



CHAPTER 1

Critical Thinking

One of the biggest surprises of the 2006 summer movie season was a documentary film based on former Vice President Al Gore's traveling slide show about global warming. In the film, the slide show, and a companion book, Gore makes the case that we are presently teetering on the brink of global environmental catastrophe—involving extremes of weather, flooding, drought, wildfire, crop failure, famine, epidemic disease, and so on. And all of this is the result of climate change caused largely by human energy consumption—the burning of fossil fuels. The film (as well as the slide show and the book) is titled *An Inconvenient Truth*. A Google tour of the blogosphere quickly demonstrates that as we write these words the questions of global warming, or climate change, and of its probable causes and possible implications all remain open and controversial in the public mind. The urgency and far-reaching significance of Gore's warnings makes them impossible to ignore. But are Gore's assessments and predictions reliable? Are they based on good science? Or do they

amount to environmental hysteria? Should we dismiss warnings like Gore's as unfounded and irrational, or should we heed them and take immediate action? If so what action or actions should we be taking? There are many passionately held and diametrically opposed opinions in circulation—a good place to begin a discussion of Critical Thinking.

But what about that title: *An Inconvenient Truth*? At the beginning of a discussion of Critical Thinking, we find this title suggestive of several crucial questions we must each wrestle with at a deep personal level. Ask yourself, What is my relationship to the truth? Do I seek the truth in my own life? Have I found the truth? How do I know when I've found the truth? Do I speak the truth? Do I ever deny the truth? And when it comes to a matter of public controversy, how do I determine what the truth is? Is it even possible to determine what the truth is in such a situation? Are the systems and processes involved in global climate science, for example, so large and complex that the truth cannot be determined? Or is the truth just so *inconvenient* that people can't face it? Keep these questions in mind. We return to them throughout this chapter.

THE IMPORTANCE OF CRITICAL THINKING

Every so often we hear or read about oppressive communities within which the thinking of individual members, and particularly of young people, is subjected to high levels of destructive influence and control. A BBC reporter writes of a summer school run by the group Islamic Jihad in which Palestinian boys aged 12 to 15 are trained to become suicide bombers.¹ An investigative journalist reports on a highly stratified series of subtle and sophisticated initiation rituals and experiences designed to indoctrinate people into the Church of Scientology.² Other recent examples, or should we say, reported examples, include the Branch Davidians, Reverend Jim Jones' Jonestown Massacre, and the Heaven's Gate doomsday cult, in which one Marshall Herff Applewhite led 38 of his followers in a mass suicide. The members of Heaven's Gate left videotaped statements explaining their actions and beliefs. According to Applewhite and his followers, the appearance of the Hale-Bopp comet was a divine sign of salvation, and a space ship cruising in the tail of the comet was waiting to pick them up and take them to the "next level" beyond this mortal human world. When the story broke in 1997, it immediately became global front-page news. Here in the United States, the three major news weeklies, *Time*, *Newsweek*, and *U.S. News & World Report*, all ran extensive cover stories, complete with elaborate side bars on UFOs, the Internet, comets, and cults. The *Time* and *Newsweek* covers were nearly identical (Figure 1.1), with captions that read "Inside the Web of Death," and "Follow Me: Inside the Heaven's Gate Mass Suicide." These headlines seemed to acknowledge how bizarre the whole episode looked from the outside, while appealing to the morbid curiosity of many readers who wanted a closer look, an inside perspective, a glimpse into what makes such people tick. The *U.S. News & World Report* cover caption put it this way: "Lost Souls: How Reasonable People Can Hold Unreasonable Beliefs."

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This poses an interesting question: How is it that reasonable people come to hold unreasonable beliefs? Notice how this question involves a special kind of **assumption**. To entertain this question in the context of this story, you must first assume that at least some of the 39 members of the Heaven's Gate cult were reasonable people and that at least some of the beliefs that led them to commit mass suicide were unreasonable beliefs. In Critical Thinking we call this sort of assumption a **presupposition**. Do you think these are reasonable assumptions? We come back to this shortly.

AND SPEAKING OF: Words in Boldface

You may be wondering why we keep putting boldface on certain words (like **assumption**). These are words that we think we should define clearly to avoid misunderstandings. Words in boldface are listed in the glossary at the end of the chapter.

Whether or not the members of Heaven's Gate were reasonable people, and however reasonable or unreasonable their beliefs may have been, it certainly seems reasonable to suppose that occasionally perfectly reasonable people come to hold unreasonable beliefs about one thing or another. And this too is a pretty good point at which to begin talking about Critical Thinking. Ask yourself, Am I a reasonable person? Do I hold any unreasonable beliefs?

The Heaven's Gate mass suicide is just an extreme case of a common tendency to be misled against our better judgment. You probably know people you consider reasonable who nevertheless hold or have held beliefs that you consider not entirely reasonable and maybe even downright unreasonable, beliefs that maybe lead them into all kinds of avoidable trouble. Tune in to Oprah, Dr. Phil, or Judge Judy any day of the week and you will see a parade of more or less reasonable people tangled up in difficulties of their own and one another's making. How does this happen? Why is it that so many otherwise intelligent people enter patterns of deeply dysfunctional behavior that they can't seem to recognize or understand as such? How do reasonable people become sucked into abusive relationships or taken in by hucksters and confidence artists when just a little Critical Thinking about the situation they are in might protect them from exploitation? One answer is that there are so many interfering urges, pressures, inducements, and distractions that make it hard, even for reasonable people, to reliably differentiate between reasonable and unreasonable beliefs and courses of action. There are, in other words, many obstacles to Critical Thinking. We come back to this topic later in this chapter. But this shows why Critical Thinking is so important for each of us. Critical Thinking is empowering and can improve a person's chances of success in a relationship or career, as a potential consumer of products and services, as a citizen and member of a community, and so on, throughout the variety of social roles each of us may be destined to play. This is because

Critical Thinking is essential to something even more fundamental and basic: personal autonomy. “Autonomy” comes from the Greek words *auto*, for self, and *nomos*, for regulation. An autonomous person is self-regulating or self-directing. Autonomy is empowering because it makes that person less dependent upon—and so less vulnerable to—the dictates, directions, and influence of others. A person who can make up his or her own mind doesn’t *need* others to tell her what to think or do and so is less likely to be dominated by others. Ask yourself: How free and independent am I in my search for the truth? Do I make up my own mind, or do I allow others to do this for me?

As important as Critical Thinking is to individual well-being, it is equally important to us collectively as a society. As citizens of a democratic republic, we enjoy a process of government that is now almost universally recognized as ideal and enlightened—in its theoretical conception, at least—one in which political power is held collectively by the entire citizenry and distributed equally among them according to the principle “one person, one vote.” But Critical Thinking is essential for such a system to function properly, as one of the chief architects of the system, Thomas Jefferson, pointed out when he said,

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.³

Sadly, Critical Thinking is not as much in evidence in American political life as Jefferson would have hoped. Examples abound. But we will take just one from several years ago (so as not to provoke an immediate reflexive reaction on the part of any reader). Consider California’s notorious turn-of-the-millennium energy crisis. Most Californians were cheerfully oblivious to looming problems in the state’s electricity industry until the summer of 2000, when the electricity rates in the San Diego area abruptly tripled. Suddenly, small businesses were being forced into bankruptcy and ratepayers were hysterically calling for boycotts and rate strikes. Elsewhere in the state, business carried on more or less as usual well into the fall, but then in January 2001, again seemingly without warning, the managers of the state’s power grid began to announce a series of power shortages and “rolling blackouts” throughout the state. Within weeks, two of the state’s largest electric utility companies, Southern California Edison and Pacific Gas and Electric Company, announced that they were on the brink of bankruptcy.

We thought these events presented an opportunity to demonstrate the importance, as well as some of the difficulty, of thinking critically. And so, as this news was breaking, we challenged our students to research the unfolding crisis and invited them to venture opinions about what was going on and what ought to be done about it. We pointed out to our students that each of them was directly affected by the crisis, and there was no shortage of information about it available to them, and that as consumers and citizens they each had both a stake and a voice in the process.

The responses to this challenge, especially in the early stages of the exercise, were telling. Quite a few members of the class were ready to venture opinions right away. Someone would say something like, “Well, I think the problem is that

we Californians are just wasting a lot of electricity.” Or “Well, I think the problem is that the environmentalists have kept any new power plants from being built while the population and the high-tech economy have grown so fast that demand for electricity is through the roof!” Or “Well, I think the problem is that the big energy corporations are manipulating the markets so as to drive up prices and extort rate hikes.” Things became interesting when we challenged them—or when they challenged one another—to defend any of these ideas. Where did they get these ideas? How did they know that these things were true? Or if they didn’t *know* that these things were true, what reason did they have for thinking these things were true? Were they just speculating? These questions led to general conversational chaos in the class, because little research had gone into the formation of any of these opinions. Most of these ideas were in circulation in the media, but did that make any of them more reasonable than the others? And how reliable were the sources? As Californians, most of us at this stage, students and instructors alike, were caught flat-footed. We were all sadly ignorant of the actual nature and origins of California’s energy crisis when it broke into the news, although we might not have wished to admit it.

As we began to look more deeply into the matter, the class soon learned that in 1996 California had enacted legislation that “deregulated” the electric power industry. What did “deregulate” mean? Did this mean that there were no longer any regulations at all governing the electric power industry? Well, what did it say in the legislation? At this stage, puzzlement and curiosity began to slide downward, through disappointment toward despair. Members of the class began to throw up their hands and show other signs of being ready to give up, and this increased when we placed a copy of the legislation⁴ on reserve in the campus library. Some students wondered in exasperation, “Do you really expect me to go and read a 70-page government document, which refers in its opening paragraph to some 20 or so distinct sections of the state Civil Code, the Commercial Code, the Government Code, and the Public Utilities Code, whatever *they* might be?” We suggested that there might perhaps be someone out there who could digest the legislation for us and explain it to us. We asked the students to see what was available on the subject in the library or on the Internet. After a morning’s browse of the Internet and peek into the periodical literature on the crisis, class morale was falling somewhere between cynical apathy and frustration bordering on rage. Here are some typical student reactions:

“All we’re finding here is a lot of controversy among ‘the experts’ whose theories and analyses conflict.”

“And they speak in acronyms and technical terms that no regular person can begin to understand.”

“And how can you trust any of these sources anyway?! Everybody’s got an axe to grind. They could *all* be lying!”

