Critical Thinking

Fifth Edition

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Advanced Reasoning Forum

THE SLEEP OF REASON BEGETS MONSTERS

Critical Thinking

Fifth Edition

THE FUNDAMENTALS

1 Critical Thinking?

2 What Are We Arguing About?

3 What Is a Good Argument?

4 Is That True?

THE STRUCTURE OF ARGUMENTS

AVOIDING BAD ARGUMENTS

14 Generalizing

15 Cause and Effect

Truth-Tables ⎫ available as free downloads at
Aristotelian Logic ⎰ www.AdvancedReasoningForum.org/CT/supplements

Formal Logic—see the companion volume *An Introduction to Formal Logic*
by Richard L. Epstein, also published by ARF.

Cast of Characters
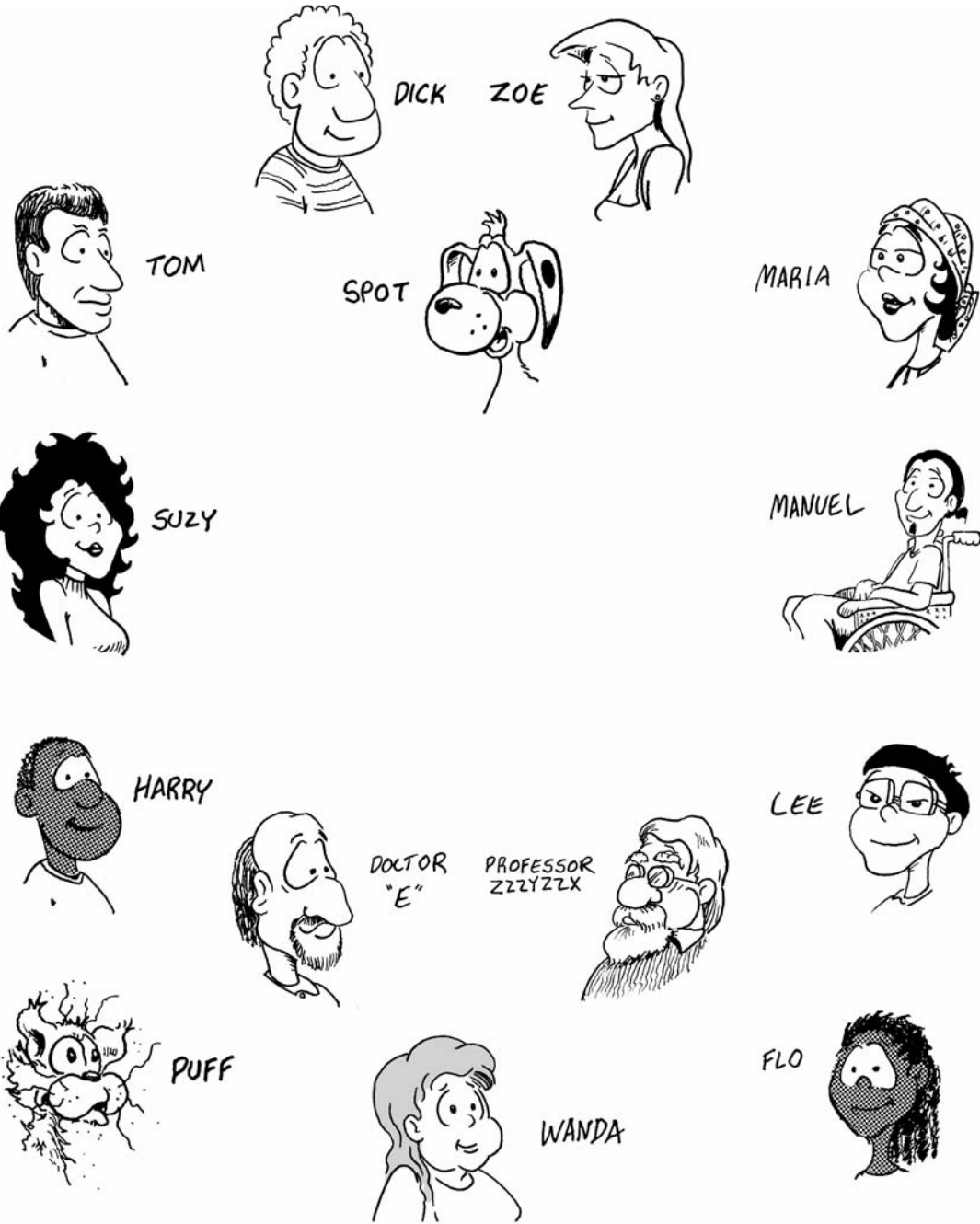
To the Student

Critical thinking will teach you how to see the consequences of what you and others say and do, to write well, and to make decisions. In your studies, in your work, you will go far if you can think clearly and write clearly.

It's all here in the text. There are plenty of examples and lots of exercises to illustrate the ideas and skills you're supposed to master. In the discussion and exchanges in class, your understanding will crystallize. You'll get the most out of those discussions if you've worked through the material first. Read the chapter through once. Get an overview. Mark the passages that are unclear. You need to understand what is said—not all the deep implications of the ideas, not all the subtleties, but the basic definitions.

Once the words make sense and you see the general picture, you need to go back through the chapter paragraph by paragraph, making sure that you understand each part or marking it so you can ask questions in class. Then you're ready to try the exercises.

Many of them will be easy applications of the material you've read. Others will require more thought. And some won't make sense until you talk about them with your classmates and instructor. When you get stuck, look in the back where there are answers to many of them.

By the time you get to class, you should be on the verge of mastering the material. Some discussion, some more examples, a few exercises explained, and you've got it.

Have fun!

To the Instructor

• Rigorous.
  • Fun.
    • One story, from start to finish.
      • Practical.
        • Easy to teach.
          • Great for classroom discussions.

Rigorous Clear and correct definitions and concepts are set out, based on the deep analysis of critical thinking developed by the author in *The Fundamentals of Argument Analysis* and the other volumes in *Essays on Logic as the Art of Reasoning Well*. You won't get lost in a maze of confusion. You won't have to keep correcting the text. This is a text you can rely on.

