THiNK

CRITICAL THINKING AND LOGIC SKILLS FOR EVERYDAY LIFE

FIFTH EDITION

Judith A. Boss, PhD, MSc

McGraw Hill

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in putting together this edition
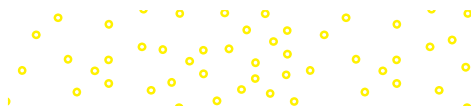
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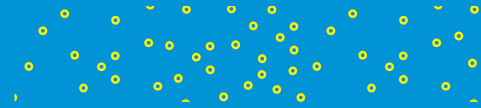
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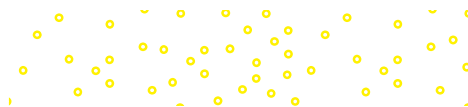
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THiNK

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CRITICAL-THINKING ISSUES

Preface

Studies have found that many, if not most, Americans will uncritically follow the orders of an authority figure. Social psychologist Stanley Milgram writes that "ordinary people, simply doing their jobs and without any particular hostility on their parts, can become agents in a terrible destructive process. . . . Relatively few people have the resources needed to resist authority." One of these resources is good critical thinking skills.

Objective

THiNK is a multicultural and interdisciplinary introductory critical thinking ethics textbook that offers core content and pedagogy in a succinct magazine format that provides students with the skills necessary to make and commit to decisions in their lives based on reason and logic. *THiNK* also offers students extensive opportunity for application and practice, and to develop and apply their critical-thinking skills.

The Thirteen Chapters

Each chapter in THiNK addresses a different topic related to critical thinking beginning with the basic critical-thinking skills, which are covered in Chapters 1 to 6. Chapters 7 and 8 address the use of these critical-thinking skills in analyzing inductive and deductive arguments. Chapters 9 to 13 are optional. Each of these chapters involves applying the critical skills studied in Chapters 1 to 8 to a different contemporary issue. Following is a summary of each of the thirteen chapters.

Chapter 1, Critical Thinking: Why It's Important: Chapter 1 provides a definition of critical thinking along with a discussion of the characteristics of a good critical thinker. It then moves on to relate the importance of good critical-thinking skills to both our self-development and our public lives.

Chapter 2, Reason and Emotion: The role of emotion in making good decisions is often ignored in traditional critical thinking and logic books. Chapter 2 looks at the roles of both reason and emotion in critical thinking and how they can work together to help us make better decisions. Finally, it examines and relationship between faith and reason.

Chapter 3, Language and Communication: This chapter begins by defining language—both verbal and nonverbal. It then covers the different types of definitions of words and how to evaluate the definitions. Chapter 3 addresses how culture and gender influences different communication styles. It also discusses ways in which language can be used to manipulate us.

Chapter 4, Knowledge, Evidence, and Errors in Thinking: Human thinking has certain limitations which can contribute to errors in our reasoning. In Chapter 4 students learn how to evaluate evidence as well as learn how to recognize the different cognitive, perceptual, and social errors and biases that may occur in thinking.

Chapter 5, Informal Fallacies: Many people fall for faulty reasoning because they fail to recognize the use of fallacies in an argument. Chapter 5 covers three categories of common logical fallacies, including fallacies of ambiguity, fallacies of relevance, and fallacies involving unwarranted assumptions. The chapter closes with a discussion of strategies for avoiding these fallacies.

Chapter 6, Recognizing, Analyzing, and Constructing Arguments: Chapter 6 is one of the key chapters in this textbook. In this chapter students learn how to recognize an argument as well as how to break down an argument into its premises and conclusion. They then learn how to diagram an argument so it can be evaluated. The chapter ends by providing steps for constructing a logical argument.

Chapter 7, Inductive Arguments: Inductive arguments are the most common type of arguments used in everyday life. In Chapter 7, students learn how to recognize, evaluative, and construct three types of inductive arguments: generalizations, analogies, and causal arguments. They will also examine the role of inductive arguments in public policy and everyday decision-making.
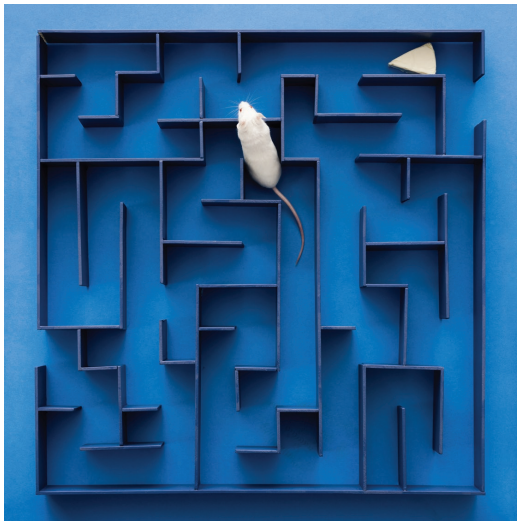
Chapter 8, Deductive Arguments: Deductive arguments are less common in everyday life. Consequently, Chapter 8 can be omitted if there are time constraints. This chapter addresses three different types of deductive arguments: arguments by elimination, arguments based on mathematics, and arguments from definition. Students also learn how to diagram and evaluate hypothetical and categorical syllogisms.

Chapter 9, Ethics and Moral Decision-Making: Chapter 9 begins with a study of the stages of moral reasoning, especially as it relates to college students. After a discussion of the different moral theories, students learn how to recognize and evaluate moral arguments. Finally, this chapter provides strategies for resolving moral conflicts.

Chapter 10, Marketing and Advertising: Chapter 10 discusses marketing strategies using the SWOT Model. It also offers students an opportunity to apply critical-thinking skills learned in previous chapters, such as avoiding confirmation bias, recognizing rhetorical devices, and recognizing fallacies. This chapter is particularly relevant for students who are studying business, marketing, and/or communication.

Chapter 11, Mass Media: After offering an overview of the rise of mass media in the United States, Chapter 11 examines the strengths and biases of the news media and science reporting. From here it looks at the impact of the Internet on our lives, including the misuse of the Internet. Lastly, it offers a critical-thinking approach to media literary, including how to interpret and analyze media messages.

Chapter 12, Science: Chapter 12 opens with an examination of the assumptions underlying science. The five steps of the scientific method are covered next,

followed by a section on how to evaluate scientific hypotheses. The chapter also includes coverage of the different types of research methodology and experiments. The chapter ends with a discussion of scientific revolutions and paradigm shifts.

Chapter 13, Law and Politics: After introducing the social contract theory of government, Chapter 13 looks at the development of democracy in the United States, including political campaigning and voting. Each of the three branches of government is then covered in more detail along with issues such as checks on executive power, unjust laws, and civil disobedience.

Stop and Assess Yourself

The major sections in each chapter are followed by a series of exercises which encourage students to apply their critical-thinking skills to specific questions or issues.

The Critical-Thinking Issues

The short critical-thinking reading selections at the end of each chapter address a different contemporary issue, such as Affirmative Action, Proof for the Existence of God, Free Speech Zones, Gun Control, Abortion, and Internet Plagiarism. These reading selections are optional and may be used for classroom discussion, essay topics, or group presentations. Each reading has review questions to help focus the students' reading, while each set of readings on a topic is followed by a series of "Think and Discuss" question on the topic itself.

Features

THiNK has several innovative features that allow students to apply their critical-thinking skills. **Think Tank** contains self-evaluation questionnaires, including emotional IQ, communication style, and stage of moral reasoning. These questionnaires are designed to help students assess where they are in their thinking as well as point out some of their shortcomings, thereby encouraging them to move beyond their current levels of thinking.

Because we are constantly bombarded with images, especially through the media, each chapter contains several **Analyzing Images** boxes which include summaries of each image and discussion questions.

The **Highlights** boxes provide summaries of the major points in each chapter.

The **Critical Thinking in Action** boxes give students an opportunity to apply their critical-thinking skills to scenarios they might encounter in their everyday lives, including verbal attacks in personal relationships, paying for college with credit cards, and perception of supersized food portions.

Finally, the **Thinking Outside the Box** features introduce students to role models who have exhibited exemplary critical-thinking skills, including Captain "Sully" Sullenberger, Sally Ride, Abraham Lincoln, Mohandas Gandhi, and Rosa Parks.

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Judith A. Boss

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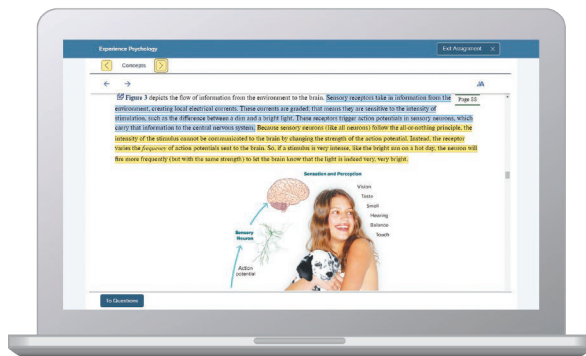
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1

CRITICAL THINKING
WHY IT'S IMPORTANT

In what ways do good listening skills and open-mindedness contribute to the development of our critical-thinking skills? Troy House/Corbis NX/ Getty Images

WHAT'S TO COME

Nazi war criminal Adolf Eichmann was tried in Israel in 1960 for crimes against humanity. Despite his claim that he was just following the orders of his superiors when he ordered the deaths of millions of Jews, the court found him guilty and sentenced him to death. The movie *Operation Finale* (2018) is based on the true story of Eichmann's capture and trial.

Was Eichmann an inhuman monster? Or was he, as his defense lawyer claimed, just doing what many of us would do—following orders from our superiors?

To address this question, social psychologist Stanley Milgram of Yale University conducted, between 1960 and 1963, what has become a classic experiment. Milgram placed an advertisement in a newspaper asking for men to take part in a scientific study of memory and learning.[1] Those chosen to participate were told that the purpose of the experiment was to study the effects of punishment on learning and that their job was to give electric shocks as punishment when the learner gave a wrong answer.

>>

3

THiNK FIRST

- What are the characteristics of a skilled critical thinker?
- What are the three levels of thinking?
- What are some of the barriers to critical thinking?

Left: Stewart F. House/Getty Images; Middle: Geoff Tompkinson/Getty Images; Right: Jeff Widener/AP Images

>> The participants were instructed that the shocks would be given at the direction of the experimenter and would range in intensity from 15 volts to 450 volts. In fact, no shocks were actually being given, but the participants didn't know this.

As the intensity of the shocks "increased," the learner (actually an actor) responded with increased anguish, screaming in pain and pleading with the participant delivering the shocks to stop. Despite the repeated pleas, all the participants were given shocks of up to 300 volts before refusing to go on. In addition, 65 percent continued to deliver shocks of 450 volts simply because an authority figure (a scientist in a white lab coat) told the participants to continue. Most who continued were clearly disturbed by what they were doing. However, unlike the participants who refused to continue, they were unable to provide logical counterarguments to the scientist's insistence that "the experiment requires that you must continue."

How could this happen? Were the results of Milgram's study some sort of aberration? As it turns out, they were not.

Milgram Experiment   Scene from the Milgram experiment on obedience. The "learner" is being hooked up to the machine that will deliver bogus electric shocks each time he gives a wrong answer. Courtesy of Alexandra Milgram

Along similar lines, in 1971, the U.S. Navy funded a study of the reaction of humans to situations in which there are huge differences in authority and power—as in a prison. The study was administered under the direction of psychologist Philip Zimbardo, who selected student volunteers judged to be psychologically stable and healthy.[2] The volunteers were randomly assigned to play the role of either "guard" or "prisoner" in a two-week prison simulation in the basement of the Stanford University building in which the psychology department was located. To make the situation more realistic, guards were given wooden batons and wore khaki, military-style uniforms and mirrored sunglasses that minimized eye contact. The prisoners were given ill-fitting smocks without underwear and rubber thongs for their feet. Each prisoner was also assigned a number to be used instead of a name. The guards were not given any formal instructions; they were simply told that it was their responsibility to run the prison.

The experiment quickly got out of control. Prisoners were subjected to abusive and humiliating treatment, both physical and emotional, by the guards. One-third of the guards became increasingly cruel, especially at night when they thought the cameras had been turned off. Prisoners were forced to clean toilets with their bare hands, to sleep on concrete floors, and to endure solitary confinement and hunger. They were also subjected to forced nudity and sexual abuse—much like what would happen many years later at Abu Ghraib prison in Iraq and at Guantanamo Bay in Cuba (see photo on page 18). After only six days, the Stanford prison experiment had to be called off.

These experiments suggest that many, if not most, Americans will uncritically follow the commands of those in authority. Like the Milgram study, the Stanford prison experiment demonstrated that ordinary people will commit atrocities in situations where there is social and institutional support for behavior that they would not do on their own and if they could put the blame on others. Milgram wrote:

> Ordinary people, simply doing their jobs and without any particular hostility on their part, can become agents in a terrible destructive process. Moreover, even when the destructive effects of their work become patently clear, and they are asked to carry out actions incompatible with fundamental standards of the majority, relatively few people have the resources needed to resist authority.[3]

What are these resources that people need to resist authority? Good critical-thinking skills are certainly one. Those who refused to continue in the Milgram study were able to give good reasons for why they should stop: for example, "it is wrong to cause harm to another person." In contrast,

those who continued, even though they knew what they were doing was wrong, simply deferred to the authority figure even though he was making unreasonable demands of them.[4]

Although most of us may never be in a situation in which our actions have such grim consequences, a lack of critical-thinking skills can still have negative consequences in our everyday decisions. When it comes to making personal, educational, and career choices, we may defer to our parents or cave in to pressure from friends rather than think through the reasons for our decisions. When major life decisions are not carefully thought out, there can be long-lasting consequences, such as dropping out of school or choosing a career in which we are ultimately unhappy. In addition, because critical-thinking skills are transferable across disciplines, improving these skills can have a positive impact on our success in college. In this chapter, we'll be looking at some of the components of critical thinking as well as the benefits of developing good critical-thinking skills. We'll conclude by examining some of the barriers to critical thinking. Specifically, we will:

- Define *critical thinking* and *logic*
- Learn about the characteristics of a good critical thinker
- Distinguish between giving an opinion and engaging in critical thinking
- Explain the benefits of good critical thinking
- Relate critical thinking to personal development and our role as citizens in a democracy
- Identify people who exemplify critical thinking in action
- Identify barriers to critical thinking, including types of resistance and narrow-mindedness

At the end of the chapter, we will apply our critical-thinking skills to a specific issue by discussing and analyzing different perspectives on affirmative action in college admissions.