“If you want us to come up with answers to the energy crisis, maybe you could show us a better way of going about it, because things *aren’t* getting any clearer. They are getting more and more confusing. This is like thinking in reverse. If we keep up like this, how will we *ever* figure out what is really going on?”

This was an example of what we teachers like to call a “teachable moment” (a moment when there’s enough suspense and concentrated frustration built up in the classroom that people are ready to *learn something*). Here was a room full of typical young-adult citizens of California, suddenly realizing that the state’s electric energy industry had been operating for almost 5 years under a new set of complex and mysterious rules enacted by their own elected representatives in state government. At the same time, they were discouraged because they could make neither head nor tail of the public controversy surrounding either the legislation or the energy crisis. Can you see how perfectly this exemplifies Jefferson’s point about democracy and the “art of reasoning”?

DISCUSSION TOPIC 1.1 | Democracy and the “Art of Reasoning”

Explain how Jefferson’s point about democracy and the “art of reasoning” is reflected in the classroom experience reported here.

AND SPEAKING OF: | The Importance and Scarcity of Critical Thinking

Here is an excerpt from an article by Charles J. Hanley published August 13, 2006, by the Associated Press News Service. If you really want to see evidence of the importance and scarcity of Critical Thinking, search the blogosphere for commentary on this story.

Enduring Faith in WMD?

By Charles J. Hanley
Associated Press

Did Saddam Hussein’s government have weapons of mass destruction in 2003? Half of America apparently still thinks so, a new poll finds, and experts see a raft of reasons why: a drumbeat of voices from talk radio to die-hard bloggers to the Oval Office, a surprise headline here or there, a rallying around a partisan flag, and a growing need for people, in their own minds, to justify the war in Iraq.

People tend to become “independent of reality” in these circumstances, says opinion analyst Steven Kull.

The reality in this case is that after a 16-month, \$900 million-plus investigation, the U.S. weapons hunters known as the Iraq Survey Group declared that Iraq had dismantled its chemical, biological and nuclear arms programs in 1991 under U.N. oversight. That finding in 2004 reaffirmed the work of U.N. inspectors who in 2002–03 found no trace of banned arsenals in Iraq.

Despite this, a Harris Poll released July 21 found a full 50 percent of U.S. respondents—up from 36 percent last year—said they believe Iraq did have the forbidden arms when U.S. troops invaded in March 2003, an attack whose stated purpose was elimination of supposed WMD. Other polls also have found an enduring American faith in the WMD story.

“I’m flabbergasted,” said Michael Massing, a media critic whose writings dissected the largely unquestioning U.S. news reporting on the Bush administration’s shaky WMD claims in 2002–03.

“This finding just has to cause despair among those of us who hope for an informed public able to draw reasonable conclusions based on evidence,” Massing said.

Influence on opinion

Timing may explain some of the poll results. Two weeks before the survey, two Republican lawmakers, Pennsylvania’s Sen. Rick Santorum and Michigan’s Rep. Peter Hoekstra, released an intelligence report in Washington saying 500 chemical munitions had been collected in Iraq since the 2003 invasion.

“I think the Harris Poll was measuring people’s surprise at hearing this after being told for so long there were no WMD in the country,” said Hoekstra spokesman Jamal Ware.

But the Pentagon and outside experts stressed that these abandoned shells, many found in ones and twos, were 15 years old or more, their chemical contents were degraded, and they were unusable as artillery ordnance. Since the 1990s, such “orphan” munitions, from among 160,000 made by Iraq and destroyed, have turned up on old battlefields and elsewhere in Iraq, ex-inspectors say. In other words, this was no surprise.

“These are not stockpiles of weapons of mass destruction,” said Scott Ritter, the ex-Marine who was a U.N. inspector in the 1990s. “They weren’t deliberately withheld from inspectors by the Iraqis.”

Conservative commentator Deroy Murdock, who trumpeted Hoekstra’s announcement in his syndicated column, complained in an interview that the press “didn’t give the story the play it deserved.” But in some quarters it was headlined.

“Our top story tonight: The nation abuzz today . . .” was how Fox News led its report on the old, stray shells. Talk-radio hosts and their callers seized on it. Feedback to blogs grew intense.

“Americans are waking up from a distorted reality,” read one posting.

Other claims about supposed WMD had preceded this, especially speculation since 2003 that Iraq had secretly shipped WMD abroad. A former Iraqi general’s book—at best uncorroborated hearsay—claimed “56 flights” by jetliners had borne such material to Syria.

Sustaining the spin

But Kull, Massing and others see an influence on opinion that’s more sustained than the odd headline.

“I think the Santorum-Hoekstra thing is the latest ‘factoid,’ but the basic dynamic is the insistent repetition by the Bush administration of the original argument,” said John Prados, author of the 2004 book *Hoodwinked: The Documents That Reveal How Bush Sold Us a War*.

Administration statements still describe Saddam’s Iraq as a threat. Despite the official findings, Secretary of State Condoleezza Rice has allowed only that “perhaps” WMD weren’t in Iraq. And Bush himself, since 2003, has repeatedly insisted on one plainly false point: that Saddam rebuffed the U.N. inspectors in 2002, that “he wouldn’t let them in,” as he said in 2003, and “he chose to deny inspectors,” as he said this March.

The facts are that Iraq—after a four-year hiatus in cooperating with inspections—acceded to the U.N. Security Council’s demand and allowed scores of experts to conduct more than 700 inspections of potential weapons sites from Nov. 27, 2002, to March 16, 2003. The inspectors said they could wrap up their work within months. Instead, the U.S. invasion aborted that work.

As recently as May 27, Bush told West Point graduates, “When the United Nations Security Council gave him one final chance to disclose and disarm, or face serious consequences, he refused to take that final opportunity.”

“Which isn’t true,” observed Kathleen Hall Jamieson, a scholar of presidential rhetoric at the University of Pennsylvania. But “it doesn’t surprise me when presidents reconstruct reality to make their policies defensible.” This president may even have convinced himself it’s true, she said.

Americans have heard it. A poll by Kull’s WorldPublicOpinion.org found that seven in 10 Americans perceive the administration as still saying Iraq had a WMD program. Combine that rhetoric with simplistic headlines about WMD “finds,” and people “assume the issue is still in play,” Kull said.

“For some it almost becomes independent of reality and becomes very partisan.” The WMD believers are heavily Republican, polls show.

A need to believe?

Beyond partisanship, however, people may also feel a need to believe in WMD, the analysts say.

“As perception grows of worsening conditions in Iraq, it may be that Americans are just hoping for more of a solid basis for being in Iraq to begin with,” said the Harris Poll’s David Krane.

Charles Duelfer, the lead U.S. inspector who announced the negative WMD findings two years ago, has watched uncertainly as TV sound bites, bloggers and politicians try to chip away at “the best factual account,” his group’s densely detailed, 1,000-page final report.

“It is easy to see what is accepted as truth rapidly morph from one representation to another,” he said in an e-mail. “It would be a shame if one effect of the power of the Internet was to undermine any commonly agreed set of facts.”

The creative “morphing” goes on.

As Israeli troops and Hezbollah guerrillas battled in Lebanon on July 21, a *Fox News* segment suggested, with no evidence, yet another destination for the supposed doomsday arms.

“ARE SADDAM HUSSEIN’S WMDS NOW IN HEZBOLLAH’S HANDS?”⁵ asked the headline, lingering for long minutes on TV screens in a million American homes.

WHAT IS CRITICAL THINKING?

Jefferson spoke of the “art of reasoning.” That’s what we mean by Critical Thinking. You’re about to embark upon a course of study in Critical Thinking, and you have a right to know what you’re getting into. We think of Critical Thinking as a set of conceptual tools with associated intellectual skills and strategies useful for making reasonable decisions about what to do or believe. That fancy-sounding formulation can be condensed to this: Critical Thinking is using reason to make up your mind.

DEFINITION 1.1 | Critical Thinking

Using reason to make up your mind

There are those words “reason” and “reasonable” again. Maybe now would be a good time for us to define them.

The word “reasonable” derives from the word “reason.” So we’ll start there. “Reason” comes from the Latin word *ratio*, for calculation or computation, a highly disciplined use of intelligence for problem solving. We think of **reason** as the capacity to use disciplined intelligence to solve problems.

DEFINITION 1.2 | Reason

The capacity to use disciplined intelligence to solve problems

On this basis, it is fairly easy to explain the meaning of other words in the same family. For example, “reasoning” can be understood as using disciplined intelligence to solve a problem or determine a course of action. A “reasonable decision” can be understood as one arrived at through the use of reason. A “reasonable person” can be understood as someone who (at least ordinarily) uses reason to decide what to do or believe. An “unreasonable person” can be understood as someone who fails or refuses to use reason to decide what to do or believe. And so on.

IS CRITICAL THINKING NEGATIVE?

Lots of people seem to think that the word “critical” involves negativity almost by definition; criticism is faultfinding and a critic is a faultfinder, so anything with the word “critical” in its name must be similarly concerned with finding faults, weaknesses, and other negative things. This myth comes primarily, we think, out of a misunderstanding of the word “critical.” The word “critical” and its cognates, “criticism,” “critic,” “critique,” and so on, all derive from the Greek word *kritikos*, for discernment or the ability to judge, which in turn derives from the Greek word *krinein*, for decision making. This is the way we prefer to understand Critical Thinking. It is concerned with decision making—period. So yes, it is interested in finding faults and in negative considerations but not only in these things. It is equally concerned with recognizing strengths and other positives. Critical Thinking is interested in the pros and the cons.

DISCUSSION TOPIC 1.2

How Can Reasonable People Hold Unreasonable Beliefs?

Remember that question we started with about the members of Heaven’s Gate: “How is it that reasonable people come to hold unreasonable beliefs?” How would you answer the question we posed in response to it: Is it reasonable to assume that at least some members of the Heaven’s Gate cult were reasonable people and that at least some of their beliefs were unreasonable beliefs? We’ll come back to this shortly.

Reason is a special and important capacity. Some have held that it is a distinctively human capacity. An old tradition defines humans as the “rational animals,” the only species with the capacity to reason. Other animals have intelligence. But, according to this particular tradition, *only humans cultivate and develop their intelligence through discipline so as to solve problems*. There are others who disagree with this and think that there is evidence of reason and reasoning in the behavior of at least some nonhuman animals, too.

DISCUSSION TOPIC 1.3 | Is Reasoning Distinctively Human?

What do you think about this? Do you think reason is a distinctively human capacity, or not? Why? Or why not?

