PART I

Be Aware

“E very man takes the limits of his own field of vision for
the limits of the world,” wrote philosopher Arthur
Schopenhauer. The wider a person’s field of vision, of course,
the deeper and more accurate his or her grasp of everyday
experiences.

The chapters included in this section of the book will
enlarge your understanding of the thinking process; clarify
the important and frequently misunderstood concepts of
truth, knowledge, and opinion; identify the habits that corrupt
thinking; and show you how to become a more critical
reader.
Developing Your Thinking: An Overview

Is thinking an activity that is done automatically, without conscious effort, or one that we can direct? Is daydreaming a kind of thinking? Are feelings an effective substitute for thinking? Do exceptional thinkers experience mental blocks, lapses in concentration, and confusion the same way average thinkers do? Can thinking skill be acquired, or does one have to be born with it?

In this chapter, you will find answers to these questions and other basic facts that will enable you to use this book confidently.

Claude is a high school student. His English teacher has just asked the class to identify the theme of the short story they read for homework. When no one answers, she admonishes them, “Class, you’re just not thinking. Get busy and think.”

Claude wrinkles up his nose, furrows his brow, scratches his chin, and stares up at the ceiling. “Think, think, I’ve got to think. What’s the theme of that story? The theme, the theme, what could be the theme?” He shifts his gaze to the right and to the left, purses his lips, then reaches down purposefully, opens his book, and begins flipping pages as if looking for something. All the while his mind is repeating, “Think . . . think . . . theme . . . .”

Is Claude thinking? No. He’s trying to, hoping to, but not really doing so. His mental motor is racing, but his transmission is in neutral. He’s ready to go, but not going.

Let’s consider another case. Agatha, a college student, is sitting in the campus cafeteria, drinking her morning coffee. To all outward appearances
she is not only thinking but totally lost in thought. Here is what is taking place in her mind:

So much work to do today . . . must remember to meet Jim at 6 P.M. . . . I’ll have to begin my term paper soon . . . That Bertha is such a slob—I wish she’d clean her part of the room sometime this semester . . . my hair looks so awful—if only I could fix it like Martha’s, it would look neat, yet demand little attention . . . If winter would only end, I wouldn’t be so depressed—why is my mood so dominated by the weather? . . . This coffee is bitter—you’d think the staff here could at least make a decent cup of coffee . . . I can’t wait to get home to have a real meal again . . . wonder how much weight I’ve gained; perhaps jogging is the solution . . .

Agatha’s mental behavior is much closer to thinking than Claude’s. Ideas, images, and notions are drifting through her mind, and she is dutifully watching them float by. But her role is passive; she is a spectator to the activity of her mind. Thinking, as we will view in this book (and as most authorities view it), is something more than aimless daydreaming.

WHAT IS THINKING?

What, then, is thinking? To begin with, it is purposeful mental activity over which we exercise some control. *Control* is the key word. Just as sitting in the driver’s seat of a car becomes driving only when we take the steering wheel in hand and control the car’s movement, so our mind’s movements become thinking only when we direct them.

There are, of course, as many different purposes in thinking as there are in traveling. We may be on a business trip or a pleasant drive through the countryside with no particular destination. Similarly, we may drive in varying conditions and with varying degrees of success or efficiency. We may travel in darkness or in light, proceed slowly or quickly, take the correct turn or the wrong one, arrive at our intended destination or a different one, or find that we are hopelessly lost en route. Nevertheless, as long as we are steering our mind, we are thinking.

This does not mean that thinking must always be conscious. The evidence that the unconscious mind can join in purposeful mental activity is overwhelming. The most dramatic example is the fact that insights often come to us when we are no longer working on a problem but have turned away from it to other activities. (We will see a number of examples of this phenomenon in Chapter 9.)

With these important considerations in mind, we can attempt a more formal definition of thinking: *Thinking is any mental activity that helps formulate or solve a problem, make a decision, or fulfill a desire to understand. It is a searching for answers, a reaching for meaning.* Numerous mental activities are included in the thinking process. Careful observation, remembering, wondering, imagining, inquiring, interpreting, evaluating, and judging are among the most important ones. Often, several of these activities work in combination, as when
we solve a problem or make a decision. We may, for example, identify an idea or dilemma, then deal with it—say, by questioning, interpreting, and analyzing—and finally reach a conclusion or decision.

There have been many attempts to explain the nature of thinking. One of the most popular notions, now largely discredited, is that thinking is entirely verbal. According to this theory, we arrange words in our minds or silently whisper to ourselves when we think. Yet if this were the case, Albert Einstein would not be considered a thinker. His thinking consisted more of images than of words. Contemporary authorities agree that the form a thought takes in our minds is usually verbal, but not necessarily so. Just as we may express an idea in mathematical symbols or pictures, in addition to words, we may also conceive of it in that way.

THE IMPORTANCE OF THINKING

Successful problem solving and issue analysis require factual knowledge—that is, familiarity with the historical context of the problem or issue and an understanding of the relevant principles and concepts. But factual knowledge is something already known, whereas in the great majority of cases, solutions are unknown, brand new, and specifically formulated to fit particular problems or issues. For this reason, the possession of factual knowledge does not by itself guarantee success in problem solving. You may, in fact, be the proverbial “walking encyclopedia” and perform quite dismally. To be a successful problem solver, you will need both factual knowledge and proficiency in thinking.

To appreciate the importance of thinking proficiency, consider the various situations in which you are or will be called upon to solve problems, analyze issues, and make decisions. The choice of a major in college and the decision of whom to marry, where to live, what religion (if any) to embrace, and what political party (if any) to join are but a few of the most obvious situations. Every day brings new and difficult challenges: how to deal with difficult people, what to do when your parents can no longer care for themselves, how to be a good parent, how to sort through hyperbole and false claims in advertisements, how to manage your investments wisely, how to determine which political candidate will do the most good (or the least harm) for the country.