> These experiments suggest that many, if not most, Americans will uncritically follow the commands of those in authority.
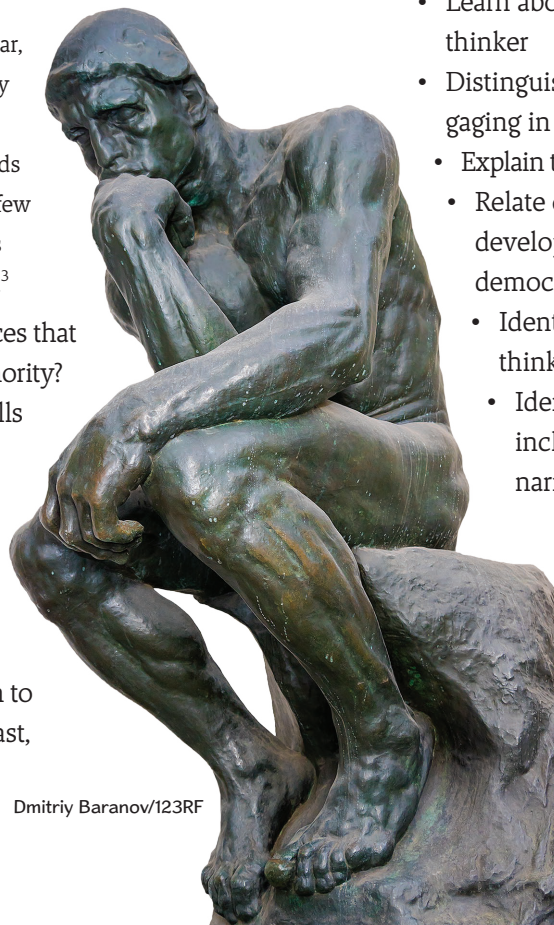
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WHAT IS CRITICAL THINKING?

Critical thinking is a collection of skills we use every day that are necessary for our full intellectual and personal development. The word *critical* is derived from the Greek word *kritikos,* which means "discernment," "the ability to judge," or "decision making." Critical thinking requires learning *how* to think rather than simply *what* to think.

Critical thinking, like logic, requires good analytical skills. **Logic** is part of critical thinking and is defined as "the study of the methods and principles used in distinguishing correct (good) arguments from incorrect (bad) arguments."[5] Critical thinking involves the application of the rules of logic as well as gathering evidence, evaluating it, and coming up with a plan of action. We'll be studying logical arguments in depth, in Chapters 5 through 8.

critical thinking A collection of skills we use every day that are necessary for our full intellectual and personal development.

logic The study of the methods and principles used to distinguish correct or good arguments from poor arguments.

opinion A belief based solely on personal feelings rather than on reason or facts.

Critical Thinking in Everyday Life

Critical thinking provides us with the tools to identify and resolve issues in our lives. Critical thinking is not simply a matter of asserting our opinions on issues. **Opinions** are based on personal feelings or beliefs, rather than on reason and evidence. We are all certainly entitled to our own opinions. Opinions, however, are not necessarily reasonable. While some may happen to turn out to be correct, opinions, no matter how deeply and sincerely held, may also be mistaken. As a critical thinker, you need to be willing to provide logical support for your beliefs.

Uninformed opinions can lead you to make poor decisions in your life and act in ways that you may later come to regret. Sometimes uninformed opinions can negatively impact society. For example, even though antibiotics kill bacteria and have no effect on cold viruses, many people try to persuade their doctors into prescribing them for cold symptoms. Despite doctors telling patients that antibiotics have no effect on viral infections, studies show that about half of doctors give in to patient pressure for antibiotics for viral infections.[6] Such overuse of antibiotics makes bacteria more drug resistant and has led to a decline in the effectiveness of treatment in diseases where they are really needed.[7] This phenomenon has been

SELF-EVALUATION QUESTIONNAIRE

Rate yourself on the following scale from 1 (strongly disagree) to 5 (strongly agree).

1 2 3 4 5   There are right and wrong answers. Authorities are those who have the right answers.

1 2 3 4 5   There are no right or wrong answers. Everyone has a right to his or her own opinion.

1 2 3 4 5   Even though the world is uncertain, we need to make decisions on what is right or wrong.

1 2 3 4 5   I tend to stick to my position on an issue even when others try to change my mind.

1 2 3 4 5   I have good communication skills.

1 2 3 4 5   I have high self-esteem.

1 2 3 4 5   I would refuse to comply if an authority figure ordered me to do something that might cause me to hurt someone else.

1 2 3 4 5   I don't like it when other people challenge my deeply held beliefs.

1 2 3 4 5   I get along better with people than do most people.

1 2 3 4 5   People don't change.

1 2 3 4 5   I have trouble coping with problems of life such as relationship problems, depression, and rage.

1 2 3 4 5   I tend to sacrifice my needs for those of others.

1 2 3 4 5   Men and women tend to have different communication styles.

1 2 3 4 5   The most credible evidence is that based on direct experience, such as eyewitness reports.

Keep track of your results. As you read this book and gain a better understanding of critical thinking, you'll find out what your responses to each of these statements mean. A brief summary of the meaning of each rating can also be found at the back of the book.

THiNK Tank

linked to the emergence of new, more virulent strains of drug-resistant tuberculosis. In addition, the incidence of some sexually transmitted diseases such as syphilis, which was once treatable by penicillin, is once again on the rise.[8]

The ability to think critically and to make effective life decisions is shaped by many factors, including our stage of cognitive development, the possession of good analytical communication, and research skills and such characteristics as open-mindedness, flexibility, and creativity.

Cognitive Development in College Students

Becoming a critical thinker is a lifelong process. Education researcher William Perry Jr. (1913–1998) was one of the first to study college students' cognitive development.[9] **Cognitive development** is the process by which each of us "becomes an intelligent person, acquiring intelligence and increasingly advanced thought and problem-solving ability from infancy to adulthood."[10] Perry's work has gained wide acceptance among educators. Although Perry identified nine developmental positions, later researchers have simplified his schemata into three stages: dualism, relativism, and commitment. These three stages are represented by the first three questions in the Self-Evaluation Questionnaire in the Think Tank feature on page 6.

Stage 1: Dualism. Younger students such as freshmen and many sophomores tend to take in knowledge and life experiences in a simplistic, "dualistic" way, viewing something as either right or wrong. They see knowledge as existing outside themselves and look to authority figures for the answers.

This dualistic stage is most obvious when these students confront a conflict. Although they may be able to apply critical-thinking skills in a structured classroom environment, they often lack the ability to apply these skills in real-life conflicts. When confronted with a situation such as occurred in the Milgram study of obedience,[11] they are more likely to follow an authority figure even if they feel uncomfortable doing so. In addition, a controversial issue such as affirmative action, where there is little agreement among authorities and no clear-cut right or wrong answers, can leave students at this stage struggling to make sense of it. We'll be studying some perspectives on affirmative action at the end of this chapter.

When researching an issue, students at the dualistic stage may engage in **confirmation bias**, seeking out only evidence that supports their views and dismissing as unreliable statistics that contradict them.[12] The fact that their "research" confirms their views serves to reinforce their simplistic, black-and-white view of the world.

HIGHLIGHTS

COGNITIVE DEVELOPMENT IN COLLEGE STUDENTS

Stage 1: Dualism There are right and wrong answers. Authorities know the right answers.

Transition to Stage 2 There are some uncertainties and different opinions, but these are temporary.

Stage 2: Relativism When the authorities don't have the right answers, everyone has a right to his or her own opinion; there are no right or wrong answers.

Transition to Stage 3 All thinking is contextual and relative but not equally valid.

Stage 3: Commitment I should not just blindly follow or oppose authority. I need to orient myself in an uncertain world and make a decision or commitment.

➤ **APPLICATION: Identify an example of thinking at each of three stages in the text.**

Sheese, Ron, and Radovanovic, Helen. "W. G. Perry's Model of Intellectual and Ethical Development: Implications of Recent Research for the Education and Counseling of Young Adults," paper presented at the annual meeting of the Canadian Psychological Association (Ottawa, Ontario, June 1984).

In one study, 48 undergraduates, who either supported or opposed capital punishment, were given two fictitious studies to read.[13] One study presented "evidence" contradicting beliefs about the deterrent effect of capital punishment. The other study presented "evidence" confirming the effectiveness of capital punishment as a deterrent. The results showed that students uncritically accepted the evidence that confirmed their preexisting views, while being skeptical about opposing evidence. In other words, despite the fact that both groups read the same studies, rather than modifying their position, the students used the confirming study to support their existing opinion on capital punishment and dismissed the opposing evidence.*

cognitive development The process of acquiring advanced thinking and problem-solving skills from infancy through adulthood.

confirmation bias At the dualistic stage of research, seeking out only evidence that supports your view and dismissing evidence that contradicts it.

Connections

How do you determine if the statistics found in the results of a scientific experiment are credible?
See Chapter 12, p. 398.

*For more on the debate on capital punishment, see pages 272–273.

Students at this stage may also be unable to recognize ambiguity, conflicting values, or motives in real-life situations. In light of this, it is not surprising that young people are most likely to fall victim to con artists, financial fraud, and identity theft. According to the Federal Trade Commission, in 2017, 40 percent of people ages 20 to 29 reported losing money to fraud, in contrast to only 18 percent of people over 70.[14]

Students are most likely to make the transition to a higher stage of cognitive development when their current way of thinking is challenged or proves inadequate. During the transition, they come to recognize that there is uncertainty in the world and that authorities can have different positions. Some educators called this period of disorientation and doubting all answers "sophomoritis."[15]

Stage 2: Relativism. Rather than accepting that ambiguity and uncertainty may be unavoidable and that they need to make decisions despite this, students at the relativist stage go to the opposite extreme. They reject a dualistic worldview and instead believe that all truth is relative or just a matter of opinion. People at this stage believe that stating your opinion is the proper mode of expression, and they look down on challenging others' opinions as "judgmental" and even disrespectful. The belief that all truth is relative can also lead to a type of mental paralysis. Furthermore, despite their purported belief in relativism, most students at this stage still expect their professor to support his or her opinion.

Having their ideas challenged, grappling with controversial issues, encountering role models who are at a higher stage of cognitive development, and learning about their limits and the contradictions in their thinking can all help students move on to the next stage of cognitive development.

Stage 3: Commitment. As students mature, they come to realize that not all thinking is equally valid. Not only can authorities be mistaken but also in some circumstances uncertainty and ambiguity are unavoidable. When students at this stage experience uncertainty, they are now able to make decisions and commit to particular positions on the basis of reason and the best evidence available. At the same time, as independent thinkers, they are open to challenge, able to remain flexible, and willing to change their position should new evidence come to light.

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*As students mature,
they come to realize that not
all thinking is equally valid.*

As we mature and acquire better critical-thinking skills, our way of conceptualizing and understanding the world becomes increasingly complex. This is particularly true of older students who return to college after spending time out in the "real world." Unlike people at the first stage who look to authority for answers, people at the third stage accept responsibility for their interactions with their environment and are more open to challenges and more accepting of ambiguity.

EXERCISE 1-1

STOP AND ASSESS YOURSELF

1. Imagine that you are a participant in Milgram's study of obedience. What would you have done if you protested and the experimenter in charge answered, "The experiment requires that you continue"? Discuss your answer in light of the stages of cognitive development. Discuss also what you might do to make it less likely that you would obey an authority figure in a situation, such as the Milgram study.

2. College professor Stephen Satris maintains that the relativism of the second stage of development is not a genuine philosophical position but a means of avoiding having one's ideas challenged. Student relativism, he writes, "is primarily a method of protection, a suit of armor, which can be applied to one's own opinions, whatever they may be—but not necessarily to the opinion of others. . . . It is an expression of the idea that no one step forward and judge (and possibly criticize) one's own opinion."[16] What is your "suit of armor"? Discuss strategies you might take to break out of this "suit of armor." Relate your answer to your own stage of cognitive development.

3. Most college students do not make the transition to the third, or commitment, stage of cognitive development. Why do you think this is so? Discuss ways in which the curriculum and college life in general might be restructured to encourage cognitive growth in students.

4. Today, more people are returning to college after having children and/or having worked for several years. This phenomenon is especially prevalent in community colleges, where the average age is 28.[17] Discuss whether there are differences in how students of different ages in your class think about the world, and how interaction among students at different stages might enrich our thinking.

5. The first three questions of the "Self-Evaluation Questionnaire" in the Think Tank feature represent the three stages of cognitive development. Which stage, or transition between stages, best describes your approach to understanding the world? What are the shortcomings and strengths of your current stage of cognitive development? Develop a plan to improve your skills as a critical thinker. Put the plan into action. Report on the results of your action plan.

CHARACTERISTICS OF A GOOD CRITICAL THINKER

Critical thinking is a collection of skills that enhance and reinforce each other. In this section, we'll be discussing some of the more important skills for effective critical thinking.

Analytical Skills

As a critical thinker, you need to be able to analyze and provide logical support for your beliefs rather than simply rely on your opinions. Analytical skills are also important in recognizing and evaluating other people's arguments so that you are not taken in by faulty reasoning. We'll be studying logical argumentation in more depth in Chapter 2 and in Chapters 5 through 9.

Effective Communication

In addition to analytical skills, critical thinking requires communication and reading skills. Communication skills include listening, speaking, and writing skills. Being aware of your own communication style, as well as of cultural variations and differences in the communication styles of men and women, can also go a long way toward improving communication in a relationship. We'll be learning more about communication in Chapter 3, "Language and Communication."

Research and Inquiry Skills

Understanding and resolving issues requires research and inquiry skills such as competence in gathering, evaluating, and pulling together supporting evidence. For example, in researching and gathering information on what would be the best major or career path for you, you need to identity your interests and talents first and then evaluate possible majors and careers in light of these interests and talents. Research skills are also important in understanding and moving toward a resolution of a complex issue, such as affirmative action in college admissions.

Inquiry and gaining greater insight requires asking the right questions, as Milgram did in designing his study of obedience. While most people were asking what sort of twisted monsters the Nazis were or why the German people allowed Hitler to have so much power, Milgram asked the more basic question: How far would ordinary citizens go in obeying an authority figure? Despite the fact that experiments such as Milgram's were declared unethical by the

American Psychological Association in 1973 because of long-term psychological distress suffered by many of the participants, his scientific experiments still stand as classics in the field.

As critical thinkers, we need to avoid confirmation bias and the tendency to selectively see and interpret data to fit into our own worldviews, as happened in the study on student's views of capital punishment (see page 7). This is a practice that often leads to stalemates and conflict in personal as well as in political relations. Our research should also be accurate and based on credible evidence. We'll be learning more about researching and evaluating evidence in Chapter 4.

Flexibility and Tolerance for Ambiguity

Too many people defer to others or fail to take a position on a controversial issue simply because they are unable to evaluate conflicting views. As we mature, we become better at making decisions in the face of uncertainty and ambiguity. Effective decision-making includes setting clear short-term and long-term goals in our lives and developing a realistic strategy for achieving these goals. Critical thinkers also build flexibility into their life plans so that they can adapt to changes, especially since most of us haven't had sufficient experience to finalize our life plan during our first few years of college. We'll be discussing the process of developing a life plan in more depth later in this chapter.

Connections

How do scientists identify a problem and develop a hypothesis for studying a problem? *See Chapter 12, p. 383.*

Open-Minded Skepticism

Critical thinkers are willing to work toward overcoming personal prejudices and biases. They begin with an open mind and an attitude of reflective skepticism. The point is not simply to take a stand on an issue—such as what career is best for me? Is abortion immoral?—but rather to critically examine the evidence and assumptions put forth in support of different positions on the issue before coming to a final conclusion. In doing so, effective critical thinkers are able to balance belief and doubt.