Fun The ideas and methods are illustrated with cartoons drawn especially for this text. They're memorable and amusing, and the text as a whole is infused with a biting humor that makes students think. Your students, and you, won't get bored.

One whole story There is a vision of how to understand, how to reason, how to teach that unifies the presentation and keeps students moving forward. The chapters build on one another to the end.

Practical More than 400 worked examples and more than 1,000 exercises teach students how to use critical thinking in their studies, in their work, and in their lives.

Easy to teach The Instructor's Manual has all you need to find an easy path to teaching and grading: teaching suggestions for each chapter; answers to all the exercises; handouts for correcting the writing lessons; analyses of the cartoon writing lessons; sample exams; and hundreds more examples that you can use for classroom or exams. You are not alone.

Great for classroom discussions The text is designed to be the basis of classroom discussion so lectures won't be necessary, minimizing the jargon while retaining the ideas. The material is more challenging than in other texts, yet more accessible.

Overview of the material

The Fundamentals (Chapters 1–6) is all one piece. It's the heart of the course. Here and throughout, learning the definitions is emphasized. It's best to go through this in a direct line.

The Structure of Arguments (Chapters 7 and 8) is important. Chapter 7 on compound claims—an informal version of propositional logic—is probably the hardest for most students. There's a temptation to skip it and leave that material for a formal logic course. But some skills in reasoning with conditionals are essential. If you skip this chapter, you'll end up having to explain the valid and invalid forms piecemeal when you deal with longer arguments. It's the same for Chapter 8 on general claims—an informal introduction to quantifiers in reasoning—except that the material is easier for students.

Avoiding Bad Arguments (Chapters 9–11) is fun. Slanters and fallacies give the students motive to look around and find examples from their own lives and from what they read and hear. For that reason, many instructors like to put this material earlier. But if you do, you can only teach a hodgepodge of fallacies that won't connect and won't be retained. Fallacies are placed alongside the good reasoning they mock—for example, mistaking the person for the claim with a discussion of when it's appropriate to accept an unsupported claim. Chapter 11 is a summary and overview. Covering this material here helps students unify the earlier material and gives them some breathing room after the hard work in Chapters 7 and 8.

It's only at the end of this section by working through *Short Arguments for Analysis* that students will begin to feel comfortable with the ideas from the earliest chapters. You can conclude a course for the quarter system here.

Reasoning About Our Experience (Chapters 12–16) covers specific kinds of reasoning: analogies, generalizations, cause and effect, and explanations. Chapter 13 on numerical claims could follow directly after Chapter 4.

Making Decisions places this material most directly in the lives of your students. Chapter 17 on evaluating risk requires students to use all the skills they've developed in the course. Chapter 18 on making decisions is an exhortation and a chance for students to see the importance of this course.

Reasoning in the Sciences is new to this edition. The first two chapters get students used to seeing scientific talk in reasoning. Chapter 3^S explains what experiments are, what it means to say an experiment is reproducible, and how to evaluate experiments. Chapter 4^S shows what can go wrong in an experiment, from lying and self-deception to placebos and positive publication bias. Chapter 5^S draws on all they've learned to explain what models and theories are and how we evaluate them. Chapter 6^S discusses the role of explanations in science, and Chapter 7^S compares science, magic, and religion. Together, these chapters constitute a basic scientific literacy course, one that is needed by all of us as we encounter scientific or pseudoscientific claims and which is crucial background for students beginning the study of any science. No background in any science is assumed.

Exercises in each chapter, in each section, build from routine ones—mostly recalling definitions—to fairly hard ones. There are always easy exercises to help students build their confidence. This method helps them learn how to read, how to pick out their confusions, how to work on their own—in short, it teaches them how to learn. On our website we have the exercise sets formatted in both PDF and RTF as free downloads so your students can answer them on those pages and bring them to class or send them to you online.

Writing Lessons are an integral part of this text. There are enough for courses that require a substantial writing component. The *Essay Writing Lessons* require the student to write an argument for or against a given claim, where the method of argument is tied to the material that's just been presented. In the Instructor's Manual there are suggestions for making the grading of those easy. About midway through the course your students can read the section "Composing Good Arguments" that summarizes the lessons they should learn.

Cartoon Writing Lessons present a situation or a series of actions in a cartoon and require the student to write the best argument for a claim based on what they see. These do more to teach students reasoning than any other work. Students have to distinguish between observation and inference; they have to judge whether a good argument is possible; they have to judge whether the claim is objective or subjective; they have to judge whether a strong argument or a valid argument is called for. These are great for class discussion.

Formal logic is quite a separate subject, important but not clearly applicable to reasoning in daily life beyond what's presented in Chapters 7 and 8. If you want to include more than that in your course, ARF publishes *An Introduction to Formal Logic* that uses the same teaching techniques and is based on the author's extensive research in *Propositional Logics*, *Predicate Logic*, and most recently *The Internal Structure of Predicates and Names*.

New to this edition

• Many new examples and exercises are included in Chapters 1–15.

• Material on explanations has been added. The basics are in Chapter 16 and the use of explanations in science is covered in Chapter 6^S.

• There is a new section of seven chapters on reasoning in the sciences.

• There is now enough material in the text for a two-semester course. Suggested course outlines are given at the beginning of the Instructor's Manual.

> I've tried to steer between the Scylla of saying nonsense
> and the Charybdis of teaching only trivialities. I hope
> you find the journey memorable. The water is deep.

1   Critical Thinking?

A.   Are You Convinced?

Everyone's trying to convince you of something: You should go to bed early. You should drop out of college. You should buy a Ram truck. You should study critical thinking . . . . And you spend a lot of time trying to decide what you should be doing, that is, trying to convince yourself: Should I take out a student loan? Is chocolate bad for my complexion? Should I really date someone who owns a cat?

Are you tired of being conned? Of falling for every pitch? Of making bad decisions? Of fooling yourself? Or of just being confused?

Thinking critically is a defense against a world of too much information and too many people trying to convince us. But it is more. Reasoning is what distinguishes us from beasts. Many of them can see better, can hear better, and are stronger. But they cannot plan, they cannot think through, they cannot discuss in the hopes of understanding better.

