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WHAT IS CRITICAL THINKING, ANYWAY?



If you attend a university, we'd bet you hear a lot about critical thinking. Perhaps you will hear your professors telling you how important it is, or how dismayed they are there isn't more of it in today's world. Unfortunately, you may not be entirely sure what exactly it is they think is lacking. If you listen for a while you may get the idea that whatever it is, all your professors are certain *they* emphasize it in *their* courses. You may even get the idea that for many of them "critical thinking" is mainly just whatever it is they happen to teach—sociology, history, business, communications, or whatever.

Is there any common ground among educators about what critical thinking is? Yes! Most educators probably agree that a person who jumps to conclusions or makes ill-formed, indefensible, knee-jerk decisions has *not* thought critically. A while back we read about a teenager who was spotted shoplifting; the police were called and arrested the young man. While they were reading him his rights, he shook out of their grasp and made a run for it. Unfortunately, as he made his break his huge trousers tripped him, and that was the end of his getaway.* Everyone will agree that trying

*The lad had not been handcuffed, the police perhaps assuming his trousers would serve the same purpose.

Students will learn to . . .

1. Define critical thinking
2. Distinguish objective claims from subjective claims
3. Understand subjectivism as it relates to moral claims
4. Identify issues
5. Define and identify premises and conclusions
6. Recognize an argument
7. Define and identify twelve common cognitive biases
8. Understand the terms *truth* and *knowledge* as used in this book

to run from the police, especially when your pants are on the ground, is not thinking well, let alone thinking critically. This may seem like an unimportant or frivolous example, but it really is not much different in principle from signing on for mortgage payments that are more than you earn, or—if you are a mortgage broker or an insurance company—betting that people who do that will be able to manage the trick.

What, then, is critical thinking? Clearly it involves more than just blindly acting or reacting. Every educator will concede that critical thinking aims at making wise decisions and coming to correct conclusions, and not being waylaid by temptation, emotion, greed, irrelevant considerations, stupidity, bias, or other similar things.

To refine this a bit, on the one hand there is good, old-fashioned thinking. That's what we do when we form opinions or judgments, make decisions, arrive at conclusions, and the like. On the other hand, there's *critical* thinking. That's what we do when we *critique* the first kind of thinking—subject it to rational evaluation. You might say that *critical thinking involves thinking about thinking*; we engage in it when we consider whether our thinking (or someone else's) abides by the criteria of good sense and logic.

Possibly you've taken courses where all you have to do is remember stuff. But in other courses—and in the workplace or in the military—you will perhaps have been asked to do more—maybe to design or evaluate something, to make a proposal or diagnose a situation, to explain or comment on something, or to do any number of other things that involve coming to conclusions. Possibly it worked this way: your instructor or colleagues or friends or supervisors read or listened to your findings, then *they* offered critical commentary. *They* gave you feedback (usually, we hope, positive). *They* evaluated your reasoning. If you are brilliant, you may not have needed their feedback. If you are brilliant, perhaps you never err in your thinking or leave room for other criticism. But most of us do occasionally make mistakes in reasoning. We overlook important considerations and ignore viewpoints that conflict with our own, and in other ways we don't think as clearly as we might. Most of us can benefit from a little critical commentary—even when it comes from ourselves. Our chances of producing a good essay or offering a sound proposal or making a wise decision improve if we don't simply write or propose or decide willy-nilly, but reflect on our reasoning and try to make it better. Our chances of thinking well improve, in other words, if we think *critically*: if we critique our own thinking as a thinking coach might.

This is a book in *critical* thinking because it offers guidance about *critiquing* thinking. The book, and the course you are using it in, if you are, explain the minimum criteria of good reasoning—the requirements a piece of reasoning must meet, no matter what the context, if it is worth paying attention to. Along the way we will explore the most common and important impediments to good reasoning, as well as some of the most common mistakes people make when coming to conclusions. Other courses you take at the university offer refinements. In them you will learn what considerations are important from the perspective of individual disciplines. But in no course anywhere, at least in no course that involves arriving at conclusions, will thinking that violates the standards set forth in this book be accepted. If it does nothing else, what you read here and learn in your critical thinking course should help you avoid at least a few of the more egregious common errors people make when they reason. If you would have otherwise made these mistakes, you will

In Depth

Critical Thinking, the Long Version

In the text, we give a couple of brief characterizations of critical thinking, and as shorthand they will serve well enough. But the Collegiate Learning Assessment (CLA) Project of the Council for Aid to Education has come up with a list of skills that covers almost everything your authors believe is important in critical thinking. If you achieve mastery over all these or even a significant majority of them, you'll be well ahead of most of your peers—and your fellow citizens. In question form, here is what the council came up with:

How well does the student

- determine what information is or is not pertinent;
- distinguish between rational claims and emotional ones;
- separate fact from opinion;
- recognize the ways in which evidence might be limited or compromised;
- spot deception and holes in the arguments of others;
- present his/her own analysis of the data or information;
- recognize logical flaws in arguments;
- draw connections between discrete sources of data and information;
- attend to contradictory, inadequate, or ambiguous information;
- construct cogent arguments rooted in data rather than opinion;
- select the strongest set of supporting data;
- avoid overstated conclusions;
- identify holes in the evidence and suggest additional information to collect;
- recognize that a problem may have no clear answer or single solution;
- propose other options and weigh them in the decision;
- consider all stakeholders or affected parties in suggesting a course of action;
- articulate the argument and the context for that argument;
- correctly and precisely use evidence to defend the argument;
- logically and cohesively organize the argument;
- avoid extraneous elements in an argument's development;
- present evidence in an order that contributes to a persuasive argument?

<http://www.aacu.org/peerreview/pr_sp07_analysis1.cfm>

have become smarter. Not smarter in some particular subject, mind you, but smarter in general. The things you learn from this book (and from the course you may be reading it for) apply to nearly any subject people can talk or think or write about.

To a certain extent, questions we should ask when critiquing our own—or someone else's—thinking depend on what is at issue. Deciding whom to vote for, whether to buy a house, whether a mathematical proof is sound, which toothpaste to buy, or what kind of dog to get involve different considerations. In all cases, however, we should want to avoid making or accepting weak and invalid arguments. We should also avoid being distracted by irrelevancies or

- The judges critique dancers on *Dancing With The Stars*, but that doesn't automatically qualify as thinking critically.



being ruled by emotion, succumbing to fallacies or bias, and being influenced by dubious authority or half-baked speculation. These are not the only criteria by which reasoning might be evaluated, but they are central and important, and they provide the main focus of this book.

BELIEFS AND CLAIMS

Why bother thinking critically? As we just said, the ultimate objective in thinking critically is to come to conclusions that are correct and to make decisions that are wise. Because our decisions reflect our conclusions, we can simplify things by saying that the purpose of thinking critically is to come to correct conclusions; the method used to achieve this objective is to evaluate our thinking by the standards of rationality. Of course, we can also evaluate someone else's thinking, though the objective there might simply be to help the person.

When we come to a conclusion, we have a belief. Concluding involves believing. If you *conclude* the battery is dead, you *believe* the battery is dead. Keeping this in mind, let's define a few key terms.

A belief is, obviously, something you believe. It is important to understand that a belief is *propositional*, which means it can be expressed in a declarative sentence—a sentence that is either true or false. A good bit of muddleheaded thinking can be avoided if you understand that beliefs are propositional entities, but more on this later.

As we use these words, *beliefs* are the same as *judgments* and *opinions*. When we express a belief (or judgment or opinion) in a declarative sentence, the result is a *statement* or *claim*, and for our purposes these are the same thing. Claims can be used for other purposes than to state beliefs, but this is the use we're primarily concerned with.

Objective Claims and Subjective Claims

Before we say something more about conclusions, we should make a distinction between claims that are objective and those that are subjective. An **objective claim** has this characteristic: whether it is true or false is independent of whether people think it is true or false. “There is life on Mars” is thus an objective claim, because whether or not life exists there doesn’t depend on whether people think it does. If everyone suddenly believed there is life on Mars, that doesn’t mean that suddenly there would be life on Mars. Likewise, “God exists” is an objective claim because whether it is true doesn’t depend on whether people think it is true.

Although objective claims are either true or false, we may not know which a given claim is. “Portland, Oregon, is closer to the North Pole than to the Equator” is a true objective claim. “Portland, Oregon, is closer to the Equator than to the North Pole” is a false objective claim. “More stamp collectors live in Portland, Oregon, than in Portland, Maine” is an objective claim whose truth or falsity is not known, at least not by us.

Not every claim is objective, of course. “Barack Obama is one cool daddy” is not objective, for it lacks the characteristic mentioned previously. That is, whether or not someone is one cool daddy does depend on whether people think he is. If nobody thinks Barack Obama is one cool daddy, then he isn’t. If Parker thinks Barack Obama is one cool daddy and Moore doesn’t, you will say that Parker and Moore are each entitled to his opinion. That’s because whether someone is one cool daddy is in the eyes of the beholder.

Claims of this variety are **subjective claims**. Whether a subjective claim is true or false is not independent of whether people think it is true or false. Examples of subjective claims would be judgments of taste, such as “Rice vinegar is too sweet.” Is rice vinegar too sweet? It depends on what you think. Some kinds of comparisons also are subjective. Is snow boarding more fun than



■ A rescue team in action. Not thinking critically about your decision to ski in avalanche conditions can have grave consequences.

In Depth

Thinking About Thinking

A subjective statement is made true by someone's thinking it is true. Does this mean that statements about what someone is thinking are subjective? The answer is no, though it may take a second to see this. Take the statement "Joanie is thinking of moving." What makes that statement true, if it is, is *not* Joanie's thinking that the *statement* is true. What makes it true is that Joanie is thinking of *moving*. A statement about what someone is thinking is an objective statement about what is going on in the person's mind.

skiing? Again, it depends on what you think, and there is no further "truth" to consider. However, many statements contain both objective and non-objective elements, as in "Somebody stole our nifty concrete lawn duck." Whether the lawn duck is *concrete* is an objective question; whether it is *our* lawn duck is an objective question; and whether it was *stolen* is an objective question. But whether the stolen concrete lawn duck is *nifty* is a subjective question.