First put forward by French philosopher and mathematician René Descartes (1596–1650), the **method of doubt** suspends belief. This method of critical analysis, which has traditionally been preferred in fields such as science and philosophy,

method of doubt A method of critical analysis in which we put aside our preconceived ideas and beliefs and begin from a position of skepticism.

René Descartes (1596–1650) proposed the method of doubt, in which we never accept anything as true without evidence and reason to support our conclusion. Imagno/Hulton Fine Art Collection/Getty Images

begins from a position of skepticism in which we put aside our preconceived ideas. Descartes wrote regarding the rules for using the method of doubt:

> The first of these [rules] was never to accept anything as true if I did not have evident knowledge of its truth: that is to say, carefully to avoid precipitate conclusions and pre-conceptions, and to include nothing more in my judgments than what presented itself to my mind so clearly and distinctly that I had no occasion to doubt it.[18]

It is especially important that you be willing to adopt a position of doubt or skepticism when critically examining your own cherished beliefs and the claims of authority figures. Albert Einstein (1879–1955), in developing his theory of relativity, used the method of doubt regarding the generally accepted belief that time is "absolute"—that is, fixed and unchanging.

The **method of belief**, in contrast, suspends doubt. Becoming immersed in a good book, movie, or play often involves what English poet Samuel Taylor Coleridge (1772–1834) called the "willing suspension of disbelief." This

method of belief   A method of critical analysis in which we suspend our doubts and biases and remain genuinely open to what people with opposing views are saying.

Why is having an open mind important in the sciences?
See Chapter 12, p. 384.

Connections

approach is also productive when we are discussing issues on which we hold strong views and are not as open as we should be to opposing viewpoints. In dialogues between people who are pro-choice and pro-life, for example, a pro-choice critical thinker, in order to compensate for his or her biases, should be genuinely open to believing what the pro-life person is saying, rather than start from the traditional position of doubt. This task requires empathy, active listening skills, and intellectual curiosity.

Creative Problem-Solving

Creative thinkers can view problems from multiple perspectives and come up with original solutions to complex problems. They use their imagination to envision possibilities, including potential future problems, and to develop contingency plans to effectively deal with these scenarios.

When staff members of the U.S. Department of Homeland Security put together a handbook of possible disaster scenarios, they failed to foresee the possibility of civil unrest and social breakdown following a disaster. Because of lack of preparedness for such occurrences as Hurricane Katrina, which struck the Gulf Coast in 2005, hundreds of people died who might have been saved and thousands of others were left homeless and living in chaotic and squalid conditions for weeks and months. Practice in problem-solving for disasters enabled the United States to respond quicker and more effectively when the East Coast was struck by Superstorm Sandy in 2012.

Creative problem-solving is an ongoing process. While responders were prepared to respond to hurricanes in the continental United States, they were not properly prepared when Hurricane Maria struck Puerto Rico in 2017. See Analyzing Images: "Creative Problem-Solving in Response to Natural Disasters" on page 11.

To cite another example, the Tokyo Electric Power Company, operator of the Fukushima Daiichi nuclear power plant, failed to take measures to prevent disasters, like the one that followed an earthquake and tsunami off the coast of Japan in 2011. Rather than taking on the challenge of making the plant secure from such events, they ignored the possibility that there could be such a large tsunami. Consequently, they failed to install adequate backup generators and cooling systems and as a result the power plants experienced a nuclear meltdown, spewing toxic radiation into the surrounding area.

Creativity also involves "a willingness to take risks, to cope with the unexpected, to welcome challenge and even failure as a part of the process to arrive at a new and deeper understanding."[19] Instead of giving up when times are difficult or resources are lacking, creative critical thinkers are able to make creative use of available resources. In 1976, when he was only 21, Steve Jobs built the first Apple personal computer in his family's garage. His innovative idea of user-friendly software changed the way people perceived computers and heralded the age of personal computing. He later went on to introduce the iPod in 2001,

ANALYZING **IMAGES**

Stewart F. House/Getty Images

Creative Problem-Solving in Response to Natural Disasters In November 2015, multiple potentially deadly EF3 tornadoes touched down in the Texas panhandle area, causing millions of dollars of damage. Because public officials and civilians were trained in tornado preparedness, there were, amazingly, no reports of deaths or serious injuries.

The response to this natural disaster stands in sharp contrast to the bungled and mismanaged response to Hurricane Maria. Hurricane Maria struck Puerto Rico in June 2017, leaving the island without power and drinking water as well as access to adequate medical care for weeks and even months in some cases.

The U.S. government's failure to respond adequately to this disaster in the aftermath of the storm resulted in an estimated 3000 deaths in the months following the hurricane and highlighted the government's lack of proper planning and problem-solving skills for a natural disaster outside of mainland United States. As of 2019 Puerto Rico has not yet recovered fully from the devastation of Hurricane Maria.

DISCUSSION QUESTIONS

1. *While the U.S. government had carefully thought-out plans for responding to natural disasters within the lower 48 states, their planning did not take into account a disaster happening in an American territory outside of the continental United States. Referring to the characteristics of good critical thinking, discuss steps the U.S. government might have taken to have better addressed this natural disaster.*

2. *Think of a time when a disaster at school or in a relationship caught you off guard. Working in small groups, select one of the scenarios. Applying the characteristics of a good critical thinker outlined in this section, discuss possible strategies for effectively responding to the disaster. Share your plan with the rest of the class.*

which revolutionized portable music players, and later the iPhone.

Creative thinking is a much sought-after skill in the business world.[20] Because young people are usually less invested in traditional ideas and ways of doing things than are people who have been working in a field for years, they tend to be more open to new ideas. Being able to recognize creative solutions to a problem and to generate and communicate new ideas requires not just creative thinking but also being open-minded, confident, intellectually curious, and an effective communicator.

Vicki Beaver/Alamy Stock photo

Attention, Mindfulness, and Curiosity

Critical thinkers are intellectually curious. They are attentive and mindful to what's going on around them and to their own thoughts and feelings. The Buddhist concept of the "beginner's mind" is closely related to the Western concept of the critically open mind, or mindfulness. Zen master Shunryu Suzuki defined the beginner's mind as "wisdom which is seeking for wisdom." He wrote:

> The practice of Zen mind is beginner's mind. The innocence of first inquiry—what am I? . . . The mind of the beginner is empty, free of the habits of the expert, ready to accept, to doubt, and open to all possibilities. . . . If your mind is empty, it is always ready for anything; it is open to everything. In the beginner's mind there are many possibilities. . . .[21]

Like the beginner's mind, good critical thinkers do not reject, without sound reasons, views that conflict with their own. Instead, they are willing to consider multiple perspectives. One of the recent breakthroughs in neuroscience is the discovery that the brains of Buddhist monks who meditate regularly—a practice that involves being mindful, open, and attentive to what is going on in the present moment—are neurally much more active and more resilient in neuroplasticity than are the brains of people who do not meditate.[22] Many large corporations, including some Fortune 500 companies, are encouraging their executives to take meditation breaks on the job, since it has been found to improve their performance.[23] The power of mindfulness was recently demonstrated when a soccer team of twelve boys and their assistant coach, Ekkapol "Ake" Chantawong, a former Buddhist monk, were rescued after being trapped deep in a cave in Thailand by monsoon rains. They were trapped for more than two weeks without food, not knowing whether or not rescue would be coming. Ake's training in the practice of mindfulness and mediation kept the boys calm until rescue finally arrived. Amazingly, everyone survived.

Collaborative Learning

Critical thinking occurs in a real-life context. We are not isolated individuals—we are interconnected beings. As critical thinkers we need to move beyond the traditional, detached approach to thinking and develop a more collaborative approach that is grounded in shared dialogue and community.

The failure to take into account context and relationships can lead to faulty decisions that we may later regret. An example of this type of faulty reasoning is the tendency of many individuals to neglect both feedback and complexity. Because of this, they tend not to fully and accurately consider the other side's response. In a relationship we may do something in an attempt to get our partner to pay more attention to us—for example, threatening to leave a partner if he or she doesn't stop spending so much time with friends—only to see this backfire, losing the relationship altogether because we failed to consider how the other person might react.

To use another example, military planners in developing strategies sometimes fail to consider what the enemy might do in return to minimize the effectiveness of these strategies. During the War of 1812, a group of politicians in Washington, D.C., decided the time had come to add Canada to the United States. Their military strategy failed primarily because they did not adequately assess the Canadian response to the U.S. mission to annex Canada. Instead of greeting the American invaders as liberators from British rule, Canadians regarded the war as an unprovoked attack on their homes and lives. Rather than uniting Canada and the United States, the War of 1812 gave rise to the first stirring of Canadian nationalism (and even provoked a movement in New England to secede from the United States).[24]

Did You Know

The ancient Greek thinker Socrates (469–399 BCE) spent much of his time in the marketplace of Athens surrounded by his young followers. He used this public venue to seek out people in order to challenge their traditional beliefs and practices. He did this by engaging people in a type of critical thinking, now referred to as the Socratic method, in which his probing questions provoked them into realizing their lack of rational understanding and their inconsistencies in thought.
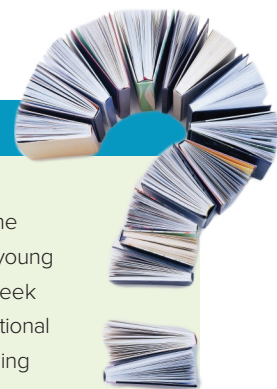
Good critical thinkers adopt a collaborative rather than an adversarial stance, in which they listen to and take others' views into account. Let's go back to the relationship example. Rather than accusing our partner of not spending enough time with us, a good critical thinker would express his or her feelings and thoughts and then listen to the other person's side. Critical thinkers carefully consider all perspectives and are open to revising their views in light of their broader understanding. Using our critical-thinking skills, we might come to realize that our partner's friends are very important to him or her. Perhaps we are being insecure and need to spend more time with our own friends, giving our partner more space.

Good critical thinkers adopt a collaborative rather than an adversarial stance.

Maybe we can find a solution that meets both our needs. For example, the sports lovers can bring their partners or another friend along once or twice a month to watch the games with them.

HIGHLIGHTS

CHARACTERISTICS OF A SKILLED CRITICAL THINKER

As a skilled critical thinker, you should:

- Have good analytical skills
- Possess effective communication skills
- Be well informed and possess good research skills
- Be flexible and able to tolerate ambiguity and uncertainty
- Adopt a position of open-minded skepticism
- Be a creative problem solver
- Be attentive, mindful, and intellectually curious
- Engage in collaborative learning

➤ *APPLICATION: Identify an example of each of the characteristics in the text.*

EXERCISE 1-2

STOP AND ASSESS YOURSELF

1. Watch the Milgram film *Obedience.* Discuss ways in which the participants in the film demonstrated, or failed to demonstrate, good critical-thinking skills.

2. Identifying good role models in your life can help you come up with a picture of the person you would like to be. Think of a person, real or fictional, who exemplifies good critical-thinking skills. Make a list of some of the qualities of this person. Discuss how these qualities help the person in his or her everyday life.

3. Adopt the stance of the Buddhist "beginner's mind." Be attentive only to what is happening in the present moment. After one minute, write down everything you observed going on around you as well as inside of you (your feelings, body language, and the like). Did you notice more than you might have otherwise? Share your observations with the class. Discuss ways in which this practice of being more attentive to what is going on might enhance your effectiveness as a critical thinker.

4. Working in groups of four to six students, select an issue about which the group is evenly divided into positions for or against it. Each side should adopt a stance of belief and open-mindedness when listening to the other side's position. After the pro side presents its views for two minutes, the anti side takes one minute to repeat back the pro's views without interjecting its own doubts. Repeat the process with the anti side presenting its views. Discuss as a class how this exercise helped you to suspend your biases and to actively listen to views that diverge from your own.

5. Referring to the Self-Evaluation Questionnaire on page 6, share your strengths and weaknesses as well as your plans for improving your critical-thinking skills with others, whether it be friends, family, or in class. Discuss steps you might take or have already taken to work toward or overcome some of your weaknesses.

CRITICAL THINKING AND SELF-DEVELOPMENT

Critical thinking is not just about abstract thought. It is also about self-improvement and your whole development as a person. Working on your self requires that you be honest with yourself and others about your biases, your expectations, your strengths, and your limitations. Are your expectations realistic? Do you have a well-thought-out plan and goals for your life? People who are inflexible in their thinking may be unable to adapt to changing or new or unusual circumstances and may instead get caught up in rules and inflexible ways of thinking that are inadequate to resolve the situation.

Living the Self-Examined Life

"The unexamined life is not worth living," Socrates said. Often we flounder in college because we have not taken the time to learn about ourselves or develop a plan for our future. The lives of too many people are controlled more by circumstances than by their own choices. Good critical thinkers, in contrast, take charge of their lives and choices rather than opting for the security of fitting into the crowd or simply blindly following an authority figure as happened in the Milgram study at the beginning of this chapter. In addition to being rational thinkers, they are in touch with their emotions and feelings. We'll be looking more at the role of emotion in Chapter 2.

Some psychologists and psychiatrists believe that irrational beliefs and poor critical-thinking skills contribute to many of the "problems of life," such as depression, rage, and low self-esteem.[25] While depression often has a biochemical component that needs to be treated, poor critical-thinking skills can aggravate or even be a major factor in some types of situational depression where a student feels overwhelmed and unable to cope or make a decision in a particular set of circumstances. In a recent survey by the American College Health Association, 41.9 percent of college students reported that at least once during the past year they felt "so depressed, it was difficult to function."[26] Since people tend to become better at problem-solving as they get older, it is not surprising that depression rates start to drop beginning at age 30. According to the Institute of Mental Health, compared to people over the age of 50, 18−26-year-olds are more than twice as likely to experience depression. See Table "Age Differences in Depression" at the bottom of this page.

Although by no means a cure-all, improving critical-thinking skills has been shown to help people deal more effectively with their problems.[27] Rather than view the problems in our lives as being out of our control, we should—as cognitive psychologists in particular counsel us—develop strategies for taking charge of our lives, develop realistic expectations, and commit ourselves to acknowledging and developing the skills to resolve our problems.