An older student was in the spring term of his senior year when he took this course. He was majoring in anthropology and planned to do graduate work in the fall. Late in the term he brought me a fifteen-page paper he'd written for an anthropology class. He said he'd completed it, then he went over it again, analyzing it as we would in class, after each paragraph asking "So?" He found that he couldn't justify his conclusion, so he changed it and cut the paper down to eleven pages. He showed me the professor's comments, which were roughly "Beautifully reasoned, clear. A+." He said it was the first A+ he'd ever gotten. I can't promise that you'll get an A on all your term papers after taking this course. But you'll be able to comprehend better what you're reading and write more clearly and convincingly.

Once in a while I'll tune in to a sports talk show on the radio. All kinds of people call in. Some of them talk nonsense, but more often the comments are clear and well reasoned. The callers know the details, the facts, and make serious projections about what might be the best strategy based on past experience. They comment on what caused a team to win or lose. They reason with great skill and reject bad arguments. I expect that you can too, at least on subjects you consider important. What we hope to do in this course is hone that skill, sharpen your judgment, and show you that the methods of evaluating reasoning apply to much in your life.

In trying to understand how to reason well, we'll also study bad ways to convince, ways we wish to avoid, ways that misuse emotions or rely on deception. You could use that knowledge to become a bad trial lawyer or advertising writer, but I hope you will learn a love of reasoning well, for it is not just ethical to reason well; it is, as we shall see, more effective in the long run. Critical thinking is part of the study of philosophy: the love of wisdom. We might not reach the truth, but we can be searchers, lovers of wisdom, and treat others as if they are too.

B. Claims

We'll be studying the process of convincing. An attempt to convince depends on someone trying to do the convincing and someone who is supposed to be convinced.

> • Someone tries to convince you.
> • You try to convince someone else.
> • You try to convince yourself.

Let's call an attempt to convince an "argument."

But, you say, an argument means someone yelling at someone else. When my mom yells at me and I yell back, that's an argument. Yes, perhaps it is. But so, by our definition, is you and your friend sitting down to talk about your college finances to decide whether you need to get a job. We need a term that will cover our attempts to convince. The word "argument" has become pretty standard.

Still, that isn't right. Suppose the school bully comes up to Flo and says, "Hand over your candy bar." Flo won't. She hits Flo on the head with a stick. Flo gives up her candy bar. Flo's been convinced. But that's no argument.

The kind of attempts to convince we'll be studying here are ones that are or can be put into language. That is, they are a bunch of sentences that we can think about. But what kind of sentences?

When we say an argument is an attempt to convince, what exactly is it we're supposed to be convinced of? To do something? If we are to try to reason using arguments, the point is that something is true. And what is that something? A sentence, for it's sentences that are true or false. And only certain kinds of sentences: not threats, not commands, not questions, not prayers. An attempt to convince, in order to be classified as an argument, should be couched in plain language that is true or false: declarative sentences.

You should already know what a declarative sentence is. For example:

This course is a delight.
The author of this book sure writes well.
Intelligent beings once lived on Mars.
Everyone should brush their teeth at least once every day.
Nobody knows the troubles I've seen.

The following are not declarative sentences:

Shut that door!
How often do I have to tell you to wipe your feet before you
    come into the house?
Dear God, let me be a millionaire instead of a starving student.

Still, not every declarative sentence is true or false: "Green dreams ride donkeys" is a declarative sentence, but it's nonsense. Let's give a name to those sentences that are true or false, that is, that have a ***truth value***.

Claim A *claim* is a declarative sentence used
in such a way that it is true or false, but not both.

We don't have to make a judgment about whether a sentence is true or whether it's false in order to classify it as a claim. We need only judge that it is one or the other. A claim need not be an *assertion*: a sentence put forward as true by someone.

One of the most important steps in trying to understand new ideas or new ways of talking is to look at lots of examples.

Examples Are the following claims?

Example 1 Your instructor for this course is male.
Analysis This is a claim. It's either true or false.

Example 2 Your instructor is short.
Analysis Is this a claim? What does "short" mean? We'll consider problems with vagueness in Chapter 2.

Example 3 Cats are nasty.
Analysis If when you read this you disagreed, then you've accepted it as a claim. You can't disagree unless you think it has a truth value.

Example 4 $2 + 2 = 4$
Analysis This is a claim, though no one is going to disagree with you about it.

Example 5 I wish I could get a job.
Analysis How is this being used? If Maria, who's been trying to get a job for three weeks, says it to herself late at night, then it's not a claim. It's more like a prayer or an extended sigh.

But if Dick's parents are berating him for not getting a job, he might say, "It's not that I'm not trying. I wish I could get a job." That might be true, but it also might be false, so "I wish I could get a job" would be a claim.

Example 6 How can anyone be so dumb as to believe that cats can think?
Analysis This is not a claim; it's a question. But in some contexts we might rewrite it as "Someone must be dumb to think that cats can think" or perhaps "Cats can't think." The process of rewriting and reinterpreting is something we'll consider throughout this course.

Example 7 Never use gasoline to clean a hot stove.
Analysis Instructions and commands are not claims because they're not true or false.

Example 8 Every mollusk can contract myxomatosis.
Analysis If you don't know what these words mean, you shouldn't try to reason with this as a claim. But that doesn't mean you should just dismiss any attempt to convince that uses language you don't understand. A dictionary is an important tool of a good reasoner.

Example 9 Something is rotten in the state of Denmark.
Analysis This is from *Hamlet*. That's fiction and isn't intended to be true or false. This isn't a claim.

C. Arguments

We're trying to define "argument." We said it was an attempt using language to convince someone that a claim is true. The only language we should allow in an argument, then, should be sentences that are true or false.

> ***Arguments***   An *argument* is an attempt to convince someone (possibly yourself) that a particular claim is true by giving one or more other claims as reasons.

The point of an argument is to convince someone that a claim—the **conclusion** —is true. The conclusion is sometimes called the **issue** that's being debated. The reasons offered for why the conclusion is true are called the **premises**.

Critical thinking is evaluating whether we should be convinced that some claim is true or some argument is good, as well as formulating good arguments.