Skill in problem solving, issue analysis, and decision making is increasingly expected of employees. Only a generation or so ago, “scientific management” was still in vogue. In that system, executives did the thinking and other employees merely carried out their assigned tasks. Since the advent of “quality management,” employers have learned to value employees who are willing and able to contribute ideas for the improvement of the company. In recent years, this perspective has been reinforced by three developments: the knowledge explosion, the communications technology revolution, and the rise of the global economy.

Improvements in research capability have dramatically increased the information base in virtually every field, making it difficult for anyone to master even a single discipline’s knowledge in its entirety. In addition, because new knowledge
is not merely being added each year but *multiplied*, before long such mastery will be impossible. More important, the information base acquired in high school and college, which used to be sufficient for an entire career, will in the future become obsolete within a decade or less.

The communications technology revolution has been even more remarkable. Within less than 20 years, the personal computer was developed and hundreds of hardware and software manufacturers sprang into existence, marketing products no one could have imagined a generation earlier. Hundreds of billions of dollars flowed into upstart companies like Microsoft, Intel, Dell, and a host of "dot-coms," ending the seeming omnipotence (and complacency) of such corporate giants as IBM. For individual companies and entire industries, the result has been a loss of stability. Even successful, well-run organizations can experience a rapid change of fortune and be forced to downsize their operations and lay off workers. Individuals who possess problem-solving and decision-making skills are more flexible than others and are therefore less likely to become victims of downsizing and more likely to find satisfactory employment if they are laid off.

The development of a global economy has resulted from the satellite transmission of television programming, the opening of former Soviet bloc countries to trade, the increase in business *competition* from other countries, and the signing of a new generation of trade agreements such as the North American Free Trade Agreement (NAFTA) and the General Agreement on Tariffs and Trade (GATT). Meeting the challenges and seizing the opportunities presented by the global economy require skill in creative and critical thinking. Employees who possess those skills will enjoy a significant advantage over those who do not.

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**BRAIN AND MIND AT WORK**

For well over a century, researchers have deepened our understanding of human thought. We now know that thinking is not a mystical activity, unknowable and unlearnable. Thinking occurs in patterns that we can study and compare to determine their relative objectivity, validity, and effectiveness. This knowledge can be used to reinforce good thinking habits and to overcome bad ones. As James Mursell has observed, “Any notion that better thinking is intrinsically unlearnable and unteachable is nothing but a lazy fallacy, entertained only by those who have never taken the trouble to consider just how a practical job of thinking is really done.”

Brain research is providing new insights, notably that the structure of the brain is considerably more complex than previously imagined. The first breakthrough in understanding came when a neurosurgeon began treating patients with severe epilepsy in a new way. He severed the *corpus callosum*, the nerve fibers connecting the two hemispheres of the cerebral cortex, to relieve the symptoms of the disease. The separation made it possible to study the way each hemisphere functioned. The right hemisphere, it was learned, governs nonverbal, symbolic, and intuitive responses. The left hemisphere governs the use of language, logical reasoning, analysis, and the performance of sequential tasks.
Some popularizers of this research have taken it to mean there are “left-brained people” and “right-brained people,” and a cottage industry has arisen to help people identify which they are and/or become what they are not. Most researchers regard this development as, at best, an oversimplification of the data. For example, Jerre Levy points out that none of the data “supports the idea that normal people function like split-brain patients, using only one hemisphere at a time,” adding that the very structure of the brain implies profound integration of the two hemispheres, the corpus callosum connecting them and facilitating their arousal.

William H. Calvin says that researchers who specialize in split-brain research (as he does) tend to regard the popularization “with something of the wariness which the astronomers reserve for astrology.” He cites the “behavior and mental processes greater than and different from each region’s contribution” as evidence of right/left integration. Others underscore the fact that left-brain/right-brain research has been conducted with severely injured or surgically altered brains and not normal ones. In his Nobel lecture on the subject, for instance, Roger W. Sperry noted that “in the normal state the two hemispheres appear to work closely together as a unit, rather than one being turned on while the other idles.”

The extravagance of popularizers notwithstanding, neurophysiological research seems to parallel cognitive psychologists’ earlier realization that the mind has two distinct phases—the production phase and the judgment phase—that complement each other during problem solving and decision making. Proficiency in thinking requires the mastery of all approaches appropriate to each phase and skill in moving back and forth between them. Let’s examine each phase a little more closely, noting how good thinkers use each effectively.

**The Production Phase**
In this phase, which is most closely associated with creative thinking, the mind produces various conceptions of the problem or issue, various ways of dealing with it, and possible solutions or responses to it. Good thinkers produce both more ideas and better ideas than poor thinkers. They become more adept in using a variety of invention techniques, enabling them to discover ideas. More specifically, good thinkers tend to see the problem from many perspectives before choosing any one, to consider many different investigative approaches, and to produce many ideas before turning to judgment. In addition, they are more willing to take intellectual risks, to be adventurous and consider unusual ideas, and to use their imaginations.

In contrast, poor thinkers tend to see the problem from a limited number of perspectives (often just a single narrow one), to take the first approach that occurs to them, to judge each idea immediately, and to settle for only a few ideas. Moreover, they are overly cautious in their thinking, unconsciously making their ideas conform to the common, the familiar, and the expected.

**The Judgment Phase**
In this phase, which is most closely associated with critical thinking, the mind examines and evaluates what it has produced, makes its judgments, and, where appropriate, adds refinements. Good thinkers handle this phase with care. They
test their first impressions, make important distinctions, and base their conclusions on evidence rather than their own feelings. Sensitive to their own limitations and predispositions, they double-check the logic of their thinking and the workability of their solutions, identifying imperfections and complications, anticipating negative responses, and generally refining their ideas.