Age Differences in Depression

12-Month Prevalence of Major Depressive Episodes Among U.S. Adults (2016)

Overall: 6.7

Sex — Female: 8.5, Male: 4.8

Age group — 18–25: 10.9, 26–49: 7.4, 50+: 4.8

Race — Hispanic: 5.6, White: 7.4, Black: 5.0, Asian: 3.9, NH/OPI*: 7.3, AI/AN**: 5.7, 2 or More: 10.5
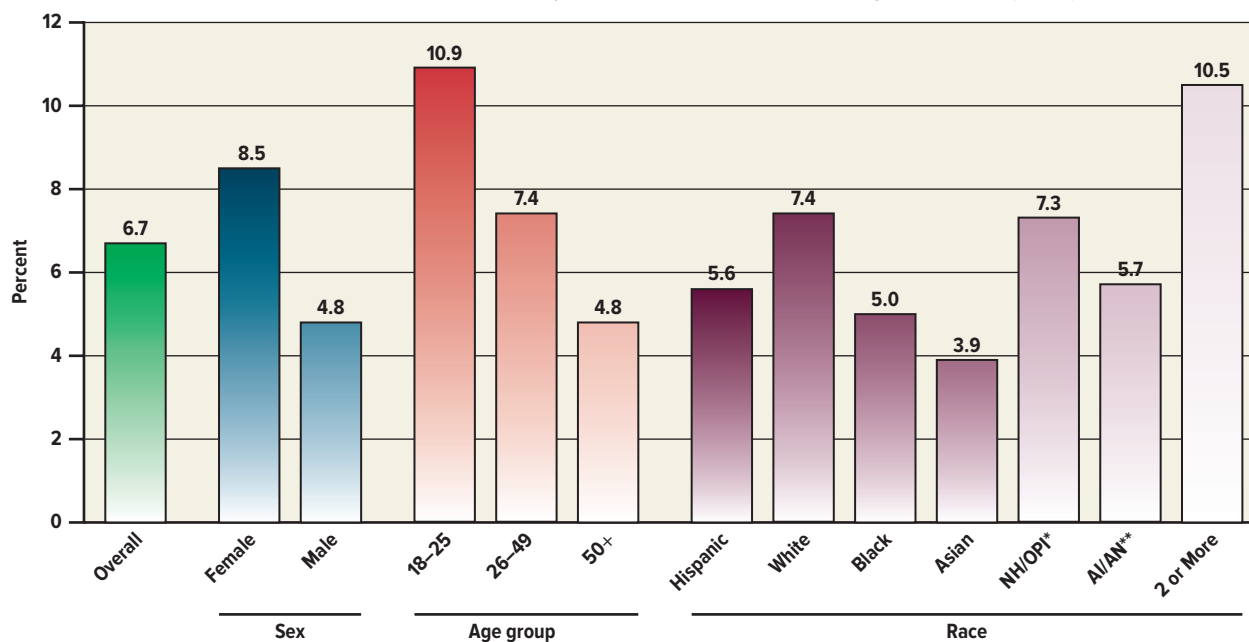
*NH/OPI = Native Hawaiian/Other Pacific Islander
**AI/AN = American Indian/Alaska Native

Source: Data courtesy of SAMHSA.

Developing a Rational Life Plan

American philosopher John Rawls (1921–2002) wrote that in order to get the most out of life, everyone needs to develop a "rational life plan"—that is, a plan that would be chosen "with full deliberative rationality, that is, with full awareness of the relevant facts and after a careful consideration of the consequences. . . . Someone is happy, when his plans are going well and his more important aspirations are being fulfilled."[28]

In drawing up our life plan, we make a hierarchy, with our most important plans or goals at the top, followed by a list of subplans. Organize your goals according to a schedule when they are to be carried out, although the more distant a goal is, the less specific the plan will be. Of course, we can't predict everything that will happen in life, and there will be times when circumstances hinder us from achieving our goals. Think of a life plan as being like a flight plan. Airplanes are off course about 90 percent of the time because of factors such as weather, wind patterns, and other aircraft. The pilot must constantly correct for these conditions to get the plane back on course. Without a flight plan, the pilots and their planes would be at the mercy of winds and weather, blown hither and thither, and never reaching their destination.

Begin putting together your life plan by making a list of your values, interests, skills, and talents. Values are what are important to you in life and include things such as financial security, love, family, career, independence, spirituality, health and fitness, education, contributions to society, friends, sense of integrity, and fun. Your goals in life, whether raising a family or being well-off financially, should be rational as well as consistent with your values. Take time to deliberate about your hierarchy of values. It is possible that after careful consideration of the implications of a particular value, such as "being very well-off financially," you may want to place it lower on your hierarchy of values.

If you are unsure of your skills and talents, go to the career office at your college and take some of the aptitude and personality tests available there, such as the Myers–Briggs Indicator.[29] These tests are useful in helping you to determine which career or careers might be most fulfilling for you. The website www.collegeboard.org also provides helpful information on choosing a major and a career.

But don't just list your strengths, assets, and competencies; take note of your weaknesses too. Weaknesses are something we do poorly or something we lack, such as financial resources, information, or technical expertise.

Once you've written down your values, interests, talents, skills, and weaknesses, list your goals. Goals are important in helping you organize your day-to-day life and in giving your life direction. Start out by listing short-term goals, or those that you want to accomplish by the time you graduate from college; for example, choose a major, maintain a 3.0 average, or get more exercise. These

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HIGHLIGHTS

MY LIFE PLAN

In putting together your life plan, you need to identify:

1. Your most important **values**

2. Your **strengths** (interests, skills, talents, and assets)

3. Your **weaknesses** (e.g., lack of financial resources or skill)

4. Your **goals**
   a. Short term
   b. Long term

5. A **plan of action** to achieve short-term goals

6. A **plan of action** to achieve long-term goals

➤ *APPLICATION: Identify an example of each of the six steps in the text.*

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goals should be consistent with your interests, talents, and the type of person you want to be. Also come up with a plan of action to achieve these short-term goals.

Next, list your long-term goals. Ideally, your long-term and short-term goals should augment each other. Your plans for achieving the long-term goals should be realistic and compatible with your short-term goals and interests. Think creatively about how certain goals can fit together.

People who are skilled critical thinkers not only have reasonable, well-thought-out goals and strategies to achieve them but also act from a sense of integrity or personal authenticity and respect for the integrity and aspirations of others in their lives. We are not isolated individuals but social beings whose decisions affect the lives of all those around us.

Facing Challenges

Sometimes traditional practices and cultural beliefs get in the way of achieving our life plan. In these cases, we may need to develop subgoals that involve challenging the obstructing beliefs rather than give up our life plan. Openly questioning traditional belief systems and effectively addressing challenges to deeply held beliefs require courage and self-confidence. The abolitionists and early feminists and civil rights advocates were often ridiculed and even imprisoned because they challenged traditions they believed were unjust. See "Thinking Outside the Box: Elizabeth Cady Stanton, Women's Rights Leader" on page 17.

When Martin Luther King Jr. was thrown in jail for his role in organizing the 1955 bus boycott in Montgomery, Alabama, he refused to back down despite the beseeching

of his fellow clergy. Fortunately, King had the courage to stand by his convictions. In his "Letter from Birmingham Jail," King wrote to his fellow clergy that a law that degrades humans is unjust and, as such, must be opposed. Furthermore, to be effective, opposition may require civil disobedience and even jail, since oppressors do not give up their power willingly.

Critical thinking, as we noted earlier, requires being in touch with our emotions, such as indignation or anger, elicited by unjust treatment, as in the case of King, or by a shocking image such as photos of prisoners of war being tortured and children dying of starvation.

In addition to being able to effectively challenge social injustices, as critical thinkers, we need to be able to respond thoughtfully to challenges to our own belief systems rather than engaging in resistance. This requires good critical-thinking skills as well as self-confidence.

The Importance of Self-Esteem

Effective critical-thinking skills appear to be positively correlated to healthy self-esteem. Healthy self-esteem emerges from effectiveness in problem-solving and success in achieving our life goals. The task of sorting out genuine self-worth from a false sense of self-esteem requires critical thinking. Healthy self-esteem is not the same as arrogant pride or always putting one's own interests first. Nor are people with proper self-esteem habitually self-sacrificing, subverting their interests and judgment to those of others.

People with low self-esteem are more vulnerable to manipulation by others. They experience more "depression, irritability, anxiety, fatigue, nightmares . . . withdrawal from others, nervous laughter, body aches and emotional tension."[30] Some of these traits, such as anxiety and nervous laughter, were seen in the Milgram study participants who complied with the request of the authority figure. Indeed, many of these men later came to regret their compliance and even required psychotherapy.

Good critical-thinking skills are essential in exercising your autonomy. Critical thinkers are proactive. They are aware of the influences on their lives, including family, culture, television, and friends; they can build on the positive influences and overcome the negative ones, rather than be passively carried through life and blaming others if their decisions turn out poorly.

An autonomous person is both rational and self-directing and therefore less likely to be taken in by poor reasoning or

A life plan is like a flight plan; it helps keep us on course.
Geoff Tompkinson/Getty Images
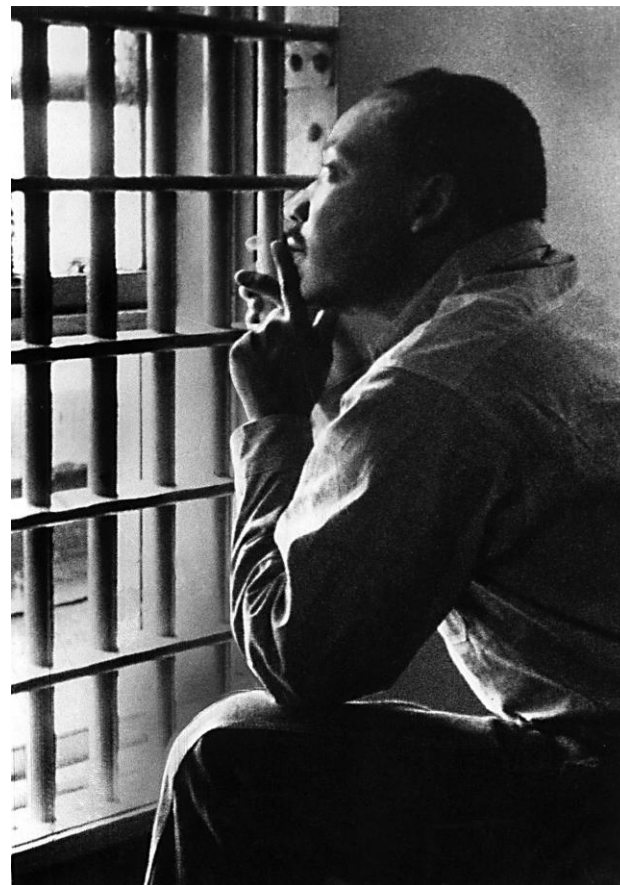
Martin Luther King's willingness to go to jail, rather than back down on his goal of equality for all people, made him one of the most effective civil rights leaders in American history.
Everett Collection/CSU Archives/Newscom

THiNKing

Outside the Box

ELIZABETH CADY STANTON, *Women's Rights Leader*

Elizabeth Cady Stanton (1815–1902) was a social activist and leader in the early women's rights movement. In 1840, when she was a young newlywed, Stanton attended the World Anti-Slavery Society convention in London, which her husband was attending as a delegate. It was there that Stanton met Lucretia Mott (1793–1880). At the convention, the women delegates from the United States were denied seats after some of the male U.S. delegates vehemently objected. Mott, in response, demanded that she be treated with the same respect as accorded to any man—white or black. During these heated discussions, Stanton marveled at the way Mott held her own in the argument, "skillfully parried all their attacks . . . turning the laugh on them, and then by her earnestness and dignity silencing their ridicule and jeers."*

Following the Civil War, Stanton refused to support passage of the Fifteenth Amendment, which gave voting rights to black men but not to women. She argued that the amendment essentially was based on the fallacy of false dilemma**—either black men get the vote (but not women) or only white men can vote. Instead she pointed out that there was a third option: both men and women should have the right to vote. Unfortunately, her argument and her challenges to traditional beliefs about the role of women were ridiculed. Although black men received the vote in 1870 with passage of the Fifteenth Amendment, it would be another 50 years before women were given the right to vote in the United States. Although Stanton, being a product of the prejudices of her time, limited her advocacy to white women, her fight for equal opportunity for women paved the way for the passage of the 19th Amendment so that other women could participate in the political life of the country.

DISCUSSION QUESTIONS

1. Stanton had friends such as Lucretia Mott and Susan B. Anthony in her fight for women's rights. Discuss ways in which having a support network of people who are skilled critical thinkers can enhance your ability not to use or fall for faulty reasoning.

2. Think of a time when your ability to pursue your goals was compromised by ridicule. Discuss steps you might take to make yourself less likely to give in to faulty reasoning or to give up on an aspect of your life plan under such circumstances.

3. Our concern for the rights of others is shaped by our cultural definition of moral community, defined as "all beings who have inherent moral value and, as such deserve the respect and protection of the community." Some beings, such as white males, are closer to the center, while others are marginalized or even outside the moral community. For example, at one time blacks were not considered part of the moral community. Presidents Washington and Jefferson, while advocating for equal rights for all men, were slave-owners. Similarly, Stanton, while fighting for women's rights part limited her advocacy to white women. Discuss ways in which our current cultural definition of the moral community excludes or privileges certain groups of beings.

*Lloyd Hare, *The Greatest American Women: Lucretia Mott* (New York: American Historical Society, 1937), p. 193.

**For more on the fallacy of false dilemma, see Chapter 5, page 162.
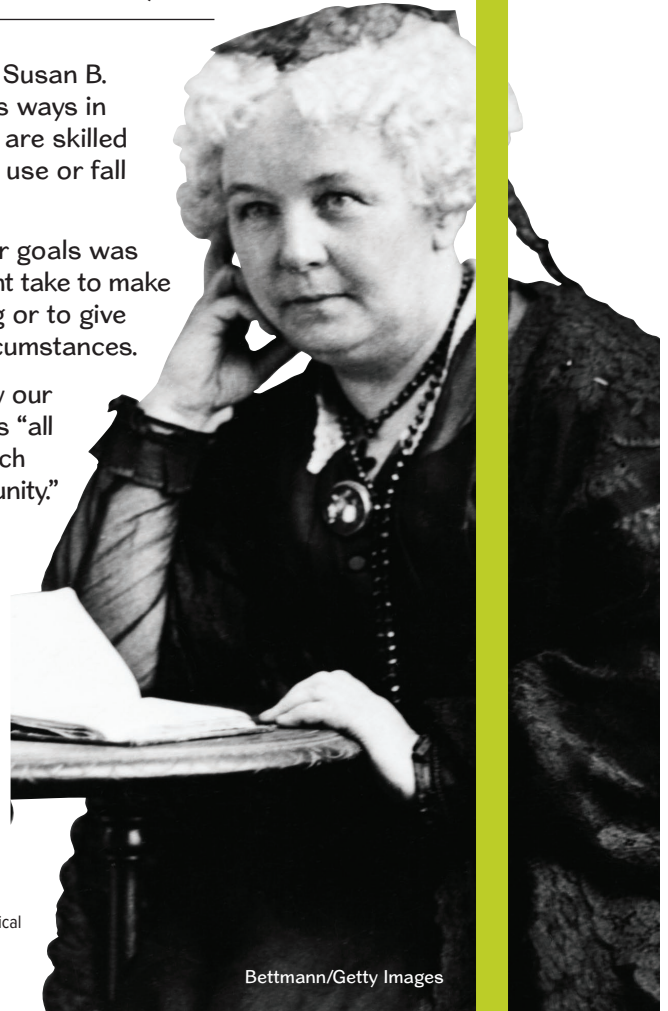
Bettmann/Getty Images

democracy A form of government in which the highest power in the state is invested in the people and exercised directly by them or, as is generally the case in modern democracies, by their elected officials.

contradictions in his own or other's reasoning. Being self-directing entails making decisions on the basis of what is reasonable instead of getting swept up in group-think or blindly obeying an authority figure. To achieve this end, autonomous critical thinkers seek out different perspectives and actively participate in critical dialogues to gain new insights and expand their own thinking.