Fact and Opinion

Sometimes people talk about the difference between "fact" and "opinion," having in mind the notion that *all* opinions are subjective. But some opinions are not subjective, because their truth or falsity is independent of what people think. Again, in this book "opinion" is just another word for "belief." If you believe that Portland, Oregon, is closer to the North Pole than to the Equator, your opinion happens to be true, and would continue to be true even if you change your mind. You can refer to objective opinions as *factual* opinions or beliefs, if you want—but *that doesn't mean factual opinions are all true*. "Portland, Oregon, is closer to the Equator than to the North Pole" is a factual opinion that is false.

So: factual opinion/belief/claim = objective opinion/belief/claim = opinion/belief/claim whose truth/falsity is independent of what anyone thinks.

Moral Subjectivism

"There is nothing either good or bad, but that thinking makes it so," said Hamlet, nicely expressing a point of view known as **moral subjectivism**. Some beginning critical thinking students, like Hamlet, assume that when you ascribe a moral property to something, your claim is purely subjective: whether something is good or bad or right or wrong depends entirely on what you think. Is bullfighting wrong? Well, as moral subjectivists say, it's a matter of opinion, and one opinion is as correct as the next.

You should be wary of the notion that all moral opinions are subjective or that one moral opinion is as correct as the rest. Consider the following real-life event. (We must warn you the example is very unpleasant. Unfortunately, it often takes an example of this sort to get the point across.) In Kelsey

Creek Park in Bellevue, Washington,* three teenage boys sneaked into a corral where lived a twenty-one-year-old donkey, a favorite of local children. The boys attempted to ride the donkey, but the animal didn't cooperate. Annoyed, the boys picked up tree limbs and hit him. As the donkey weakened, the boys intensified their beating until he could no longer stand. They then found a piece of rope and used it to suspend the donkey from a tree so that he strangled to death.

Now ask yourself: If these boys didn't think their actions were wrong, would that make them right? Of course you wouldn't say that. If you could have stopped the beating simply by yelling at them, with no danger to yourself, would you have done it? Of course you would. A person who truly believed that any evaluation of the boys' behavior was as good as any other is someone we'd consider very peculiar indeed—and possibly defective in some way.

By now you should not be surprised to learn that most moral philosophers reject the notion that moral opinions are all purely subjective. Most would say that the rightness and wrongness of actions is independent of what people think. They would say that, regardless of what anyone might believe, it would be wrong to torture donkeys or execute orphans for kicks. They would say that, even if by some chain of events, *everyone* came to think it was okay to stone women to death when they are accused of adultery, it still wouldn't be okay to stone a woman to death for that or any other reason.

Now that you know what opinions and claims are, and understand the difference between objective opinions/claims and subjective opinions/claims, and see that some opinions/claims that at first blush seem to be subjective perhaps are not really so, we can talk about issues. Then we will get back to conclusions.

ISSUES

An issue, as we employ that concept in this book, is simply a question. Is Moore taller than Parker? When we ask that question, we raise the issue as to *whether* Moore is taller than Parker. To put it differently, we are considering whether the claim "Moore is taller than Parker" is true. Let us note in passing that as with claims, some questions or issues are **objective questions or issues**. Is Moore taller than Parker? Whether he is or isn't doesn't depend on whether we think he is, so this is an objective question.

Other issues, such as whether Simon Cowell dresses well, are subjective, in the sense explained previously.

The first order of business when it comes to thinking critically about an issue is to determine what, exactly, the issue *is*. Unfortunately, in many real-life situations, it is difficult to identify exactly what the issue is—meaning it is difficult to identify exactly what claim or belief is in question. This happens for lots of reasons, from purposeful obfuscation to ambiguous terminology to plain muddleheaded thinking. In his inaugural address President Warren G. Harding said,

We have mistaken unpreparedness to embrace it to be a challenge of the reality and due concern for making all citizens fit for participation will give added strength of citizenship and magnify our achievement.

*April, 1992.

Do you understand what issue Harding is addressing? Neither does anyone else, because his statement is perfectly meaningless. (American satirist H. L. Mencken described it as a “sonorous nonsense driven home with gestures.”*) Understanding what is meant by a claim has so many aspects that we’ll devote a large part of Chapter 3 to the subject.

However, if you have absolutely no clue as to what an issue actually is, there isn’t much point in considering it further—you don’t know what “it” is. There also isn’t much point in considering it further if you have no idea as to what would count toward settling it. For example, suppose someone asks, “Is there an identical you in a different dimension?” What sort of evidence would support saying either there is or isn’t? Nobody has any idea. (Almost any question about different “dimensions” or “planes” or “universes” would be apt to suffer from the same problem unless, possibly, it were to be raised from someone well educated in physics who used those concepts in a technical way.) “Is everything really one?” would also qualify as something you couldn’t begin to settle, as would wondering if “the entire universe was created instantly five minutes ago with all false memories and fictitious records.”** And how about “Is there an invisible gremlin inside my watch that works the alarm?”

Obscure issues aren’t always as metaphysical as the preceding examples. Listen carefully and you may hear more than one politician intone, “It is human nature to desire freedom.” Oh, really? Well—saying so is a good sound bite—but when you look closely at the claim, it’s hard to know exactly what sort of data would support it.

This isn’t to imply that only issues that can be settled through scientific test or via the experimental method are worth considering. Moral issues cannot be settled in that way, for example. Mathematical and historical questions are not answered by experiment, and neither are important philosophical questions. Does God exist? Is there free will? What difference does it make if he does or doesn’t or there is or isn’t? Legal questions, questions of aesthetics—the list of important questions not subject to purely scientific resolution—is very long. The point here is merely that if a question is to be taken seriously, or if you want others to take it seriously, or if you want others who can think critically to take it seriously, you must have *some* idea as to what considerations bear on the answer.

ARGUMENTS

Jamela is trying to decide whether she should get a dog—specifically, a sweet little Shih Tzu puppy a friend wants to give her. Let’s give the little dog a name and call him Priglet. Priglet, let’s imagine, is rambunctious and adorable, and Jamela is sorely tempted.

After giving it careful thought, Jamela decides to get Priglet. She thinks, “I love little Priglet; I can take care of him, and I see no reason not to get him.” When we set forth reasons for accepting a claim, we produce an **argument**, and that is exactly what Jamela has done. She has given herself reasons for accepting the claim “I should get Priglet.”

*Reported on NBC News, *Meet the Press*, January 16, 2005.

**This famous example comes from philosopher Bertrand Russell.

Two concepts are traditionally used in talking about arguments. A reason for accepting a claim is expressed in something called a **premise**; the claim itself is called the **conclusion**.

So let's portray Jamela's argument this way:

Premises: I love Priglet; I can take care of him, and I can see no reason not to take him.

Conclusion: Therefore, I should get him.

Jamela's issue has been whether she should get Priglet. Notice that Jamela's conclusion represents her position on that issue. You should always think of the conclusion of an argument as stating a position on an issue, and of premises as giving reasons for taking that position.

What does this have to do with critical thinking? Jamela wants to make the best decision on an important question. She has concluded she should get Priglet. If she wants to think critically, she goes back over her reasoning and evaluates it.

Whether Jamela's reasoning is good depends on how much support her premises provide for accepting her conclusion. Later we'll examine the underlying principles of argument evaluation in depth, but for now we should point out two things so that you may get a general idea of the critical thinking process. First, a premise can offer support for a conclusion only if the premise is *true*. Second, it can offer support only if it is *relevant* to the conclusion. It must actually bear on the truth of the conclusion. Sometimes this is expressed by saying the premise must be *cogent*.

One of Jamela's premises stands out for especially careful consideration: "I can take care of him." This premise is relevant to Jamela's conclusion, but is it true? Can Jamela find the time to exercise Priglet? Does she have a place for doing it? What will she do with Priglet if she goes on a trip? What happens to Priglet in the summer, when Jamela lives at her parents' house?

The more carefully Jamela has thought about things originally, the less time she will need to spend reviewing her reasoning. Of course, she can't know how much her original thinking needs reviewing until she actually attempts to review it. Thinking critically is very much like writing an essay: When you write an essay, first you compose a draft; then you revise and improve your draft as often as it takes to make your essay as good as it can be. Likewise, when you think critically, you go over your original thinking several times to make it as airtight as it can be. Are you the kind of person who reasons well the first time? Some people are. Unfortunately, there is reason to believe that people who aren't very proficient at reasoning are the most likely to overestimate their reasoning ability.*

The analysis and evaluation of arguments will occupy us at length later, so for now let's make sure we understand the definition of "argument."

An **argument** consists of two parts; one part of which (the premise or premises) is intended to provide a reason for accepting the other part (the conclusion).

*See Justin Kruger and David Dunning, "Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-Assessments," *Psychology*, 2009, 1, 30-46.

Critical thinking happens, then, when we evaluate the thinking we or someone else has used in coming to a conclusion on an issue. Thus it will not surprise you to learn that we devote a great deal of time and space in this book to arguments and their proper analysis and evaluation.

Three minor points about arguments are worth noticing now:

1. Unfortunately, the word “argument” is sometimes used to refer to someone’s reason for thinking something, as in “That’s a good argument for not getting a dog.” When “argument” is used this way, it refers to an argument’s premise. In this book, to avoid confusion, when we speak of a person’s argument, we will be referring to the person’s premise *together with* his or her conclusion.
2. Jamela’s argument was straightforward and easy to understand. Don’t suppose all arguments are that way. Einstein’s conclusion that $E = mc^2$ was proved by complex theoretical reasons requiring a lot of mathematics and physics to comprehend, and together they amounted to an argument that $E = mc^2$.
3. Not every issue requires an argument for resolution. Is your throat sore? There isn’t room here for an argument; you can just tell directly and conclusively whether your throat is sore. Whether or not an issue requires an argument for resolution may itself be an issue, however.