Examples   Are the following arguments?

Example 10
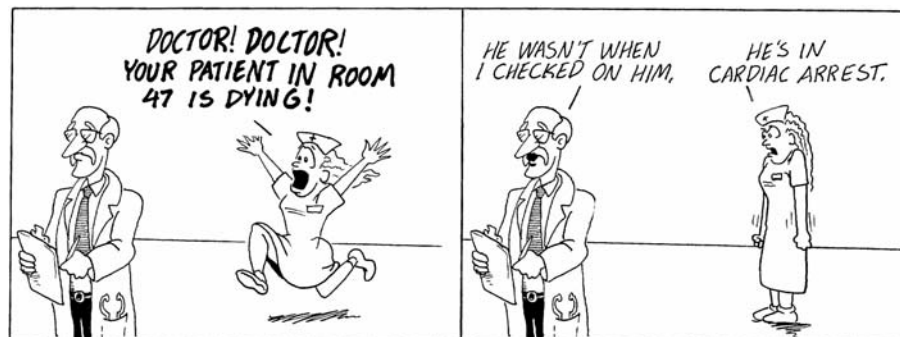
Analysis   The nurse is making an argument. She's trying to convince the doctor that "Your patient in Room 47 is dying" is true. She offers the premise "He's in cardiac arrest." Sounds pretty convincing.

Example 11
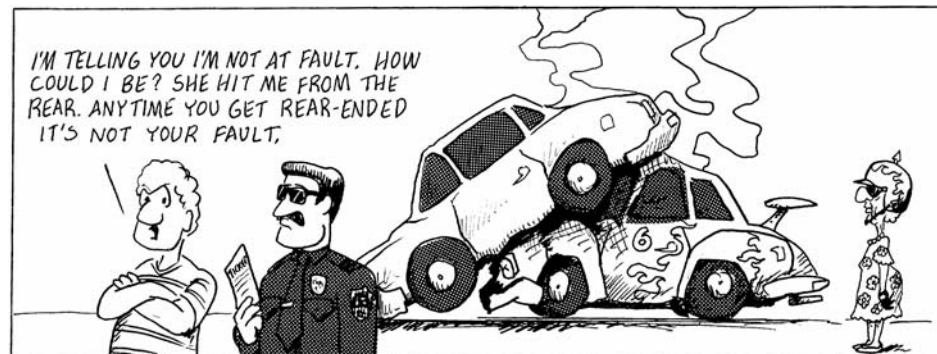
Analysis   Dick is making an argument, trying to convince the police officer that the following claim is true: "The accident was not my fault" (reworded a bit). He uses

two premises: "She hit me from the rear" and "Anytime you get rear-ended it's not your fault."

Example 12   The sky is blue. That's because sunlight is refracted through the air in such a way that other wavelengths of light are diminished.

Analysis   This is not an attempt to convince you that the sky is blue—that's obvious. This is an explanation, and *an explanation is not an argument*. We'll study explanations in Chapter 16.

Example 13   Out? Out? I was safe by a mile. Are you blind? He didn't even touch me with his glove!

Analysis   This was spoken at a baseball game by a runner who'd just been called out. He was trying to convince the umpire to believe "I was safe." He used only one premise: "He didn't even touch me with his glove." The rest is just noise.

Example 14   Give me that *$!#&* wrench.

Analysis   I can remember who said this to me. He was trying to convince me. But it was no argument, just a series of commands and threats. And what he was trying to convince me of wasn't that some claim was true.

Example 15 (From a label on a medication) Follow the directions provided by your doctor for using this medicine. This medicine may be taken on an empty stomach or with food. Store this medicine at room temperature, away from heat and light.

Analysis   This is not an argument. Instructions and descriptions, though they may use declarative sentences, aren't arguments. They're not intended to convince you that some claim is true.

Example 16

Analysis   Zoe's mother is attempting to convince her, but not of the truth of a claim. So there's no argument. Perhaps we could interpret what's being said as having an unstated conclusion "You should feel guilty for not calling your mother," and premises (disguised as questions) "Anyone who doesn't call her mother doesn't love her mother" and "If you don't love your mother, then your mother did something wrong." But it would be the interpretation that is an argument, not the original. And we would have to consider whether the interpretation is faithful to what Zoe's mother intended. We'll consider re-interpreting what's said in Chapter 5.

Example 16   You see a chimpanzee trying to get some termites out of a hole. She can't manage it because the hole is too small for her finger. So she gets a stick and tries to pull the termites out. No success. She licks the end of the stick and puts it in the hole and pulls it out with a termite stuck to it. She eats the termite and repeats the process. Is she convincing herself by means of an argument?

Analysis   There's no argument here. Whatever the chimpanzee is doing, she's not using claims to convince herself that a particular claim is true.

But isn't she reasoning? That's a hard question you can study in psychology and philosophy courses.

Summary   We said that this course will be about attempts to convince. But that's too much for one course. We narrowed the topic to attempts to convince that use language. That was still too broad. An argument, we decided, should mean an attempt to convince someone that a sentence is true. We defined a claim as a declarative sentence used in such a way that it is true or false. Arguments, then, are attempts to convince that use only claims.

Now we'll begin to look at methods and make distinctions. Because your reasoning can be sharpened, you can understand more, you can avoid being duped. And, we can hope, you will reason well with those you love and work with and need to convince, and you will make better decisions. But whether you will do so depends not just on method, not just on the tools of reasoning, but on your goals, your ends. And that depends on virtue.

Key Words		
	truth value	conclusion
	true	premise
	false	issue
	claim	critical thinking
	argument	virtue

Exercises for Chapter 1 ——————————————————————————————

These exercises are meant to help you become familiar with the ideas we've seen in this chapter. They should raise enough worries about the nature of claims and arguments that you'll be glad to see how we clarify those in the next few chapters.

To make it easier to answer these exercises, use the formatted versions of them which you can find at www.AdvancedReasoningForum.org/CT5/exercises.

1. What is this course about?

2. How did I try to convince you that this course is important? Pick out at least two places where I tried to convince you and decide whether they are arguments.

