diverse Ethnic Groups in Research

There is a historic bias in favor of conducting research with men, especially in the field of health (Matthews et al., 1997). For example, most of the large sample research on the relationships between lifestyle and health has been conducted with men. There is a crucial deficiency of research into women’s health (including disease prevention), women and depression, and women and chemical dependence.

More research with women is also needed in other areas. One of these is the effects of violence on women. One-fifth to one-third of U.S. women will be physically assaulted—slapped, beaten, choked, or attacked with a weapon—by a partner with whom they share an intimate relationship (Browne, 1993). As many as one woman in four has been raped (Koss, 1993). Many psychologists believe that the epidemic of violence against women will only come to an end when people in the United States confront and change the social and cultural traditions and institutions that give rise to sexual violence (Goodman et al., 1993). (Some of these traditions are discussed in Chapter 13.)

Another area in which more research is needed is the impact of work on women’s lives. For example, how does working outside the home affect the division of labor within the home? Numerous studies have found that women are more likely than men to put in a “double shift.” Women, that is, tend to put in a full day of work along with an equally long “shift” of shopping, mopping, and otherwise caring for their families (Chitayat, 1993; Keita, 1993). Even so, research shows that women who work outside the home have lower cholesterol levels and fewer illnesses than full-time homemakers (Weidner et al., 1997).

It is now fairly widely accepted that findings of research with men cannot be generalized to women (Ader & Johnson, 1994). However, psychology may now be in danger of overgeneralizing findings of research with European American, privileged women to all women (Yoder & Kahn, 1993). When women of color and of lower socioeconomic status are not included in research studies, or when their responses are not sorted out from those of European American women, issues of interest to them tend to get lost.

Research samples have also tended to underrepresent minority ethnic groups in the population. For example, personality tests completed by European Americans and by African Americans may need to be interpreted in diverse ways if accurate conclusions are to be drawn (Nevid et al., 2003). The well-known Kinsey studies on sexual behavior (Kinsey et al., 1948, 1953) did not adequately represent African Americans, poor people, older people, and numerous other groups. The results of the National Health and Social Life Survey (NHSLS), reported later in the chapter, do reflect the behavior of diverse groups.

Here, let us focus on some of the major methods of research psychologists use.

• Replicate Repeat, reproduce, copy.
What are some reasons that psychologists replicate the research conducted by other psychologists?
The Case-Study Method

We begin with the case-study method because our own ideas about human nature tend to be based on our informal studies or observations of individuals and small groups. Most of us gather our information haphazardly. Often, we see what we want to see. Unscientific accounts of people’s behavior are referred to as anecdotes. Through the use of the case-study method, psychologists draw carefully constructed portraits of the lives of individuals in order to better understand their behavior.

Sigmund Freud, whose work is discussed in Chapter 2, developed his theory of personality largely on the basis of intensive case studies of patients he had treated. Freud studied his patients in great depth, seeking factors that seemed to contribute to notable patterns of behavior. He followed some patients for many years, meeting with them several times a week.

Of course, there are bound to be gaps in memory when people are questioned. People may also distort their pasts because of a social desirability bias—a tendency to present oneself in a socially desirable light. Interviewers may also have certain expectations and may subtly encourage subjects to fill in gaps in ways that are consistent with their theoretical perspectives (Bandura, 1986). All in all, case studies may provide useful or revealing information, but they lack the rigorous controls found in experimental methods.

The Survey Method

Psychologists conduct surveys to learn about attitudes and behaviors that cannot be directly observed in the natural setting or studied experimentally. Psychologists conducting surveys typically administer questionnaires or interviews to large numbers of individuals. Surveys have been conducted on many topics relating to adjustment, including dietary habits, exercise patterns, marital satisfaction, and even intimate sexual behavior.

Samples and Populations: Hitting the Target Population

Consider a piece of “history” that never happened: The Republican candidate Alf Landon defeated the incumbent president, Franklin D. Roosevelt, in 1936. Or at least Landon did so in a poll conducted by a popular magazine of the day, the Literary Digest. In the actual election, however, Roosevelt routed Landon in a landslide of 11 million votes. How, then, could the Digest predict a Landon victory? How was so great a discrepancy possible?

The Digest, you see, had phoned the voters it surveyed. Today, telephone sampling is a widely practiced and reasonably legitimate technique. But the Digest poll was taken during the Great Depression, when Americans who had telephones were much wealthier than those who did not. Americans at higher income levels are also more likely to vote Republican. No surprise, then, that the overwhelming majority of those sampled said that they would vote for Landon.

Psychologists use samples to represent populations. If samples accurately represent the population they are intended to reflect, we can generalize the results obtained from research samples back to the populations from which they were drawn.

In surveys such as that conducted by the Literary Digest and in other research methods, the individuals, or subjects, who are studied are referred to as a sample. A sample is a segment of a population. Psychologists and other scientists need to ensure that the subjects they observe represent their target population, such as Americans, and not subgroups such as Southern California Yuppies or European American members of the middle class.