Critical thinking, as we have explained it, happens when we submit our thinking, or the thinking of others, to the tribunal of logic and good sense. Unfortunately, there is no guarantee when we do this that we will always arrive at the truth. It is a rare individual who, even after painstaking deliberation, never acts unwisely or accepts contentions that turned out in hindsight to be false. We humans have an inborn taste for salt and fat and sugar and other things beyond what is good for us; likewise, we are wired to process information in ways that aren’t necessarily in our best interest or that don’t reflect reality accurately. In the next section we will look at psychological factors that impede clear thought.

Critical thinking won’t immunize us against all errors in thinking—but the criteria set forth in this book are those that our thinking must adhere to, to qualify as rationally grounded.

The following exercises will test your understanding of the concepts of critical thinking, argument, premise, conclusion, and issue, and the difference between objective and subjective claims.

Exercise 1-1

Answer the questions based on your reading to this point, including the boxes.

▲—See answer key in back of book.

- ▲ 1. What is an argument?
2. T or F: A claim is what you use to state an opinion or a belief.
3. T or F: Critical thinking consists in attacking other people’s ideas.
- ▲ 4. T or F: Whether a passage contains an argument depends on how long it is.

5. T or F: When a question has been asked, an issue has been raised.
6. T or F: All arguments have a premise.
- ▲ 7. T or F: All arguments have a conclusion.
8. T or F: You can reach a conclusion without believing it is true.
9. T or F: Beliefs, judgments, and opinions are the same thing.
- ▲ 10. T or F: All opinions are subjective.
11. T or F: All factual claims are true.
12. "There is nothing either good or bad but that thinking makes it so" expresses a doctrine known as _____.
- ▲ 13. The first order of business when it comes to thinking critically about an issue is (a) to determine whether the issue is subjective or objective (b) to determine whether the issue can be resolved (c) neither of these.
14. T or F: The conclusion of an argument states a position on an issue.
15. T or F: Issues can be resolved only through scientific testing.
- ▲ 16. T or F: Critical thinking is a foolproof way of avoiding errors in thinking.
17. T or F: The claim "Death Valley is an eyesore" is subjective.
18. T or F: Every issue requires an argument for a resolution.
- ▲ 19. Which one of these doesn't belong? (a) therefore (b) consequently (c) thus (d) since (e) so
20. T or F: It is not possible to reason correctly if you do not think critically.

On the basis of a distinction covered in this chapter, divide these items into two groups of five items each such that all the items in one group have a feature that none of the items in the second group have. Describe the feature on which you based your classifications. The items that belong in one group are listed in the back of the book.

Exercise 1-2

- ▲ 1. You shouldn't buy that car because it is ugly.
2. That car is ugly, and it costs more than \$25,000, too.
3. Rainbows have seven colors, although it's not always easy to see them all.
- ▲ 4. Walking is the best exercise. It places the least stress on your joints.
5. The ocean on the central coast is the most beautiful shade of sky blue, but it gets greener as you go north.
6. Her favorite color is yellow because it is the color of the sun.
- ▲ 7. Pooh is my favorite cartoon character because he has lots of personality.
8. You must turn off the lights when you leave the room. They cost a lot of money to run, and you don't need them during the day.
9. Television programs have too much violence and immoral behavior. Hundreds of killings are portrayed every month.
- ▲ 10. You'll be able to find a calendar on sale after the first of the year, so it is a good idea to wait until then to buy one.

- Can bears and other animals think critically? Find out by checking the answer section in the back of the book.



Exercise 1-3

Which of the following claims are objective?

- ▲ 1. Bob Dylan's voice was perfect for the folk music of the sixties.
- 2. On a baseball field, the center of the pitcher's mound is 59 feet from home plate.
- 3. Staring at the sun will damage your eyes.
- ▲ 4. Green is the most pleasant color to look at.
- 5. Yellow is Jennifer's favorite color.
- 6. With enough experience, a person who doesn't like opera can come to appreciate it.
- ▲ 7. Opera would be easier to listen to if they'd leave out the singing.
- 8. Sailing is much more soothing than sputtering about in a motorboat.
- 9. Driving while drowsy is dangerous.
- ▲ 10. Pit vipers can strike a warm-blooded animal even when it is pitch dark.
- 11. Sarah Palin looks very presidential.
- 12. Sarah Palin looks very presidential to me.

Exercise 1-4

Which of the following are subjective?

- ▲ 1. Leno tells better jokes than Letterman.
- 2. Mays hit more home runs than McGwire.
- 3. Your teacher will complain if you wear a baseball cap in class.
- ▲ 4. Your teacher should complain if you wear a baseball cap in class.
- 5. There is life on Mars.

- 6. Golf is a waste of time.
- ▲ 7. *Halloween IV* scared the you-know-what out of my sister.
- 8. *Halloween IV* was lousy. A total letdown.
- 9. Movies like *Halloween IV* lack redeeming social value. [Hint: an assertion might have more than one subjective element.]
- ▲ 10. John Kerry has quite an unusual chin.

Some of these items are arguments, and some are not. Can you divide them up correctly?

Exercise 1-5

- ▲ 1. Federer is unlikely to win the U.S. Open this year. He has a nagging leg injury, plus he just doesn't seem to have the drive he once had.
- 2. Hey there, Marco! Don't go giving that cat top sirloin. What's the matter with you? You got no brains at all?
- 3. If you've ever met a pet bird, you know they are very busy creatures.
- ▲ 4. Everybody is saying the president earned the Nobel Prize. What a stupid idea! He hasn't earned it at all. There's not a lick of truth in that notion.
- 5. "Is the author really entitled to assert that there is a degree of unity among these essays which makes this a book rather than a congeries? I am inclined to say that he is justified in this claim, but articulating this justification is a somewhat complex task."

—From a book review by Stanley Bates

- 6. As a long-time customer, you're already taking advantage of our money management expertise and variety of investment choices. That's a good reason for consolidating your other eligible assets into an IRA with us.
- ▲ 7. PROFESSOR X: Well, I see where the new chancellor wants to increase class sizes.
PROFESSOR Y: Yeah, another of his bright ideas.
PROFESSOR X: Actually, I don't think it hurts to have one or two extra people in class.
PROFESSOR Y: What? Of course it hurts. Whatever are you thinking?
PROFESSOR X: Well, I just think there are good reasons for increasing the class size a bit.
- 8. Yes, I charge a little more than other dentists. But I feel I give better service. So I think my billing practices are justified.
- 9. Since you want to purchase the house, you should exercise your option before June 30, 2011. Otherwise, you will forfeit the option price.
- ▲ 10. John Montgomery has been the Eastern Baseball League's best closer this season. Unfortunately, when a closer fails, as Montgomery did last night, there's usually not much chance to recover. Draw your own conclusion.

Determine which of the following passages contain arguments. For any that do, identify the argument's conclusion. Remember: an argument occurs when one or more claims (the premises) are offered as a reason for accepting the other claim (the conclusion). There aren't hard-and-fast rules for identifying arguments, so you'll have to read closely and think carefully about some of these.

Exercise 1-6

- ▲ 1. The Directory of Intentional Communities lists more than 200 groups across the country organized around a variety of purposes, including environmentally aware living.
- 2. Carl would like to help out, but he won't be in town. We'll have to find someone else who owns a truck.
- 3. In 1976, Washington, D.C., passed an ordinance prohibiting private ownership of firearms. Since then, Washington's murder rate has shot up 121 percent. Bans on firearms are clearly counterproductive.
- ▲ 4. Computers will never be able to converse intelligently through speech. A simple example proves this. The sentences "How do you recognize speech?" and "How do you wreck a nice beach?" have different meanings, but they sound similar enough that a computer could not distinguish between the two.
- 5. Recent surveys for the National Science Foundation report that two of three adult Americans believe that alien spaceships account for UFO reports. It therefore seems likely that several million Americans may have been predisposed to accept the report on NBC's *Unsolved Mysteries* that the U.S. military recovered a UFO with alien markings.
- 6. "Like short-term memory, long-term memory retains information that is encoded in terms of sense modality and in terms of links with information that was learned earlier (that is, meaning)."

—Neil R. Carlson

- ▲ 7. Fears that chemicals in teething rings and soft plastic toys may cause cancer may be justified. Last week, the Consumer Product Safety Commission issued a report confirming that low amounts of DEHP, known to cause liver cancer in lab animals, may be absorbed from certain infant products.

- 8. "It may be true that people, not guns, kill people. But people with guns kill more people than people without guns. As long as the number of lethal weapons in the hands of the American people continues to grow, so will the murder rate."

—Susan Mish'alani

- 9. June 1970: A Miami man gets thirty days in the stockade for wearing a flag patch on the seat of his trousers. March 2008: Miami department stores sell boxer trunks made up to look like an American flag. Times have changed.

- ▲ 10. Dockers are still in style, but pleats are out.

■ Think you are welcome?
Think again and think critically.



For each numbered passage, identify which lettered item best states the primary issue discussed in the passage. Be prepared to say why you think your choice is the correct one.