3. Explain how to divide up all attempts to convince in terms of who is trying to convince whom.

4. Which of the following are claims?

    a. Justin Bieber is a woman.

    b. College is really expensive now.

    c. Pass the salt, please.

    d. Bill Gates founded Apple.

    e. Your instructor believes that Bill Gates founded Apple.

    f. A friend in need is a friend indeed.

    g. Puff is a cat.

    h. Puff is a cat?

    i. Distance makes the heart grow fonder.

    j. No se puede vivir sin amar.

    k. Whenever Spot barks, Zoe gets mad.

    l. The Dodgers aren't going to win a World Series for at least another ten years.

    m. If you don't pay your taxes on time, you'll have to pay more to the government.

    n. 2 + 2 = 5

    o. I feel cold today.

    p. There are an odd number of stars in the universe.

5. Write down five sentences, four of which are claims and one of which is not. Exchange with a classmate and see if he or she can spot which are the claims.

6. What is an argument?

7. What is the point of making an argument?

8. What is a premise? What is a conclusion?

9. Why isn't every attempt to convince an argument? Give an example.

10. Bring to class an example of an argument you heard or read in the last two days.

11. Bring in a short article from a news website or a newspaper. Are all the sentences used in it claims? Is it an argument?

12. Your friend goes outside, looks up at the sky, and sees it's cloudy. She goes back inside and gets her raincoat and umbrella. Is she making an argument? Explain.

13. Bring an advertisement to class that uses an argument. State the premises and the conclusion.

    Here are two exercises done by Tom, along with Dr. E's comments.

Tom Wyzyczy
Critical Thinking, Section 4

Sheep are the dumbest animals. If the one in front walks off a cliff, all the rest will follow it. And if they get rolled over on their backs, they can't right themselves.

Argument? (yes/no) Yes.
Conclusion: Sheep are the dumbest animals.
Premises: If a sheep walks off a cliff, all the rest will follow it.
                  If a sheep gets rolled over on its back, it can't right itself.

This is good work, Tom.

**How can you go to the movies with Sarah and not me? Don't you remember
I helped you fix your car last week?**

Argument? (yes/no) Yes.
Conclusion: You should go to the movies with me.
Premises: I helped you fix your car last week.

*Is what you are given an argument? No. There are just two questions, and
questions aren't claims. So it can't be an argument. And if there's no
argument, there are no premises and no conclusion. Sure, it seems that we ought
to interpret what's said as an argument—as you have done. But before we go
<u>putting words in someone's mouth</u>, we ought to have rules and a better
understanding of when that's justified.*

For each of Exercises 14–28 answer the following:

Argument? (yes or no)
Premises:
Conclusion:

Remember: Answer the last two only if it's an argument.

14. You shouldn't eat at Zee-Zee Frap's restaurant. I heard they did really badly on their
health inspection last week.

15. You liked that movie? Boy, are you dumb. I guess you just can't distinguish bad acting
from good. And the photography was lousy. What a stupid ending, too.

16. If it's O.K. to buy white mice to feed a pet boa constrictor, why isn't it O.K. to buy
white mice for your cat to play with?

17. We shouldn't fix the car now. The oil leak is slow, and it would cost a lot of money.

18. Flo: She pulled my hair and stepped on my hand and wrecked my toy. I hate her.

19. (Advertisement) The bigger the burgers, the better the burgers, the burgers are bigger
at Burger King.

20. I would not live forever, because we should not live forever, because if we were
supposed to live forever, then we would live forever, but we cannot live forever,
which is why I would not live forever.

   (A contestant's response to the question "If you could live forever, would you
   and why?" in the 1994 Miss USA contest.)

21. Flo has always wanted a dog, but she's never been very responsible. She had a fish once, but it died after a week. She forgot to water her mother's plants, and they died. She stepped on a neighbor's turtle and killed it.

22. Maria: Ah-choo.
    Lee: Bless you.
    Maria: I'm just miserable. Stuffy head and trouble breathing.
    Lee: Sounds like the allergies I get.
    Maria: No, it's the flu. I'm running a fever.

23. Look Dick! Look Zoe! See Spot. See Spot run.

24. If you don't take a course on critical thinking, you'll always end up being conned, a dupe for any fast-talker, an easy mark for politicians. So you should take a course on critical thinking. You'd be especially wise to take one from the instructor you've got now—she [he] is a great teacher.

25. Whatever you do, you should drop the critical thinking course from the instructor you've got now. She [he] is a really tough grader, much more demanding than the other professors who teach that course. You could end up getting a bad grade.

26. [A review on Netflix of *Fifty Shades of Grey*—1 star out of 5] This movie plodded along like getting a root canal . . . painfully slow. Perhaps more insight into Christian Grey's psychological workings would have made the movie more interesting and engaging. I didn't read any of the books but I am wondering why all the fascination with an abusive physical relationship? It seemed to border on domestic violence and the papers are full of it with real people. Say "no" to this movie and do something better with your time . . . like bake cookies or shovel snow.

27. Dick: The gas pump stopped pumping by itself.
    Zoe: I can't get it to pump any more gas.
    Dick: So the gas tank must be full.

28. Dick: You shouldn't dock your dog's tail because it will hurt her, it'll make her insecure, and she won't be able to express her feelings.

29. In order to choose good courses of action in our lives, we need not only knowledge of the world and the ability to reason well, but what else?

Further Study   There's much more to learn about the nature of claims and truth and the relation of language to our experience. We'll touch on some of those in the next chapter. An introductory philosophy course goes much deeper.

Attempts to convince that use language but aren't arguments, such as fables and examples, are studied in courses in rhetoric. Courses in marketing, advertising, and psychology study both verbal and nonverbal ways to convince that aren't arguments. Convincing that uses body language is at the heart of acting classes.

A good place to begin reading about whether animals can reason is *The Animal Mind* by James and Carol Gould, Scientific American Library.

Writing Lesson 1

Write an argument either for or against the following:

> *Student athletes should be given special leniency when the instructor assigns course marks.*

Your argument should be at most one page long.

2 What Are We Arguing About?

We want to arrive at truths from our reasoning. So we need to be able to recognize whether a sentence is true or false—or whether it's just nonsense.