In contrast, poor thinkers judge too quickly and uncritically, ignoring the need for evidence and letting their feelings shape their conclusions. Blind to their limitations and predispositions, poor thinkers trust their judgment implicitly, ignoring the possibility of flaws in their thinking.

GOOD THINKING IS A HABIT

It is frequently said that good thinkers are born, not made. Although there is an element of truth in this, the idea is essentially false. Some people have more talent for thinking than others, and some learn more quickly. As a result, over the years one person may develop thinking ability to a greater extent than another. Nevertheless, effective thinking is mostly a matter of habit. Research proves that the qualities of mind required to think well, the qualities we noted in our discussion of the production and judgment phases, can be mastered by anyone. It even proves that originality can be learned. Most important, it proves that you don’t need a high IQ to be a good thinker. E. Paul Torrance has shown that fully 70 percent of all creative people score below 135 on IQ tests.

The difficulty of improving your thinking depends on the habits and attitudes you have. Chances are you’ve had little or no direct training in the art of thinking before now, so you’re bound to have acquired some bad habits and attitudes. This book will supply principles and techniques for you to master, and your instructor will supply the guidance. You must supply the most important ingredients: the desire to improve and the willingness to apply what you learn.

If at first the task of changing your habits and attitudes seems impossible, remember that a lot of other tasks seemed so, yet you mastered them: walking, for example, and eating without drooling food out of your mouth onto your high chair, swimming, hitting a baseball, and driving a car. The unfamiliar often seems daunting.

THE STRUCTURE OF THIS BOOK

Becoming familiar with the contents of this book will help you meet its challenge more confidently. The purpose of the book is to teach you how to think more creatively and critically. That may seem obvious enough, but it’s easily confused with telling you what to think. The difference is this: telling you what to think makes you dependent on other people’s ideas; teaching you how to think liberates you from dependency on others’ ideas and helps you form sound and sensible ideas of your own. You will find this book introducing you to, or deepening your acquaintance with, a host of problems and controversial issues. It will guide
the way you consider them—that is, the strategies you apply and the manner in which you apply them. But you will not find this book making up your mind for you. That task is yours alone.

*The Art of Thinking* is divided into four parts, each with several chapters. “Be Aware” will help you to broaden your outlook and become a critical reader. “Be Creative” and “Be Critical” will demonstrate ways to produce and evaluate ideas more effectively. “Communicate Your Ideas” will help you present your ideas more persuasively to other people.

Don’t feel bound by the sequence of the chapters. If you haven’t examined the table of contents closely, take a moment and do so now. Whenever you are interested in learning about a topic that appears in a later chapter, read ahead. For example, if you lack confidence in your writing, consult Chapters 14 and 15 now, and apply the advice presented there.

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**GETTING THE MOST FROM YOUR EFFORTS**

At one time it was thought that the same occasions, places, and conditions of work are right for everyone. Today we know better. No two people are exactly alike in their needs. What works for one will not necessarily work for another. Mozart and Beethoven, for example, were both great composers, yet they worked very differently. Mozart thought out entire symphonies and scenes from operas in his head, without benefit of notes. Later he transcribed them onto paper. Beethoven, on the other hand, wrote fragmentary notes in notebooks, often reworking and polishing them for years. His first ideas were so clumsy that scholars marvel at how he could have developed such great music from them.8

Imagine what would have happened if Mozart had followed Beethoven’s approach, and vice versa. Surely Mozart’s output would have been diminished. Given the unsuitability of another approach to his temperament, it might even have been choked off altogether. And Beethoven would have given the world trash.

It is not unreasonable to believe that there are thousands, perhaps millions, of people in the world today who have not begun to glimpse, let alone develop, their potential for achievement simply because they are using work habits borrowed from someone else or fallen into by chance or force of circumstance. Your best approach is not to assume that your work habits fit your needs but to experiment a little and find out what really works best for you. What you find may not make a dramatic difference, but even modest improvements in proficiency will continue to pay dividends over the years.

**Consider Time.** An hour of prime time will often get better results than two or three hours of the wrong time. When are you in the habit of doing your most important schoolwork? Early in the morning? Late at night? At midday? For the next week or two, try different times and note the effect on your work.

**Consider Place.** You can observe students studying in strange places: dormitory lounges, crowded cafeterias filled with people clanging and chattering, and snack bars (often next to a blaring jukebox). You’ve probably studied in some of
these places, too, at one time or another, and for no other reason than that you happened to be there at the time an assignment had to be done. But that is not a good reason. If you need quiet to work efficiently, you should seek a quiet place—if not a dormitory room, then an empty classroom, a park bench, or a parked car. Of course, if you find that a busy place actually stimulates your thinking, by all means work there.

**Consider Conditions.** Thinkers throughout history have occasionally needed some strange stimuli. Poet Friedrich von Schiller needed a desk filled with rotten apples. Novelist Marcel Proust needed a cork-lined workroom. Dr. Samuel Johnson demanded a purring cat, an orange peel, and a cup of tea. But you’d do well not to become dependent on gimmicks or bizarre conditions, if for no other reason than that they’re hard to maintain. You’re better off trying such approaches as taking a walk or a brisk jog across campus before beginning work or playing music while you work.

A word of caution is in order here. Don’t confuse what you like with what works best for you. You may, for example, enjoy watching TV or listening to the stereo blare. But these might hinder more than help your efforts to think or write. Similarly, alcohol and drugs may make you feel good (temporarily, at least), but they are definitely counterproductive. Although the notion persists that such substances enhance creativity, researchers are almost unanimous in concluding that they have the reverse effect: They cloud and numb the mind.