Exercise 1-7

- ▲ 1. Let me tell you why Hank ought not to take that math course. First, it's too hard, and he'll probably flunk it. Second, he's going to spend the whole term in a state of frustration. Third, he'll probably get depressed and do poorly in all the rest of his courses.
 - a. whether Hank ought to take the math course
 - b. whether Hank would flunk the math course
 - c. whether Hank will spend the whole term in a state of frustration
 - d. whether Hank will get depressed and do poorly in all the rest of his courses
- 2. The county has cut the library budget for salaried library workers, and there will not be enough volunteers to make up for the lack of paid workers. Therefore, the library will have to be open fewer hours next year.
 - a. whether the library will have to be open fewer hours next year
 - b. whether there will be enough volunteers to make up for the lack of paid workers
- 3. Pollution of the waters of the Everglades and of Florida Bay is due to multiple causes. These include cattle farming, dairy farming, industry, tourism, and urban development. So it is simply not so that the sugar industry is completely responsible for the pollution of these waters.
 - a. whether pollution of the waters of the Everglades and Florida Bay is due to multiple causes
 - b. whether pollution is caused by cattle farming, dairy farming, industry, tourism, and urban development
 - c. whether the sugar industry is partly responsible for the pollution of these waters
 - d. whether the sugar industry is completely responsible for the pollution of these waters
- ▲ 4. It's clear that the mainstream media have lost interest in classical music. For example, the NBC network used to have its own classical orchestra conducted by Arturo Toscanini, but no such orchestra exists now. One newspaper, the no-longer-existent *Washington Star*, used to have thirteen classical music reviewers; that's more than twice as many as the *New York Times* has now. H. L. Mencken and other columnists used to devote considerable space to classical music; nowadays, you almost never see it mentioned in a major column.
 - a. whether popular taste has turned away from classical music
 - b. whether newspapers are employing fewer writers on classical music
 - c. whether the mainstream media have lost interest in classical music
- 5. This year's National Football League draft lists a large number of quarterbacks among its highest-ranking candidates. Furthermore, quite a number of teams do not have first-class quarterbacks. It's therefore likely that an unusually large number of quarterbacks will be drafted early in this year's draft.

- a. whether teams without first-class quarterbacks will choose quarterbacks in the draft
 - b. whether this year's NFL draft includes a large number of quarterbacks
 - c. whether an unusually large number of quarterbacks will be drafted early in this year's draft
- 6. An animal that will walk out into a rainstorm and stare up at the clouds until water runs into its nostrils and it drowns—well, that's what I call the world's dumbest animal. And that's exactly what young domestic turkeys do.
 - a. whether young domestic turkeys will drown themselves in the rain
 - b. whether any animal is dumb enough to drown itself in the rain
 - c. whether young domestic turkeys are the world's dumbest animal
- ▲ 7. The defeat of the school voucher initiative was a bad thing for the country because now public schools won't have any incentive to clean up their act. Furthermore, the defeat perpetuates the private-school-for-the-rich, public-school-for-the-poor syndrome.
 - a. whether public schools now have any incentive to clean up their act
 - b. whether the defeat of the school voucher initiative was bad for the country
 - c. Two issues are equally stressed in the passage: whether public schools now have any incentive to clean up their act and whether the private-school-for-the-rich, public-school-for-the-poor syndrome will be perpetuated
- 8. From an editorial in a newspaper outside Southern California: "The people in Southern California who lost a fortune in the wildfires last year could have bought insurance that would have covered their houses and practically everything in them. And anybody with any foresight would have made sure there were no brush and no trees near the houses so that there would be a buffer zone between the house and any fire, as the Forest Service recommends. Finally, anybody living in a fire danger zone ought to know enough to have a fireproof or fire-resistant roof on the house. So, you see, most of the losses those people suffered were simply their own fault."
 - a. whether fire victims could have done anything to prevent their losses
 - b. whether insurance, fire buffer zones, and fire-resistant roofs could have prevented much of the loss
 - c. whether the losses people suffered in the fires were their own fault
- 9. "Whatever we believe, we think agreeable to reason, and, on that account, yield our assent to it. Whatever we disbelieve, we think contrary to reason, and, on that account, dissent from it. Reason, therefore, is allowed to be the principle by which our belief and opinions ought to be regulated."

—Thomas Reid, *Essays on the Active Powers of Man*

- a. whether reason is the principle by which our beliefs and opinions ought to be regulated
- b. whether what we believe is agreeable to reason
- c. whether what we disbelieve is contrary to reason
- d. both b and c

- ▲ 10. Most people you find on university faculties are people who are interested in ideas. And the most interesting ideas are usually new ideas. So most people you find on university faculties are interested in new ideas. Therefore, you are not going to find many conservatives on university faculties, because conservatives are not usually interested in new ideas.
- whether conservatives are interested in new ideas
 - whether you'll find many conservatives on university faculties
 - whether people on university faculties are interested more in new ideas than in other ideas
 - whether most people are correct

COGNITIVE BIASES

Were we entirely rational, our conclusions would be grounded in logic and based on evidence objectively weighed. Unfortunately, belief formation is also affected by unconscious features of human psychology. Psychologists refer to these features, some of which are unexpected and surprising, as cognitive biases. Cognitive biases skew our apprehension of reality and interfere with our ability to think clearly, process information accurately, and reason objectively.

For example, we tend to evaluate an argument based on whether we agree with it rather than on the criteria of logic. Is the following specimen good reasoning?

All dogs are animals.
Some animals are German Shepherds.
Therefore some dogs are German Shepherds.

It isn't. You might as well conclude some dogs are cats. After all, all dogs are animals and some animals are cats. If it took you a moment to see that the first argument is illogical, it's because its conclusion is something you know is true.

The tendency to evaluate reasoning by how believable its conclusion seems is known as **belief bias**. Like other cognitive biases, belief bias affects us unconsciously. As you can see from the example, belief bias may detract from our ability to think and reason clearly. Unfortunately, this kind of bias may be even more pronounced when we evaluate extended pieces of persuasion, in which underlying arguments are overlaid with rhetorical flourishes. An editorial favoring gun control, for example, or taking a stand on illegal immigration may appear especially well argued if its conclusion accords with something we strongly believe.

■ When Glen Beck evaluates his and others' reasoning he is thinking critically, and when you evaluate his reasoning you are thinking critically.



Some cognitive biases involve **heuristics**, general rules we unconsciously follow in estimating probabilities.* An example is the **availability heuristic**, which involves unconsciously assigning a probability to a type of event on the basis of how often one thinks of events of that type. After watching multiple news reports of an earthquake or an airplane crash or a case of child abuse, thoughts of earthquakes and airplane crashes and child abuse will be in the front of one's mind. Accordingly, one may overestimate their probability. True, if the probability of airplane crashes were to increase, then one might well think about airplane crashes more often; but it does not follow that if one thinks about them more often, their probability has increased.

The availability heuristic may explain how easy it is to make the mistake known as generalizing from anecdote, a logical fallacy we discuss in Chapter 10. Generalizing from anecdote happens when one accepts a sweeping generalization based on a single vivid report. The availability heuristic is also probably related to the **false consensus effect**, which refers to the inclination we may have to assume that our attitudes and those held by people around us are shared by society at large.**

Another source of skewed belief is the **bandwagon effect**, which refers to an unconscious tendency to align one's thinking with that of other people. The bandwagon effect is potentially a powerful source of cognitive distortion. In famous experiments, psychologist Solomon Asch found that what other people say *they* see may actually alter what we think *we* see.† We—the authors—have students take tests and quizzes using smart phones and clickers, with software that instantly displays the opinion of the class in a bar graph projected on a screen. Not infrequently it happens that, if opinion begins to build for one answer, almost everyone switches to that option—even if it is incorrect or illogical.

If you have wondered why consumer products are routinely advertised as best sellers, you now know the answer. Marketers understand the bandwagon effect. They know that getting people to believe that a product is popular generates further sales.

Political propagandists also know we have an unconscious need to align our beliefs with the opinions of other people. Thus, they try to increase support for a measure by asserting that everyone likes it, or—and this is even more effective—by asserting that *nobody* likes whatever the opposition has proposed. “Nobody wants X!” is even more likely to generate support for alternative Y than is “Everyone wants Y!” This is because of **negativity bias**, the tendency people have to weight negative information more heavily than positive information when evaluating things. Negativity bias is hard-wired into us: the brain displays more neural activity in response to negative information than to positive information.†† A corollary to negativity bias from economics is that people generally are more strongly motivated to avoid a loss than to accrue a gain, a bias known as **loss aversion**.

*The field known as “heuristics and biases” was originated by Daniel Kahneman and Amos Tversky.

**See L. Ross, The “False Consensus Effect”: An Egocentric Bias in Social Perception and Attribution Processes, *Journal of Experimental Social Psychology*, 13, 3, 279–301, May 1977.

†A copy of Asch's own summary of his experiments can be found at <http://www.panarchy.org/asch/social.pressure.1955.html>.

††See Tiffany A. Ito, and other authors, “Negative Information Weighs More Heavily on the Brain”; *Journal of Personality and Social Psychology*, 1998, Vol. 75 No. 4, 887–900.

In Depth

Rational Choice?

Critical thinking is aimed at coming to correct conclusions and making wise choices or decisions. We know from everyday experience that desires, fears, personal objectives, and various emotions affect choices. As explained in the text, experimental psychologists have discovered other, more unexpected and surprising, influences on our thinking. Here are three additional examples:

- Social psychologist Dan Ariely found that when people are asked to write down the last two digits of their social security number and then submit mock bids for things like wine and chocolate, those with higher numbers submit higher bids. This is a phenomenon known as “anchoring,” and it has been replicated in a variety of contexts.* When we are induced to think of a high numeral, for example, our thinking is “anchored” in the high-numeral range.
- In a recent experiment, researchers at Yale and Harvard Universities asked subjects to evaluate a job candidate by reading an applicant’s resume, which had been attached to a clipboard. Some of the clipboards weighed $\frac{3}{4}$ pound; the others weighed $4\frac{1}{2}$ pounds. Subjects holding the heavier clipboard rated the applicant as better overall. Evidently a “rational evaluation” of a person’s qualifications is affected by irrelevant physical cues.**
- Amos Tversky and Daniel Kahneman famously found that people will go to more trouble to save money when buying a less expensive item than when buying a much costlier item, even when the savings would be the same.†

We might expect to see real-life manifestations of these phenomena. Paying to use a toilet on an airplane might be more upsetting than having to pay to use one in the terminal. If we were opening a restaurant, we’d not have too many items on our menu. Asking people to estimate whether the percentage of voters unhappy with the president is above or below 80% might yield a higher estimate than would asking them if it is above or below 40%.

*Reported by MIT psychologist Dan Ariely, *Predictably Irrational* (New York: HarperCollins Publishers, 2008).

**Reported by Randolph E. Schmid of the Associated Press, in *The Sacramento Bee*, June 23, 2010.

†See pages 19 and 20 of the book by Dan Ariely mentioned above.