Random Sampling

One way to achieve a representative sample is by means of random sampling. In a random sample, each member of a population has an equal chance of being selected to participate. Researchers may stratify their sample by first
identifying subgroups in the population and then randomly sampling members of these subgroups in relation to the proportion of the subgroups in the population. For instance, 13% of the American population is African American. A stratified sample would thus be 13% African American. As a practical matter, a large, randomly selected sample will show reasonably accurate stratification. A random sample of 1,500 people will represent the general American population reasonably well. A haphazardly drawn sample of a million, however, might not.

**Volunteer Bias** Large-scale magazine surveys of sexual behavior such as those conducted by *Redbook* (Tavris & Sadd, 1977) and *Cosmopolitan* (Wolfe, 1981) have asked readers to fill out and return questionnaires. Although many thousands of readers completed the questionnaires and sent them in, did they represent the general American population? Probably not. These studies and similar ones may have been influenced by volunteer bias. The concept behind volunteer bias is that people who offer to participate in research studies differ systematically from people who do not. In the case of research into sexual behavior, volunteers may represent subgroups of the population—or of readers of the magazines in question—who are willing to disclose intimate information (Rathus et al., 2002). Volunteers may also be more interested in research than nonvolunteers, as well as having more spare time. How might such volunteers differ from the population at large? How might such differences slant or bias the research outcomes?

**Surveying Intimate Behavior: The NHSLS Survey** Is it possible for scientists to describe the sex lives of people in the United States? There are many difficulties in gathering data, such as the refusal of many individuals to participate in research. Moreover, we must specify which people we are talking about. Are we talking, for example, about the behavior of women or men, younger people or older people, European Americans or African Americans?

The National Health and Social Life Survey (NHSLS) sample included 3,432 people (Laumann et al., 1994). Of this number, 3,159 were English-speaking adults aged 18 to 59. The other 273 respondents were drawn from African American and Latino and Latina American households. While the sample probably represents the overall U.S. population aged 18 to 59 quite well, it may include too few Asian Americans, Native Americans, and Jewish Americans to offer much information about these groups.

The NHSLS research team identified sets of households in various locales—addresses, not names. They sent a letter to each household describing the purpose and methods of the study. An interviewer visited each household one week later. The people targeted were assured that the purposes of the study were important and that their identities would be kept confidential. Incentives of up to $100 were offered to obtain a high completion rate of close to 80%.

The NHSLS considered the factors of gender, age, level of education, religion, and race/ethnicity in the numbers of sex partners people have (Laumann et al., 1994; see Table 1.1.) Males in the survey report having higher numbers of sex partners than females do. For example, one male in three (33%) reports having 11 or more sex partners since the age of 18. This compares with fewer than one woman in 10 (9%). On the other hand, most people in the United States appear to limit their numbers of sex partners to a handful or fewer.

Note that the numbers of sex partners appears to rise with age into the forties. Why? As people gain in years, have they had more opportunity to accumulate life experiences, including sexual experiences? But reports of the numbers of partners fall off among people in their fifties. People in this age group entered adulthood when sexual attitudes were more conservative.

Level of education is also connected with sexual behavior. Generally speaking, it would appear that education is a liberating influence. People with some college, or who have completed college, are likely to report having more sex partners than those who attended only grade school or high school. By contrast, conservative religious
experience appears to be a restraining factor. Liberal Protestants (for example, Methodists, Lutherans, Presbyterians, Episcopalians, and United Churches of Christ) and people who say they have no religion report higher numbers of sex partners than do Catholics and conservative Protestants (for example, Baptists, Pentecostals, Churches of Christ, and Assemblies of God).

Ethnicity is also connected with sexual behavior. The research findings in Table 1.1 suggest that European Americans and African Americans have the highest numbers of sex partners. Latino and Latina Americans are mostly Catholic. Perhaps Catholicism provides a restraint on sexual behavior. Asian Americans would appear to be the most sexually restrained ethnic group. However, the sample sizes of Asian Americans and Native Americans are too small to have much confidence in the results.

### Table 1.1: Number of Sex Partners Since Age 18 as Found in the NHLS Study

<table>
<thead>
<tr>
<th>FACTORS</th>
<th>NUMBER OF SEX PARTNERS (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER OF</td>
<td>0</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3</td>
</tr>
<tr>
<td>Female</td>
<td>3</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>18–24</td>
<td>8</td>
</tr>
<tr>
<td>25–29</td>
<td>2</td>
</tr>
<tr>
<td>30–34</td>
<td>3</td>
</tr>
<tr>
<td>35–39</td>
<td>2</td>
</tr>
<tr>
<td>40–44</td>
<td>1</td>
</tr>
<tr>
<td>45–49</td>
<td>2</td>
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<td>50–54</td>
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<tr>
<td>55–59</td>
<td>1</td>
</tr>
<tr>
<td>Education</td>
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<td>Less than high school</td>
<td>4</td>
</tr>
<tr>
<td>High school graduate</td>
<td>3</td>
</tr>
<tr>
<td>Some college</td>
<td>2</td>
</tr>
<tr>
<td>College graduate</td>
<td>2</td>
</tr>
<tr>
<td>Advanced degree</td>
<td>4</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>3</td>
</tr>
<tr>
<td>Liberal, moderate Protestant</td>
<td>2</td>
</tr>
<tr>
<td>Conservative Protestant</td>
<td>3</td>
</tr>
<tr>
<td>Catholic</td>
<td>4</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
</tr>
<tr>
<td>European American</td>
<td>3</td>
</tr>
<tr>
<td>African American</td>
<td>2</td>
</tr>
<tr>
<td>Latino and Latina American</td>
<td>3</td>
</tr>
<tr>
<td>Asian American*</td>
<td>6</td>
</tr>
<tr>
<td>Native American*</td>
<td>5</td>
</tr>
</tbody>
</table>