**USING FEELINGS TO ADVANTAGE**

Feelings were greatly emphasized in the 1960s and early 1970s. “Do your own thing,” “If it feels good, do it,” and “Get in touch with your feelings” were the catch-phrases of the time. In light of the neglect of feelings in previous decades, that emphasis was understandable, but it often took the form of a rejection of thought. The proper relationship of thoughts and feelings is harmonious, not mutually exclusive.

The contribution feelings can make to problem solving and decision making is immeasurable. Not only do feelings often yield the hunches, impressions, and intuitions that help to produce the answers we seek but they also, more importantly, provide the enthusiasm to undertake difficult challenges and persevere in them. Albert Einstein spent 7 years working out his theory of relativity; Thomas Edison spent 13 years perfecting the phonograph; Copernicus devoted more than 30 years to proving that the sun is the center of the solar system. And millions of men and women labor tirelessly to realize the most elusive of goals: victory over disease, poverty, ignorance, and inhumanity. Without deep and abiding feelings about the importance of their work, such people could not sustain their efforts.

The popular notion that only artists feel, whereas scientists and other practical people approach problems in computer-like fashion, has long been discredited by scholars. Albert Einstein himself affirmed the role of intuition in science. “There is no logical way to the discovery of [complex scientific laws],” he explained. “There is only the way of intuition, which is helped by a feeling for the
order lying behind the appearance.”

And Arthur Koestler, who studied the lives of innumerable great scientists, observed, “In the popular imagination [they] appear as sober ice-cold logicians, electronic brains mounted on dry sticks. But if one were shown an anthology of typical extracts from their letters and autobiographies with no names mentioned, and then asked to guess their profession, the likeliest answer would be: a bunch of poets or musicians of a rather romantically naive kind.”

Of course, not all feelings are good. Some direct us in ways good sense would not have us go. From time to time even the mildest individuals may feel like responding violently to people they don’t like, experience a strong urge for sexual contact with those who don’t share the sentiment, or be overtaken by the impulse to steal something. For this reason, wisdom demands that we refuse to surrender ourselves to our feelings but instead examine them dispassionately and separate the worthy from the unworthy.

As you proceed through this course, try to become more aware of your feelings. Accept the challenge of finding your best and noblest feelings and allowing them to motivate you.

**LEARNING TO CONCENTRATE**

Many people have the notion that concentration means a constant, unbroken line of thought. They imagine that scientists, writers, inventors, and philosophers start from point A and move smoothly to point B without distraction. That notion is incorrect. Concentration is not so much something done to prevent distraction and interruption as it is something done to overcome distraction and interruption when they occur. To concentrate means to return our attention to our purpose or problem whenever it wanders.

Concentrating is much like steering a car. When experienced drivers steer, they don’t lock their hands on the wheel in one fixed position; they turn it slightly to the right and to the left to keep the car on course. Even on a straight road, the car stays on course only a small percentage of the time. Drivers must make constant adjustments, many of them almost imperceptible. Experienced drivers are not more talented than inexperienced ones; they have simply learned to make subtle corrections at the right time.

Similarly, the secret of efficient thinkers is not that they experience fewer distractions, but that they have learned to deal with them more quickly and more effectively than inefficient thinkers do. There is no magic in what effective thinkers do. You can learn it as they did, by practicing.

**COPING WITH FRUSTRATION**

All thinkers have their share of frustration: confusion, mental blocks, false starts, and failures happen to everyone. Good thinkers, however, have learned strategies for dealing with their frustration, whereas poor thinkers merely lament it—thus allowing themselves to be defeated by it. One important study of students’
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problem-solving processes revealed some interesting differences between good and poor problem solvers. Among them were the following.\(^\text{13}\)

<table>
<thead>
<tr>
<th>Good Problem Solvers</th>
<th>Poor Problem Solvers</th>
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<tr>
<td>Read a problem and decide how to begin attacking it.</td>
<td>Cannot settle on a way to begin.</td>
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<tr>
<td>Bring their knowledge to bear on a problem.</td>
<td>Convince themselves they lack sufficient knowledge (even when that is not the case).</td>
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<tr>
<td>Go about solving a problem systematically—for example, trying to simplify it, puzzling out key terms, or breaking the problem into subproblems.</td>
<td>Plunge in, jumping haphazardly from one part of the problem to another, trying to justify first impressions instead of testing them.</td>
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<td>Tend to trust their reasoning and to have confidence in themselves.</td>
<td>Tend to distrust their reasoning and to lack confidence in themselves.</td>
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<tr>
<td>Maintain a critical attitude throughout the problem-solving process.</td>
<td>Lack a critical attitude and take too much for granted.</td>
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MAKING DISCUSSION MEANINGFUL\(^\text{14}\)

At its best, discussion deepens understanding and promotes problem solving and decision making. At its worst, it frays nerves, creates animosity, and leaves important issues unresolved. Unfortunately, the most prominent models for discussion in contemporary culture—radio and TV talk shows—often produce the latter effects.

Many hosts demand that their guests answer complex questions with simple “yes” or “no” answers. If the guests respond that way, they are attacked for oversimplifying. If, instead, they try to offer a balanced answer, the host shouts, “You’re not answering the question,” and proceeds to answer it himself. Guests who agree with the host are treated warmly; others are dismissed as ignorant or dishonest. As often as not, when two guests are debating, each takes a turn interrupting while the other shouts, “Let me finish.” Neither shows any desire to learn from the other. Typically, as the show draws to a close, the host thanks the participants for a “vigorous debate” and promises the audience more of the same next time.