A. Vague Sentences

1. Too vague?

Zoe heard a radio advertisement that said, "Snappy detergent gets clothes whiter." So when she went to the supermarket she bought a box. She's not very happy.

Some sentences look like claims, or people try to pass them off as claims, but they're worthless for reasoning. If we can't figure out what someone's saying, we can't investigate whether it's true or false.

> ***Vague sentence***   A sentence is too vague to be a claim if there are different ways to understand it and we can't settle on one of those without the speaker making it clearer.

We hear vague sentences all the time:

You can win a lot playing blackjack.
Public education is not very good in this state.
Freedom is worth fighting for.

They sound plausible, yet how can anyone tell whether they're true?

But isn't everything we say somewhat vague? After all, no two people have identical perceptions; and, since the way we understand words depends on our experience, we all understand words a little differently. There has to be some wiggle room in the meaning of words and sentences for us to be able to communicate. You say, "My math professor showed up late for class on Tuesday." Which Tuesday? Who's your math professor? What do you mean by late? 5 minutes? 30 seconds? How do you determine when she showed up? When she walked through the door? At exactly what point? When her nose crossed the threshold?

That's silly. We all know "what you meant," and the sentence isn't too vague for us to agree that it's true or false. The issue isn't whether a sentence is vague but whether it's *too vague* given the context for us to be justified in saying that it is true or false.

Examples   Are the following too vague to be taken as claims?

Example 1   Men are stronger than women.
Analysis   Don't bother to argue about this one until you clarify it, even though it may seem plausible. What's meant by "stronger"? Stronger for their body weight? Stronger in that the "average man" (whoever that is) can lift more than the "average woman"? Stronger emotionally?

Example 2   On the whole, people are much more conservative than they were 30 years ago.
Analysis   We get into disagreements about sentences like this and make decisions based on them. But the example is too vague to be true or false. What does "people" mean? All adults? What does "conservative" mean? That's really vague. Is the head of Fox News conservative? Your uncle? Your senator?

Example 3   Aquarius: What you thought would be a quick dance is turning out to be a long slog. What makes this so cumbersome is all of the baggage you have to carry.

Horoscopes by Holiday, February 2, 2012

Analysis   Ever notice how vague horoscopes are? How could you tell if this one was false? There's no claim here.

Example 4   Susan Shank, J.D., has joined Zia Trust Inc. as Senior Trust Officer. Shank has 20 years' experience in the financial services industry including 13 years' experience as a trust officer and seven years' experience as a wealth strategist.

Albuquerque Journal, April 29, 2010, and the Zia Trust website

Analysis   "Wealth strategist" looks impressive. But when I called Ms. Shank and asked her what it meant, she said, "It can have many meanings, whatever the person wants it to mean." This is vagueness used to try to convince you she's doing something important.

Example 5   If a suspect who is totally uncooperative is hit once by a policeman, that's not unnecessary force. Nor twice, if he's resisting. Possibly three times. If he's still resisting, shouldn't the policeman have the right to hit him again? It would be dangerous not to allow that. So, you can't say exactly how many times a policeman has to hit a suspect before it's unnecessary force. So the policeman did not use unnecessary force.

Analysis   This argument convinced a jury to acquit the policemen who beat up Rodney King in Los Angeles in the 1990s. But it's an example of the drawing the line fallacy.

In a very large auditorium lit by a single candle at one end, there is no place where we can say it stops being light and starts being dark. But that doesn't mean there's no difference between light and dark. That we cannot draw a line does not mean there is no obvious difference in the extremes.

Throughout this text we'll often point out a common mistake in reasoning and label it a *fallacy*.

> ***Drawing the line fallacy***   It's bad reasoning to argue that if you can't make the difference precise, then there's no difference.

Example 6   Tom: That guard on the 76ers is better than LeBron James.

Analysis   Manuel shouldn't start arguing about this until Tom makes it clear what he means by one basketball player being better than another (Scoring? Defense? Passing? All of those somehow combined?). Suppose you were a coach and you asked your assistant, "Who should I put in the game?" and she answered, "The best player, coach." You'd want to get a new assistant.

Example 7   Dad: Whoa, little guy. Be careful with that gallon of milk. Let me help you.
              Little Boy: No, no, Daddy. I can do it. I'm strong.

Analysis   If someone came up to you on the street and asked, "Are you strong?" how could you answer that? It's too vague. But here the dad understands his son means that he's strong enough to lift the milk without dropping it. Either his son can do it or he can't, so it's a claim. *Whether a sentence is too vague to be a claim can depend on context.*

2. Ambiguous sentences

An ***ambiguous*** sentence is one that can be understood in two or a very few obviously different ways. An ambiguous sentence is definitely not a claim.

Example 8   There is a reason I haven't talked to Robert [my ex-lover] in seventeen years (beyond the fact that I've been married to a very sexy man whom I've loved for two-thirds of that time).   Laura Berman, *Ladies' Home Journal,* June 1996

Analysis   The rest of the time she just put up with him?

Example 9   Tom: Saying that having a gun in the home is an accident waiting to happen is like saying that people who buy life insurance are waiting to die. We should be allowed to protect ourselves.

Analysis   Tom, perhaps without even realizing it, is trading on two ways to understand "protect": physically protect vs. emotionally or financially protect.

Example 10   Dr. E's dogs eat over 10 pounds of meat every week.

Analysis   Is this true or false? It depends on whether it means "Each of Dr. E's dogs eats over 10 pounds of meat every week" (big dogs!), or "Dr. E's dogs together eat over 10 pounds of meat every week." *It's ambiguous whether the individual or the group is meant.*

Example 11   Homosexuality can't be hereditary. Homosexual couples can't reproduce, so genes for homosexuality would have died out long ago.

Analysis   The argument appears good but only because "Homosexual couples can't reproduce" is ambiguous. It's true if understood as "Homosexuals can't reproduce *as a couple*," but it's false in the sense needed to make the argument good: "Homosexuals, who happen to be in couples, each can't reproduce." Again there's ambiguity between the individual and the group. It's easy to get confused when an ambiguous sentence is used as a premise. We can tolerate some vagueness, but we should never tolerate ambiguity in reasoning.