Did You Know

Studies show that young people who have positive self-esteem "have more friends, are more apt to resist harmful peer pressure, are less sensitive to criticism or to what people think, have higher IQs, and are better informed."[31]

Critical Thinking in a Democracy

Critical-thinking skills are essential in a democracy. **Democracy** literally means rule by the people; it is a form of government in which the highest power in the state is invested in the people and exercised directly by them or, as is generally the case in modern democracies, by their elected officials. As citizens of a democracy, we have an obligation to be well informed about policies and issues so that we can effectively participate in critical discussions and decisions.

Thomas Jefferson wrote, "In a republican nation, whose citizens are to be led by reason and persuasion and not by force, the art of reasoning becomes of the first importance."[32] The purpose of democracy is not to achieve consensus through polling or majority vote but to facilitate open-ended discussion and debates by those with diverse views. Truth, argued British philosopher John Stuart Mill (1806–1873), often is found neither in the opinion of those who favor the status quo nor in the opinion of the nonconformist but in a combination of viewpoints. Therefore, freedom of speech and

Many of the prisoners at Guantanamo Bay were denied access to legal counsel and other protections as required by the United Nations' Geneva Conventions. Despite calls by the United Nations to close Guantanamo Bay by January 2007, it is still open. Although most of the prisoners have been transferred or released, in 2018 President Trump signed an executive order to keep Guantanamo Bay Prison open indefinitely. As of January 2019 there were still 40 prisoners being held at Guantanamo Bay. Shane T. McCoy/U.S. Navy/Getty Images

ANALYZING **IMAGES**

Jeff Widener/AP Images

Student Protestor in Front of Tanks at Tiananmen Square, China

On June 3 and 4, 1989, hundreds, possibly thousands, of unarmed demonstrators protesting the legitimacy of China's communist government were shot dead in a brutal military operation to crush a democratic uprising in Beijing's Tiananmen Square. The demonstrators, who were mostly university students, had occupied the square for several weeks, refusing to leave until their demands for democratic reform were met. A photographer captured the above picture of a lone, unnamed demonstrator standing in front of the tanks, bringing to a halt the row of advancing tanks. To this day, no one knows who the demonstrator was or what his fate was.

DISCUSSION QUESTIONS

1. *What do you think the student in the photo is thinking and feeling? What do you think led up to his decision to take this action? Does his action show good critical thinking? Discuss ways in which the student's action demonstrates, or does not demonstrate, good critical-thinking skills. Relate your answer to the actions of reformers such as Stanton and King.*

2. *Imagine yourself in a similar situation. Discuss how you would most likely react and how your reaction is a reflection of your current self-development. What steps could you take in your life to make yourself more likely to engage in civil disobedience, particularly in a case where your life was not at stake?*

listening to opposing views, no matter how offensive they may be, are essential for critical thinking in a democracy.

Corrupt politicians have been elected or appointed to public office and high-ranking positions in their parties because the people failed to educate themselves about their activities and ideals. Indeed, in a 1938 poll of Princeton freshmen, Adolf Hitler was ranked first as the "greatest living person"![33] And in New York City in the mid-nineteenth

century, politician William Marcy "Boss" Tweed (1823–1878) conned citizens out of millions of dollars. He also managed to get his corrupt associates, known as the Tweed Ring, appointed and elected to high offices.

Unlike totalitarian societies, modern democracies encourage diversity and open discussion of different ideas. Research on the effects of race, ethnicity, class, and diversity on college students reveals "important links between

Connections

experiences with diversity and increased commitment to civic engagement, democratic outcomes and community participation."[34] Exposure to diversity on campus and in the classroom broadens students' perspectives and improves critical-thinking and problem-solving skills.

In his book *The Assault on Reason* (2007), Al Gore argues that there has been a decline in participation by ordinary citizens in the democratic process since television overtook the printed word as the dominant source of information.

Television as a one-way source of information appeals mainly to our uncritical emotions rather than requiring critical reflective thought, thus rendering viewers passive consumers of prepackaged information and ideologies. Political engagement tends to rise during a presidential election year and drop off following the election.

People who are skilled at critical thinking are less likely to be taken in by faulty arguments and rhetoric. They are also more likely, like the pro-democracy Chinese students in Tiananmen Square, to demand the same clarity and reasonableness of thinking in their leaders that they require in themselves rather than remain passive in the face of government abuses of power. Thus, critical thinking contributes to your own well-being as well as to the well-being of society as a whole, by teaching you how to stand up to authority and irrational thinking.

EXERCISE 1-3

STOP AND ASSESS YOURSELF

1. According to German philosopher Immanuel Kant (1724–1804), one of our primary moral duties is self-respect and the development of proper self-esteem.[35] To truly respect others and their perspectives, we must first respect ourselves. Discuss and relate your answer to how proper self-respect might enhance your critical-thinking skills. Use specific examples to support your answer.

2. Choose one of your short-term or long-term goals. Working in small groups, brainstorm about ways each of you might best achieve your goals. Also discuss the role good critical-thinking skills play (or played) in helping you achieve your goals.

3. In small groups, discuss a time when you deferred to the view of someone else and did (or failed to do) something you later came to regret because you were unable to give good reasons at the time for why you should not accept that person's view. Brainstorm with your group about ways in which you might make yourself less prone to this behavior.

4. What is diversity? What are the educational benefits of diversity? Discuss ways in which your college, including your classes, addresses and facilitates diversity.

5. The student pro-democracy movement in Tiananmen Square was unsuccessful in terms of bringing democracy and a more open society to China. Does this failure mean that the movement and the lives that were lost were a waste? Support your answer.

6. Former vice president Al Gore argues that the "mental muscles of democracy have begun to atrophy."[36] Discuss his claim. Relate your answer to the exercise of your "mental muscles" and those of other college students in political dialogue.

7. When the *Brown Daily Herald,* the student newspaper at Brown University, ran an ad from conservative activist David Horowitz entitled "Ten Reasons Why Reparation for Slavery Is a Bad Idea—and Racist Too," a coalition of Brown students stole and destroyed nearly 4,000 newspapers at campus distribution points. Defendants of the action argued that the ad was "an attempt to inject blatantly revisionist and, yes, racist arguments into a legitimate debate about black reparations . . . ."[37] Is it ever appropriate to censor views? Did the students have a legitimate right, on the basis of their freedom of speech, to destroy the newspapers? To what extent, if any, do we have an obligation in a democracy to listen attentively to and consider views that we find offensive? What would you have done had your school newspaper decided to publish the ad by Horowitz?

8. What are your strengths and talents? If you are not sure of your talents, go to the career office at your college and ask if you can take some of the personality and aptitude tests available there. These tests are also useful in helping you to determine which career or careers might be most fulfilling for you. Be creative; don't limit or underrate yourself.

BARRIERS TO CRITICAL THINKING

By sharpening your critical-thinking skills, you can become more independent and less susceptible to worldviews that foster narrow-mindedness. In this section, we'll be looking at some of the barriers to critical thinking that keep us from analyzing our experiences or worldviews, as well as the experiences and worldviews of others.

The Three-Tier Model of Thinking

The processes used in critical thinking can be broken down into three tiers or levels: experience, interpretation, and analysis. Keep in mind that this division is artificial and merely helps to highlight the critical-thinking process. Although analysis is at the pinnacle of the process, the three-tier model is also recursive and dynamic, with analysis returning to experience for confirmation and interpretation being modified in light of the analysis of the new information. People never have pure experience or engage in pure analysis.

Experience, the first level, includes firsthand experience as well as information or empirical facts that we receive from other sources. Experience is the foundation of critical thinking and argumentation. It provides the material for interpretation and analysis. At this level of thinking, we merely describe our experiences rather than try to understand them. For example:

1. I was turned down for the job I interviewed for.
2. Mark held the door open for me when I was leaving class.

The Three Levels of Thinking
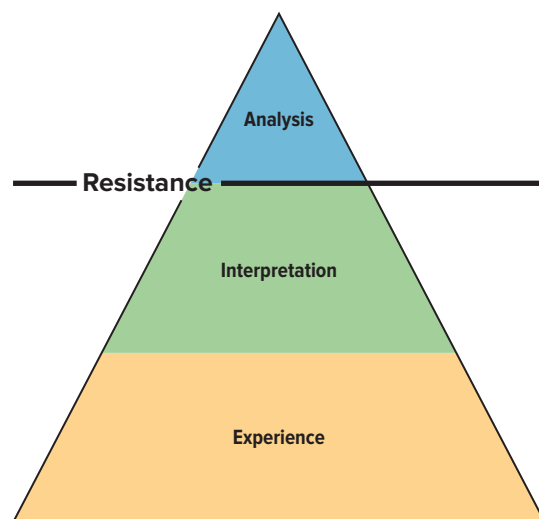
3. Human cloning is illegal in the United States.
4. Although blacks represent only 13.4 percent of the U.S. population, they make up 38.1 percent of the prison inmates.[38]

Interpretation, the second level, involves trying to make sense of our experiences. This level of thinking includes individual interpretations of experiences as well as collective and cultural worldviews. Some of our interpretations may be well informed; others may be based merely on our opinions or personal feelings and prejudices. Some possible interpretations of the experiences previously listed are:

1. I didn't get the job because I didn't have the right connections.
2. Mark is a chauvinist pig who thinks women are too weak to open their own doors.
3. If human cloning is illegal, it must be immoral.
4. Black men make up such a large percentage of the prison population because black men are innately more violent than white men.

Analysis, the third level, requires that we raise our level of thinking and critically examine our interpretations of an experience, as well as those of others, refusing to accept either narrow interpretations of an experience or interpretations that are too broad. Analysis is most productive when it is done collectively because we each bring different experiences and interpretations, as well as skills in analysis, to the table. Analysis often begins by asking a question. The following are examples of questions we might ask in order to begin our analysis of the interpretations:

1. Was it my lack of connections or my poor interviewing skills or lack of job qualifications that caused me not to get the job?
2. What was Mark's intention in holding the door open for me?
3. Why is human cloning illegal? Are there circumstances in which human cloning might be acceptable?

Connections

How has the Internet enhanced your ability to participate in political life? *See Chapter 11, pp. 361–362.*

In what ways is the news media biased? *See Chapter 11, pp. 363–365.*

How can we as citizens participate in the law-making process? *See Chapter 13, p. 426.*

How can you use the three-tier model of thinking to analyze media messages? *See Chapter 11, pp. 374–376.*

What model of thinking do scientists use? *See Chapter 12, p. 383.*

4. Is there evidence that black men are innately more violent, or is it possible that black men are simply discriminated against more than white men? Or are other factors at work to account for their overrepresentation in the prison population?

The three-tier model of thinking provides a dynamic model of critical thinking in which analysis is always returning to experience for confirmation. As critical thinkers, it is not only our reasoning process that is important but also that our reasoning is connected to reality.

Resistance

Because most of us hate to be proven wrong, we may create barriers to keep our cherished worldviews from being challenged. Resistance, defined as "the use of immature defense mechanisms that are rigid, impulsive, maladaptive, and nonanalytical," can act as a barrier to critical thinking.

People who hold views that are backed by public opinion or the law may be particularly likely to resist when these views are challenged: They don't want to see the status quo upset.

Connections

How can our critical-thinking skills help us recognize misleading advertisements? *See Chapter 10, p. 335.*

Almost all of us use defense mechanisms when we feel overwhelmed. Resistance, however, becomes a problem when it is used as a habitual way of responding to issues. Such habitual use interferes with our self-development, since it involves avoiding novel experiences and ideas that challenge our worldviews. People who hold views that are backed by public opinion or the law may be particularly likely to resist when these views are challenged: They don't want to see the status quo upset.

In addition, resistance can create anxiety, since it puts us in a defensive mode and can shield us from the ideas and viewpoints of others, thus preventing us from working collaboratively and coming up with a well-thought-out plan of action.

Types of Resistance

There are several types of resistance, including avoidance, anger, clichés, denial, ignorance, conformity, struggling, and distractions.

Avoidance. Rather than seeking out different points of view, we may avoid certain people and situations. Some people who hold strong opinions but are insecure in their ability to defend these positions hang out only with people who agree with them or read literature and watch television news shows that support their worldview. As a form of resistance, avoidance can lead to a serious lack of communication and even hostility among people who hold opposing points of view.

Anger. We cannot always avoid people who disagree with us. Rather than using critical thinking when confronted with an opposing viewpoint, some people respond with anger. People with physical and/or social power are more likely than those without it to use anger to silence those who disagree with them. Anger may be expressed overtly by glares, threats, physical violence, gang activity, or even war.

Not all anger is resistance. We may feel anger or moral indignation when we hear that one of our favorite professors was denied tenure because he is Arab. This anger may motivate us to correct this injustice by writing a letter of protest to the local newspaper. We'll be looking more at the positive role of emotion in critical thinking in Chapter 2.

Clichés. Resorting to clichés—often-repeated statements such as "Don't force your views on me," "It's all relative," "To each his own," "Things always work out for the best," and "I have a right to my own opinion"—can keep us from thinking critically about issues. Advertisers and politicians often use clichés as a means of sidetracking us from considering the quality of the product or the issue at hand.