Here are some simple guidelines for ensuring that the discussions you engage in—in the classroom, on the job, or at home—are more civil, meaningful, and productive than what you see on TV. By following these guidelines, you will set a good example for the people around you.
Whenever Possible, Prepare in Advance
Not every discussion can be prepared for in advance, but many can. An agenda is usually circulated several days before a business or committee meeting. And in college courses, the assignment schedule provides a reliable indication of what will be discussed in class on a given day. Use this advance information to prepare for discussion. Begin by reflecting on what you already know about the topic. Then decide how you can expand your knowledge and devote some time to doing so. (Fifteen or twenty minutes of focused searching on the Internet can produce a significant amount of information on almost any subject.) Finally, try to anticipate the different points of view that might be expressed in the discussion, and consider the relative merits of each. Keep your conclusions very tentative at this point so that you will be open to the facts and interpretations others will present.

Set Reasonable Expectations
Have you ever left a discussion disappointed that others hadn’t abandoned their views and embraced yours? Have you ever felt offended when someone disagreed with you or asked you what evidence you had to support your opinion? If the answer to either question is yes, you probably expect too much of others. People seldom change their minds easily or quickly, particularly in the case of long-held convictions. And when they encounter ideas that differ from their own, they naturally want to know what evidence supports those ideas. Expect to have your ideas questioned, and be cheerful and gracious in responding.

Leave Egotism and Personal Agendas at the Door
To be productive, discussion requires an atmosphere of mutual respect and civility. Egotism produces disrespectful attitudes toward others—notably, “I’m more important than other people,” “My ideas are better than anyone else’s,” and “Rules don’t apply to me.” Personal agendas, such as dislike for another participant or excessive zeal for a point of view, can lead to personal attacks and unwillingness to listen to others’ views.

Contribute But Don’t Dominate
If you are the kind of person who loves to talk and has a lot to say, you probably contribute more to discussions than other participants. On the other hand, if you are more reserved, you may seldom say anything. There is nothing wrong with being either kind of person. However, discussions tend to be most productive when everyone contributes ideas. For this to happen, loquacious people need to exercise a little restraint, and more reserved people need to accept responsibility for sharing their thoughts.

Avoid Distracting Speech Mannerisms
Such mannerisms include starting one sentence and then abruptly switching to another, mumbling or slurring your words, and punctuating every phrase or clause with audible pauses (“um,” “ah,”) or meaningless expressions (“like,” “you know,” “man”). These annoying mannerisms distract people from your message. To overcome them, listen to yourself when you speak. Even better, tape
your conversations with friends and family (with their permission), then play the 
tape back and listen to yourself. And whenever you are engaged in a discussion, 
aim for clarity, directness, and economy of expression.

**Listen Actively**
When the participants don’t listen to one another, discussion becomes little more 
than serial monologue—each person taking a turn at speaking while the rest 
ignore what is being said. This can happen quite unintentionally because the mind 
can process ideas faster than the fastest speaker can deliver them. Your mind may 
get tired of waiting and wander about aimlessly like a dog off its leash. In such 
cases, instead of listening to what is being said, you may think about the speaker’s 
clothing or hairstyle or look outside the window and observe what is happening 
there. Even when you are making a serious effort to listen, it is easy to lose focus. 
If the speaker’s words trigger an unrelated memory, you may slip away to that 
earlier time and place. If the speaker says something you disagree with, you may 
begin framing a reply. The best way to maintain your attention is to be alert for 
such distractions and to resist them. Strive to enter the speaker’s frame of mind 
and understand each sentence as it is spoken and to connect it with previous 
sentences. Whenever you realize your mind is wandering, drag it back to the task.

**Judge Ideas Responsibly**
Ideas range in quality from profound to ridiculous, helpful to harmful, ennobling 
to degrading. It is therefore appropriate to pass judgment on them. However, fairness 
demands that you base your judgment on thoughtful consideration of the 
overall strengths and weaknesses of the ideas, not on your initial impressions or 
feelings. Be especially careful with ideas that are unfamiliar or different from your 
own because those are the ones you will be most inclined to deny a fair hearing.

**Resist the Urge to Shout or Interrupt**
No doubt you understand that shouting and interrupting are rude and disrespectful 
behaviors, but do you realize that in many cases they are also a sign of *intellectual 
insecurity*? It’s true. If you really believe your ideas are sound, you will have no need 
to raise your voice or to silence the other person. Even if the other person resorts to 
such behavior, the best way to demonstrate confidence and character is by refusing 
to reciprocate. Make it your rule to disagree without being disagreeable.

**PRELIMINARY THINKING STRATEGIES**
At the end of each chapter in this book, you will find three kinds of challenges. 
The first kind, warm-up exercises, are intended to provide an enjoyable way for 
you to experiment with ideas and limber up your thinking. The second kind are 
applications, which invite you to apply what you learned in the particular 
chapter and previous chapters to real-life problems and issues. Finally, each 
chapter has a composition/speech exercise that requires more extended analysis 
and more formal presentation of your findings.
By the time you reach the end of this book, you will have learned a variety of strategies for applying creative and critical thinking to these challenges. In the meantime, however, you will need some preliminary strategies. The remainder of this chapter will explain seven helpful ones that you can begin using immediately. Because most involve using writing in a way you may not be familiar with, we’ll begin by clarifying what that way is.