Exercises for Section A   ——————————————————————————————

To make it easier to answer these exercises, use the formatted versions of them, which you can find at www.AdvancedReasoningForum.org/CT5/exercises.

1. Give an example of a vague sentence that someone tried to pass off to you as a claim.

2. Which of the following are too vague to be considered claims?
    (You may have to suggest a context in which the sentence is spoken.)

    a. Manuel: Maria is a better cook than Lee.

    b. Lee: Manuel looks like he has a cold today.

    c. Public animal shelters should be allowed to sell unclaimed animals to laboratories for experimentation.

    d. Tuition at state universities does not cover the entire cost to the university of a student's education.

    e. All unnatural sex acts should be prohibited by law.

    f. All citizens should have equal rights.

    g. People with disabilities are just as good as people who are not disabled.

    h. Boy, are you lucky to get a date with Jane—on a scale of 1 to 10, she's at least a 9.

    i. Zoe has beautiful eyes.

    j. Dog food is cheaper at Albertson's grocery store than at Smith's grocery.

    k. Alpo in cans is cheaper at Albertson's grocery store than at Smith's grocery.

    l. Spot is a big dog.

    m. Cholesterol is bad for you.

    n. Parents should be held responsible for crimes their children commit.

    o. "Pasadena City College: a global community college for the 21st century" (radio ad)

    p. We offer no-hassle loans.

    q. "Each one of us has an important contribution to make in terms of shaping our collective vision and helping us create a welcoming and positive environment that truly serves the needs of our students and community."
        (memo to faculty from Kathleen F. Burke, Ed.D., Pierce College president, 2016)

    r. "Coaching people to unleash their aspirations, move beyond what they already think and know, and maximize their results fulfills one of our highest aspirations of what it is to be a human being."
        Robert Hargrove, *The Masterful Coaching Fieldbook*, 2007

3. Find an advertisement that treats a vague sentence as if it were a claim.

4. What's wrong with the following attempt to convince?

    Look, officer, if I were going 36 in this 35 m.p.h. zone, you wouldn't have given me a ticket, right? What about 37? But at 45 you would? Well, isn't that saying that the posted speed limit is just a suggestion? Or do you write the law on what's speeding?

5. a. Can a claim be ambiguous?
    b. Can a claim be vague?

6. How much ambiguity can we tolerate in an argument?

7. Decide whether each of the following sentences is a claim. If it is ambiguous, give at least two sentences corresponding to the ways it could be understood.

    a. Zoe saw the waiter with the glasses.
    b. Americans bicycle thousands of miles every year.
    c. If someone is under 18 years old, then he cannot vote in this country.
    d. I am over 6 feet tall.
    e. Zoe is cold.
    f. The players on the basketball team had a B average in their courses.
    g. All men are created equal.
    h. It is better to be rich than famous.
    i. "VA Reaches Out To Blind Vets"
            Albuquerque Journal, headline, August 18, 2009
    j. Cats are a species of reptile.
    k. "I remember meeting a mother of a child who was abducted by the North Koreans right here in the Oval Office."   George W. Bush, June 26, 2008
    l. Public education in California is on the decline.
    m. He gave her cat food.

8. Give an example of an ambiguous sentence you've heard recently.

9. The following argument depends on ambiguity to sound convincing. Rewrite at least one of the sentences to eliminate the ambiguity.

    Dick to Zoe: Anything that's valuable should be protected. Good abdominal muscles are valuable—you can tell because everyone is trying to get them. A layer of fat will protect my abs. So I should continue to be 11 pounds overweight.

10. A special kind of ambiguity occurs when we're talking about what we say. Suppose I say:

        The Taj Mahal has eleven letters.

    I don't mean that the building has eleven letters but that the name of it does. In speech we use a different tone of voice or make quotation marks in the air with our fingers. In writing we use quotation marks around a word or phrase to show that we're talking about that word or phrase. In writing I can indicate that with:

        "The Taj Mahal" has eleven letters.

We also use quotation marks as an equivalent of a wink or a nod in conversation, a nudge in the ribs indicating that we're not to be taken literally or that we don't really subscribe to what we're saying. We call these "scare quotes," and when used this way they allow us to get away with "murder."

For each of the following, indicate if any quotation marks should be inserted.

a.   Suzy can't understand what argument means.

b.   Suzy can't understand the argument Dr. E gave in class.

c.   The judge let the defendant get away with murder.

d.   O'Brien says that there are seven legal ways to never pay taxes.

B.   Subjective and Objective Claims

Sometimes the problem with a sentence that seems vague is that we're not clear what standards are being used. Suppose Dick hears Harry say,

"New cars today are really expensive."

Harry might have some clear standards for what "expensive" means, perhaps that the average price of a new car today is more than 50% of what the average person earns in a year.

Or Harry might just mean that new cars cost too much for him to be comfortable buying one. That is, Harry has standards, but they're personal, not necessarily shared by anyone else. They're how he thinks or believes or feels.

Or Harry might have no standards at all. He's never thought hard about what it means for a car to be expensive.

It's convenient to have terms for these different possibilities.

> **Subjective and objective claims**   A claim is *subjective* if whether it is true or false depends on what someone (or some thing or some group) thinks, believes, or feels. A claim is *objective* if it's not subjective.

So Harry might have objective standards for what it means for a car to be expensive, or he might have subjective standards, or he might have no standards at all. Until we know what he meant, we shouldn't accept what he said as a claim.

An example of an objective claim is "Every car made by Volkswagen has a gasoline engine." It's false, and that doesn't depend on what anyone thinks or believes. But when Dick says, "Steak tastes better than spaghetti," that's subjective. Whether it's true depends on whether Dick believes or thinks that steak tastes better than spaghetti.

If Tom says, "It's cold outside," is that objective or subjective? If it's meant as shorthand for "I feel cold when outdoors," then it's subjective, and it's a claim. But if it's meant as objective, that is, Tom means to assert that it's cold independently of me or anyone, then it's too vague for us to consider it to have a truth value.