It also should come as no surprise that we find it easier to form negative opinions of people who don’t belong to our club, church, party, nationality, or other group. This is a part of **in-group bias**, another cognitive factor that may color perception and distort judgment. We may well perceive the members of our own group as exhibiting more variety and individuality than the members of this or that out-group, who we may view as indistinguishable from one another and as conforming to stereotypes. We may attribute the achievements of members of our own group to gumption and hard work and our failures to bad luck; whereas we may attribute *their* failures—those of the members of out-groups—to their personal shortcomings, while grudgingly discounting their achievements as mere good luck. The tendency to not appreciate that

others' behavior is as much constrained by events and circumstances as our own would be if we were in their position is known as the **fundamental attribution error**.*

Experiments suggest that little common ground is required for people to forge a group identity. People assigned to a group on the basis of something as trivial as a coin flip will immediately begin exhibiting in-group and attribution biases.** In a famous experiment in social psychology, the Robber's Cave Experiment, twenty-two 12-year-old boys who previously hadn't known each other were divided arbitrarily into two groups. When the two groups were forced to compete, the members of each group promptly exhibited hostility and other indicators of in-group bias toward the members of the other group.†

People make snap judgments about who is and who is not a member of their group. Students transferring into a new high school are branded almost instantly. Once, one of the authors and his wife were walking their dogs, not necessarily the world's best-behaved pooches, along a street in Carmel, an affluent town on California's central coast. Stopping to tie his shoe, the author fell a few paces behind his wife, who continued on with the dogs. A well-dressed woman walking by glanced disapprovingly at the cavorting canines, perhaps because they were not pedigreed poodles, and thrust her chin in the air. An instant later she passed the author, with her chin still high. "Did you see that woman?" she asked indignantly, unaware that the woman in question was the wife of the man she was addressing. "You can tell she isn't from around here," she sniffed. She seemed to think the author, unlike his wife, was one of the in-group from her neck of the woods, though the only thing she had to base this on was that he didn't have a dog.

In a series of famous experiments in the 1960s regarding **obedience to authority**, psychologist Stanley Milgram discovered that a frightening percentage of ordinary men and women will administer apparently lethal electrical shocks to innocent people, when told to do so by an experimenter in a white coat.†† The findings are subject to multiple interpretations and explanations, but the tendency of humans to obey authority simply for the sake of doing so hardly needs experimental confirmation. We read recently about a fake French TV game show that was much like the Milgram experiment. The host instructed contestants to deliver electrical shocks to an individual who was presented as another contestant, but who was really an actor. The contestants complied—right up to the point they had reason to think they might have killed the man. Whether they were simply blindly following the instructions of an authority or were responding to some other impulse isn't completely clear, but it is impossible to think that good judgment or rational thought would lead them to such excess.§

*E. E. Jones and V. A. Harris, "The Attribution of Attitudes," *Journal of Experimental Social Psychology*, 1967, 3, 1–24. For in-group biases, see Henri Tajfel, *Human Groups and Social Categories*, (Cambridge, England: Cambridge University Press, 1981).

**See the work cited above by Henri Tajfel.

†A report of the Robber's Cave experiment is available online at <http://psychclassics.yorku.ca/Sherif/>.

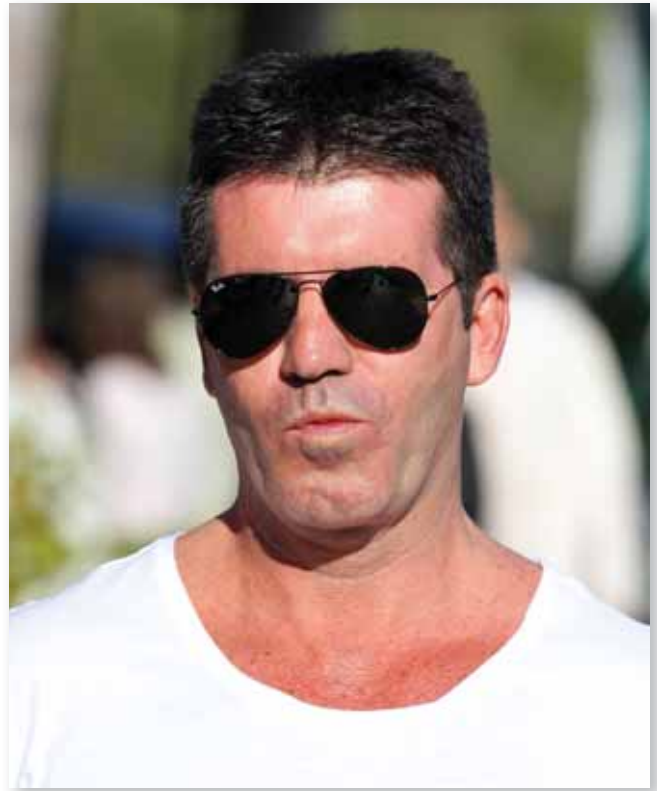
††Milgram discusses his experiments in *Obedience to Authority: An Experimental View* (New York: HarperCollins, 1974).

§Jamey Keaton, Associated Press. Reported in *The Sacramento Bee*, Thursday, March 18, 2010. Did the subjects suspect the shocks weren't real? Their statements afterward don't rule out the possibility but certainly seem to suggest they believed they truly were administering painful electrical shocks to the actor.

Yet another possible source of psychological distortion is the **overconfidence effect**, one of several self-deception biases that may be found in a variety of contexts.* If a person estimates the percentage of his or her correct answers on a subject, the estimate will likely err on the high side—at least if the questions are difficult or the subject matter is unfamiliar.** Perhaps some manifestation of the overconfidence effect explains why, in the early stages of the *American Idol* competition, many contestants appear totally convinced they will be crowned the next American Idol—and are speechless when the judges inform them they cannot so much as carry a tune.†

Closely related to the overconfidence effect is the **better-than-average illusion**. The illusion crops up when most of a group rate themselves as better than most of the group relative to some desirable characteristic, such as resourcefulness or driving ability. The classic illustration is the 1976 survey of SAT takers, in which well over fifty percent of the respondents rated themselves as better than fifty percent of other SAT takers with respect to such qualities as leadership ability.†† The same effect has been observed when people estimate how their intelligence, memory, or job performance stacks up with the intelligence, memory, and job performances of other members of their profession or workplace. In our own informal surveys, more than eighty percent of our students rate themselves in the top ten percent of their class with respect to their ability to think critically.

Unfortunately, evidence indicates that even when they are informed about the better-than-average illusion, people may *still* rate themselves as better than most in their ability to not be subject to it.§



■ Does Simon Cowell dress well? The issue is *subjective*, or, as some people say, “a matter of opinion.”

*However, a universal tendency among humans to irrationally exaggerate their own competencies hasn't been established. For an online quiz purportedly showing the overconfidence effect see: <http://www.tim-richardson.net/joomla15/finance-articles-profmenu-70/73-over-confidence-test.html>.

**See Sarah Lichtenstein and other authors, “Calibration of Probabilities: The State of the Art to 1980,” in Daniel Kahneman, Paul Slovic, and Amos Tversky. *Judgment Under Uncertainty: Heuristics and Biases*. (Cambridge, England: Cambridge University Press, Cambridge, 1982), pp. 306–334.

†This possibility was proposed by Gad Saad, *Psychology Today*, <http://www.psychologytoday.com/blog/homo-consumericus/200901/self-deception-american-idol-is-it-adaptive>.

††See Mark D. Alicke and other authors in “The Better-Than-Average Effect,” in Mark D. Alicke and others, *The Self in Social Judgment*. Studies in Self and Identity, Psychology Press, 2005, pp. 85–106. The better-than-average illusion is sometimes called the Lake Wobegone effect, in reference to Garrison Keillor's story about the fictitious Minnesota town “where all the children are above average.”

§<http://weblamp.princeton.edu/~psych/FACULTY/Articles/Pronin/The%20Bias%20Blind.PDF>. The better-than-average bias has not been found to hold for all positive traits. In some things, people underestimate their abilities. The moral is that for many abilities, we are probably not the best judges of how we compare to others. And this includes our ability to avoid being subject to biasing influences.

That beliefs are generated as much by psychology and impulse as by evidence should come as no surprise. The new car that was well beyond our means yesterday seems entirely affordable today—though our finances haven't changed. If someone invited us to The Olive Garden we'd expect decent fare; but if they suggested we try dining at, say, The Lung Garden, we'd hesitate—even if we were told the food is identical. People will go out of their way to save \$10 when buying a \$25 pen, but won't do the same to save the same amount buying a \$500 suit.* Programmed into our psyches are features that distort our perception, color our judgment, and impair our ability to think objectively.

The best defense? Making it a habit to think critically.

The following exercises may help you understand the cognitive biases discussed in the previous section.

Exercise 1-8

The following questions are for thought or discussion. Your instructor may ask you to write a brief essay addressing one or more of them.

- ▲ 1. Which of the cognitive biases discussed in this section do you think you might be most subject to? Why?
- 2. Can you think of other psychological tendencies you have that might interfere with the objectivity of your thinking? For example, are you unusually generous or selfish?
- 3. Read again about Jamela, on page 8. Is there a psychological factor discussed in this section that is especially likely to bias her thinking about getting Priglet? What could she do about it?
- ▲ 4. If you were in Jamela's position, is there anything that might especially bias your thinking about whether to get a dog? What could you do about it?
- 5. What might you do to compensate for a bias factor you listed in questions 1 or 2 in this exercise?

Exercise 1-9

For each of the following attributes, rate yourself in comparison with other students in your class. Are you

- a. in the top 10%?
- b. in the top 50% to 89%?
- c. in the lower 25% to 49%?
- d. below the top 75%?
- ability to think clearly
- ability to think logically
- ability to think critically
- ability to be objective
- ability to think creatively

*Daniel Ariely, *Predictably Irrational* (New York: HarperCollins Publishers, 2008), pp. 19–20.