But regardless of whether reason is a distinctively human characteristic or not, and whether it is *confined to* the human species or not, it has certainly proven an important species-survival trait in humans. Without it, we would be severely handicapped in the struggle for survival. It is therefore easy to see how we come to recognize reason as an essentially human trait, one that pertains to humans *as* humans. This does not mean that all members of the species are equally reasonable or are equally reasonable at all times. What it does mean is that we *presume* that all members of the human species have reason. In other words, they all have the capacity to cultivate and develop their intelligence through discipline so as to solve problems. We do not restrict this presumption to exclude any category of humans. This presumption is not gender specific. It is not restricted by age, race, or ethnicity. It applies to all humans as humans.

DISCUSSION TOPIC 1.4 | Is Reasoning Essentially Human?

Do you think reason is an essentially human trait or not? Why?

DISCIPLINE

In this definition of reason, the word “disciplined” is important. Take a moment to reflect on the meaning of **discipline**. There are two things we think we should point out about this crucial concept. First, any discipline will have rules, or at least regularities. To master any discipline, you need to learn the rules and regularities. Second, discipline takes practice. Music is a good example of a discipline. To become a musician, you need to learn some rules and regularities by practicing. The same is true of Critical Thinking. Some people worry that entering into a discipline, with all of its rules and regularities, means submitting to some form of enforced conformity to some rigid orthodoxy—in other words, that all critical thinkers must come out thinking in exactly the same way. This is worrisome

because thinking is one of the ways in which we become, manifest, and express ourselves as individuals. But if we think for a minute about the comparison to music as a discipline, this worry can be dismissed. All great musicians throughout history have been highly distinctive individuals. The same is true of writing as a discipline. Practice leads to greater mastery, which opens many avenues for individual self-expression. And so, too, with thinking.

IS THERE ROOM FOR CREATIVITY?

When we said that Critical Thinking involves discipline, we meant that it involves mastering rules and regularities and requires practice. Sometimes people jump from this to the conclusion that Critical Thinking does not involve or encourage creativity. We think this stems in part from the (mistaken) idea that creativity is essentially a matter of *breaking* the rules. On the contrary, it often turns out that creativity is greatly involved in *following* the rules. Sometimes it takes original creative insight to know just how to interpret and apply the rules in a given situation. Such situations are often described as calling for judgment or discretion. We hope and anticipate that you'll occasionally recognize examples of this sort of situation as you work your way through this book.

WRITING ASSIGNMENT 1.1 | **Freewrite**

Freewriting, like brainstorming, is a technique for liberating creative mental energy. When you freewrite you don't worry about parallel sentence structure, split infinitives, sentence fragments, or any of the other editorial problems your instructors will nag you about when you're working on an essay. When you freewrite you don't worry about anything—even spelling—that might interfere with simply getting your ideas flowing and on paper.

Here's the exercise: Now that you've learned how we define Critical Thinking, what do you think you can gain from studying it? Take out a fresh sheet of paper and freewrite for 15 minutes on the topic of what you hope and expect to get out of a course in Critical Thinking. Don't plan what you're going to write. Just start writing. And don't stop to reconsider, refine, edit, or correct what you've written. Just keep writing. If you can't think of a good way to begin, just complete this sentence: "What I hope and expect to get out of a course in Critical Thinking is . . ."

When you have written for 15 minutes, finish your thought and save what you've written. We'll be coming back to this. Ready? Go.

OBSTACLES TO CRITICAL THINKING

It is difficult to get a man to understand something when his salary depends upon his not understanding it. — UPTON SINCLAIR

Naturally, what people actually gain from the study of Critical Thinking varies widely and depends on many variable factors. What we hope our students will

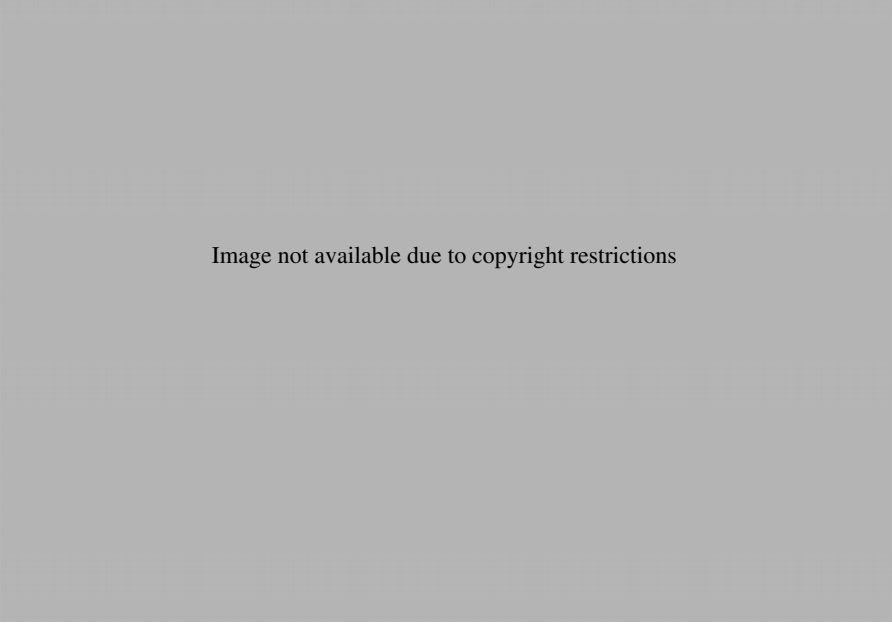


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come away with in the end boils down to this: Critical Thinking is a natural development of reasoning capacity with many useful applications in daily life. We hope that everyone who studies the concepts, skills, and strategies that we cover in this book will come to understand them as natural refinements of common sense. And we expect that anyone who arrives at this understanding will find many opportunities to apply Critical Thinking in daily life.

This may sound nice, but it gives rise to a bit of a puzzle: We are saying that Critical Thinking is natural for us as humans. However, when we pay attention to the way people actually think and behave, the impression is that a lot of normal people don't think critically. Or they think critically about certain things on certain occasions but not at all about other things (sometimes the things that matter most). And this makes us wonder: Why isn't something as important and natural as Critical Thinking more common? Why do so many people seem unable to tell the difference between thinking critically and thinking in completely uncritical ways? Why do so many people find Critical Thinking so *unnatural*—not only so difficult but also so difficult to understand—when they first begin to study it? As we said earlier in this chapter, we think the answer is that there are many obstacles to Critical Thinking—urges, pressures, inducements, and distractions that make it hard, even for reasonable people, to think critically. In addition, we are taught to believe things and understand things in ways that confuse, mislead, and otherwise interfere with the natural refinement of common sense. So, as it unfortunately turns out, many of us need to *unlearn* a fair amount before we begin to appreciate how natural Critical Thinking can be for us. Many people find that they need to radically reorient themselves and their thinking

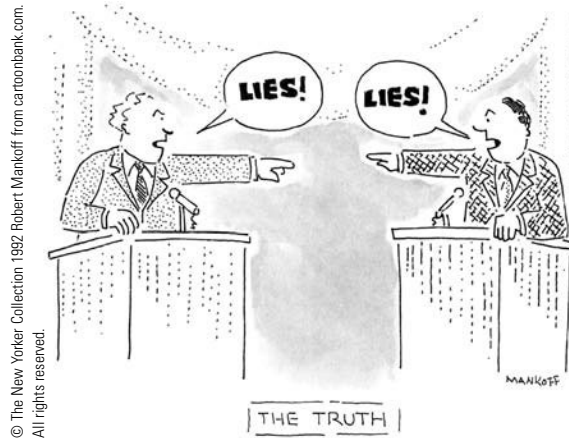


FIGURE 1.2

processes and to change some deeply engrained thinking habits as they learn what it is like to think critically.

For example, go back and review that class discussion of California’s energy crisis. Or take a quick tour of global warming blogs. It seems that people are often ready to make up their minds to one degree or another on the basis of . . . what? Well, often on the basis of little or no particular information from sources whose identity is vague and indeterminate and whose credibility and reliability are simply assumed. Common sense tells us that in a general discussion, where conflicting ideas are being advanced in competition against one another, the question must arise of whether ideas have enough of a basis to hold their own. And so we find that we must look more deeply into the sources of our information and the assumptions underlying our beliefs to think critically about what is at issue. If people have not learned how to do this, it can seem like “thinking in reverse,” probably because, at least for a while, it seems to take us further from making up our minds. The search for truth seems long and hard. This can be discouraging—raising obstacles to Critical Thinking. Let’s start with a common myth, illustrated in Figure 1.2.

RELATIVISM OR SUBJECTIVISM

Sometimes people become so discouraged that they seem to give up searching for the truth altogether. They even say things like, “There’s really no such thing as the ‘truth,’ at least not ‘Truth’ with a capital ‘T.’”

DISCUSSION TOPIC 1.5

“No Such Thing as the ‘Truth,’ at Least Not with a Capital ‘T’”

What do you think about this? First, what do you think that the statement “There’s really no such thing as the ‘truth,’ at least not ‘Truth’ with a capital ‘T’” means? Second, do you think it’s true? Or not? Third, does it make sense to ask whether it’s true?

No doubt there are quite a few things that might be meant by this statement. But they all probably boil down to some version or variation of this: *The so-called truth is always relative to some particular point of view; in other words, what's true for me may not be true for you.* This position is often referred to as **relativism** or **subjectivism**. It is a big obstacle to Critical Thinking. We say it is a “myth,” and we propose to refute it with an argument. Here is the argument: It is impossible to say or believe that relativism or subjectivism is true without contradicting yourself. (Try it.) Therefore it is unreasonable to say or believe that relativism or subjectivism is true.

DISCUSSION TOPIC 1.6 | Incoherence of Relativism

What do you think about this? Do you find this argument convincing? Explain. Why? Or why not?

It would not be surprising if the question were to arise in this discussion of what we mean by “truth.” This turns out to be a surprisingly deep philosophical question, because there are several competing philosophical theories of truth. If you are interested in learning about and considering these theories in detail, we recommend taking a course in metaphysics, epistemology, or both.⁶ For our purposes here, overcoming the obstacle to Critical Thinking posed by relativism or subjectivism, we are going to assume a commonsense understanding of the nature of truth. We are going to assume that **truth** is a relationship between a belief or a statement on the one hand and reality or the world on the other. A belief or statement is true only if it corresponds to something real. For example, if you believe or say that there is a growing hole in the Earth's ozone layer, your belief or statement is true only if there really is a growing hole in the Earth's ozone layer. Suppose that you believe or say that burning fossil fuels builds up carbon dioxide in the atmosphere, which traps solar energy, and that this causes glaciers and polar ice to melt, raises sea levels and ocean temperatures, and thereby increases the frequency and intensity of hurricanes. Your belief or statement is true only if that's what is really going on. On the basis of this conception of truth, what can we say about the search for truth? Well, the search for truth can be long and hard. Scientists have had to work long and hard to find out about the Earth's ozone layer. And to the extent that disagreement persists among scientists who have studied the Earth's ozone layer, or the greenhouse effect, we should recognize that the search for truth may still be ongoing. But long and arduous research programs can eventually arrive at reliable conclusions. And in many instances the search for truth is neither long nor hard. For example, it's not all that difficult to find out how much you weigh, is it?