Resistance to analyzing one's position is seen in the abortion debate where each side has become entrenched in the clichés pro-choice or pro-life, with the pro-choice side focused on having few or no legal restrictions and the pro-life side wanting abortion to be illegal, at least in most cases. To overcome this divisive thinking, the term "reproductive justice" was
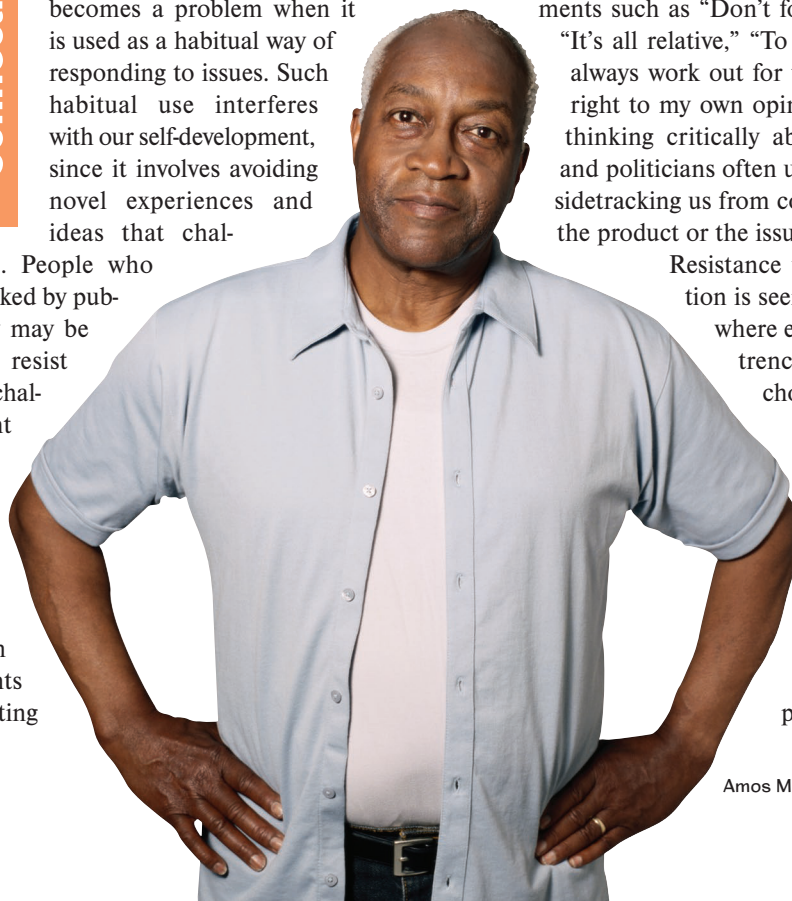
Amos Morgan/Getty Images

coined by a group of black feminists to address the concerns of African-American women, whose abortion rate is more than double that of white women. Loretta Ross, cofounder of the group SisterSong Women of Color Reproductive Justice Collective, maintains that we need to think differently about the abortion debate. "Those of us in the reproductive justice movement, would say, 'Let's ask why there is such a high rate of unintended pregnancies in our community: What are the factors driving it?'"[39]

Used sparingly, clichés can be helpful to illustrate a point. However, the habitual use of clichés acts as a barrier to critical thinking.

Denial. According to the U.S. National Center for Injury Prevention and Control, alcohol-related motor vehicle accidents kill someone every 30 minutes and account for 41 percent of all traffic-related deaths. Young people are most at risk, with one in every three alcohol-related fatal crashes involving drivers between the ages of 21 and 24.[40] Despite these startling statistics, people who drink and drive often deny that they are drunk. They may refuse to let someone else drive, claiming that they are quite capable of doing so.

Many Americans are also in denial about the possibility that world oil reserves may soon run out. Despite improved exploration technology, discovery of new oil reserves peaked in 1962 and has been dropping ever since. According to some predictions, active oil reserves may run out by 2030.[41] Yet, faced with declining fossil-fuel sources, many Americans continue to drive large vehicles and to live in large homes that cost more and more to heat.

Ignorance. Confucius taught that "Ignorance is the night of the mind." The modern Hindu yogi Swami Prabhavananda wrote, "Ignorance creates all the other obstacles." People are more likely to think critically about issues about which they have knowledge in depth. In certain situations, we are ignorant about an issue simply because the information about it is not available to us. However, sometimes we just don't want to know.

Ignorance is a type of resistance when we intentionally avoid learning about a particular issue, about which information is readily available, in order to get out of having to think or talk about it. Ignorance is often used

Medioimages/Photodisc/Getty Images

as an excuse for inaction. For example, Joe told his colleagues that he wanted to make a donation to help the Syrian refugees who had been displaced from their homes because of violent conflict in his country, but he didn't because "you just can't tell which charities are ripping you off and keeping most of the money for themselves." In fact, there are websites such as www.charitynavigator.org that inform potential donors exactly how much money each major charitable organization uses directly for charity and how much goes to administrative and fundraising costs. Some people believe that being ignorant excuses them from having to speak out or take action on an issue. As a result, the issue is not resolved or even becomes worse.

Conformity. Many people fear that they will not be accepted by their peers if they disagree with them. Even though they may actually disagree, they go along with the group rather than risk rejection. We've probably all been in a situation where someone at work or a party

makes a racist or sexist joke or an offensive comment about gays or women. Rather than speaking up, many people keep quiet or even laugh, thus tolerating and perpetuating bigotry and negative stereotypes.

Other people conform because they don't have a point of view of their own on an issue. Saying "I can see both sides of the issue" often masks a reluctance to think critically about it. Martin Luther King Jr. once pointed out that most people are afraid to take positions that are unpopular and would rather take no stand at all or one that is so ambiguous that it offends no one.

Struggling. During the Nazi occupation of France in World War II, the people of the village of Le Chambonsur-Lignon provided refuge for Jews who were fleeing the Nazis. When Pierre Sauvage, director of *Weapons of the Spirit*—a documentary about the people and resistance movement of Le Chambon—was asked by PBS television's Bill Moyers years later why they did this when other people were still struggling about what to do, Sauvage replied, "Those who agonize don't act; those who act don't agonize."[42]

It is appropriate to struggle with or agonize over difficult issues before coming to a tentative stand. However, some people get so caught up in the minute details and "what ifs" of an issue—a situation sometimes referred to as "analysis paralysis"—that nothing gets accomplished. Procrastinators are most likely to use this type of resistance. Although struggling with an issue as part of the analytical process of coming up with a

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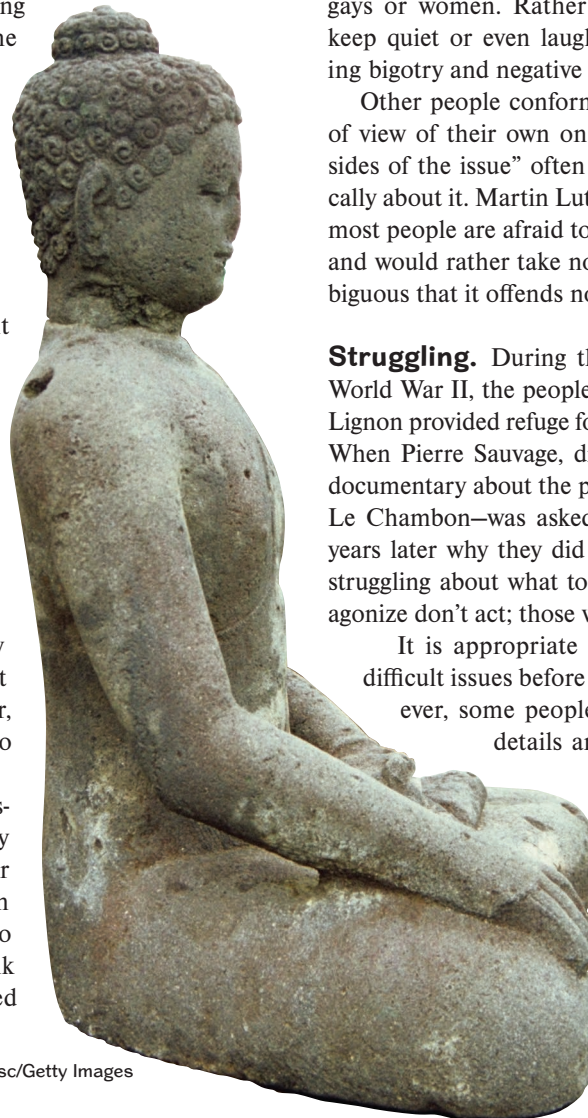
resolution and plan for action is an important component of critical thinking, when the struggle becomes an end-in-itself, we are engaging in resistance, not critical thinking.

Distractions. Some people hate silence and being left alone with their own thoughts. Many of us use television, social media, loud music, partying, work, drugs, alcohol, or shopping to prevent our minds from critically thinking about troublesome issues in our lives. People may overeat instead of examining the causes of their cravings or unhappiness. Mental hindrances like distractions, according to Buddhist teaching, keep us from clear understanding. Instead, Buddhist philosophy values stillness and contemplation as means of achieving wisdom and understanding.

Narrow-Mindedness

Like resistance, narrow-mindedness and rigid beliefs, such as absolutism, egocentrism, and ethnocentrism, can become barriers to critical thinking.

Absolutism. As we noted earlier, we may find ourselves acting contrary to our deeply held moral beliefs—as happened to most of the subjects in the Milgram study—simply because we do not have the critical-thinking skills necessary for standing up to unreasonable authority. In particular, college students at the first stage of cognitive development, where they regard information as either right or wrong, have an "expectation that authorities provide them with absolutely correct knowledge."[43] When confronted with a situation like the one faced by those who administered electric shocks in Milgram's study, such students lack the critical-thinking skills to counter the authority's reasoning. For more on the stages of moral development, see Chapter 9.

Fear of Challenge. We may also fail to stand up to others because we fear that others will challenge our beliefs. Some people believe that it is a sign of weakness to change their position on an issue. Unlike physicist Stephen Hawking, who is described in "Thinking Outside the Box: Stephen Hawking, Physicist," many people—especially those with low self-esteem or an egocentric personality—resist information and evidence that are at odds with what they believe. They may view the expression of opposing views or evidence as a personal attack. Good critical thinkers, in contrast, are

egocentrism The belief that the self or individual is the center of all things.

ethnocentrism The belief in the inherent superiority of one's own group and culture.

willing to openly change their position in light of conflicting evidence.

Egocentrism. Believing that you are the center of all things is called **egocentrism**. Egocentric, or self-centered, people have little regard for others' interests and thoughts. Studies of cognitive development in college students suggest that as students develop cognitively and become better at critical thinking, they are less likely to view themselves egocentrically.[44] Although we all tend to fall for compliments and be skeptical of criticism, this tendency is especially true of egocentric people. Flattery impedes our ability to make sound judgments and increases our chances of being persuaded by the flatterer. Advertisers and con artists are well aware of this human tendency and thus use flattery to try to get us to go along with them or to buy products that we wouldn't otherwise buy.

Ethnocentrism. An uncritical or unjustified belief in the inherent superiority of one's own group and culture is called **ethnocentrism**. It is characterized by suspicion of and a lack of knowledge of foreign countries and cultures.[45] Ethnocentric people often make decisions about other groups, cultures, and countries on the basis of stereotypes and opinions rather than on factual information. In addition, we tend to remember evidence that supports our worldview or stereotypes and forget or downplay that which doesn't. (See page 125 for more on self-serving biases in our thinking.)

President Donald Trump's comment that there should be a ban on Muslims who are not American citizens coming into the United States was met with accusations of ethnocentrism and bias against Muslims. Ethan Miller/Getty Images

THiNKing Outside the Box

STEPHEN HAWKING, *Physicist*

Stephen Hawking (1942–2018) was the most famous physicist of the late 20th and early 21st centuries. Shortly after graduating from college, he learned that he had ALS (Lou Gehrig's disease), a devastating and incurable neurological disease. About half of the people with it die within three years. After enduring depression and waiting to die, Hawking pulled himself together and decided to live his life to his fullest rather than give up. He enrolled in graduate school, married, and had three children. He wrote: "ALS has not prevented me from having a very attractive family and being successful in my work. I have been lucky that my condition has progressed more slowly than is often the case. But it shows that one need not lose hope."

In 2004, Hawking publicly recanted a position he had held for the past 30 years that the gravity of black holes is so powerful that nothing can escape it, not even light.* In doing so, he conceded, with some regret, that CalTech astrophysicist John Preskill had been right all along about black holes. Preskill theorized that information about objects swallowed by black holes is able to leak from the black holes, a phenomenon known as the "black hole information paradox." Hawking paid Preskill off with an agreed-upon prize—an encyclopedia of baseball.

Hawking remained active in his field until his death in 2018. He spoke at conferences on topics such as black holes and the search for alien life.

DISCUSSION QUESTIONS

1. Discuss what characteristics of a good critical thinker, listed in the text, are demonstrated by Hawking's response to adversity and uncertainty.

2. Think of a position that you held (or still hold) against all evidence. Compare and contrast Hawking's action with how you respond when someone challenges your views or position. Discuss to what extent resistance and/or narrow-mindedness is responsible for your reluctance to change or modify your position.

*See Mark Peplow, "Hawking Changes His Mind about Black Holes," http://www.nature.com/news/2004/040712/full/news040712-12.html.

David Silverman/Getty Images

Since the September 11, 2001, terrorist attacks on New York City and the Pentagon, Arab Americans have been subjected to hate crimes as well as to racial profiling by police and federal officials, despite official policies against this practice.

According to the U.S. Department of Justice, anti-Muslim crimes have soared to five times the level they were in 2001. Hundreds of Muslims and Americans of Arab descent have also been detained without charges and imprisoned under the USA Patriot Act. These types of hasty reactions can lead to misunderstandings and even increased hostility. The rate of hate crimes against Muslims in America has risen dramatically since the election of President Donald Trump and is currently more than 30 times the pre-9/11 rate.[46]

Uncritical nationalism—a form of ethnocentrism—can blind us to flaws and deteriorating conditions in our own culture. Americans who engage in this type of narrow-mindedness, for example, may bristle at the mere suggestion that the United States may not be the greatest and freest nation ever. Yet according to the Worldwide Governance Indicators report, which ranks governments by the amount of freedom citizens have to voice opinions and select their government, the United States ranks lower than Canada, Australia, and most European nations.[47] This represents a drop from 2005, in part because of increased restrictions on freedom of the press.

anthropocentrism The belief that humans are the central or most significant entities of the universe.

Anthropocentrism. A belief that humans are the central or most significant entities of the universe, called **anthropocentrism**, can blind people to the capabilities of other animals. In his theory of evolution, Charles Darwin

Sunando Sen, of Queens, New York, was pushed to his death in front of a train in December 2012 by a woman who told police she had pushed him off the subway platform because she has hated Muslims ever since September 11. Sen was from India.
Matthew McDermott/Polaris/Newscom

postulated that differences in cognitive function between humans and other animals were simply a matter of degree or quantity, rather than human cognitive function being of a qualitatively different "higher" type. However, the anthropocentric view of humans as unique among all other creatures or as beings created in the image of God and therefore above and separate from nature still dominates. This is found in the use of the term *animal,* even in scientific journals and books, as excluding humans, even though we are an animal species. Under the anthropocentric view, other animals and nature exist not in their own right but as resources for humans. Anthropocentrism can hinder us from critically thinking about our relationship with the rest of nature and can thereby threaten not only the survival of other species and the environment, as is happening with global warming, but our own survival as well.

The belief that artificial intelligence, in which a computer, robot, or other device is programmed to learn and make decisions, will never match human intelligence is also a product of anthropocentrism. We'll be looking at artificial intelligence and reason in Chapter 2.

Rationalization and Doublethink

While sometimes the best alternative is clear, it's often the case that competing claims require our analysis before we can come to a decision. When presented with

conflicting alternatives, some people make a decision quickly because of their bias in favor of one of the alternatives. In doing so, they justify or rationalize their choice on the basis of personal preferences or opinion, rather than on a critical analysis of the competing claims. In an experiment on making choices, psychologist A. H. Martin found that with rationalization the decision is often accompanied by a "rush" of satisfaction, thus convincing the person that his or her preference was correct.[48]

We may also use rationalization in an attempt to justify past actions that are inconsistent with our image of ourselves as a decent, rational person. Child molesters may see themselves as affectionate and loving people whom children enjoy being with. A person may cheat on a spouse and then, when confronted, lie about the affair, justifying the lie on the grounds that he or she is a caring person who is looking out for the best interests of their spouse by not saying something that will hurt his or her feelings.