**Note:** Adapted from The Social Organization of Sexuality: Sexual Practices in the United States (Table 5.1C, p. 179), by E. O. Laumann, J. H. Gagnon, R. T. Michael, & S. Michaels, 1994, Chicago: University of Chicago Press.

*National Health and Social Life Survey, conducted by a research team centered at the University of Chicago.

*These sample sizes are quite small.
Do you say what you think, or do you tend to misrepresent your beliefs to earn the approval of others? Do you answer questions honestly, or do you say what you think other people want to hear? Telling others what we think they want to hear is making the socially desirable response. Falling prey to social desirability may cause us to distort our beliefs and experiences in interviews or on psychological tests. The bias toward responding in socially desirable directions is also a source of error in the case study, survey, and testing methods. You can complete the Social-Desirability Scale devised by Crowne and Marlowe to gain insight into whether you have a tendency to produce socially desirable responses.

Directions: Read each item and decide whether it is true (T) or false (F) for you. Try to work rapidly and answer each question by circling the T or the F. Then turn to the scoring key at the end of the chapter to interpret your answers.

T F 1. Before voting I thoroughly investigate the qualifications of all the candidates.
T F 2. I never hesitate to go out of my way to help someone in trouble.
T F 3. It is sometimes hard for me to go on with my work if I am not encouraged.
T F 4. I have never intensely disliked anyone.
T F 5. On occasions I have had doubts about my ability to succeed in life.
T F 6. I sometimes feel resentful when I don’t get my way.
T F 7. I am always careful about my manner of dress.
T F 8. My table manners at home are as good as when I eat out in a restaurant.
T F 9. If I could get into a movie without paying and be sure I was not seen, I would probably do it.
T F 10. On a few occasions, I have given up something because I thought too little of my ability.
T F 11. I like to gossip at times.
T F 12. There have been times when I felt like rebelling against people in authority even though I knew they were right.
T F 13. No matter who I’m talking to, I’m always a good listener.
T F 14. I can remember “playing sick” to get out of something.
T F 15. There have been occasions when I have taken advantage of someone.
T F 16. I’m always willing to admit it when I make a mistake.
T F 17. I always try to practice what I preach.
T F 18. I don’t find it particularly difficult to get along with loudmouthed, obnoxious people.
T F 19. I sometimes try to get even rather than forgive and forget.
T F 20. When I don’t know something I don’t mind at all admitting it.
T F 21. I am always courteous, even to people who are disagreeable.
T F 22. At times I have really insisted on having things my own way.
T F 23. There have been occasions when I felt like smashing things.
T F 24. I would never think of letting someone else be punished for my wrongdoings.
T F 25. I never resent being asked to return a favor.
T F 26. I have never been irked when people expressed ideas very different from my own.
T F 27. I never make a long trip without checking the safety of my car.
T F 28. There have been times when I was quite jealous of the good fortune of others.
T F 29. I have almost never felt the urge to tell someone off.
T F 30. I am sometimes irritated by people who ask favors of me.
T F 31. I have never felt that I was punished without cause.
T F 32. I sometimes think when people have a misfortune they only got what they deserved.
T F 33. I have never deliberately said something that hurt someone’s feelings.

The Naturalistic-Observation Method

You use naturalistic observation every day of your life. That is, you observe people in their natural habitats. So do scientists. But scientists use more systematic or formal methods when observing people than casual observation. For example, they may observe peer relationships of children in a schoolyard to better understand how children relate to one another. They may note how children form play groups and how they allow or exclude other children from participating. Psychologists may also observe differences in eating behaviors of normal weight and overweight patrons at fast-food restaurants. They may observe what people order, how long it takes them to consume their meals, and how many bites they take. Do the overweight eat more rapidly? Chew less frequently? Leave less food on their plates? This kind of information may help determine whether the eating habits of people of different weight classes differ.

In naturalistic observation, psychologists and other scientists observe behavior in the field, or “where it happens.” They try to avoid interfering with the behaviors they are observing by using unobtrusive measures. The naturalistic-observation method provides descriptive information about behavior, but it cannot determine underlying causes of behavior.

The Correlational Method: Seeing What Goes Up and What Comes Down

Are people with higher intelligence more likely to do well in school? Are people with a stronger need for achievement likely to climb higher up the corporate ladder? What is the relationship between stress and health? These kinds of questions are often addressed through correlational research.