LIMITED RELATIVISM OR SUBJECTIVISM

Often people will cling to some *limited* version of relativism or subjectivism, even after granting that relativism or subjectivism can't generally be true. A popular version of limited relativism or subjectivism is based on a distinction between

matters of fact and matters of opinion that goes something like this: Factual matters are matters that pertain to the facts. The facts, in turn, are those things that are provable or knowable beyond doubt or question. Everything else is a matter of opinion. And, when it comes to matters of opinion, there's really no such thing as the "truth," at least not "Truth" with a capital "T." We return to a discussion of this the distinction between factual matters and matters of opinion in the section on issue classification later in this chapter.

DISCUSSION TOPIC 1.7 | Fact vs. Opinion

Does this view seem any more reasonable than *general* relativism or subjectivism? Explain.

One way in which this limited version of relativism or subjectivism may be stronger and more defensible than the general across-the-board version is that it cannot so easily be refuted by instantly deriving a self-contradiction from it. But it is still a major obstacle to Critical Thinking. One big problem with it is that most everything, even science, turns out to be a matter of opinion, simply because it is so hard to prove or know anything beyond doubt or question. The problem arises when we give up the search for truth just because we recognize room for doubt and disagreement. Critical Thinking doesn't give up the search for truth so easily. To overcome the obstacles to Critical Thinking posed by relativism or subjectivism, whether limited or not, we must cultivate an attitude of *patience and tenacity in pursuit of the truth*. We will be coming back to this shortly.

EGOCENTRISM

Another big obstacle to Critical Thinking—a kind of opposite to relativism or subjectivism—arises out of the tendency to cherish and defend those beliefs most closely associated with an individual's identity. Even in science we can find examples of **egocentrism** standing in the way of Critical Thinking. Galileo's astronomical treatise, the *Dialogue on the Two Chief Systems of the World* (1632), was a thoughtful and devastating attack on the traditional geocentric view of the universe proposed by the ancient Greek Ptolemy (second century A.D.) and accepted by most scholars and scientists of Galileo's time. Galileo's treatise was therefore an attack not only on the views that these authorities held but also on the authoritative status that they were privileged to enjoy and on their self-images. Their reaction was to censor Galileo. Pope Urban, who was persuaded that the character of Simplicio, the butt of the whole dialogue, was intended to represent himself, ordered Galileo to appear before the Inquisition. Although never formally imprisoned, Galileo was threatened with torture and ordered to renounce what he had written. In 1633, he was banished to his country estate. His *Dialogue*, with the works of Kepler and Copernicus, were placed on the Index of Forbidden Books, from which they were not withdrawn until 1835. This tendency to cherish and

defend those beliefs most closely associated with individual identity is not *unnatural*. We're each naturally inclined to favor and defend our selves and anything with which we identify ourselves. We are naturally egocentric in our thinking, as well as in our interests and concerns. But this natural and understandable tendency, if left unchecked, can, as in the case of Galileo and his contemporaries, close an individual's mind to the possibility that he or she is mistaken. And that would surely stand in the way of thinking critically. To understand how to keep this natural inclination in healthy check, start with a series of thought experiments⁷:

THOUGHT EXPERIMENT 1.1 | Some of My Beliefs Are False

Try saying, "Some of my beliefs *are not* true." Do you notice a problem with this? If so, explain. Do you nevertheless find it a reasonable thing to say about yourself? If so, explain.

Some people notice a problem when they say "Some of my beliefs are not true," because they recognize that part of believing something is believing that it *is* true. Some people find this problem manifesting itself at the level of their own particular beliefs: "If I were to do an inventory of my beliefs, wouldn't they all strike me as true?"

THOUGHT EXPERIMENT 1.2 | A Belief Inventory I

Try the preceding thought experiment using some of your beliefs. Identify 5–10 beliefs that you have. Do they all strike you as true? Or does it occur to you to wonder whether any of them might not be true? What more general conclusion, if any, do you draw from these results?

What is a belief, anyway? Think of a **belief** as a kind of investment of trust or confidence. A belief, like any other investment, can be difficult to abandon, even when evidence begins to show that it was a bad investment. Realizing and writing off a loss can be so painful that many people will hang on to a bad investment in the hope that it will eventually turn around to become a good one. "Is this evidence really conclusive? Maybe there's something wrong with this evidence." Questioning the evidence against a belief is one thing, but when this reluctance to admit to making a bad investment in a belief rises to the level of *denying* or *refusing to heed* the evidence, then what we have is not Critical Thinking but wishful thinking.

THOUGHT EXPERIMENT 1.3 | Self-Deception

What do you think you would do if you became aware of evidence indicating that one or more of your beliefs is not true?

Some people say, “If I found out that something was not true, I would just stop believing it.” It would be nice if things were this simple, but we often engage in wishful thinking and we are capable even of profound self-deception. “How can this be?” you might wonder. “How can a person know that something is not true and continue to believe it? How can a person be both the successful deceiver and the victim of the deception at the same time?” These are good questions. There is something deeply puzzling about the phenomena of self-deception. But self-deception is a fact of human life, and we’re sure that if you think for a minute or so you’ll be able to come up with an example or two from your own experience of the sort of thing we’re talking about. You probably know people who have on occasion talked themselves into believing things that they knew weren’t true: for example, that they were ready for the midterm exam when they knew at some level that they weren’t prepared. If we were *perfectly* rational creatures, we would no doubt recognize the inconsistency involved in self-deception, so self-deception probably would never occur. But there is no doubt that it does occur. We are rational creatures, but not perfectly so. We are also (in some ways and at some times) irrational creatures, and our wishes and desires often overwhelm our good sense. So we often persist in believing what we want to believe or what we wish were true despite what we know or have every good reason to believe.

THOUGHT EXPERIMENT 1.4 | A Belief Inventory II

A moment ago we imagined someone saying, “If I were to do an inventory of my beliefs, wouldn’t they all strike me as true?” Try to describe what it would be like to complete an inventory of your beliefs. How long would it take? How would you start? What kind of procedure would you use? How would you keep track? . . . After you’ve struggled with this for a while, go ahead and begin an inventory of your beliefs, on paper. Give yourself a measured 5 minutes and see what you come up with.

Most people are immediately struck by the realization that they have many more beliefs to keep track of than they ever would have imagined had they not been prompted to consider enumerating them. If people try to organize an inventory of their beliefs by sorting them into categories, a similar realization occurs: beliefs of so many different kinds!

THOUGHT EXPERIMENT 1.5 | Metabeliefs

Do you have any beliefs about how many beliefs you have? For example, do you believe that you have more beliefs than you can count? If so, what category would such a belief fall into? When did you realize that you had beliefs of this sort? For example, were you aware that you had beliefs of this sort before you tried this thought experiment?

By this point, most people are struck by what might be described as a major inventory control problem. This problem arises out of two conditions. First, there is uncertainty about the current inventory of beliefs. How many of these beliefs that I've just noticed have been with me all along? And how many more beliefs do I have yet to notice? Second, there is the dynamic condition of our belief systems. In other words, our belief systems are not static. They are constantly undergoing change and revision as we deal with incoming information. Consider how this process normally works. We live in what has come to be known as the "information age," a label that derives from the awesome volume of information bombarding us daily. Just think of the amount of material contained in the average metropolitan daily newspaper. Multiply that by 7 days a week and then again by the number of metropolitan population centers you can think of in a few short minutes. Add to this weekly, monthly, quarterly, and annual publications; books; radio; and television—literally hundreds of separate stations, channels, and cable services, many of them broadcasting round the clock. Then add the Internet! This should be enough to make the point that there's far too much information to pay attention to, let alone absorb. Consequently, each of us has to be selective about where we direct our attention in this overwhelming flow of information. Actually, this is nothing new or peculiar to our age. It's part of the human condition. There's always more to pay attention to than any of us has attention for. And if you're like most people, even within the narrow range of information you do become aware of, you continue to be selective. Some incoming information is actively incorporated into your belief system, and other information is rejected. What do you suppose are the main factors that govern this process? What do you suppose determines these selections? Among the most important and influential of these factors are the existing contents of our belief systems. The way we deal with incoming information is determined largely by what we already believe. Our belief systems are "self-editing."

DISCUSSION TOPIC 1.8 | Common Sense Skepticism

What do you suppose common sense would suggest at this stage?

Each of us has a large and constantly evolving belief system comprising a huge number of beliefs—so many that trying to count them seems crazy. Most of these beliefs we routinely just assume. In other words, we take them for granted. We regard them as true without questioning them, or determining the adequacy of whatever evidence there may be to support them, or wondering where they came from and whether those sources are reliable or not. So, if you're like most people, a large part of your belief system is probably "subterranean," and functions in a largely unexamined way, as a set of assumptions of which you are probably not

even fully aware and that influences its own ongoing evolution. Based on the sheer size of a normal person's belief system, common sense surely suggests the strong probability that some of those beliefs are not true, especially as long as they remain unexamined.

THOUGHT EXPERIMENT 1.6 | A Critical Thinking Koan

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Suppose that you were able to complete a thorough inventory of every one of your beliefs. And suppose that you had been able to weed out each false or dubious item from that inventory. Now here you are at the end, considering the last item in the inventory: Belief # 457,986,312 "Some of my beliefs are not true." What do you think you should do with this belief? Would you weed it out, or not? Explain.

To overcome the obstacles to Critical Thinking posed by the pitfalls of egocentrism, we must cultivate an attitude of "intellectual humility"—in other words, a recognition of our fallibility or liability to error—yet maintain a patient and tenacious commitment to the pursuit of truth. But, as we shall see, even such a healthy attitude as intellectual humility can give rise to another kind of obstacle to Critical Thinking.