Because rationalization involves ignoring competing claims, people who engage in it often get caught up in doublethink. **Doublethink** involves holding two contradictory views, or "double standards," at the same time and believing both to be true. This is particularly prevalent in response to highly charged issues. Rather than analyze the arguments surrounding these issues, people may unwittingly engage in doublethink.

For example, when asked, most college students state that they believe in equality of men and women. However, when it comes to lifestyle and career, the same students who claim to believe in equality and freedom of choice also say that women should be the primary caretakers of children. Most teachers, even the most ardent feminists, treat their female students differently from their male students, calling on boys and praising their accomplishments more often, and having more tolerance of boys' disruptive behavior.[49] When shown videotapes of their classes, many of these teachers are horrified at the extent to which they ignore the girls and downplay their contributions and achievements.

doublethink Holding two contradictory views at the same time and believing both to be true.

U.S. Median Income by Race, Ethnicity, and Gender, 2017

Hispanic women earn less than half of what white men earn.

Asian American men: $67,673
White men: $60,355
Asian American women: $51,703
White women: $46,213
Black men: $42,976
Hispanic men: $38,876
Black women: $36,135
Hispanic women: $32,002
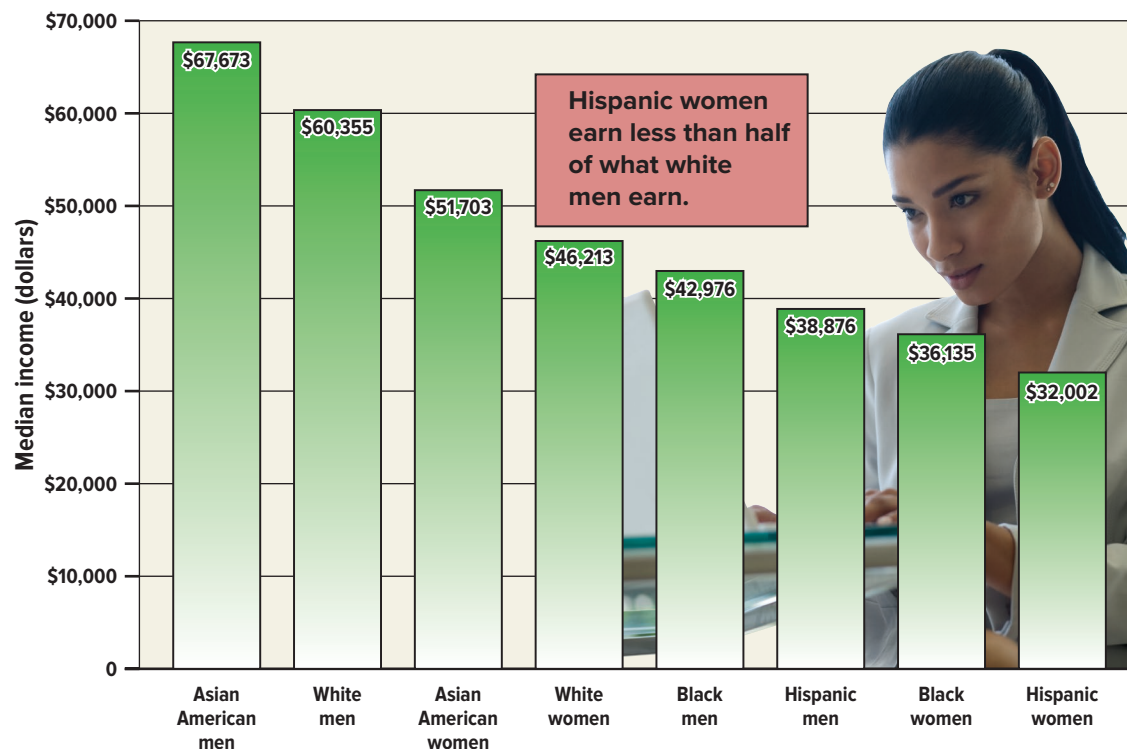
The wage gap between women and men, especially between white and Asian men and black and Hispanic women, continues to be significant with women earning only about 80 percent of what men earn. Michael Poehlman/The Image Bank/Getty Images

Source: U.S. Census Bureau, 2018.

Similarly, the majority of white Americans champion equality as a principle when it comes to race but may harbor unconscious prejudice. Unexamined prejudices can distort our perception of the world. In a study, people were asked to match negative and positive words with names associated with Americans of both European and African descent. The more implicitly prejudiced the subjects were, the more likely they were to match the negative words with African Americans and the positive words with European Americans.[50]

Doublethink can have an impact on our real-life decisions. According to the U.S. Bureau of Labor Statistics, women, including those who work full time outside the home, still perform the great majority of housework and child care.[51] At work, women and minorities suffer from job discrimination and earn significantly less than white men earn. The wage disparity between men and women increases with age. Yet, in spite of the evidence to the contrary, many college students, when asked, maintain that sex-based and race-based discrimination in the workplace are things of the past.

Cognitive and Social Dissonance

We are most likely to critically analyze or modify our views when we encounter **cognitive dissonance** and **social dissonance**, situations where new ideas or social behavior directly conflicts with our worldviews. People who are forced to live or work in an integrated community, be it a dorm, college classroom, or a public housing project, often encounter occasions and behavior that conflict with their ethnocentric attitudes. Evidence indicates that once a person's behavior is changed—that is, after they share a meal or discuss issues in class with people of other races or ethnicities—a change in belief is likely to follow.[52] Exposing yourself to role models who are skilled in critical thinking can also strengthen your motivation to think clearly rather than engage in resistance.

cognitive dissonance A sense of disorientation that occurs in situations where new ideas directly conflict with a person's worldview.

social dissonance A sense of disorientation that occurs when the social behavior and norms of others conflict with a person's worldview.

Stress as a Barrier

While some stress can be good in motivating us, when we experience excessive stress, our brain—and our ability to think critically—slows down. Researchers have found that when people get caught up in disasters, such as an airplane crash, hurricane, flood, or fire, the vast majority freeze up. According to Mac McLean of the FAA and Civil Aerospace Medical Institute, instead of taking action to remove themselves from the danger, most people are "stunned and bewildered."[53] (See Thinking Outside the Box: Captain Chesley "Sully" Sullenberger on page 29.)

We can counteract the effect of stress by mentally rehearsing our responses to different stressful scenarios. People, such as Captain Sullenberger, who have mentally rehearsed the best route for evacuating their building repeatedly are far more likely than those who haven't rehearsed to take action and escape in cases of emergencies, such as a fire or a terrorist attack. More importantly, mental rehearsal can enhance our performance on familiar tasks. For example, basketball players who engaged in 15 minutes of mental rehearsal on most days and 15 minutes of actual practice on the other days actually performed better after 20 days than players who only engaged in physical practice each day.[54]

Did You Know

In a study, college students were shown a picture of a black man in a business suit standing on a subway next to a white man who is holding a razor. When asked later what they had seen, the majority reported seeing a black man with a razor standing next to a white man in a business suit.

THiNKiNG **Outside the Box**

CAPTAIN CHESLEY "SULLY" SULLENBERGER, *Pilot*

On January 9, 2009, shortly after takeoff from LaGuardia Airport, U.S. Air flight 1549 struck a large flock of geese, disabling both engines. After quickly determining that neither returning to LaGuardia nor continuing on to the next closest airport was feasible, Captain Chesley "Sully" Sullenberger made the decision to attempt to land the plane in the Hudson River. With the help of his co-pilot, he successfully landed the disabled plane in the river. While some passengers and crew sustained injuries, there was no loss of life. Sullenberger remained aboard until he was sure everyone had been safely evacuated before disembarking himself.

Three years later, in January 2012, the cruise ship *Costa Concordia* navigated too close to the coast of Italy. The ship struck a rock, tearing a huge gash in the side of the ship, causing it to capsize onto its side. Unlike Sullenberger's, Captain Francesco Schettino's reaction intensified the disaster. Schettino failed to order passengers to evacuate the ship until over an hour after the accident. He also abandoned the ship before all passengers were evacuated. Thirty-two passengers died in the accident. When later questioned about his actions, Schettino blamed his helmsman for the incident. As for his abandoning the ship, he claims he accidently fell into one of the lifeboats. Rather than accepting Schettino's excuses, the Costa cruise company placed the blame squarely on Captain Schettino for taking the ship off course and for the aftermath.

Why did Captain Schettino so mishandle the *Costa Concordia* incident, whereas Captain Sullenberger remained calm and in control? Sullenberger credits his years of experience and practice as an aviation safety expert and accident investigator. In a February 8, 2009, news interview, Sullenberger told Katie Couric, "One way of looking at this might be that for 42 years, I've been making small regular deposits in this bank of experience, education, and training. And on January 15 the balance was sufficient so that I could make a very large withdrawal."

Sullenberg currently travels the country giving speeches on the life lessons that prepared him for the Miracle on the Hudson. The 2016 film *Sully* is about the Hudson River landing.

DISCUSSION QUESTIONS

1. Compare and contrast the responses of Captains Sullenberger and Schettino. Relate your answer to the types of resistance. Discuss how the development of your critical-thinking skills might make you less prone to using resistance in a stressful situation.

2. What deposits are you making in your "bank of experience, education, and training" that will help you respond effectively to stressful situations or a crisis? Be specific. Discuss how these "deposits" will help you achieve this objective.

Enzo Russo/AP Images   Steven Day/AP Images
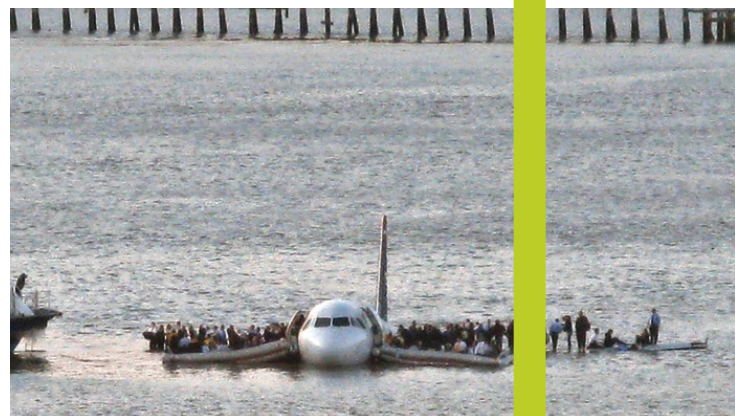
STOP AND ASSESS YOURSELF

EXERCISE 1-4

1. Reread the interpretation examples on page 21. Come up with an additional interpretation for each item. Which interpretations are most reasonable? Support your answer using the two other levels of thinking, experience and analysis.

2. Using the three-tiered model of thinking, discuss the experiences listed below. The interpretations that you list for each experience do not have to be ones that you personally accept. Share your interpretations with others in the class. Discuss how your past experiences have been shaped by your interpretations and how applying critical-thinking skills to analyze this issue might affect your future actions.

a. Affirmative action in college admissions discriminates against white males.

b. When I invited Chris to go to the movies with me last weekend, Chris said, "No thanks."

c. College tuition is rising faster than the cost of living in the United States.

d. According to *CNN,* more than half of the agricultural workers in the United States are illegal aliens.

e. Marijuana use has been decriminalized in Canada.

f. In 2017, the unemployment rate for college graduates was 2.5 percent compared to 4.8 percent for the general population and 7.7 percent for college dropouts.[55]

g. The college graduate rate for female student athletes is significantly higher than the rate for male student athletes.

h. In a recent survey, 45 percent of Americans stated that they feel that their pet listens to them better than their spouse does.

i. More and more men are going into nursing as a profession.

j. People who cohabitate before marriage are more likely to get divorced than those who do not.

3. According to the International Energy Commission, North Americans use more energy per person than any other people in the world. As a class, discuss ways in which we use rationalization or other types of resistance to justify our high-energy-consumption lifestyle.

4. At the opposite end of the spectrum from egocentric people are those who sacrifice their needs and dreams for others. Harvard professor of education Carol Gilligan maintains that women, in particular, tend to be self-sacrificing—putting others' needs before their own. How does the tendency to be self-sacrificing interfere with effective critical thinking? Use examples from your own experience to illustrate your answer.

5. Douglas Adams (1952–2001), the author of *The Hitchhiker's Guide to the Galaxy,* compared humans to a puddle of water as a way of illustrating anthropocentric thinking, or what he called "the vain conceit" of humans. He wrote:

> Imagine a puddle waking up one morning and thinking, "This is an interesting world I find myself in, an interesting hole I find myself in. It fits me rather neatly, doesn't it? In fact, it fits me staggeringly well. It must have been made to have me in it." Even as the sun comes out and the puddle gets smaller, it still frantically hangs on to the idea that everything is going to be all right; that the world was made for it since it is so well suited to it.[56]

Are humans, in fact, a lot like the puddle in Adams's analogy? Support your answer, using examples from your own experience. Discuss how this type of anthropocentric thinking shapes or distorts our interpretation of the world.

6. Working in small groups, expand on the list of barriers to critical thinking presented in the text. Come up with examples of each barrier and explain how they get in the way of critical thinking.

7. Think of a stressful situation—such as a job interview, breaking bad news, asking someone for a date, or giving a presentation in front of a class—that you will be facing in the next few weeks. Write down the task at the top of a page. Spend 15 minutes a day over the next week mentally rehearsing the task. Note the dates and times you spent mentally rehearsing the task. After you have performed the actual task, write a short essay on how well you did. Were you satisfied with the outcome? Discuss the extent to which mental rehearsal helped you perform this task, compared with similar tasks you performed in the past.

8. Write down three experiences relating to yourself and your life goals. For example, "I am good at science," "I am shy," "I haven't chosen a major yet," or "I want a job in which I can make a lot of money." Now write down at least three interpretations of each of these experiences. Analyze your interpretations. Are the interpretations reasonable? Share your interpretations with others in the class or with friends or family. Do they agree with your interpretations? If not, why not?

9. Working in small groups, discuss the types of resistance or narrow-mindedness that you are most likely to engage in when your views are challenged and steps you might take to overcome your resistance and narrow-mindedness.

10. Compare and contrast the reaction of Captain Sullenberger to a potential disastrous situation to that of Captain Schettino. Discuss how improving your critical-thinking skills might improve your response to stressful situations and what deposits you are putting in your "bank of experience, education, and training," to use Sullenberger's words, to help you when you encounter situations beyond your control.