In using the correlational method, psychologists investigate whether one observed behavior or measured trait is related to, or correlated with, another. Consider the variables of intelligence and academic performance. The variables of intelligence and academic performance are assigned numbers such as intelligence test scores and academic averages. Then the numbers or scores are mathematically related and expressed as a correlation coefficient. A correlation coefficient is a number that varies between $-1.00$ to $1.00$. The closer to positive or negative 1.00, the stronger the magnitude of the relationship between the two variables.

When one variable increases as the other increases, the relationship between the two variables is expressed as a positive correlation (the sign of the correlation coefficient is positive). For example, we often find a positive relationship between intelligence and measures of academic achievement. Generally speaking, the higher people score on intelligence tests, the better their academic performance is likely to be. The scores attained on intelligence tests are positively correlated (about $+0.60$ to $+0.70$) with overall academic achievement (see Figure 1.5).

There is a negative correlation between stress and various indices of health. As the amount of stress affecting us increases, the functioning of our immune systems decreases (see Chapter 4). Under high levels of stress, many people show poorer health. A negative correlation is expressed by a correlation coefficient with a negative sign (e.g., $-0.60$).

Correlational research may suggest causal patterns, but does not demonstrate cause-and-effect relationships. For instance, it may seem logical to assume that high intelligence makes it possible for children to profit from education. Research has also shown, however, that education contributes to higher scores on intelligence tests. Children placed in richly stimulating Head Start programs at an early age do better later on intelligence tests than agemates who did not have this experience. It is also conceivable that intelligence and academic achievement have no causal relationship, but are both explained by a third variable, such as genetic factors or exposure to a stimulating home environment. The relationship between intelligence and academic performance may not be as simple as you might have thought. What of the link between stress and...
health? Does stress impair health, or is it possible that people in poorer health encounter higher levels of stress? Though correlational research may not pinpoint cause and effect, it may suggest possible causal factors that may be followed-up through experimental methods.

Consider another example based on research on cohabitation. A kind of folklore has developed concerning the advantages of premarital cohabitation, or of trial marriage with one’s future spouse. Many people believe that a trial period allows them to test their feelings and find out if they can adjust to another’s quirks before they make a permanent commitment. It is thus ironic that studies of divorce rates show that 38% of those who had cohabited were divorced within 10 years after the wedding, as compared to 27% of those who tied the knot before setting up joint housekeeping (Barriger, 1989).

Do not jump to the conclusion that living together before marriage causes, or even heightens the risk of, divorce. We cite this research to highlight the fact that correlational research does not demonstrate cause and effect. Both variables—the high divorce rate and the choice to live together before marriage—might reflect another factor: liberal attitudes. That is, liberal attitudes could contribute to cohabitation and divorce. Similarly, even though body height and weight are correlated, people do not grow taller because they weigh more.

The Experimental Method: Trying Things Out

Scientists use the experimental method to determine cause-and-effect relationships, to answer questions such as whether physical activity lowers blood pressure, alcohol incites aggressive behavior, or psychotherapy relieves feelings of anxiety. In the experimental method, a group of participants, or subjects, receives a treatment, for example, an exercise regimen, a dosage of alcohol, or a trial of therapy. Then the subjects are observed under carefully controlled conditions to determine whether the treatment has an effect on their health or behavior.

Independent and Dependent Variables In an experiment to determine whether alcohol causes aggression, subjects would be given an amount of alcohol and...
its effects would be measured. In this case, alcohol is an independent variable. The presence of an independent variable is manipulated by the experimenters so that its effects may be determined. The independent variable of alcohol may be administered at different levels, or doses, from none or very little to enough to cause intoxication or drunkenness.

The measured results, or outcomes, in an experiment are called dependent variables. The presence of dependent variables presumably depends on the independent variables. In an experiment to determine whether alcohol influences aggression, aggressive behavior would be a dependent variable. Other dependent variables of interest might include sexual arousal, visual-motor coordination, and performance on intellectual tasks such as defining words or doing numerical computations.

**Experimental and Control Groups** Scientists determine the effects of an independent variable by comparing the behavior of experimental and control groups. Individuals in an experimental group receive the experimental manipulation, which is also called a treatment. Members of a control group do not. Every effort is made to ensure that all other conditions are held constant for both groups. This method enhances the researchers’ ability to draw conclusions about cause and effect. In well-designed studies, subjects are assigned randomly to treatment or control groups. By using random assignment, experimenters have confidence that differences between treatment and control groups are due to the effects of the experimental manipulation, or independent variable, rather than differences in the types of subjects comprising these groups.

In a study on the effects of alcohol on aggression, members of the experimental group would ingest alcohol and members of the control group would not. In a complex experiment, different experimental groups might ingest different dosages of alcohol and be exposed to different types of social provocations.