Although writing is most commonly thought of as a way of expressing thoughts we have already formed, it is also an excellent tool for discovering and clarifying thoughts. You’ve probably had the experience of believing you have an idea clearly in mind and then finding out it is hopelessly muddled. It’s a common experience. As Ernest Dimnet explains:

Most men and women die vague about life and death, religion or morals, politics or art. Even about practical issues we are far from being clear. We imagine that other people know definitely their own minds about their children’s education, about their own careers, or about the use they should make of their money. The notion helps us to imagine that we ourselves are only separated from decision on these important issues by the lightest curtain of uncertainty. But it is not so. Other people, like ourselves, live in perpetual vagueness. Like us they foolishly imagine they are thinking of some important subject when they are merely thinking of thinking about it.15

The solution, Dimnet suggests, is to use the technique known as freewriting. It consists of focusing on a problem or issue, letting your mind produce whatever associations it will, and writing down the resulting ideas, without pausing to evaluate any ideas (lest you shut off the flow prematurely). This kind of writing is not intended to be read by anyone else, so the rules of composition do not apply. Nor do you have to worry about spelling or penmanship. A variation on freewriting is listmaking. Because it involves single words and phrases rather than sentences, it is more efficient than freewriting, which makes it the perfect way to capture those ideas that come suddenly and leave just as quickly.

Once you have recorded your ideas, you can sort them out, refine them, and express them in a way that will be meaningful to others. Generally, that will take the form of stating what you think and why you think it, as well as providing sufficient explanation to overcome any confusion your readers might have.

Following are seven worthwhile strategies to help you meet the challenges at the end of each chapter:

1. If the exercise consists of a single statement to be analyzed, read it again carefully. Be sure you understand what it says. Ask yourself, “Does this make sense?” If you find yourself answering with a firm “yes” or “no,” decide precisely what makes you respond that way. Often, that will be what you should explain to your audience.

2. If words fail you at the outset, refuse to sit and stare at the page. If you took a dead-end street by accident, you wouldn’t sit in your car staring at the dead-end sign; you’d turn the car around and try moving in another
direction. Do the same with difficult challenges. One approach that works well with some problems is to use a diagram. If, for example, you were evaluating the reasoning “All dogs are animals. Fido is a dog. Therefore, Fido is an animal,” you might diagram it this way:

![Diagram of Animal, All dogs, Fido]

The diagram would suggest the way to explain your analysis:

It is correct to classify dogs under the general heading *animals*. Moreover, this applies not just to some dogs but also to *all* dogs. There is no other category under which to classify dogs. Fido is correctly classified as a dog, so he must be an animal.

3. When the statement presents as fact something that is not factual, identify the error and explain how it invalidates the statement.

4. When the statement confuses two terms or ideas, identify the confusion and show its effect on the statement as a whole.

5. When the statement presents a conclusion as the only possible conclusion and other conclusions are also possible, present the other conclusions and demonstrate that they, too, are reasonable (perhaps more reasonable).

6. When the statement, or some part of it, is open to interpretation, use the if-then approach to analysis. Consider, for example, the statement “Everyone must die.” Here’s how the if-then approach works:

The statement as it stands is ambiguous. *If* it is taken to mean “At present there is no known way for human beings to avoid death,” *then* it is a statement of fact. But *if* it is taken to mean “There will never be a way for human beings to avoid death,” *then* it is presumptuous. For, however unlikely such a development may seem, we cannot say for certain it will never occur.

The if-then approach is also useful when you are uncertain of the facts. In other words, you might say, “I am uncertain of the facts in this matter, but *if* they are as stated, *then* the conclusion is sound because. . . . *If*, however, they are not as stated, *then* the conclusion is not sound because. . . .”

7. If the exercise consists of a dialogue, read it several times, each time for a different purpose. First, read it to understand the discussion in its entirety. Then read each person’s comments individually, noting the progression of his or her thoughts and the degree of logical consistency. Finally, read for implications and assumptions; these are ideas that are not stated directly but are nevertheless identifiable by what *is* stated directly. (The dialogue in Sample Exercise 2 contains an unstated idea.)
SAMPLE EXERCISES AND RESPONSES

Each exercise you do will have its own particular details and will therefore demand a special response. For that reason, no one formula can be given for responding to the exercises. The following sample exercises and responses, though fairly typical, are illustrations of what can be done rather than models to be slavishly imitated.

Exercise 1

The Assignment: Analyze the following statement, deciding whether it is reasonable and, if so, to what degree. Explain your thinking thoroughly.

The results of a recent national examination reveal that 75 percent of America’s high school students are below average in reading ability.

The Response:

I don’t know if the statement is a factual one. But I can say that it may have different meanings, depending on how the word average is interpreted. And the various meanings affect the reasonableness of the statement.

Below average may mean “below a score that half the high school seniors have achieved in previous years.” Or it may mean “below a score now regarded as an acceptable minimum.” In either of these cases, the statement is a reasonable one and could very well be factual.

But there is a more technical definition of below average. It may mean “below the arithmetic mean (the score derived from dividing the total scores of all high school students by the total number of high school students).” I am not sure whether it is even mathematically possible that 75 percent could fall below the mean, but I do know that it is highly unlikely. So if this is what the statement is saying, it is not very reasonable.

Exercise 2

The Assignment: Read the following dialogue carefully. Then decide whether what is stated (or implied) makes sense. Explain your reasoning thoroughly.

JOHN: Do you think the masses really have any power in the United States today?

BILL: That depends on what groups you include in “the masses.” Would you include professional people—doctors, lawyers, teachers . . . ?

JOHN: Teachers? They don’t make that much money.

The Response:

John’s last comment reveals the assumption that money is the basis for determining professional status. That assumption is unwarranted. If money were the measure, a lawyer with a small practice would not be considered a professional, but a plumber with a good business would be. If an apprentice clerk in a store inherited a large sum of money from
his aunt, he would be a nonprofessional one day and a professional the next. No, a professional person is one engaged in one of the professions: those fields requiring a liberal arts or science education and some form of subsequent specialization. The amount of money a person earns is beside the point.

**Exercise 3**

*The Assignment:* Rowena has three unmarked glasses of different sizes: 3 ounces, 5 ounces, and 8 ounces. The largest glass is full. What can Rowena do to get 4 ounces of liquid into each of the larger two glasses?