- ability to read with comprehension
- ability to spot political bias in the evening news
- IQ

If you answered (a) or (b) about one of the preceding abilities, would you change your mind if you learned that most of the class also answered (a) or (b) about that ability? Why or why not?

Select one of the following claims you are inclined to strongly agree or disagree with. Then produce the best argument you can think of for the opposing side. When you are finished, ask someone to read your argument and tell you honestly whether he or she thinks you have been fair and objective.

Exercise 1-10

- "There is (is not) a God."
- "Illegal immigrants should (should not) be eligible for health-care benefits."
- "Handgun owners should (should not) be required to register each handgun they own."
- "The words 'under God' should (should not) be removed from the Pledge of Allegiance."
- "Sex education should (should not) be taught in public schools."

TRUTH AND KNOWLEDGE

At the end of the day, when we are ready to turn out the lights and go to bed, we want the conclusions we have reached through painstaking critical thinking to be *true*—and we want to *know* they are true. However, as simple as it may seem when we think of them casually, the concepts of truth and knowledge have a long and contentious history. Through the years, many competing theories have been offered to account for their real nature, but fortunately for you, we can tell you what you need to know for this discussion without getting too deeply into those controversies.

As for truth, all you really need to understand here is that a legitimate belief or claim—that is, one that makes sense—is either true or false in the normal, commonsense way. Truth and falsity are properties of propositional entities like beliefs, opinions, judgments, statements, claims, and the like. As mentioned previously, when any of those entities is objective, whether it is true or false does not depend on whether we think it is true or false.

You can assert a claim's truth in a number of ways. In normal conversation, we'd take each of the following as making the same statement:

- A book is on the table.
- It is true a book is on the table.
- It is a fact a book is on the table.
- Yes, a book is on the table.

The concept of knowledge is another that philosophers have contested at a deep, theoretical level despite a general agreement that in everyday life, we understand well enough what we mean when we say we know something.

Ordinarily, you are entitled to say you know a book is on the table, provided that (1) you believe a book is on the table, (2) you have justification for this belief in the form of an argument beyond a reasonable doubt that a book is on the table, and (3) you have no reason to suspect you are mistaken, such as that you haven't slept for several nights or have recently taken hallucinogenic drugs. Skeptics may say it is impossible to know anything, though one wonders how they know that. Presumably, they'd have to say they're just guessing.

Ideally we would always make claims to knowledge in accordance with the three criteria just listed, a habit that would be endorsed by the nineteenth-century mathematician W. K. Clifford, who famously said, "It is wrong always, everywhere, and for anyone, to believe anything upon insufficient evidence."

WHAT CRITICAL THINKING CAN AND CAN'T DO

As we use the term in this book, "critical thinking" is not synonymous with "good thinking," "hard thinking," "clear thinking," "constructing arguments," "problem solving," or "thinking outside the box." Critical thinking kicks in *after* you have done these and other kinds of thinking. It's what you do when you think about thinking, specifically, when you evaluate the thinking you or someone else uses in arriving at a conclusion about something. Unfortunately, critical thinking *won't* necessarily tell you whether you should get a dog or who to support for president, or whether there is global warming or why your car won't start. It can, however, help you spot a bad reason for getting a dog or voting for someone, or for thinking there is or isn't global warming or for this or that explanation of why your car won't start. Please notice we say it *can* do that, not that it *will*. In the end, reasoning may yield to self-interest, wishful thinking, desire for acceptance, or other temptations; and we may find it difficult to free our thinking from various cognitive biases, distortions, or blind spots. Just remember, reasoning that doesn't measure up to the standards set forth in this book is not worthy of acceptance. Reading the book thoughtfully, doing the exercises, and applying what you learn will be a good first step toward avoiding these problems.

A WORD ABOUT THE EXERCISES

To get good at tennis, golf, playing a musical instrument, or most other skills, you have to practice, practice, and practice some more. It's the same way with critical thinking, and that's why we provide so many exercises. For some exercises in this book, there is no such thing as only one correct answer, just as there is no such thing as only one correct way to serve a tennis ball. Some answers, however—just like tennis serves—are better than others, and that is where your instructor comes in. In many exercises, answers you give that are different from your instructor's are not necessarily incorrect. Still, your instructor's answers will be well thought out, reliable, and worth your attention. We recommend taking advantage of his or her experience to improve your ability to think critically.

By the way, if you did the exercises you've already come across, you will have noticed that the answers to the questions marked with a triangle are found in the answer section at the back of the book. You'll also find an occasional comment, tip, suggestion, joke, or buried treasure map back there.

Recap

We think critically when we evaluate the reasoning we (and others) use in coming to a conclusion about something. As human beings, we are an imperfect lot: we sometimes act impulsively, and even when we don't, we make important decisions when we are tired or angry or depressed or otherwise influenced by emotion or self-interest. A theme of this chapter has been that our thinking can also be contoured by unexpected psychological parameters, some of which are beyond consciousness. Should we then abandon critical thinking or view it as a futile exercise? On the contrary. Precisely because we are not purely rational beings who always think clearly and weigh considerations objectively, we should evaluate our reasoning against the criteria examined in this book.

Other ideas we explored in this chapter include the following:

- **Claim:** When a belief (judgment, opinion) is asserted in a declarative sentence, the result is a claim or statement.
- **Objective claim vs. subjective claim:** An objective claim is true or false regardless of whether people think it is true or false. Claims that lack this property are said to be subjective.
- **"Fact vs. opinion":** People sometimes refer to true objective claims as "facts," and use the word "opinion" to designate any claim that is subjective.
- **"Factual claim":** An objective claim. Saying that a claim is "factual" is not the same as saying it is true. A factual claim is simply a claim whose truth does not depend on our thinking it is true.
- **Moral subjectivism:** Moral subjectivism is the idea that all judgments and claims that ascribe a moral property to something are subjective. "There is nothing either good or bad but that thinking makes it so."
- **Issue:** A question.
- **Argument:** An argument consists of two parts—one part of which (the premise or premises) is intended to provide a reason for accepting the other part (the conclusion).
- **"Argument":** People sometimes use this word to refer to an argument's premise.
- **Arguments and issues:** The conclusion of an argument states a position on the issue under consideration.
- **Cognitive bias:** a feature of human psychology that skews belief formation. The ones discussed in this chapter include the following:
 - **Belief bias:** Evaluating reasoning by how believable its conclusion is.
 - **Availability heuristic:** Assigning a probability to an event based on how easily or frequently it is thought of.
 - **False consensus effect:** Assuming our opinions and those held by people around us are shared by society at large.
 - **Bandwagon effect:** The tendency to align our beliefs with those of other people.
 - **Negativity bias:** Attaching more weight to negative information than to positive information.

- **Loss aversion:** Being more strongly motivated to avoid a loss than to accrue a gain.
- **In-group bias:** A set of cognitive biases that make us view people who belong to our group differently from people who don't.
- **Fundamental attribution error:** Understanding the behavior of others differently from how we understand our own behavior or that of other people in our group.
- **Obedience to authority:** A tendency to comply with instructions from an authority.
- **Overconfidence effect:** A cognitive bias that leads us to overestimate what percentage of our answers on a subject are correct.
- **Better-than-average illusion:** A self-deception cognitive bias that leads us to overestimate our own abilities relative to those of others.
- **Truth:** The question, What is Truth, has no universally accepted answer, and we don't try to answer it here. In this book we use the concept in a commonsense way: A claim is true if it is free from error.
- **Knowledge:** For our purposes, if you believe something is so, have an argument that is beyond a reasonable doubt that it is so, and have no reason to think you are mistaken, you can claim you know it is so.

Additional Exercises

Here are more exercises to help you identify objective and subjective claims, recognize arguments, identify issues, and tell when two people are addressing the same issue. In addition, you will find writing exercises, as well as an exercise that will give you practice in identifying the purpose of a claim.

Exercise 1-11

Determine which of the following passages contain arguments. For any that do, identify the argument's conclusion. Remember: an argument occurs when one or more claims (the premises) are offered as a reason for accepting the other claim (the conclusion). There aren't hard-and-fast rules for identifying arguments, so you'll have to read closely and think carefully about some of these. We're not asking you to evaluate the argument—only to determine whether one is being made.

- ▲ 1. There is trouble in the Middle East, there is a recession under way at home, and all economic indicators are trending downward. It seems likely, then, that the only way the stock market can go is down.
- 2. Lucy is too short to reach the bottom of the sign.
- 3. "Can it be established that genetic humanity is sufficient for moral humanity? I think there are very good reasons for not defining the moral community in this way."

—Mary Anne Warren

- ▲ 4. Pornography often depicts women as servants or slaves or as otherwise inferior to men. In light of that, it seems reasonable to expect to find more women than men who are upset by pornography.

5. "My folks, who were Russian immigrants, loved the chance to vote. That's probably why I decided that I was going to vote whenever I got the chance. I'm not sure [whom I'll vote for], but I am going to vote. And I don't understand people who don't."

—Mike Wallace

6. "Dynamism is a function of change. On some campuses, change is effected through nonviolent or even violent means. Although we too have had our demonstrations, change here is usually a product of discussion in the decision-making process."

—Hillary Clinton, while a student at Wellesley College in the 1960s

- ▲ 7. What does it take to make a good soap opera? You need good guys and bad guys, sex, babies, passion, infidelity, jealousy, hatred, and suspense. And it must all be believable. Believability is the key.
8. We need to make clear that sexual preference, whether chosen or genetically determined, is a private matter. It has nothing to do with an individual's ability to make a positive contribution to society.
9. The report card on charter schools is mixed. Some show better results than public schools, others show worse. Charter schools have this advantage when it comes to test scores: the kids attending them are more apt to have involved parents.
- ▲ 10. *American Idol* may not be having its best season, but when you remember whose careers were launched by *AI*, you know it is the best talent show on TV.

Exercise 1-12

For each numbered passage in this exercise, identify which lettered item best states the primary issue discussed in the passage. Be prepared to say why you think your choice is the correct one.