INTIMIDATION BY AUTHORITY

An **authority** is an expert source of information outside ourselves. The source can be a single individual (a parent, a teacher, a celebrity, a clergy member, the president), a group of individuals (doctors, educators, a peer group, a national consensus), or even an institution (a religion, a government agency, an educational establishment). Whatever its form, authority can exert considerable influence on our belief systems. And it's easy to see why. Consider how difficult it is to become an expert about *anything*. Nobody can ever hope to become an expert about *everything*. There's almost always going to be someone around who knows more about whatever it is that we're interested in than we do. So a person with a healthy attitude of intellectual humility will likely find it helpful to consult authorities for their expert opinions.

THOUGHT EXPERIMENT 1.7 | Sources of My Beliefs

Reconsider your belief inventory with regard to sources. How many of the things that you believe can you trace back to direct experience? Take as an example some area of interest or concern that is of intimate personal importance to you (like your physical health). How many of the things that you believe about your physical health have you derived from sources other than your direct experience? In such cases, can you identify the precise source of the belief? Explain.

If you're like most of the rest of us, chances are that a lot of the things you believe you've obtained from other sources. Beliefs about world history, the direction of the economy, the events of the day, the existence of God and an after-life, the state of your health, the climate—what are the sources of all of these beliefs? It's likely that you developed many of them by relying on the words of others, sources you are in effect trusting as authorities. Again, all of this is normal and natural. But common sense should warn you that there is a risk inherent in trusting someone other than yourself when you make up your mind. How do you know that the authority you trust is reliable?

Beyond this inherent risk (a risk that can at least be managed) there is a deeper danger. We can rely so much on authority that we stop thinking for ourselves. For a vivid and extreme example, look at what happened to the members of the Heaven's Gate cult. Inside the cult, a rigid authoritarian regime trained members to "purify" their "vehicles" (bodies) through systematic self-denial and unquestioning obedience to authority. Punishable offenses included "knowingly breaking any instruction or procedure; trusting one's own judgment or using one's own mind; having private thoughts; curiosity; criticizing or finding fault with one's teacher or classmates."⁸ Such blind acceptance of and obedience to authority is incompatible with intellectual autonomy and Critical Thinking.

But just how likely is it that a normal, intelligent person would be susceptible to such a debilitating abuse of trust? How vulnerable are we to the dictates of authority? How subtle might its negative influence be? Consider a series of experiments conducted by psychologist Stanley Milgram in the 1960s.⁹ Milgram's famous experiment consisted of asking subjects to administer strong electrical shocks to people whom the subjects couldn't see. The subjects were told that they could control the shock's intensity by means of a shock generator with 30 clearly marked voltages, ranging from 15 to 450 volts and labeled from "Slight Shock (15)" to "XXX—Danger! Severe Shock (450)." We should point out that the entire experiment was a setup: No one was administering or receiving shocks. The subjects were led to believe that the "victims" were being shocked as part of an experiment to determine the effects of punishment on memory. The "victims," who were confederates of the experimenters, were strapped in their seats with electrodes attached to their wrists "to avoid blistering and burning." They were told to make no noise until a "300-volt shock" was administered, at which point they were to make noise loud enough for the subjects to hear (for example, pounding on the walls as if in pain). The subjects were reassured that the shocks, although extremely painful, would cause no permanent tissue injury. When asked, a number of psychologists predicted that no more than 10% of the subjects would follow the instruction to administer a 450-volt shock. In fact, well over half did (26 out of 40). Even after hearing the "victims" pounding, 87.5% of the subjects (35 out of 40) followed instructions to increase the voltage. It seems clear that many normal, intelligent people, when instructed by an authority, will act against their better judgment. To overcome the obstacles to Critical Thinking posed by the intimidating influence of authority, we simply need to maintain our "intellectual independence."

CONFORMISM

Further experiments seem to show that not only people's actions but also their judgment is susceptible to external influence. For example, look at the line segments in Thought Experiment 1.8.

THOUGHT EXPERIMENT 1.8 | Reliability of Perception

Which of the three lines on the left matches the one on the right?

A _____

B _____

C _____

Do your trust your perceptual judgment here? Line segment B is the one that matches the line segment on the right. Do you think you could ever be persuaded to doubt your perceptions and choose A or C? Maybe not, but experiments indicate that many normal, intelligent people can be persuaded to alter their perceptual judgments, even when their judgments are obviously correct. These experiments involved several hundred individuals who were asked to match lines just as you did. In each group, however, only one subject was naive; that is, unaware of the nature of the experiment. The others were instructed to make incorrect judgments in some cases and to exert peer pressure on the naive subject to change his or her correct judgment. The results: When subjects were not exposed to peer pressure, they inevitably judged correctly. But peer pressure produces a measurable and significant tendency toward conformity, with the tendency increasing as the majority increased toward unanimity.¹⁰ What is most interesting about these results is what they show about the power of peer pressure. Psychologically we are all, at some level, aware of our liability to error, even in our perceptual judgments. But it is still remarkable that peer pressure is powerful enough to erode people's confidence in their own perceptual experience and judgment. Consider how much more intimidating peer pressure must be when applied to anything more remote from you than your own perceptual experience and judgment.

What accounts for such intimidating power? Like many other creatures, humans are social animals. Our chances of survival and of flourishing are greatly enhanced by association with others of our kind. We do much better in groups than as individuals. So we are naturally fearful of isolation. At the same time, cooperation among individual members and group loyalty are both essential to the successful organization of any group, to the coordination of any group project, and to the maintenance of the group as a stable entity. So there is a natural

tendency in any group toward conformity and orthodoxy. And there arises within any group a hierarchy of authority through which orthodoxy is established and conformity to it is reinforced. All of this is natural and makes sense in terms of its survival value for the individual, for the group, and for the species. However, if this natural and functional tendency is not kept within healthy limits, the fear of isolation can overcome our basic common sense, increasing rather than minimizing our liability to error. To overcome the obstacles to Critical Thinking posed by the intimidating influence of authority, peer pressure, and orthodoxy, we need to cultivate and maintain “intellectual courage.”

ETHNOCENTRISM

Another major obstacle to Critical Thinking—a close relative of egocentrism—also arises out of our natural tendency as social animals to gather in groups and to identify ourselves with and in terms of our social groupings. To see how this happens, try the next thought experiment.

THOUGHT EXPERIMENT 1.9 | Identity and Culture

How many distinct cultural groups can you identify in 5 minutes by simply describing yourself, as in “I am a(n) _____”? (You could even start with your name, which identifies your family.)

However narrowly or broadly these groupings are defined—from kinship groupings (families) to something as broad as a gender—cultural categories play an important role in the formation of our individual personal identities because we largely identify ourselves in terms of them. Ethnic consciousness, like self-awareness, and ethnic pride, like self-esteem, are important ingredients in a healthy personality and society. But each has corresponding perversions that, when they arise, stand as obstacles to Critical Thinking (and cause lots of other serious grief). The natural human tendency to be egocentric also can affect our attitudes regarding groups with which we identify. So there arises a tendency to believe in the superiority of our family, our circle of friends, our age group, our religion, our nation, our race, our ethnicity, our gender, our sexual orientation, and our culture. Thus egocentricity, the view that mine is better—my ideas, my experience, my values, my agenda—becomes **ethnocentricity**, the view that ours is better—our ideas, our values, our ways. In recent years cultural identity has gained recognition as a matter of political importance. Multiculturalism is high on the agenda of most educational institutions now sensitive to the importance of cultural diversity in the community and the curriculum. Instructors strive to reflect multiple cultural perspectives in their courses (and authors in their textbooks). In Critical Thinking, cultural diversity and an awareness of alternative cultural perspectives are especially useful because of the limitations inherent in any given cultural perspective. An appreciation of cultural diversity contributes to open-mindedness, an essential ingredient of Critical Thinking. To overcome the obstacles to Critical

Thinking posed by ethnocentrism, we must cultivate an attitude of respectful intellectual tolerance and maintain and strengthen our intellectual humility.

UNEXAMINED ASSUMPTIONS

As we were writing the fifth edition of this book, the world was still reeling in shock over the spectacular multiple airliner hijacking and attack on the World Trade Center towers in New York City and the Pentagon in Washington, D.C. At the time, we said that we had no doubt that these stunning events would live on in collective memory, and indeed they have. In the 5 years since, we cannot identify a single day upon which we have not heard a reference to September 11, 2001, in public discourse. As you read these words, we'd like you to try to move yourself imaginatively back in time to September 11, 2001. Perhaps you remember where you were and what you were doing when you first learned that two airliners, apparently hijacked, had flown directly into the two World Trade Center towers in New York City—followed by fires and eventually the collapse of both buildings—and a third airliner had apparently crashed directly into the Pentagon in Washington, D.C. In particular, we'd like you to try to recover a sense of the confusion and of the urgency we all felt to know what was happening and to figure out what to do about it.

To help you conjure the mood, let us remind you that at that time, thousands of people remained missing and unaccounted for; rescue workers were digging through rubble searching for survivors; and the New York Stock Exchange was shut down, as was all commercial air travel to, from, and within the United States. There was considerable speculation about the identities and affiliations of the perpetrators of the attacks. But, as of that moment, only a handful of fragments from the beginnings of the investigation had been made public. The FBI had published passenger lists and boarding passes from the flights. Cell phone calls from passengers aboard one of the hijacked airliners reported that hijackers with knives had taken control of the flight. A car had been impounded at Boston's Logan Airport. A few individuals had been "detained for questioning." There was, again, considerable speculation about the identities and affiliations of the perpetrators of the attacks. But it had already focused on a particular terrorist organization led by one Osama bin Laden, whose base of operations was reported to be in Afghanistan. President George W. Bush, Vice President Dick Cheney, Secretary of State Colin Powell, and other government officials, as well as the television journalists covering the story, were careful to refer to bin Laden only as the "prime suspect." Meanwhile, however, the Bush administration was mobilizing an international coalition, as well as domestic public support, for a "war against terrorism."

THOUGHT EXPERIMENT 1.10 | **Suspending Judgment**

See if you can feel how difficult it is to suspend judgment. If someone asks you, "What do you think is happening?" or "What do you think we should do about it?" you are *suspending your judgment* when you sincerely say "I don't know."