*The Response:* After some initial difficulty trying to work the problem out in your head, you create a visual aid by drawing three glasses on a sheet of paper, as shown here. (You could have instead gotten three actual glasses of appropriate sizes.)

What next? You would pour some liquid into one of the empty glasses, actually or in your imagination. Which glass? It makes no difference. You would just get busy *doing*. If one approach failed, you’d try another.

Try this approach and see if you can solve this challenge by yourself. (You’ll find the answer on page 271.)

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**Warm-Up Exercises**

1.1 Decide whether the reasoning that underlies the following statement is sound or unsound. Write a paragraph or two stating and explaining your judgment. (If you have difficulty doing this assignment, consult the suggestions on pages 15–17.)

There’s a possibility that the price of postage stamps will be raised again soon. I’ll stock up on them now to avoid paying the higher price.

1.2 Follow the directions for Exercise 1.1.

The sun has always risen in the past; therefore, it will rise tomorrow.

1.3 A young child is convinced that the time between two o’clock and three o’clock is longer than the time between one o’clock and two o’clock. Compose a brief explanation, with or without a diagram, that helps the child understand that the time isn’t longer.
Applications

1.1 For each of the following statements, write a brief response (one or two sentences) stating your position and explaining why you hold it.

- Violence is better than reason in dealing with dangerous situations.
- Only the good die young.
- It’s human nature to be greedy.
- Capital punishment is a deterrent to crime.
- If people are unemployed, they must be lazy. There’s a job for everyone who really wants to work.
- Everyone has a value system of some kind.
- We know ourselves better than others know us.
- An unborn fetus is a human being.
- If guns are outlawed, only outlaws will have guns.
- Truth is an intensely personal matter: What is true for me is not necessarily true for you.
- Winning isn’t everything—it’s the only thing.
- Challenging another’s opinion is a sign of intolerance.
- Atheists are generally moral people.
- Censorship is evil.
- Black people are better athletes than white people.
- The oil companies manipulate gasoline prices.
- Getting your feet wet can cause a cold.
- Homosexuals are as likely to control their sexual urges as are heterosexuals.

1.2 Read the following dialogue carefully, looking for flaws in thinking. If you find a flaw, identify it and explain what is wrong with it in sufficient detail to persuade someone who has read the passage but sees no flaw. If you find two or more flaws, decide which is most serious and limit your discussion to that one. If you find nothing wrong with the thinking in the dialogue, explain why you agree with what is said. (If you have difficulty doing this assignment, consult suggestion 7 on page 16.)

SALLY: Norma, have you begun your composition yet, the one that’s due tomorrow?

NORMA: No, I haven’t. But I have done quite a bit of research on the topic. I have a few very interesting facts I plan to refer to. Have you done any reading?

SALLY: Not me. I want to do my own thing in my compositions—you know, be original.

NORMA: Really? Maybe I’d better not use those facts. They could work against me, I guess.
Follow the directions for Application 1.2.

HOMER: Excuse me, Professor Collins, may I speak to you for a minute?

PROF. C.: Sure, Homer. What can I do for you?

HOMER: It’s about the test we had last week. You gave me a 40 on it.

PROF. C.: That’s not a very good grade. Had you read all three chapters carefully?

HOMER: Carefully? I read each one four times, underlined every important detail, and then studied them for about 10 hours for three nights before the test. I took No-Doz and stayed up until 4:30 A.M. the night before the test.

PROF. C.: I see. That would surely seem to be more than adequate preparation. What do you think went wrong?

HOMER: I think the test was unfair. . . . I mean, it’s not. . . . I know you wouldn’t make a test unfair on purpose. I think you’re a good teacher and all. Sociology is your field and I’m just an amateur, but after all that trying, I wouldn’t have got a 40 if the test were fair.

Follow the directions for Application 1.2.

LILLIAN: Do you think parents should be told when their teenage daughters are given abortion counseling?

ROY: Absolutely. Parents are responsible for their children until they become of age. They have a right to be told.

LILLIAN: I’m not as sure as you. I can see how not telling them is a violation of their rights as parents, and the family has been weakened enough today without its being weakened further. But on the other hand, teenage girls are not just objects. They’re people, and therefore, they have rights, such as the right to determine how their bodies will be used. And many times they can’t talk to their parents about sex.

ROY: Nonsense. Parents care about their kids. They have their interests at heart more than anyone else, particularly some money-grabbing doctor or abortion-happy feminist. If kids really want to talk to their parents, there’s nothing stopping them—except the possibility that they don’t want to hear what their parents will say.

LILLIAN: Another thing bothers me, too. Why does the issue always focus on teenage girls rather than teenage boys?

ROY: Check with your local anatomist.
1.5 Follow the directions for Application 1.2.

**GUY:** Want to know what makes me sick? The tolerance our society has for transsexuals. I can’t think of anything more disgusting than a person changing sexes to act out homosexual fantasies or to get more sexual satisfaction.

**DARRELL:** You obviously don’t know much about transsexualism.

**GUY:** Don’t tell me you excuse their perversion, too?

**DARRELL:** There’s nothing to excuse. And you’re mistaken in calling it a perversion. It’s not.

**GUY:** What else can it be but a perversion? A man decides to be a woman, or vice versa. It’s a mockery of nature. We are what we’re born to be, and it’s our responsibility to accept that. It ought to be against the law to tamper with nature the way they do.

1.6 The following passage is an excerpt from a student’s letter home. Read it carefully. Then decide whether its reasoning is sound or unsound. State and explain your judgment in a paragraph or two, including whatever supporting material you believe will help persuade your reader.

The one thing that really bugs me about my schedule this term is that required course, “Introduction to Literature.” Some students may not know what their future career is. I do. It’s to help you, Dad, with the business, and someday to take it over. If we sold books I could see the value of such a course. But literature surely isn’t going to make me a better furniture store manager.