- ▲ 1. In pre-civil war Spain, the influence of the Catholic Church must have been much stronger on women than on men. You can determine this by looking at the number of religious communities, such as monasteries, nunneries, and so forth. A total of about 5,000 such communities existed in 1931; 4,000 of them were female, whereas only 1,000 of them were male. This proves my point about the Church's influence on the sexes.
- whether the Catholic Church's influence was greater on women than on men in pre-civil war Spain
 - whether the speaker's statistics really prove his point about the Church's influence
 - whether the figures about religious communities really have anything to do with the overall influence of the Catholic Church in Spain
2. The TV show *The Sopranos* might have been a pretty good series without the profanity that occurred all the way through it. But without the profanity, it would not have been believable. Those people just talk that way. If you have them speaking Shakespearean English or middle-class suburban English, then nobody is going to pay any attention to the message because nobody will see it as realistic. It's true, of course, that like many

other programs with some offensive feature—whether it’s bad language, sex, or whatever—it will never appeal to the squeamish.

- a. whether movies with offensive features can appeal to the squeamish
- b. whether *The Sopranos* would have been an entertaining series without the bad language
- c. whether *The Sopranos* would have been believable without the bad language
- d. whether believable programs must always have an offensive feature of one kind or another

3. “From information gathered recently, it has become clear that the single biggest environmental problem in Russia—many times bigger than anything we have to contend with in the United States—is radioactive pollution from nuclear energy plants and nuclear weapons testing and production. Soviet Communist leaders seemed to believe they could do anything to hasten the industrialization process and compete with Western countries and that the land and natural resources they controlled were vast enough to suffer any abuse without serious consequence. The arrogance of the Communist leaders produced a burden of misery and death that fell on the people of the region, and the scale of that burden only recently became clear. Nuclear waste was dumped into rivers from which downstream villages drew their drinking water; the landscape is dotted with nuclear dumps that now threaten to leak into the environment; and the seas around Russia are littered with decaying hulks of nuclear submarines and rusting metal containers with tens of millions of tons of nuclear waste. The result has been radiation poisoning and its awful effects on a grand scale.

“A science advisor to former Russian president Boris Yeltsin said, ‘The way we have dealt with the whole issue of nuclear power, and particularly the problem of nuclear waste, was irresponsible and immoral.’ ”

—Adapted from the *Washington Post*

- a. whether communism failed to protect people from nuclear contamination as well as capitalism did
- b. whether nuclear waste problems in Russia are much worse than had been realized until just recently
- c. whether Soviet leaders made large-scale sacrifice of the lives and health of their people in their nuclear competition with the West
- d. whether communism, in the long run, is a much worse system than capitalism when it comes to protecting the population from harm

- ▲ 4. “The United States puts a greater percentage of its population in prison than any other developed country in the world. We persist in locking more and more people up despite the obvious fact that it doesn’t work. Even as we build more prisons and stuff them ever more tightly, the crime rate goes up and up. But we respond, ‘Since it isn’t working, let’s do more of it!’ It’s about time we learned that fighting criminals is not the same thing as fighting crime.”

—Richard Parker, radio commentary on CalNet, California Public Radio

- a. whether we build more prisons than any other country
- b. whether we imprison more people than do other countries

- c. whether reliance on imprisonment is an effective method of reducing crime
 - d. whether attacking the sources of crime (poverty, lack of education, and so on) will reduce crime more than just imprisoning people who commit crimes
 - e. none of the above
5. In Miami-Dade County, Florida, schools superintendent Rudy Crew was inundated with complaints after a police officer used a stun gun on a six-year-old student. As a result, Crew asked the Miami-Dade police to ban the use of stun guns on elementary school children. Crew did the right thing. More than 100 deaths have been linked to tasers.
- a. whether a police officer used a stun gun on a six-year-old student
 - b. whether the superintendent did the right thing by asking the police to ban the use of stun guns on elementary school children
 - c. whether 100 deaths have been linked to tasers
 - d. whether the fact that 100 deaths have been linked to tasers shows that the superintendent did the right thing when he asked the police not to use tasers on children
6. Letting your children surf the Net is like dropping them off downtown to spend the day doing whatever they want. They'll get in trouble.
- a. whether letting your children off downtown to spend the day doing whatever they want will lead them into trouble
 - b. whether letting your children surf the Net will lead them into trouble
 - c. whether restrictions should be placed on children's activities
- ▲ 7. The winner of this year's spelling bee is a straight-A student whose favorite subject is science, which isn't surprising, since students interested in science learn to pay attention to details.
- a. whether the winner of this year's spelling bee is a straight-A student
 - b. whether science students learn to pay attention to detail
 - c. whether learning science will improve a student's ability to spell
 - d. whether learning science teaches a student to pay attention to details
 - e. none of the above
8. Illinois state employees, both uniformed and non-uniformed, have been loyally, faithfully, honorably, and patiently serving the state without a contract or cost-of-living pay increase for years, despite the fact that legislators and the governor have accepted hefty pay increases. All public employee unions should launch a signature-gathering initiative to place on the ballot a proposition that the Illinois constitution be amended to provide for compulsory binding arbitration for all uniformed and non-uniformed public employees, under the supervision of the state supreme court.
- a. whether Illinois state employees have been loyally, faithfully, honorably, and patiently serving the state without a contract or cost-of-living pay increase for years
 - b. whether public employee unions should launch a signature-gathering initiative to place on the ballot a proposition that the Illinois constitution be amended to provide for compulsory binding arbitration for all uniformed and non-uniformed public employees, under the supervision of the Illinois Supreme Court
 - c. neither of the above

9. In 2007, the Dominican Republic banned the sale of two brands of Chinese toothpaste because they contained a toxic chemical responsible for dozens of poisoning deaths in Panama. The company that exported the toothpaste, the Danyang Household Chemical Company, defended its product. "Toothpaste is not something you'd swallow, but spit out, and so it's totally different from something you would eat," one company manager said. The company manager was taking a position on which issue?
 - a. whether the Danyang Household Chemical Company included toxic chemicals in its toothpaste
 - b. whether toothpaste should be eaten
 - c. whether the Danyang Household Chemical Company did anything wrong by exporting its toothpaste
 - d. whether China should have better product safety controls
- ▲ 10. YOU: So, what do you think of the governor?
 YOUR FRIEND: Not much, actually.
 YOU: What do you mean? Don't you think she's been pretty good?
 YOUR FRIEND: Are you serious?
 YOU: Well, yes. I think she's been doing a fine job.
 YOUR FRIEND: Oh, come on. Weren't you complaining about her just a few days ago?
 - a. whether your friend thinks the governor has been a good governor
 - b. whether you think the governor has been a good governor
 - c. whether the governor has been a good governor
 - d. whether you have a good argument for thinking the governor has been a good governor

Exercise 1-13

On what issue is the speaker taking a position in each of the following?

- ▲ 1. Police brutality does not happen very often. Otherwise, it would not make headlines when it does happen.
2. We have little choice but to concentrate our crime-fighting efforts on enforcement because we don't have any idea what to do about the underlying causes of crime.
3. A lot of people think the gender of a Supreme Court justice doesn't make any difference. But with three women on the bench, cases dealing with women's issues are being handled differently.
- ▲ 4. "The point is that the existence of an independent world explains our experiences better than any known alternative. We thus have good reason to believe that the world—which seems independent of our minds—really is essentially independent of our minds."

—Theodore W. Schick, Jr., and Lewis Vaughn,
How to Think About Weird Things
5. Sure, some of the hot-doggers get good grades in Professor Bubacz's class. But my guess is that, if Algernon takes it, all it'll get him is flunked out!
6. It is dumb to claim that sales taxes hit poor people harder than rich people. After all, the more money you have, the more you spend; and

the more you spend, the more sales taxes you pay. So people with more money are always going to be paying more in sales tax than poor people.

- ▲ 7. If you're going to buy a synthesizer, you might as well also sign up for lessons on how to use the thing. After all, no synthesizer ever worked for its owner until he or she learned how to make it work.
- 8. Intravenous drug use with nonsterile needles has become one of the leading causes of the spread of AIDS. Many states passed legislation allowing officials to distribute clean needles in an effort to combat this method of infection. But in eleven states, including some of the most populous, possession of hypodermic syringes without a prescription is illegal. The laws in these foot-dragging states have to be changed if we ever hope to bring this awful epidemic to an end.
- 9. The best way to avoid error—that is, belief in something false—is to suspend judgment about everything except what is absolutely certain. Because error usually leads to trouble, suspending judgment is usually the right thing to do.
- ▲ 10. "[Readers] may learn something about their own relationship to the earth from a people who were true conservationists. The Indians knew that life was equated with the earth and its resources, that America was a paradise, and they could not comprehend why the intruders from the East were determined to destroy all that was Indian as well as America itself."

—Dee Brown, *Bury My Heart at Wounded Knee*

Exercise 1-14

Is the second person addressing the issue raised by the first person?

Example

ELMOP: Toilet paper looks better unwinding from the back of the spool.

MARWOOF: Get real! That is so stupid! It should unwind the other way.

Analysis

Marwoof addresses the issue raised by Elmop.

- ▲ 1. MR.: Next weekend, we go on standard time again. We have to set the clocks ahead.
MRS.: It isn't next weekend; it's the weekend after. And you set the clocks back an hour.
- 2. MOORE: The administration's latest Afghanistan proposal may just make matters worse.
PARKER: Yeah, right. You're just saying that 'cause you don't like Obama.
- 3. SHE: You don't give me enough help around the house. Why, you hardly ever do anything!
HE: What??? I mowed the lawn on Saturday, and I washed both of the cars on Sunday. What's more, I clean up after dinner almost every night, and

I hauled all that garden stuff to the dump. How can you say I don't do anything?

SHE: Well, you sure don't want to hear about what I do! I do a lot more than that!