There comes a point for most people at which it is no longer possible to suspend judgment. The urgency of the need we feel to initiate some plan of action makes the suspense unbearable. Although we may not know what has happened to any degree of certainty, we nevertheless feel we must do *something*. So we begin to make assumptions. Do you remember that “assumption” was among the first words we said we needed to define clearly to avoid misunderstanding? Here is what we mean by “assumption.” An assumption is a claim that is taken to be true without argument. In this definition we use two terms, “claim” and “argument,” which also need to be explained. A **claim** is a statement that claims for itself (whether rightly or wrongly) the value of being true. If someone says, “Hi, how are you?” this would not be a claim—the language is not being used to make a statement that claims to be true. If someone asks you “What time is it?” this would not be a claim. But if someone says something like, “The attack on the World Trade Center towers in New York City was the work of the bin Laden terrorist organization al-Qaeda,” a claim is being made. Or if someone were to say, “The attack on the World Trade Center towers was orchestrated by high-level officials of the U.S. government and the buildings were destroyed by controlled demolition to create a pretext for global war,” a claim is being made (actually several claims). Argument is a concept that we define and develop in detail in Chapters 3 through 5 of this book. For now, just think of an argument as support for a claim. So an assumption is a statement that claims to be true and is taken to be true without support.

DEFINITION 1.3 | Assumption

A claim taken to be true without support

REVIEW EXERCISE 1.1 | Find the Argument

Argument is a concept we have already put to use in this chapter. Where?

Perhaps you have heard the following cliché: Beware of assumptions; to “assume” makes an “ass” out of “u” and “me.” This is part of a widespread myth according to which *all* assumptions are suspect or dangerous, so we should try to avoid making *any* assumptions.

THOUGHT EXPERIMENT 1.11 | Assumption-free Thinking

Pick any topic or subject, and try thinking about it without making any assumptions.

The main problem with this widespread myth is that it is practically impossible to follow as a recommendation for how to conduct reasoning. The more seriously you take it, the more paralyzed you become. All reasoning must start somewhere. When Thomas Jefferson wrote in the Declaration of Independence,

We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness.

these were the starting points of the reasoning. When he said “We hold these truths to be self-evident,” he was saying that he thought it reasonable to assert these claims without support, that is, as assumptions.

Of course, there is risk involved in making any assumption: namely the risk that what you are assuming is not true. No doubt we’re making some assumptions when we say this, but it seems clear that in practice it is impossible to reason about anything without making at least some assumption or assumptions. Some such risk is inherent and inevitable in reasoning as such. In other words, there is no way to eliminate this risk entirely. But this risk increases—in other words, assumptions are more dangerous—to the extent that they remain **hidden**. As long as assumptions are hidden, they are not open to discussion, to challenge, to debate, and to deliberate consideration (as any serious claim to the truth should be). So the obvious way to keep the risk down would be to *be aware of the assumptions we’re making*. Notice that Jefferson’s assumptions in the Declaration of Independence are not hidden. Thus we would replace the cliché “beware of assumptions” with the maxim “be aware of assumptions” and posit this as a Critical Thinking rule of thumb.

CRITICAL THINKING TIP 1.1 | Awareness of Assumptions

~~BEWARE of Assumptions~~ Be AWARE of Assumptions

There is also an important corollary to this rule of thumb: *Don’t forget the assumptions you are making* (don’t forget that they *are* assumptions). This is essential to avoiding one of those pitfalls that leads otherwise reasonable people into unreasonable beliefs and ill-advised courses of action. Assumptions in their essential nature—by definition—are taken to be true without support. So, as we just explained, the risk of error increases as soon as we forget about the need to discuss, challenge, debate, and deliberately consider whether what we are assuming is true. And don’t forget the point we made earlier about the difficulty this poses for many people. Seriously examining assumptions, on the basis of which you thought you were going to make up your mind, can easily seem like “thinking in reverse.”

DISCUSSION TOPIC 1.9 | 9/11 Assumptions

Five years (and counting) past September 11, 2001, do we have any clearer understanding than we had on that day of what occurred? In discussing this question, pay careful attention to and make note of assumptions as they emerge and come into play.

INFERENCEAL ASSUMPTIONS

Where should we look for assumptions? Common sense would suggest that we be especially vigilant in two particular directions. Whenever people are making inferences or drawing conclusions—by which we mean reasoning from one claim to another—we should look for assumptions between the claims in the inference.

REVIEW EXERCISE 1.2 | Identifying Hidden Assumptions (Between the Lines)

Suppose a fellow student says to you, “As a society, we really shouldn’t be relying on computers as much as we do.” And you wonder why, and she says, “Well, don’t forget, computers are designed and built by humans.” What is she assuming?

In the example in the preceding exercise, your hypothetical fellow student says, “As a society, we really shouldn’t be relying on computers as much as we do.” You ask, “Why?” And she says, “Computers are designed and built by humans.” Notice how the reasoning here goes from her *answer* back to the claim you challenged. But how does the reasoning move from the claim “computers are designed and built by humans” to the claim you originally challenged “that we shouldn’t rely on computers as much as we do”? There is an assumption being made that serves as a missing link in the chain of reasoning. Can you figure out what this assumption is? Assumptions that play this sort of linking role are often called **inferenceal assumptions**. We return to this concept in Chapters 3 and 4.

PRESUPPOSITIONS

Another important place to look for assumptions is *underneath* the claims being made. Sometimes, to make sense of what is stated or expressed explicitly, we are required to assume additional claims that are not stated explicitly.

REVIEW EXERCISE 1.3 | Identifying Hidden Assumptions (Beneath the Surface)

Go back to the pictures on page 5 in this chapter. Read the caption under the main headline of the magazine *U.S. News & World Report*. What two assumptions do you have to make to understand this caption?

This is the way the *U.S. News & World Report* cover works: The caption under the main headline “Lost Souls” reads “How Reasonable People Can Hold Unreasonable Beliefs.” To make sense of this caption, you need to assume that the 39 members of the Heaven’s Gate cult (or at least some of them) were reasonable people, and you need to assume that the beliefs that led them to commit mass suicide (or at least some of those beliefs) were unreasonable beliefs. Assumptions of this kind—the kind that must be made for what is explicitly said to make sense—are called presuppositions. We develop this concept in Chapter 3.

DISCUSSION TOPIC 1.10 | UFO Cover-up

On June 24, 1997, the United States Air Force issued its official explanation of the Roswell Incident. The Roswell Incident is probably the most famous incident of an alleged Earth landing of extraterrestrials, long thought by many UFO believers to involve a government cover-up, because the sightings occurred and the debris was collected on and around a government military reservation (Roswell Air Force Base in New Mexico) and because the government maintained an “official silence” about the incident for 50 years. The official explanation: An experimental high-altitude weather balloon and several humanoid crash-test dummies fell to Earth from high altitudes. Conspiracy theorists were not convinced. There was much debate. Here is an opinion we heard on the radio. How many assumptions can you identify?

There’s no government cover-up, and there were no aliens. Look, if you were an alien and you were scoping out the earthly terrain, the last place you’d go would be to one of the most highly fortified and tightly secured military installations in the United States.

From this discussion of obstacles to Critical Thinking, a sort of “portrait of the critical thinker” begins to emerge. A critical thinker is a person who combines an array of “intellectual virtues” and displays these virtues in his or her intellectual life. A critical thinker is patient, tenacious, humble, courageous, tolerant, and respectful of diversity of opinion in pursuit of the truth. The critical thinker sticks with the search for truth. The critical thinker is not in a hurry to finish the search for truth, although it may be long and arduous. The critical thinker is humble in recognizing his or her limitations and liability to error. But the critical thinker is not easily intimidated by authority or by popular opinion or peer pressure. The critical thinker recognizes the value of diverse perspectives and viewpoints and is respectful of the views of others with whom he or she may disagree. With this portrait of the critical thinker in mind, return to a question we raised earlier in this chapter: How is it that reasonable people come to hold unreasonable beliefs? Chances are that this is because people have given up the search for truth, lost their patience and jumped to a hasty conclusion of the search for truth, become intimidated (lost their courage and independence), or become arrogant (lost their humility) in pursuit of the truth.

REVIEW EXERCISE 1.4 A Critical Thinking Self-Assessment

Assess your own habits of mind in terms of the intellectual virtues found in the preceding portrait of the critical thinker.

I am a truth seeker

- always
- most of the time
- some of the time
- seldom
- never

In seeking the truth, I would describe myself as

- extremely patient
- relatively patient
- about average
- somewhat impatient
- very impatient

In seeking the truth, I would describe myself as

- very tenacious (I refuse to give up)
- relatively tenacious (I don't give up easily)
- about average
- someone who will give up
- easily defeated

In seeking the truth, I would describe myself as

- very aware of my limitations and liability to error
- sometimes aware of my limitations and liability to error
- about average
- when I'm right, I'm right
- I'm always right

In seeking the truth, I would describe myself as

- extremely skeptical of authority
- skeptical of authority
- about average
- susceptible to persuasion by authority
- easily swayed by authority

In seeking the truth, I would describe myself as

- a contrarian (I tend to go against the conventional wisdom)
- indifferent to popular opinion or peer pressure
- about average

- mindful of the views of my peers and the public
- easily intimidated by peer pressure and popular opinion

In seeking the truth I, would describe myself as

- eager to learn about views and understandings that conflict with my own
- interested in views and understandings that conflict with my own
- about average
- not much interested in views and understandings that conflict with my own
- annoyed by views and understandings that conflict with my own

I speak the truth

- always
- most of the time
- some of the time
- rarely
- never

The truth about the things that matter most to me is knowable.

- I strongly agree with this statement.
- I agree with this statement.
- I don't know.
- I disagree with this statement.
- I strongly disagree with this statement.

The truth about the things I care about is simple.

- I strongly agree with this statement.
- I agree with this statement.
- I don't know.
- I disagree with this statement.
- I strongly disagree with this statement.

The truth about the things I care about is complex and difficult to capture in words.

- I strongly agree with this statement.
 - I agree with this statement.
 - I don't know.
 - I disagree with this statement.
 - I strongly disagree with this statement.
-

WRITING ASSIGNMENT 1.2 | A Critical Thinking Role Model

Based on your understanding of Critical Thinking as defined and explained so far in this chapter, identify the person or people you think best exemplify it. Explain your selection.

LOOKING AHEAD: ISSUES AND DISPUTES

You may have heard the expression “Reasonable people may differ.” An **issue** is what we call a topic about which reasonable people may differ. Should there be a law against abortion? Should animals be used in medical experimentation? Does intelligent extraterrestrial life exist? What is the average temperature of the water in Lake Tahoe? Is there a global environmental crisis? What drives people to commit acts of terrorism? Does the Federal Reserve Board’s move to raise interest rates indicate that its members think the recession is over? These are all questions to which a number of significant and conflicting alternative responses are both genuinely open and defensible. These are all good examples of our concept of an issue.