**Blinds and Double Blinds** One early study on the effects of alcohol on aggression reported that men at parties where beer and liquor were served acted more aggressively than men at parties where only soft drinks were served (Boyatzis, 1974). But subjects in the experimental group knew they had drunk alcohol, and those in the control group knew they had not. Aggression that appeared to result from alcohol might not have reflected drinking per se. Instead, it might have reflected the subjects’ expectations about the effects of alcohol. People tend to act in stereotypical ways when they believe they have been drinking alcohol. For instance, men tend to become less anxious in social situations, more aggressive, and more sexually aroused.

A placebo, or “sugar pill,” often results in the kind of behavior that people expect. Physicians sometimes give placebos to demanding, but healthy, people, many of whom then report that they feel better. When subjects in psychological experiments are given placebos—such as tonic water—but think they have drunk alcohol, we can conclude that changes in their behavior stem from their beliefs about alcohol, not from the alcohol itself.

Well-designed experiments control for the effects of expectations by creating conditions under which subjects are unaware of, or blind to, the treatment (Day & Altman, 2000). Yet researchers may also have expectations that bias their judgments. They may, in effect, be “rooting for” a certain treatment. Hence it is often useful if the experimenters themselves were kept in the dark about which subjects received which treatments. Studies in which neither the subjects nor the experimenters know which subjects received the active drug and which received the placebo are called double-blind drug studies.

A U.S. watchdog agency, the Food and Drug Administration (FDA), requires double-blind drug studies before it allows the marketing of new drugs. The drug and the placebo look and taste alike. Experimenters assign the drug or placebo to subjects at random. Neither the subjects nor the observers know who is taking the drug and who is taking the placebo. After the final measurements have been made, a neutral panel (a group of people who have no personal stake in the outcome of the study) judges whether the effects of the drug differed from those of the placebo.
In a classic double-blind study on the effects of alcohol, Alan Lang and his colleagues (1975) pretested a highball of vodka and tonic water to determine that it could not be discriminated by taste from tonic water alone. They recruited college men who described themselves as social drinkers to participate in the study. Some of the men drank vodka and tonic water. Others drank tonic water only. Of the men who drank vodka, half were misled into believing they had drunk tonic water only (Figure 1.6). Of those who drank tonic water only, half were misled into believing their drink contained vodka. Thus, half the subjects were blind to their treatment. Experimenters who measured the men’s aggressive responses were also blind concerning which subjects had drunk vodka.

The research team found that men who believed that they had drunk vodka responded more aggressively to a provocation than men who believed that they had drunk tonic water only. The actual content of the drink was immaterial. That is, men who had actually drunk alcohol acted no more aggressively than men who had drunk tonic water only.

Before moving ahead, you may want to review the different types of research methods psychologists use, as outlined in Table 1.2.

**Figure 1.6**

**The Experimental Conditions in the Lang Study**

The taste of vodka cannot be discerned when vodka is mixed with tonic water. For this reason, it was possible for subjects in the Lang study on the effects of alcohol to be kept “blind” as to whether they had actually drunk alcohol. Studies use blinds to control for the effects of subjects’ expectations.

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**Reflect**

If you consume alcohol, do you believe your behavior is affected by the chemical effects of the drug or by your expectancies about the drug, such as beliefs that alcohol makes you more confident or outgoing in social situations?

**What Are the Effects of Alcohol?**

We know that alcohol is connected with various kinds of social behavior that involves loss of inhibitions, for example, aggression and casual sex. But does the evidence show that alcohol causes such behavior? How can we use critical thinking to avoid jumping to conclusions?
### Table 1.2: How Psychologists Do Research

Here we consider the methods psychologists use when conducting research. The examples provided involve methods of studying research questions concerning an important issue in psychological adjustment—romantic love.

<table>
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<tr>
<th>WHAT RESEARCHERS DO</th>
<th>COMMENTS</th>
<th>METHODS FOR STUDYING ROMANTIC LOVE</th>
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<tr>
<td>In the case-study method, the researcher interviews an individual (or small group of individuals) or examines historical records of the lives of particular individuals.</td>
<td>The accuracy of case studies may be jeopardized by gaps or errors in memory or by people’s efforts to present a false impression of themselves.</td>
<td>A psychologist might conduct in-depth interviews of several individuals about the reasons why they chose their mates.</td>
</tr>
<tr>
<td>In the survey method, the researcher may use questionnaires, interviews, or public records to obtain information about a group of people.</td>
<td>Psychologists may survey thousands of people to explore attitudes or beliefs about such topics as abortion, premarital sex, or leisure pursuits.</td>
<td>Psychologists might survey hundreds or even thousands of individuals about the characteristics of people with whom they have had committed relationships or have married.</td>
</tr>
<tr>
<td>In the naturalistic observation method, the researcher observes behavior in the field—that is, where it occurs naturally.</td>
<td>Psychologists attempt not to interfere with the behaviors they are observing.</td>
<td>Psychologists might observe from a distance how lovers walk together and how they look at each other.</td>
</tr>
<tr>
<td>In the correlational method, the researcher uses statistical (mathematical) methods to reveal and describe positive and negative relationships (correlations) between variables.</td>
<td>This method may suggest but does not demonstrate the presence of cause and effect. The degree to which variables are statistically associated with each other is expressed in the form of a correlation coefficient that may vary from +1 to −1.</td>
<td>Psychologists might study relationships between feelings of love, self-esteem, and sexual satisfaction.</td>
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<tr>
<td>In the experimental method, the psychologist manipulates one or more independent variables (makes changes in the participants’ environments) and observes their effects on one or more dependent (measured) variables. Experiments are conducted to establish cause-and-effect relationships between independent and dependent variables.</td>
<td>Participants in experimental groups receive an experimental treatment but participants in control groups do not. All other conditions are held constant in order to draw conclusions about a causal link between the independent variable (treatment vs. control conditions) and the dependent variable (observed effect). Random assignment helps ensure that groups do not differ on important subject characteristics that might affect the outcome.</td>
<td>Psychologists might expose dating partners to an experimental treatment in which they share an arousing experience, such as watching an emotionally powerful movie, and then measure the treatment’s effects on their feelings on attraction or love for each other. (Control participants would be exposed to a neutral movie.)</td>
</tr>
</tbody>
</table>