THiNK AGAIN
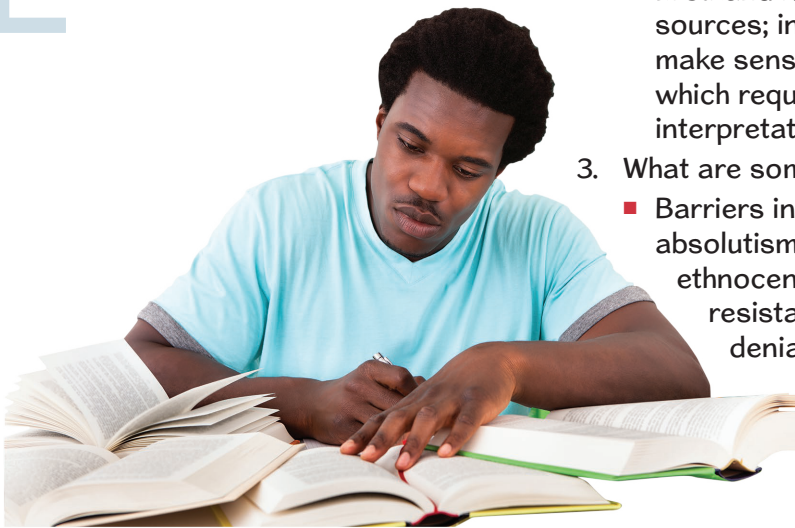
1. **What are the characteristics of a skilled critical thinker?**
   - A skilled critical thinker is well informed, open-minded, attentive, and creative, and has effective analytical, research, communication, and problem-solving skills.

2. **What are the three levels of thinking?**
   - The three levels are experience, which includes firsthand knowledge and information from other sources; interpretation, which involves trying to make sense out of our experiences; and analysis, which requires that we critically examine our interpretations.

3. **What are some of the barriers to critical thinking?**
   - Barriers include narrow-mindedness, such as absolutism, egocentrism, anthropocentrism, and ethnocentrism, as well as the habitual use of resistance, such as avoidance, anger, clichés, denial, ignorance, conformity, rationalization, and distractions.

Andriy Popov/123RF

<div style="writing-mode: vertical-rl">Critical THINKing Issue</div>

Perspectives on Affirmative Action in College Admissions

Affirmative action involves taking positive steps in job hiring and college admissions to correct certain past injustices against groups such as minorities and women. In 1954, the Supreme Court ruled in *Brown v. Board of Education* that school segregation was unconstitutional and that black children have a right to equal education opportunities. The first affirmative action legislation was proposed by Vice President Richard Nixon in 1959. Affirmative action programs and legislation were expanded during the civil rights era in the 1960s.

In 1978, Allan Bakke, a white man, sued the University of California at Davis Medical School because his application was rejected while minority students with lower test scores were admitted. The Supreme Court agreed with Bakke, ruling that reverse discrimination was unconstitutional. In 1996, with the passage of Proposition 209, California became the first state to ban affirmative action in the public sector, including admission to state colleges. Washington, Texas, and other states have also passed referenda banning affirmative action in state college admissions.

In June 2003, in *Grutter v. Bollinger,* the Supreme Court found that the admissions policy of the University of Michigan Law School, which awarded points to applicants based on race, was flawed. However, in its final ruling, the court permitted race to be considered as one among many factors when considering individual applications. On June 24, 2013, the Supreme Court ruled on *Fisher v. University of Texas,* which was brought in response to *Grutter v. Bollinger* and requested overturn of the use of affirmative action in college admissions. Abigail Fisher is a white woman who was denied admission to the University of Texas at Austin. She sued the university arguing that the use of race in admission decisions violated her rights. The Supreme Court sent the case back to the lower court and ordered it to review

the university's admission policy. The court ruled in favor of affirmative action. However, in 2013, the Supreme Court ruled that the lower court of appeals had failed to apply strict scrutiny in deciding the case.

In June 2016 the Supreme Court rejected Abigail Fisher's challenge to the University of Texas's affirmative action program, ruling that the university could give preference to racial minority college applicants.

One of the complaints about some college affirmative action programs is their preferential treatment of different groups of minorities in admissions. In October 2018, a group known as Students for Fair Admissions (SFFA) brought a lawsuit against Harvard University arguing that the university's affirmative action program discriminated against Asian-American applications. The case has yet to be heard by a court.

Wrong Take on Admissions

AFFIRMATIVE ACTION AND HIGHER EDUCATION: BEFORE AND AFTER
THE SUPREME COURT RULINGS ON THE MICHIGAN CASES   NANCY CANTOR

Nancy Cantor is chancellor of Rutgers University—Newark. She was provost of the University of Michigan when the affirmative action cases were filed with the U.S. Supreme Court. In this article, published in the *Chicago Tribune* on January 28, 2003, she presents an argument for affirmative action in college admissions.

Integration takes hard work, especially when we have little other than collective fear, stereotypes, and sins upon which to build. It is time America sees affirmative action on college campuses for what it is: a way to enrich the educational and intellectual lives of white students as well as students of color. We must not abandon race as a consideration in admissions.

The debate now before the U.S. Supreme Court over admissions at the University of Michigan is about the relative advantages people are getting, and it is a debate that misses the point. College admission has always been about relative advantage because a college education is a scarce resource, and the stakes are high.

In this era of emphasis on standardized tests, it may be easy to forget that colleges and universities have always taken into account many other aspects of students' experiences, including the geographic region from which they come, their families' relationship to the institution and their leadership experiences.

It is appropriate, and indeed critical, for the best institutions in the world to create the broadest possible mix of life experiences. Race is a fundamental feature of life in America, and it has an enormous impact on what a person has to contribute on campus. College admissions should be race-conscious to take the cultural and historical experiences of all students—Native American, African-American, Hispanic, Asian-American and white—and build on these in an educational setting. President Bush was wrong when he labeled the affirmative-action programs at the University of Michigan "quota systems.". . .

. . . There are no quotas at Michigan. All students compete for all seats. Race is used as a plus factor, along with other life experiences and talents, just as the president has suggested should happen. The percentages of students of color at Michigan vary annually.

Bush says he believes college admissions should be "race neutral," and he says he supports the principles of *Regents of the University of California vs. Bakke*. He cannot have it

both ways. Race is not neutral in the Bakke decision; it is front and center, just as it was nearly 50 years ago in *Brown vs. Board of Education*. In both cases, the Supreme Court urged our nation to boldly and straightforwardly take on the issue of race. . . .

The decision by Justice Lewis F. Powell in *Bakke* brought more than students of color to the table. It brought race in America to the table, urging educators to join hands in creating a truly integrated society of learners.

How are we to fulfill the dream of Brown and Bakke, to build a positive story of race in America, if we are told to ignore race—to concoct systems constructed around proxies for race such as class rank in racially segregated public school districts or euphemisms such as "cultural traditions" that both avoid our past and fail to value the possibility that race can play a constructive role in our nation's future?

. . . We want to include, not exclude. We want to use race as a positive category, as one of many aspects of a life we consider when we sit down to decide which students to invite to our table.

Source: Cantor, Nancy. "Wrong Take on Admissions," Chicago Tribute, July 28, 2003. Accessed July 2019. https://www.chicagotribune.com/newsctxpm-2003-01-28-0301280295-story.html.

REVIEW QUESTIONS

1. According to Cantor, how does affirmative action benefit both white students and students of color?

2. What does Cantor mean when she says that "college admissions should be race-conscious"?

3. What is President Bush's stand on affirmative action, and why does Cantor disagree with him?

4. How does Cantor use the Supreme Court's rulings to bolster her argument for affirmative action in college admissions?

Achieving Diversity on Campus

U.S. SUPREME COURT JUSTICE SANDRA DAY O'CONNOR

In the following excerpt, U.S. Supreme Court Justice Sandra Day O'Connor delivers the majority opinion in the landmark Supreme Court case *Grutter v. Bollinger,* in which it was argued that the use of affirmative action in college admissions is constitutional if race is treated as one factor among many and if the purpose is to achieve diversity on campus.

The University of Michigan Law School (Law School), one of the Nation's top law schools, follows an official admissions policy that seeks to achieve student body diversity through compliance with *Regents of Univ. of Cal. v. Bakke,* . . . Focusing on students' academic ability coupled with a flexible assessment of their talents, experiences, and potential, the policy requires admissions officials to evaluate each applicant based on all the information available in the file, including a personal statement, letters of recommendation, an essay describing how the applicant will contribute to Law School life and diversity, and the applicant's undergraduate grade point average (GPA) and Law School Admissions Test (LSAT) score. Additionally, officials must look beyond grades and scores to so-called "soft variables," such as recommenders' enthusiasm, the quality of the undergraduate institution and the applicant's essay, and the areas and difficulty of undergraduate course selection. The policy does not define diversity solely in terms of racial and ethnic status and does not restrict the types of diversity contributions eligible for "substantial weight," but it does reaffirm the Law School's commitment to diversity with special reference to the inclusion of African-American, Hispanic, and Native-American students, who otherwise might not be represented in the student body in meaningful numbers. By enrolling a "critical mass" of underrepresented minority students, the policy seeks to ensure their ability to contribute to the Law School's character and to the legal profession.

When the Law School denied admission to petitioner Grutter, a white Michigan resident with a 3.8 GPA and 161 LSAT score, she filed this suit, alleging that respondents had discriminated against her on the basis of race in violation of the Fourteenth Amendment, Title VI of the Civil Rights Act of 1964, and 42 U.S.C. § 1981; that she was rejected because the Law School uses race as a "predominant" factor, giving applicants belonging to certain minority groups a significantly greater chance of admission than students with similar credentials from disfavored racial groups; and that respondents had no compelling interest to justify that use of race. The District Court found the Law School's use of race as an admissions factor unlawful. The Sixth Circuit reversed, holding that Justice Powell's opinion in *Bakke* was binding precedent establishing diversity as a compelling state interest, and that the Law School's use of race was narrowly tailored because race was merely a "potential 'plus' factor" and because the Law School's program was virtually identical to the Harvard admissions program described approvingly by Justice Powell and appended to his *Bakke* opinion.

Held: The Law School's narrowly tailored use of race in admissions decisions to further a compelling interest in obtaining the educational benefits that flow from a diverse student body is not prohibited by the Equal Protection Clause, Title VI, or §1981.

In the landmark *Bakke* case, this Court reviewed a medical school's racial set-aside program that reserved 16 out of 100 seats for members of certain minority groups. . . . expressed his view that attaining a diverse student body was the only interest asserted by the university that survived scrutiny. . . . Grounding his analysis in the academic freedom that "long has been viewed as a special concern of the First Amendment,". . . Justice Powell emphasized that the "'nation's future depends upon leaders trained through wide exposure' to the ideas and mores of students as diverse as this Nation.". . . However, he also emphasized that "[i]t is not an interest in simple ethnic diversity, in which a specified percentage of the student body is in effect guaranteed to be members of selected ethnic groups," that can justify using race. . . . Rather, "[t]he diversity that furthers a compelling state interest encompasses a far broader array of qualifications and characteristics of which racial or ethnic origin is but a single though important element." Since *Bakke,* Justice Powell's opinion has been the touchstone for constitutional analysis of race-conscious admissions policies. Public and private universities across the Nation have modeled their own admissions programs on Justice Powell's views. . .

The Court endorses Justice Powell's view that student body diversity is a compelling state interest that can justify using race in university admissions. The Court defers to the Law School's educational judgment that diversity is essential to its educational mission. . . . Attaining a diverse student body is at the heart of the Law School's proper institutional mission, and its "good faith" is "presumed" absent "a showing to the contrary." . . . Enrolling a "critical mass" of minority students simply to assure some specified percentage of a particular group merely because of its race or ethnic origin would be patently unconstitutional. . . . But the Law School defines its critical mass concept by reference to the substantial, important, and laudable educational benefits that diversity is designed to produce, including cross-racial understanding and the breaking down of racial stereotypes. The Law School's claim is further bolstered by numerous expert studies and reports showing that such diversity promotes learning outcomes and better prepares students for an increasingly diverse workforce, for society, and for the legal profession. Major American businesses have made clear that the skills needed in today's increasingly global marketplace can only be developed through exposure to widely diverse people, cultures, ideas, and viewpoints. High-ranking retired officers and civilian military leaders assert that a highly qualified, racially diverse officer corps is essential to national security. Moreover, because universities, and in particular, law schools, represent the

training ground for a large number of the Nation's leaders . . . the path to leadership must be visibly open to talented and qualified individuals of every race and ethnicity. Thus, the Law School has a compelling interest in attaining a diverse student body. . . . (d) The Law School's admissions program bears the hallmarks of a narrowly tailored plan. To be narrowly tailored, a race-conscious admissions program cannot "insulat[e] each category of applicants with certain desired qualifications from competition with all other applicants." . . . Instead, it may consider race or ethnicity only as a "'plus' in a particular applicant's file"; i.e., it must be "flexible enough to consider all pertinent elements of diversity in light of the particular qualifications of each applicant, and to place them on the same footing for consideration, although not necessarily according them the same weight," . . . It follows that universities cannot establish quotas for members of certain racial or ethnic groups or put them on separate admissions tracks. . . . The Law School's admissions program, like the Harvard plan approved by Justice Powell, satisfies these requirements. Moreover, the program is flexible enough to ensure that each applicant is evaluated as an individual and not in a way that makes race or ethnicity the defining feature of the application. See *Bakke, supra,* at 317 (opinion of Powell, J.). The Law School engages in a highly individualized, holistic review of each applicant's file, giving serious consideration to all the ways an applicant might contribute to a diverse educational environment. . . . Also, the program adequately ensures that all factors that may contribute to diversity are meaningfully considered alongside race. Moreover, the Law School frequently accepts nonminority applicants with grades and test scores lower than underrepresented minority applicants

(and other nonminority applicants) who are rejected. . . . The Court is satisfied that the Law School adequately considered the available alternatives. The Court is also satisfied that, in the context of individualized consideration of the possible diversity contributions of each applicant, the Law School's race-conscious admissions program does not unduly harm nonminority applicants. . . . The Court takes the Law School at its word that it would like nothing better than to find a race-neutral admissions formula and will terminate its use of racial preferences as soon as practicable. The Court expects that 25 years from now, the use of racial preferences will no longer be necessary to further the interest approved today.

Source: Justice Sandra Day O'Connor, Achieving Diversity on Campus 2002 GRUTTER v. BOLLINGER ET AL. U.S. Supreme Court.

REVIEW QUESTIONS

1. Why did Grutter maintain that she had been treated unfairly by the University of Michigan Law School?
2. Why is Justice Powells's opinion in the *Bakke* case considered a landmark decision regarding college admissions?
3. On what grounds did the Supreme Court argument argue that attaining a diverse student body is part of an important part of institution's mission?
4. What conditions and limitations did the court place on using race in college admissions?

THiNK AND DISCUSS

PERSPECTIVES ON AFFIRMATIVE ACTION

1. Agreeing on a definition is one of the first steps in debating an issue. How are the Supreme Court justices and Nancy Cantor each using the term *affirmative action?*
2. Discuss whether affirmative action has a place in a democracy that is built on equal rights for all citizens, or if it is a violation of the fundamental principle of fairness.
3. Compare and contrast the arguments used by Nancy Cantor and U.S. Supreme Court justice Sandra Day O'Connor regarding the use of affirmative action in college admissions. Which person makes the best argument? Support your answer.
4. Some people argue that instead of race, we should use an economic or class-based criterion for affirmative action. How would you support that premise?
5. Research the policy at your college regarding affirmative action in admission. To what extent has this policy had an impact on diversity in the student body and the quality of your education? Support your answer using specific examples.