DEFINITION 1.4 | Issue

A topic about which reasonable people are likely to disagree

Sometimes it seems as though reasonable people may differ about anything, everything, even nothing. It would help if we could dispense with disputes over nothing. So before we begin to discuss issues, let us explain more deeply what we mean by “*genuinely* disputable” by pointing out and setting aside another kind of thing that often *passes for* an issue.

MERE VERBAL DISPUTES

Philosopher William James tells the story about how on a camping trip everyone entered a dispute over the following puzzle:

The corpus of the dispute was a squirrel—a live squirrel supposed to be clinging to one side of a tree-trunk; while over against the tree’s opposite side a human being was imagined to stand. This human witness tries to get sight of the squirrel by moving rapidly round the tree, but no matter how fast he goes, the squirrel moves as fast in the opposite direction, and always keeps the tree between himself and the man, so that never a glimpse of him is caught. The resultant metaphysical problem now is this: Does the man go round the squirrel or not? He goes round the tree, sure enough, and the squirrel is on the tree; but does he go round the squirrel?¹¹

James’s idea was that although you can easily imagine people going round and round in an endless dispute over such a puzzle, you can just as easily dissolve the puzzle by drawing a simple terminological distinction: it all depends upon what you mean by “going round” the squirrel.

If you mean passing from the north of him to the east, then to the south, then to the west, then to the north again, obviously the man does go round him, for he occupies these

successive positions. But if on the contrary you mean being first in front of him, then on the right of him, then behind him, then on the left, and finally in front again, it is quite as obvious that the man fails to go round him, for by the compensating movements the squirrel makes, he keeps his belly turned towards the man all the time, and his back turned away.¹²

Because it hardly matters to which meaning of “going round” the squirrel applies, this could be called a merely verbal dispute. To put it another way, there’s no real issue here; the dispute arises out of a simple ambiguity (for an explanation of this concept, see the section on ambiguity and vagueness in Chapter 2) in the way the puzzle is worded. A similar example is the old dispute that results from the question, “If a tree falls in the forest and nobody is there to hear it, is there a sound?” Clarifying the meaning of “sound” dissolves the dispute. If you’re talking about sound *waves*, then presumably there are sounds whether or not anyone is there to hear the tree fall. But if you mean sound *sensations*—the experience of sound—then the falling tree makes no sound, because no one is there to experience the sound sensations.

Perhaps it would be nice if all issues were as trivial as these. Perhaps it would be nice if all disputes arose out of simple ambiguities and could be dismissed as mere matters of semantics. On the other hand, perhaps it would be boring if all disputes were idle and there were no real, serious, and urgent issues to argue about. Reasonable people may differ about this, possibly leading to another kind of idle dispute. In any case, most genuinely important disputes are concerned with genuine issues. The rest of this book will be devoted to developing and refining strategies and procedures for resolving serious disputes about real and important issues, which are as varied as all of human interest and concern.

ISSUE ANALYSIS

Because they inherently involve conflict, all issues present a certain amount of psychological discomfort. They all seem to cry out for resolution. But a critical thinker must discipline himself or herself to be patient in pursuit of the truth. Thus another aspect of thinking critically that often gives the impression of “thinking in reverse” has to do with issues and their analysis. Before we begin to make up our minds about how to resolve a given issue, it is useful to do some analysis of the issue.

REVIEW EXERCISE 1.5 | Epigram

Reread the epigram at the beginning of this chapter by Jiddu Krishnamurti. Reflect on how his insight might apply at this stage of your reading.

Among the immediate challenges that most issues present is their inherent complexity. Take the first of the issues we mentioned in the section “Looking Ahead: Issues and Disputes” as an example. The question of whether there

should be law against abortion, even though it is worded as a simple yes-or-no question, is hardly a simple issue. The minute you look at it closely and begin to confront it seriously, you will see that it is not just one issue but more like a whole nest of them, resembling a can of worms. This is because there are so many things under the umbrella heading of “abortion” that reasonable people can disagree about. For example, reasonable people will disagree over whether abortion belongs in the same moral category as murder, homicide, elective surgery, birth control, or all of these. Reasonable people will disagree over whether a woman’s reproductive processes are private and over whether the government may legitimately interfere with her choices. Reasonable people will disagree over whether the fetus is a person or only a potential person. Reasonable people will disagree over whether potential people have rights. Reasonable people will disagree over whether the right to life overrides other rights that may come into conflict with it and over whether the right to life includes the right to use another person’s body as a life support system. Even among those who agree that the law *should* restrict abortion, reasonable people will disagree, for example, over whether the restriction should be total or partial, rigid or flexible and, if partial and flexible, over what the exceptions should be, and so on. So much complexity! It seems even that there might be too many dimensions of complexity to count. The challenge this poses for human intelligence is confusion: another one of those things that make it difficult—even for reasonable people, and even when they’re not distracted by external pressures or internal longings and fears—to discriminate between reasonable and unreasonable beliefs. Most interesting issues are deep and complex enough to present this sort of challenge. So the first step of issue analysis is to take the issue apart and see what subsidiary issues are contained within it.

THOUGHT EXPERIMENT 1.12 | Issue Analysis I

Set the egg timer for 3 minutes. Then brainstorm for subsidiary issues. See how many distinct issues you can see arising out of one of the following issues:

- Was the war on Iraq justified?
- Were the presidential elections in 2000 and 2004 “stolen”?
- Are humans changing global climate patterns?
- What is the average temperature of the water in Lake Tahoe?
- What drives people to commit acts of terrorism?
- Should animals be used in medical experimentation?

The next step is to find an approach to the issue that will help us bring its complexity under intellectual control rather than allowing its complexity to confuse and overwhelm us. One approach that immediately occurs to many people is to narrow the focus of the inquiry. For example, rather than try to resolve the

whole nest of issues we can see arising out of the abortion debate, we might confine ourselves to the issue over whether the fetus is a person or only a potential person. This approach is a reasonable one and is often useful. But, it never disposes of the problem. Suppose we do narrow our focus to the issue over the status of the fetus. Is the fetus a person or just a potential person? But here again, the minute you look closely at this issue and begin to confront it seriously, what you will see is not just one issue. What are the biological changes that take place during fetal development? How do the criteria for personhood relate to the biology of fetal development? Is personhood simply a biological matter? Or is it an essentially political matter? Or a spiritual matter? What precisely is meant by this word “person”? What are the criteria for being a person? And so on.

LOGICAL PRIORITY

With any such complex inquiry, what we really need is to be able to develop an orderly **agenda of inquiry**. An agenda is a list of things to do. The function of an agenda is to monitor progress, especially when there are a lot of things to keep track of. An agenda of inquiry would be a list of issues to resolve. Its function would be to let you know whether you are making progress toward resolving the main issue (the issue you started with) in which the others are embedded, rather than going in circles or wandering aimlessly and becoming lost in it all. To develop an agenda, we must **prioritize**, which simply means putting things into some kind of serial order. In any agenda, something has to come first, something has to come next, and so on. There may often be several reasonable orders to follow in an agenda of inquiry. And an agenda of inquiry probably ought to be always open to revision. Nevertheless, some ways of ordering an agenda of inquiry are more logical than others. Suppose we start by trying to resolve the issue of what to do about global warming. Shortly, we should notice that any resolution to this issue that we might consider presupposes some resolution to the subsidiary issue of what the *causes* of global warming are. And similarly, we should notice that *this* presupposes a specific resolution (in the affirmative) to the issue about whether global warming is occurring. This would indicate that the issue as to the reality of global warming comes logically before the issue as to its causes, which in turn comes logically before the issue as to the remedies. Similarly, any resolution to the issue of whether the fetus is a person will presuppose some resolution to the issue of what the criteria for personhood are. In other words, the issue as to the criteria for personhood comes logically before the issue of whether the fetus is a person. Whenever we notice this sort of relationship, it makes sense to address issues in order of their **logical priority**.

THOUGHT EXPERIMENT 1.13 | Issue Analysis II

Take the list of subsidiary issues you brainstormed in the preceding exercise and prioritize it.

ISSUE CLASSIFICATION

The next step of issue analysis comes from recognizing that there are different types of issues and that strategies and procedures appropriate for issues of one type may not be appropriate for issues of other types. For example, the procedures for determining the average temperature of the water in Lake Tahoe will not be of much use in resolving the question of whether animals should be used in medical experimentation. We propose that you sort issues into the following three categories: factual issues, evaluative issues, and interpretive issues.

In this connection, we use the terms “factual,” “evaluative,” and “interpretive” in a way that departs slightly but significantly from what we believe is current popular usage. Our impression is that people generally draw a sharp distinction between factual matters and evaluative and interpretive matters but also that people generally do not draw any sharp and clear distinction between evaluative and interpretive matters. We touched upon this in the section on limited relativism or subjectivism. Again, popular usage seems to go something like this: Factual matters pertain to the facts. The facts are everything that is proven or known beyond doubt or question. Everything else (values, interpretations, whatever) is a matter of opinion and as such can never be proven or established as true.

If you agree with any of this, we’re going to try to talk you out of it (remember our earlier discussion about limited relativism and how it constitutes an obstacle to Critical Thinking). First, this way of talking and thinking fails to recognize the need for strategies and procedures to resolve issues about what the facts are. Second, it doesn’t open up any useful strategic or procedural options for resolving evaluative or interpretive issues. We are therefore going to stipulate meanings with somewhat greater precision and utility than popular conventional usage has for the words “factual,” “evaluative,” and “interpretive.” We will use **factual** to refer to matters that can be investigated by the methods either of empirical science or of documentary research. We will use **evaluative** to refer to matters that concern the merits of things. And we will use **interpretive** to refer to matters that concern the meanings of things.

These categories are neither mutually exclusive nor exhaustive. This means that a given issue may have aspects that belong to more than one of these categories or may fall outside all of them. Bear in mind that the purpose of this categorical scheme has little to do with labeling issues or sorting them “correctly.” It’s more about clarifying the agenda of inquiry. Recognizing a given issue as belonging to a particular type is potentially valuable in determining what strategies and procedures will be most likely to lead to a resolution of the issue. To approach an issue as a factual issue is to raise questions of *evidence*. What sort of evidence would be relevant and decisive? What evidence is already available that bears on the issue? What additional evidence is required? What sorts of experiment or research would be needed to obtain that additional evidence? To approach an issue as an evaluative issue is to raise questions of *standards*. To approach an issue as an interpretive issue is to raise the question of interpretive *hypotheses*.