Review It

(13) The ______ is a framework for testing ideas and acquiring knowledge through careful observation and experimentation.

(14) The ______ method involves the development of a carefully drawn portrait of an individual.

(15) The method of research that involves the administration of questionnaires or interviews to large numbers of individuals is called the ______ method.

(16) A subset or segment of a population used in research is referred to as a ______.

(17) Investigators use the technique of random ______ to draw representative samples from the population of interest.

(18) Psychologists recognize that certain types of ______ may affect research results.

(19) Psychologists may employ ______ measures to help ensure that their observational methods do not interfere with the behavior of the people they observe.

(20) Psychologists use the correlational method to examine ______ between variables, though they recognize that the variables may not be causally connected.

(21) The experimental method studies cause-and-effect relationships by means of manipulation of one or more (Independent or Dependent?) variables in order to observe their effects on one or more (Independent or Dependent?) variables.

Think About It

People who exercise are generally healthier than people who do not. Does this relationship between exercise and health show that exercise is a causal factor in good health? Why or why not?

Adjustment and Modern Life

Becoming a Successful Student—In This and Your Other Courses

The Adjustment and Modern Life modules in this book are found at the end of each chapter and apply psychology to the challenges that are likely to occur in your own life. The first of these is intended to help you do well in this and your other college courses.

Your second author had little idea of what to expect when he went to college. New faces, a new locale, responsibility for doing his own laundry, new courses. It all added up to an overwhelming assortment of changes. Perhaps the most stunning change of all was his newfound freedom. It was completely up to him to plan ahead to get his coursework completed but somehow to manage to leave time for socializing and his addiction to the game of bridge.

Another big surprise was that it was not enough for him just to enroll in a course and plant himself in a seat. To see what we mean, visualize a simple experiment. Imagine that you put some water into a bathtub and then sit in the tub. Wait a few moments,
then look around. Unless strange things are happening, you’ll notice that the water is still there, even though you may have displaced it a bit. You are not a sponge, and you will not simply soak up the water. You have to take active measures to get it inside—perhaps a straw and patience would help.

Taking an Active Approach to Learning (We Don’t Really “Soak Up” Knowledge)

The problems of soaking up knowledge from this and other textbooks are not entirely dissimilar. You won’t accomplish much by sitting on it, except, perhaps, looking an inch taller. But psychological theory and research have taught us that an active approach to learning results in better grades than a passive approach. It is more efficient to look ahead and seek the answers to specific questions than to just flip through the pages. It is also helpful not to try to do it all in one sitting, as in cramming before tests, especially when a few bathtubfuls of academic material are floating around you.

Plan Ahead

You can take an active approach to studying by first evaluating the amount of material you need to learn during the semester and the rate at which you learn. Establish a study plan to ensure that you have sufficient time to learn the material required in your texts and assigned readings. You may need to reevaluate your study schedule from time to time and be willing to review your original estimates.

Most of us learn better through spaced or distributed learning rather than through massed learning. Consequently, it makes sense to space out your study period fairly evenly throughout the semester, rather than cramming just before exams.

Here are some additional study tips that might be helpful (adapted from Rathus & Fichner-Rathus, 1994):

- Know when the tests are scheduled and what material will be covered on each test.
- Ask your instructor which material is most important for you to learn.
- Review your lecture notes, use additional study materials such as study guides, and review the text material.
- Create a schedule that allows you enough time to master each of the assigned chapters and any additional readings before each exam.
- Prioritize your study tasks and establish a schedule for accomplishing them.
- As you read, generate possible test questions and quiz yourself.
- Review key terms, using flash cards or index cards to help you master these glossary terms.
- Identify key concepts by stopping after each section of text and asking yourself, “What key concepts was the author trying to get across? What were the main points the author was addressing?”
- Use practice tests in the textbook or ancillary study guides as dress rehearsals for “the real thing.” Instructors sometimes draw exam questions from the practice tests, so answering these questions may give you an edge when it comes to taking exams.
- Break down practice tests into two parts by separating out odd and even questions. Answer the odd questions first. If you answer them perfectly, go on to the even questions. If not, review the material in the chapter again and then answer the even questions. Then compare your scores for the two parts. Chances are that the additional review will help boost your performance on the second set of questions.
- Keep a record of your performance on the practice tests so you can gauge how well you are progressing through the course of the semester.