- ▲ 4. HEEDLESS: When people complain about what we're doing in Afghanistan, they just encourage terrorists to think Americans won't fight back. People who complain like that ought to just shut up.
CAUTIOUS: I disagree. Those people are reminding everyone that it isn't in our best interest to get involved in extended wars abroad.
- 5. MR. RJ: If you ask me, there are too many casinos around here already. We don't need more.
MR. JR: Yeah? Well that's a strange idea coming from you; you play the lottery all the time.
- 6. JOE FITNESS: Whoa, look at that! The chain on my bike is starting to jump around! If I don't fix it, it'll stop working.
COUCH POTATO: What you need is to stop worrying about it. You get too much exercise as it is.
- ▲ 7. YOUNG GUY: Baseball players are much better now than they were forty years ago. They eat better, have better coaching, you name it.
OLD GUY: They aren't better at all. They just seem better because they get more publicity and play with juiced equipment.
- 8. STUDENT ONE: Studying is a waste of time. Half the time, I get better grades if I don't study.
STUDENT TWO: I'd like to hear you say that in front of your parents. . . .
- 9. PHILATELIST: Did you know that U.S. postage stamps are now being printed in Canada?
PATRIOT: Gad, what an outrage! If there is one thing that ought to be made in the United States, it's U.S. postage stamps!
PHILATELIST: Oh, c'mon. If American printing companies can't do the work, let the Canadians have it.
- ▲ 10. FIRST NEIGHBOR: See here, you have no right to make so much noise at night. I have to get up early for work.
SECOND NEIGHBOR: Yeah? Well, you have no right to let your idiot dog run loose all day long.
- 11. STUDY PARTNER ONE: Let's knock off for a while and go get pizza. We'll function better if we eat something.
STUDY PARTNER TWO: Not one of those pizzas you like! I can't stand anchovies.
- 12. FEMALE STUDENT: The Internet is overrated. It takes forever to find something you can actually use in an assignment.
MALE STUDENT: Listen, it takes a lot longer to drive over to the library and find a place to park.
- ▲ 13. CITIZEN ONE: In 2012, it's going to be Mitt Romney for the Republicans and Barack Obama for the Democrats, what do you want to bet?
CITIZEN TWO: I doubt it. Romney has too many enemies. Besides, Republicans love Sarah Palin.
- 14. CULTURALLY CHALLENGED PERSON: A concert! You think I'm going to a concert when I can be home watching football?

CULTURALLY CHALLENGED PERSON'S SPOUSE: Yes, if you want dinner this week.

15. REPUBLICAN: I don't think Obama's budget requests make a lot of sense.
DEMOCRAT: You just can't stand more taxes, can you?

- ▲ 16. MOORE: I've seen the work of both Thomas Brothers and Vernon Construction, and I tell you, Thomas Brothers does a better job.
PARKER: Listen, Thomas Brothers is the highest-priced company in the whole state. If you hire them, you'll pay double for every part of the job.

17. URBANITE: The new requirements will force people off septic tanks and make them hook up to the city sewer. That's the only way we'll ever get the nitrates and other pollutants out of the groundwater.
SUBURBANITE: You call it a requirement, but I call it an outrage! They're going to charge us from five to fifteen thousand dollars each to make the hookups! That's more than anybody can afford!

18. CRITIC: I don't think it's morally proper to sell junk bonds to anybody without emphasizing the risk involved, but it's especially bad to sell them to older people who are investing their entire savings.
ENTREPRENEUR: Oh, come on. There's nothing the matter with making money.

- ▲ 19. ONE HAND: What with the number of handguns and armed robberies these days, it's hard to feel safe in your own home.
THE OTHER HAND: The reason you don't feel safe is you don't have a handgun yourself. Criminals would rather hit a house where there's no gun than a house where there is one.

20. ONE GUY: Would you look at the price they want for these DVD recording machines? They're making a fortune on every one of these things!
ANOTHER: Don't give me that. I know how big a raise you got last year—you can afford a truckload of those things!

21. FED UP: This city is too cold in the winter, too hot in the summer, and too dangerous all the time. I'll be happier if I exercise my early retirement option and move to my place in Arkansas.
FRIEND: You're nuts. You'll be miserable if you don't work, and if you move, you'll be back in six months.

- ▲ 22. KATIE: Hey, Jennifer, I hate to say this, but if you picked up your stuff once in a while, this place would look better.
JENNIFER: Hey, you leave things lying around, too. You and your stupid boyfriend.

23. DEZRA: What are you thinking, mowing the lawn in your bare feet? That's totally unsafe.
KEN: Like you never did anything you could get hurt doing?

24. YAO: Nice thing about an iMAC. It never gets viruses.
MAO: Of course you would say that; you own one.

- ▲ 25. INTERVIEWER: Secretary Clinton, how do you respond when your fellow Democrats criticize you for not trying to get us out of Afghanistan?
SENATOR CLINTON: You know, I think we Democrats have to stop talking about each other. This has never been our war, and we should not forget that.

Exercise 1-15

On the basis of a concept or distinction discussed in this chapter, divide the following claims into two groups, and identify the concept or distinction you used.

- ▲ 1. Buttermilk tastes kind of funny, you know what I mean? Kind of like it's gone bad?
- 2. It's more expensive to take a cruise than to lie around on the beach.
- 3. You should bathe your dog more often.
- ▲ 4. Paris Hilton lied to the judge, plain and simple.
- 5. Hey, don't let your kids wear clothes like that!
- 6. Carol can't hit a high C when she sings.
- ▲ 7. Letterman tells sexist jokes, and he oughta be pulled off the air.
- 8. Seeing that you drive a big, honking Hummer, you shouldn't complain about gas prices.
- 9. The most economical car out this year? That would be the new Volt.
- ▲ 10. I've heard that stuff they put on popcorn can cause lung disease.

Exercise 1-16

Which of the following claims pertain to right/wrong, good/bad, or should/shouldn't?

- ▲ 1. We did the right thing getting rid of Saddam. He was a sadistic tyrant.
- 2. That guy is the smartest person I know.
- 3. Contributing to the Humane Society is a good thing to do.
- ▲ 4. It's high time you starting thinking about somebody other than yourself!
- 5. Your first duty is to your family; after that, to God and country, in that order.
- 6. You know what? I always tip 15%.
- ▲ 7. The FBI and CIA don't share information all that often, at least that's what I've heard.
- 8. You might find the parking less expensive outside.
- 9. Help the guy! If the situation were reversed, he would help you.
- ▲ 10. Hip hop is better than country, any day.
- 11. Rodin was a master sculptor.
- 12. Whatever happened to Susan Boyle? You don't hear about her much any more.
- ▲ 13. If we want to stop the decline in enrollments here at Chaffee, we need to give students skills they can use.

Exercise 1-17

This exercise will give you an opportunity to work with the concepts of argument, conclusion, and critical thinking.

Decide which of the lettered options serve the same kind of purpose as the original remark. Then think critically about your conclusion. Do you have a reason for it? Be ready to state your reasoning in class if called on.

Example

Be careful! This plate is hot.

- a. Watch out. The roads are icy.
- b. Say—why don't you get lost?

Conclusion: The purpose of (a) is most like the purpose of the original remark.

Reason: Both are warnings.

- ▲ 1. I'd expect that zipper to last about a week; it's made of cheap plastic.
 - a. The wrinkles on that dog make me think of an old man.
 - b. Given Sydney's spending habits, I doubt Adolphus will stick with her for long.
- 2. If you recharge your battery, sir, it will be almost as good as new.
 - a. Purchasing one CD at the regular price would entitle you to buy an unlimited number of CDs at only \$4.99.
 - b. I shall now serve dinner, after which you can play if you want.
- 3. To put out a really creative newsletter, you should get in touch with our technology people.
 - a. Do unto others as you would have them do unto you.
 - b. To put an end to this discussion, I'll concede your point.
 - c. You'd better cut down on your smoking if you want to live longer.
- ▲ 4. GE's profits during the first quarter were short of GE's projections. Therefore, we can expect GE stock to fall sharply in the next day or so.
 - a. Senator Craig apparently thought what he did in private was nobody's business but his own.
 - b. The dog is very hot. Probably he would appreciate a drink of water.
 - c. The dog's coat is unusually thick. No wonder he is hot.
- 5. How was my date with your brother? Well . . . he has a great personality.
 - a. How do I like my steak? Well, not dripping blood like this thing you just served me.
 - b. How do I like the dress? Say, did you know that black is more slimming than white?
- 6. The wind is coming up. We'd better head for shore.
 - a. They finally arrived. I guess they will order soon.
 - b. We shouldn't leave yet. We just got here.
- ▲ 7. Good ties are made out of silk. That's why they cost so much.
 - a. Belts are like suspenders. They both keep your pants up.
 - b. Rugby has lots of injuries because rugby players don't wear pads.
- 8. Daphne owns an expensive car. She must be rich.
 - a. This dog has fleas. I'll bet it itches a lot.
 - b. This dog has fleas. That explains why it scratches a lot.

9. Dennis's salary is going up. He just got a promotion.
 - a. Dennis's salary went up after he got a promotion.
 - b. Dennis's salary won't be going up; he didn't get a promotion.
- ▲ 10. Outlawing adult websites may hamper free speech, but pornography must be curbed.
 - a. The grass must be mowed even though it is hot.
 - b. The grass is getting long; time to mow.

Writing Exercises

1. Turn to the "Essays for Analysis" in Appendix 1. Identify and write in your own words the principal issues in the selections identified by your instructor.
2. Do people choose the sex they are attracted to? Write a one-page answer to this question, defending your answer with at least one supporting reason. Take about ten minutes to write your answer. Do not put your name on your paper. When everyone is finished, your instructor will collect the papers and redistribute them to the class. In groups of four or five, read the papers that have been given to your group. Divide the drafts into two batches, those that contain an argument and those that do not. Your instructor will ask each group to read to the class a paper that contains an argument and a paper that does not contain an argument (assuming that each group has at least one of each). The group should be prepared to explain why they feel each paper contains or fails to contain an argument.
3. Using the issues you identified in Exercise 1 for each of the selections, choose a side on one of the issues and write a short paper supporting it.