FACTUAL ISSUES

In modern Olympic history, which nation has won the most medals in weight lifting? What city is the world's coldest national capital? What is the average temperature of the water in Lake Tahoe? All of these are factual questions. They illustrate what we mean by saying that factual matters can be investigated by doing empirical science or documentary research. If a dispute were to arise about any of these questions, say, during a game of *Jeopardy* or *Trivial Pursuit*, there are already well-established procedures available for settling it. We might look the information up in a reliable source (documentary research). If the information is not already recorded, we could easily imagine the sort of scientific investigation by which the information could be gathered.

Having said that, we should also note that not all factual issues are equally simple. Suppose that we needed to figure out how many feral cats are living in the city of San Francisco. In this case, the question is not theoretically difficult to answer. It's a simple factual matter of counting the cats. But in practice, how is anyone going to count all feral (wild) cats in the city of San Francisco? They run away. They hide. They breed like, uh, feral cats. So we would need to estimate the number in some way. Things might not be simple even with the simple-sounding examples we mentioned earlier. Suppose we were asked to determine the average temperature of the water in the Pacific Ocean. You can begin to appreciate the difficulty of determining at least some matters of fact.

Doing good science involves both evaluation and interpretation, as does doing good documentary research. The question of whether or not there is a global environmental crisis is an excellent example. Suppose we approach it initially as a factual question. What sort of evidence would be relevant? Well, suppose there were hard, empirical evidence of significant changes in weather patterns on a global scale. That would be relevant evidence. Notice that evaluation (of the evidence) is already involved. *Hard* evidence has merit, and *significant* changes merit attention. Supposing for the moment that we do have hard evidence of significant global weather anomalies, we would still need some understanding of their causes to answer the original question. This will involve interpreting the evidence we already have, as well as additional evidence that we may seek, concerning, for example, extraordinary fluctuations in the average temperature in the Pacific Ocean. We discuss all of this further in Chapters 8 and 9.

EVALUATIVE ISSUES

Reconsider the first two issues we mentioned earlier: Should there be a law against abortion? Should animals be used in medical experimentation? One thing should be clear right away: neither of these issues can be resolved simply as a matter of fact. We could not possibly hope to settle a dispute over the right and proper legal status of abortion by doing documentary research alone. Nor could we hope to settle a dispute over the use of animals in experimental medicine on the basis of empirical science alone. Not that documentation and empirical evidence are irrelevant to these issues. Just as evaluation and interpretation are important parts of any good factual inquiry, so good science and good documentary research often play a crucial role in

evaluation and interpretation. But no amount of empirical evidence, documentation, or both could be *by itself* decisive in either of these issues. So it would make sense to approach them initially not as factual issues. The word “should” in each question is a clue that each issue is fundamentally evaluative, which raises the question of standards. What standards of evaluation are we concerned with? In each issue, it is apparent that moral or ethical standards are central. So they will need to be clarified in the course of the inquiry. Interpretive and factual questions will take their place in the agenda of inquiry as they arise in the process of clarifying and applying these moral or ethical standards. We discuss this further in Chapter 10.

INTERPRETIVE ISSUES

Suppose that in her first speech before the United Nations General Assembly the newly appointed U.S. ambassador makes five explicit references to human rights, free trade, opium, democracy, and Hong Kong. Is the United States “sending a message” to Beijing? And if so, what is the message? Or take this example from our earlier list of issues: does the Federal Reserve Board’s move to raise interest rates indicate that its members think the recession is over? These questions indicate issues concerning what things mean or how they should be understood. Such issues often arise in our attempts to understand things whose meanings may be flexible, complicated, multilayered, obscure, or even deliberately veiled. Issues of this sort are probably the most complex and difficult issues procedurally that we are likely to encounter in everyday discourse. Yet they are also fundamental to the process of communication because they have to do with the discernment of meaning. Indeed, perhaps most of the activities you will be performing throughout this book involve interpretation. Deciding whether or not a particular passage is an argument involves interpretation. Deciding whether a passage is intended to serve an expressive, persuasive, or informative function involves interpretation. There is no single simple procedure for resolving interpretive issues or settling interpretive disputes. Rather, there are many kinds of information relevant to interpretation, some of which have already been mentioned and some of which we discuss further in Chapters 2, 9, and 10.

For example, the conventions governing the use of a term or expression are relevant to its interpretation. Similarly, there are diplomatic conventions, which would be relevant to the interpretation of communications between one government, for example, through its U.N. ambassador, and another. In addition to conventions, information about the context surrounding a passage is relevant to its interpretation. Knowing that a particular speech was delivered before the U.N. General Assembly, rather than, for example, by confidential communiqué to the Chinese ambassador, is an important piece of information that can guide us closer to an accurate understanding of what was meant. Contextual information in the case of oral communication, as well as in film and video, includes facial expression, vocal inflection, bodily posture, and timing.

It should be apparent already that gathering and sifting evidence of such variety, especially in living contexts where time is of the essence, is a process of considerable complexity and subtlety. And there is a good deal of disagreement

among theorists about what the proper procedures are for doing interpretive work and how they should be applied in different sorts of interpretive controversy. Nevertheless, interpretation is something you are probably good at by now. You no doubt already recognize that some interpretive issues can be resolved relatively firmly and easily whereas others are more difficult and may be quite resistant to resolution. In disputed cases, perhaps the most useful procedural strategy is the use of hypothetical reasoning. This involves formulating and testing interpretive hypotheses. A **hypothesis** is a particular sort of conscious assumption. It is an idea we *assume* to be true for the purpose of exploring or testing it. This procedure also has important applications in dealing with factual issues. We discuss it in greater detail in Chapter 9.

REVIEW EXERCISE 1.6 | Issue Analysis III

Logically prioritize each of the following sets of related issues or questions—and explain your decisions:

- Should there be a law against hate speech on the Internet? *
- What is hate speech?
- Should the service provider or the government be responsible for the enforcement of regulations prohibiting hate speech over the Internet?
- What kinds of penalties should be imposed on people who post hate speech on the Internet?

- Is time travel possible?
- Is time travel technically feasible?
- Is the technical feasibility of time travel worth investigating?
- What is meant by “time travel”?

- What are the defining criteria for being a person?
- Should abortion be prohibited under criminal law as a form of homicide?
- Is abortion a form of homicide?
- Is the human fetus a person?

- Should same-sex couples be allowed to join in legally sanctioned marriages?
- Will the recognition of same-sex marriages undermine the purposes of the institution of legally sanctioned marriage?
- What purpose or purposes are served by the institution of legally sanctioned marriage?
- Could civilization survive the collapse of an institution as important as legally sanctioned marriage as a result of the recognition of same-sex marriages?

COMPOSING AN ISSUE STATEMENT An **issue statement** is a composition whose purpose is to clearly communicate an interest in a topic, a topic about which we anticipate disagreement among reasonable people.

An issue statement can be composed briefly, for example, as a single short sentence, or at greater length, for example, as the opening chapter of a book. The ability to compose issue statements is essential both to successfully communicating our opinions and to understanding the viewpoints of others (as we explain in Chapter 5). Either way, composing an issue statement can and should involve careful and appropriate use of the techniques of issue analysis discussed earlier in this chapter. Eventually, when you compose a complete argumentative essay, a well-crafted issue statement will be an important part of your essay's introduction. We work on this in greater detail in Chapter 13.

WRITING ASSIGNMENT 1.3 | Issue Statement

Compose a 250-word issue statement (one-page standard double-spaced) incorporating your results from Thought Experiments 1.12 and 1.13. In your issue statement, try not to take sides.



WRITING ASSIGNMENT 1.4 | Term Project

Compose a 250-word issue statement (one-page standard double-spaced) presenting an issue of your choice. In your issue statement, try not to take sides.

GLOSSARY

- agenda of inquiry** an organized list of issues to resolve
- assumption** an unsupported claim
- assumption, hidden** an unstated or implied assumption
- assumption, inferential** a hidden assumption that functions as added support, linking a stated premise with a conclusion
- authority** an expert or source of information outside oneself
- belief** an idea in which one has invested one's confidence
- claim** a statement that is either true or false
- critical thinking** using reason to make up your mind
- discipline** the cultivation of mastery through practice
- egocentrism** favoritism for oneself and the beliefs, values, traditions, and groups with which one identifies
- ethnocentricity** favoritism for the beliefs, values, and traditions of one's ethnic group
- hypothesis** An idea assumed to be true for the purpose of exploring or testing it
- issue** a topic about which reasonable people may disagree
- issue, factual** an issue to be resolved by either methods of empirical science or documentary research
- issue, evaluative** an issue concerning the merits of things

issue, interpretive an issue concerning the meanings of things

issue statement a composition whose purpose is to communicate interest in a topic about which reasonable people may disagree

logical priority a kind of order among issues, where one issue presupposes a resolution of a second issue; the second comes logically before the first

presupposition an assumption required to make sense of what is explicitly stated

prioritize to place in order as a series

reason

1. the human capacity to use disciplined intelligence to solve problems
2. a claim used as a premise
3. a claim used as an explanation

relativism the view that the truth is relative and varies

subjectivism the view that the truth is relative or varies from individual to individual

truth the agreement of an idea with reality

worldview the self-regulating system of assumptions and other beliefs through which one receives and interprets new information

ADDITIONAL EXERCISES

As you work through the exercises throughout this book, keep in mind what we said earlier about relativism and the search for truth. There are some questions for which there's no such thing as *the* correct answer, yet even in such cases most likely some answers will be better than others. What matters most is how you reason your way to your answer and whether your reasoning holds up under scrutiny. When you discuss these exercises, don't be afraid to challenge answers that may be offered by your instructors. But you should also try to understand and appreciate the reasoning your instructors may have to offer in support of their preferred answers.

■ **THOUGHT EXPERIMENT 1.14 WORLDVIEW** We will use the term **worldview** to refer to the self-regulating system of assumptions and other beliefs according to which a person views the world or deals with incoming information. One of the most valuable things about the diversity of cultures you will find on most contemporary college campuses is what you can learn from cultures other than your own about the limitations of your worldview. Here is an exercise in self-awareness and appreciation of cultural diversity: Try to identify three items in your worldview that are not shared by or that conflict with the worldview of a typical member of some identifiable culture other than your own. You may find it useful, perhaps even necessary, to approach one or more of your fellow students whose cultural heritage or heritages differ from your own and learn a bit from them about the distinctive characteristics of their culture or cultures.

■ **THOUGHT EXPERIMENT 1.15 CULTURAL AWARENESS** Another valuable thing about cultural diversity is what you can learn about common or shared humanity. Here is a follow-up exercise in cultural awareness: Try to identify three items in your worldview that are or would be shared by a typical member of some identifiable culture other than your own.