Study Different Subjects Each Day

We have to admit that too much psychology may not be such a good thing. That is, we generally respond better to novel stimulation and variety. You may find it helpful to alternate your study efforts. Rather than studying psychology all day Monday and literature all day Tuesday, study some psychology and some literature each study day.

Become an Active Note Taker

By taking notes, you become an active learner. Rather than just passively absorbing lecture material (or perhaps spacing out), you become actively engaged in reviewing and organizing this material. None of us possesses an encyclopedic memory for everything we hear or see. Taking careful notes helps you recall important lecture information that you might otherwise forget or perhaps never learned in the first place.

Expand Your Attention Span

Establish a schedule that gradually increases your study time by adding a few minutes each day. Most of us find it takes a period of time before we are fully in the groove. Also, you may find that your attention wanders when you’ve been studying for a length of time. Take frequent breaks to minimize these lapses of attention. Get up and stretch your muscles. Take a brief walk or just take in the view from your window. When you return to studying, you’re likely to be better able to focus your attention.

Eliminate Distractions

Select a study place that is free from distractions, especially noise and other people’s chatter. Find a quiet study place that allows you
to focus your attention, such as the library or study lounge. If you study at home, place a “Do Not Disturb” sign on your door. Control your phone calls by turning off your cell phone or by setting the answering machine for your landline to a silent (non-ring) mode. Keep the TV and radio off. Avoid bringing magazines and other types of distractions to your study space.

**Practice Self-Reward**

Pat yourself on the back for meeting your study goals. You may also want to link specific rewards to meeting your study goals. For example, you may wish to reward yourself each weekend with a desirable activity if (and only if) you accomplish your weekly study goals.

**The SQ3R Study Method: Survey, Question, Read, Recite, and Review**

The SQ3R study method is a widely used study technique developed by educational psychologist Francis Robinson (1970). It is designed to help students develop more effective study habits. SQ3R is an acronym that stands for five key steps to developing effective study skills: survey, question, read, recite, and review.

**Survey**

Preview each chapter by leafing through the pages to get a sense of the topics that are covered and the way the chapter is organized. Each chapter, including those in this text, is organized in terms of major and minor sections or parts. This text in particular is organized in terms of major sections called modules and subsections within modules. A module is a self-contained unit of instruction that focuses on a major topic within the chapter. Becoming familiar with the format and structure of your textbooks helps prepare you for the content you will need to learn.

**Question**

This text begins each module with a set of survey questions that are answered in the body of the text. These questions highlight key issues and points that are addressed in the module. Use these questions as a guide to your reading. Test yourself to see if you can answer each of the questions as you read the corresponding material in the module. You may also find it helpful to generate additional questions for yourself. The development of good questioning skills helps you become a more active learner and can help expand your comprehension of the text material.

**Read**

Try to answer the survey questions as you read the chapter material. Also, pick out the key terms and key concepts and make sure you understand them before moving ahead.

**Recite**

Recite your answers to each survey question aloud. Hearing yourself speak these answers helps strengthen your retention and mastery of the material. To further reinforce your learning, practice writing down your answers in a notebook.

**Review**

Use the Module Review sections at the end of each module to review your knowledge of the material. First, complete the fill-in-the-blank questions found in the Review It section. Then answer the Think About It questions posed in the review. These critical thinking questions help stimulate your thinking and challenge you to carefully evaluate and examine issues that are discussed in the text. Many college texts today contain critical thinking questions.

This text also contains sample answers to survey questions, which you will find in the “Recite-Recite-Recite” sections at the end of each chapter. Compare your answers with the sample answers provided and review the relevant sections of the text if your answer doesn’t quite measure up.

Review the text material on a regular study schedule, such as once weekly. Review your answers to the survey questions and test yourself on your knowledge of key terms and concepts. Reread the subject matter if you stumble.

All in all, taking a more active approach to studying may help you improve your grades and gain more pleasure from the learning process.

**Coping with Test Anxiety**

Like John, whom we introduced at the beginning of the chapter, many college students face the challenge of coping with test anxiety. Test anxiety can lead us to tense up during examinations and make it difficult to focus our attention and perform to the best of our ability. Test anxiety is often linked to exaggerated, catastrophic thoughts, such as those shown in Table 1.3. If you experience test anxiety that interferes with your test performance, it may be worthwhile to examine your thoughts and take steps to replace irrational, catastrophizing thoughts with the kinds of rational alternatives shown in Table 1.3. Here are some steps you can use to restructure your thinking:

1. Identify irrational, catastrophizing thoughts.
2. Construct incompatible, rational alternatives.
3. Substitute rational alternative thoughts.
4. Reward yourself for making these changes.