1.7 Some psychologists believe that when a teenager runs away from home, there must be something wrong with the home. Do you agree? Explain your view, taking care to anticipate and respond to possible objections to it.

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**ISSUE FOR EXTENDED ANALYSIS**

Following is a more comprehensive thinking challenge than the others in the chapter. Read the background note, the two opposing essays, and the class discussion.* Analyze what you have read, conduct additional research where appropriate, and formulate your assessment of the issue. Then write a composition

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*Note that the essays and the discussions in this exercise, here and in subsequent chapters, are presented in the informal style typically encountered in nonscholarly, journalistic writing. Thus, quotations from authors and mentions of statistical data or other research materials are not accompanied by footnote citations, though in some cases they contain a reference to a book title. This approach creates a different, and in some ways more difficult, burden than that of more scholarly reading, but it is more reflective of everyday reading and discussion.
that explains and supports your assessment. Remember that in addressing one issue, people often raise other issues. Also, keep in mind that the essays and discussion may contain erroneous statements and/or unsound arguments and may neglect important matters. Part of your challenge is to identify new issues as well as errors and omissions.

**THE ISSUE: HUMAN NATURE**

This issue is an ancient one that has fascinated philosophers, scientists, and most recently, social scientists. Of its many aspects, the one that we will focus on here is the question of whether people are by nature good. Traditional religious believers, notably Jews and Christians, answer “no,” claiming that people have a natural predisposition, or at least a vulnerability, to evil. Some conservative Christians go further, arguing that humans are by nature “depraved.” Secular humanists and humanistic psychologists tend to take the opposite view, claiming that people are born good and that any bad behavior they may engage in is attributable to social influences and conditions. (This view is borrowed from Romanticism, particularly from the ideas of Jean Jacques Rousseau.) Many current social controversies reflect this controversy over human nature.

**THE ESSAYS**

**People Are Inherently Good**  
By Asanti Jones  
Rousseau was insightful in noting that people are born good and, left to follow their natural inclinations and intuitions, will develop their potential and benefit themselves and those around them. A number of conclusions follow logically from this insight.

First, parents should not impose their beliefs and values on children but instead leave them free to develop their own. This is particularly so in such matters as religion, politics, and morality. No one has a right to say what others should regard as right and proper. Each individual must choose for him/herself. And what each chooses, others should respect.

Secondly, schools should have as few regulations and formalities as possible. Courses should be suggested by teachers, but the final determination of what to study and how to do nothing more than potential. By Inga Nowak

If people are inherently good, it makes sense not to burden them with regimens, rules, and regulations that hinder the natural expressions of their impulses. And the lifting of such burdens should begin at the earliest time of life—in childhood. On the other hand, if people are not inherently good—if goodness like wisdom is not inborn but acquired—then regimens, rules, and regulations are beneficial.

Only a foolish generation would answer such a vital question on the basis of wishful thinking. But that is just what the past couple of generations did. They installed permissivism in both home and school. They let children decide what to think about truth and falsity, right and wrong, beauty and ugliness. They discarded the idea of discipline and let students decide what they would learn and
so should be the student’s. If students find a lecture or other class exercise boring or irrelevant to their needs at the moment, they should be free to choose another activity. Moreover, any assessment of students’ achievement should be made by the students themselves—just as they alone know what goals they should set, they alone know how well their have progressed toward reaching those goals.

If all people received such an upbringing, they would be healthy, happy, and successful. Unfortunately, few do, and the result is crime, drug and alcohol addiction, child and spouse abuse, and a host of other social problems. But it is a mistake to meet such problems with more laws and stricter punishment for infractions. The fault lies in society’s failure to recognize the inherent goodness of people and to ensure their freedom to be themselves.

Exactly what has been the result of almost half a century of permissivism and self-indulgence? Social chaos. Parents have lost control of their children and have no idea of how to regain it. Teachers are frustrated in their attempts to impart knowledge and often fearful for their personal safety. Young people, intent on following their urges, are making life difficult for themselves and everyone around them, and are filled with resentment without knowing why.

It’s about time America saw the notion that people are inherently good for the dangerous nonsense it is. People are not born good or evil but have the potential to be either. And which they become depends partly on the quality of the training they receive and partly on the choices they make.

CLASS DISCUSSION

EDNA: Jones is right. The old saying “As the twig is bent, so grows the tree” supports his view. People, like twigs, start out straight. The bending is supplied by others.

WALLY: Jones’s argument is a big cop-out. Efforts to escape personal responsibility are as old as history. They go all the way back to Adam, who blamed Eve, who in turn said the devil made her do it. Today’s rapists, child molesters, thieves, and terrorists continue the tradition by blaming their victims. What is different today is that some prominent thinkers tend to side with the perpetrators.

EDNA: Do you deny that bad environments—slums, for example—are more crime-ridden and produce more lawbreakers than the suburbs?

WALLY: Not at all. But I also recognize that two children in the same family, exposed to identical influences, often turn out very differently. One will become a criminal, and the other,
a law-abiding citizen; one a narcissist, the other an altruist;
one a sinner, the other a saint.

EDNA: There are always exceptions. I’m talking about what
happens as a general rule.

WALLY: If Jones were right, then more permissive ages would have
fewer social problems than more restrictive ages. Yet
over the last few decades, our society has become very
permissive, and our social problems have increased.

EDNA: Don’t kid yourself. The influences of parents, teachers,
and other authority figures are every bit as strong today.
They’re just more subtle.

WALLY: I’m not saying kids aren’t influenced by adults. I’m saying
that they show the tendency to bad behavior way before
such influence takes place. Children who are barely able to
crawl display meanness and selfishness. Most parental
guidance aims to correct already-existing bad tendencies.