Prepare yourself for test situations by rehearsing rational alternatives you can use if you need them. Attend to your thoughts during the examination. If you begin thinking irrational thoughts, sub-
1. What is psychology?
Psychology is the science of behavior and mental processes.

2. What is adjustment?
Adjustment is behavior that permits us to meet the challenges of life. Adjustment is also referred to as coping or coping behavior.

3. What is the difference between adjustment and personal growth?
Adjustment is reactive — coping with the challenges of life. Personal growth is proactive. It involves conscious, active self-development.

4. Is biology destiny?
No. Genes (nature) may determine the ranges for the expression of traits, but environmental conditions and our chosen behavior patterns minimize the influence of genetic risk factors and maximize our genetic potential.

5. What is the difference between the clinical approach and the healthy-personality approach to the psychology of adjustment?
The clinical approach focuses on ways in which problems can be corrected, whereas the healthy-personality approach focuses on optimizing our development along personal, social, physical, and vocational lines.

6. What is human diversity?
Human diversity refers to many sources of differences among people, including ethnic or racial differences, gender differences, and differences in disability status and sexual orientation.

7. Why is it important to study human diversity?
Awareness of the richness of human diversity enhances our understanding of the individual and enables students to appreciate the cultural heritages and historical problems of various ethnic groups. Knowledge of diversity helps psychologists understand the aspirations and problems of individuals from various groups so that they can successfully intervene to help group members.

8. What is an ethnic group?
An ethnic group comprises people who share factors such as cultural heritage, history, race, and language in common. Minority ethnic groups have frequently experienced prejudice and discrimination by members of the dominant culture.

9. What forms of prejudices have women experienced in our society?
There have been historic prejudices against women. The careers of women have been traditionally channeled into domestic chores, regardless of women’s wishes as individuals. Much of the scientific research into gender roles and gender differences assumes that male behavior represents the norm.

10. What is critical thinking?
Critical thinking is the adoption of a skeptical questioning attitude and evaluation of arguments or claims in the light of evidence. Critical thinking is a hallmark feature of psychology and other sciences.
11. What are some of the major features of critical thinking?
Critical thinking involves examining the definitions of terms, examining the premises or assumptions behind arguments, and scrutinizing the logic with which arguments are developed. Critical thinkers are cautious in drawing conclusions from evidence. They do not oversimplify or overgeneralize.

12. How does critical thinking “protect” us from the claims of astrology and other pseudosciences?
Critical thinking guides us to examine the evidence for and against astrology and other pseudosciences.

13. What is the scientific method?
The scientific method is an organized way of expanding and refining knowledge. Psychologists reach conclusions about their research questions or the accuracy of their hypotheses on the basis of their research observations or findings.

14. What is the case study method?
The case study method involves the crafting of carefully constructed portraits of individuals to help shed light on their behavior.

15. What is the survey method?
The survey method involves the administration of questionnaires or interviews to large numbers of individuals to learn more about their attitudes and behavior patterns.

16. How do psychologists use samples to represent populations?
The subjects who are studied are referred to as a sample. A sample is a segment of a population. Women’s groups and health professionals argue that there is a historic bias in favor of conducting research with men. Research samples have also tended to underrepresent minority ethnic groups in the population. Researchers use random and stratified samples to represent populations. In a random sample, each member of a population has an equal chance of being selected to participate. In a stratified sample, identified subgroups in the population are represented proportionately.

17. What is the naturalistic-observation method?
The naturalistic-observation method involves careful and unobtrusive observation of behavior where it happens—in the “field.”

18. What is the correlational method?
The correlational method reveals relationships between variables, but does not determine cause and effect. In a positive correlation, two variables increase together; in a negative correlation, one variable increases while the other decreases.

19. What is the experimental method?
Experiments are used to discover cause and effect—that is, the effects of independent variables on dependent variables. Experimental groups receive a specific treatment, whereas control groups do not. Blinds and double blinds may be used to control for the effects of the expectations of the subjects and the researchers. Results can be generalized only to populations that have been adequately represented in the research samples.

Answers to Module Reviews

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<th>Interpreting Your Score</th>
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<tr>
<td>Low Scorers (0–8). About one respondent in six earns a score between 0 and 8. Such respondents answered in a socially undesirable direction much of the time. It may be that they are more willing than most people to respond to tests truthfully, even when their answers might meet with social disapproval.</td>
</tr>
<tr>
<td>Average Scorers (9–19). About two respondents in three earn a score from 9 through 19. They tend to show an average degree of concern for the social desirability of their responses, and it may be that their general behavior represents an average degree of conformity to social rules and conventions.</td>
</tr>
<tr>
<td>High Scorers (20–33). About one respondent in six earns a score between 20 and 33. These respondents may be highly concerned about social approval and respond to test items in such a way as to avoid the disapproval of people who may read their responses. Their general behavior may show high conformity to social rules and conventions.</td>
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Scoring Key for the Social Desirability Scale

Place a checkmark on the appropriate line of the scoring key each time your answer agrees with the one listed in the scoring key. Add the checkmarks and record the total number of checkmarks below.

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8. T     17. T     26. T
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