A sentence that's too vague to be an objective claim might be perfectly all right as a subjective one if that's what the speaker intended. After all, we don't have very precise ways to describe our feelings.
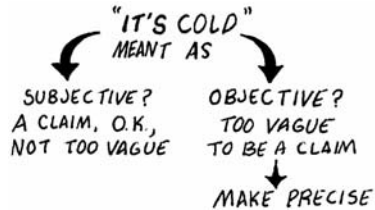
But what if it's so cold that everyone agrees that it's cold outside? Is "It's cold outside" still subjective? Yes. Whether it's true or false depends on what a lot of people think—no standard independent of people has been put forward. But we can note that agreement.

> **Intersubjective claims**   A subjective claim is *intersubjective* if (nearly) everyone agrees that it's true or (nearly) everyone agrees that it's false.

Examples   Are the following objective or subjective claims, or not claims at all?

Example 12   All ravens are black.
Analysis   This is an objective claim.

Example 13   Wanda weighs 195 pounds.
Analysis   This is an objective claim. Whether it's true or false doesn't depend on what anyone thinks or believes. Registering a number on a scale is an objective criterion.

Example 14   Wanda is overweight.
Analysis   If Wanda's doctor says this, he's probably thinking of some standard for being overweight, and he intends it as an objective claim. If you or I say it, it's probably subjective, just as if we were to say someone is ugly or handsome.

Example 15   Wanda is fat.
Analysis   "Fat" isn't a technical term used by a doctor. It's a term we use to classify people as unattractive or attractive, like "beautiful." The claim is subjective. But what if Wanda is so obese that almost everyone would say she is fat? In that case the claim is intersubjective.

Example 16   Lee: I felt sick yesterday, and that's why I didn't hand in my work.
Analysis   Lee didn't feel sick yesterday—he left his critical thinking writing assignment to the last minute and couldn't finish it before class. This is a false subjective claim.

Example 17 Dick: Spot eats canned dog food right away, but when we give him
dry dog food, he doesn't finish it until half the day is over.
     Zoe: So Spot likes canned dog food better than dry.

Analysis   Dick makes two objective claims about how Spot acts. Zoe concludes from them a subjective claim about what Spot thinks or feels.

Example 18 Compare:

There are no oil reserves worth exploiting in Iowa.

I think that there are no oil reserves worth exploiting in Iowa.

Analysis   There's a big difference between these two. The first is objective. The second is subjective.

Example 19
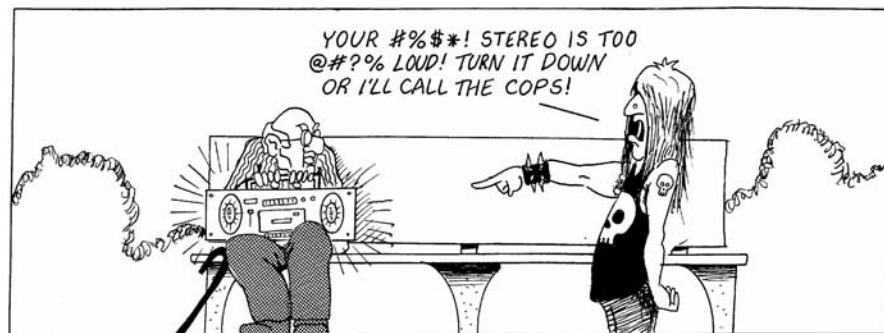
Analysis   Sure, "too loud" is vague. It's subjective, too. But it serves its purpose here. We understand what the guy means.

Example 20   There are more rabbits alive now than there were 50 years ago.

Analysis   You might think it's easier to know whether objective claims are true compared to subjective ones. But this example is objective and no one has any idea how to go about finding out whether it's true.

Example 21   Spot is outdoors. He's wet. It's well below freezing. Spot is whining and shivering. Dick says, "Spot feels cold."

Analysis This is subjective, and we all know it's true.

Example 22 There's enough oil available for extraction by current means to fulfill the world's needs for the next 47 years at the current rate of use.

Analysis This is objective. People disagree about it because there's not enough evidence one way or the other.

Example 23   Zoe (to Dick): Tom loves Suzy.
     Dick: I don't think so.

Analysis   Dick and Zoe disagree about whether this subjective claim is true, but it's not for lack of evidence. There's plenty; the problem is how to interpret it.

Whether a claim is subjective or objective does not depend on:

- How many people believe it.
- Whether it's true or false.
- Whether anyone can know whether it's true or false.

> ***Subjectivist fallacy***   It's a mistake to argue that because there is a lot of disagreement about whether a claim is true, it's therefore subjective.

The subjectivist fallacy is just one way of ***confusing objective with subjective***.

Example 24   Lee: I deserve a higher mark in this course.
     Dr. E: No, you don't. Here's the record of your exams and papers.
           You earned a C.
     Lee: That's just your opinion.

Analysis   Lee is treating the claim "I deserve a higher mark in this course" as if it were subjective. But if it really were subjective, there'd be no point in arguing about it with Dr. E any more than arguing about whether Dr. E feels cold.

Example 25

Analysis   What are Dick and Zoe arguing about? He likes the tie; she doesn't. Treating a subjective claim as objective is also a mistake.

Often it's reasonable to question whether a claim is really objective. But sometimes it's just a confusion. All too often people insist that a claim is subjective ("That's just your opinion") when they're unwilling to examine their beliefs or engage in dialogue.

Exercises for Section B

1. a.   What is a subjective claim?
   b.   What is an objective claim?
   c.   Are there any claims that are neither objective nor subjective?

2. a.   Give an example of a true objective claim.
   b.   Give an example of a false objective claim.
   c.   Give an example of a true subjective claim.
   d.   Give an example of a false subjective claim.

3. Explain why a sentence that is too vague to be taken as an objective claim might be acceptable as a subjective claim.

4. Make up a list of five claims for your classmates to classify as objective or subjective.

5. State whether each of the following is objective, or subjective, or not a claim at all. In some cases you'll have to imagine who's saying it and the context. Where possible, explain your answer in terms of the standards being used.

   a. Wool insulates better than rayon.
   b. Silk feels better on your skin than rayon.
   c. Pablo Picasso painted more oil paintings than Norman Rockwell.
   d. Bald men are more handsome.
   e. You intend to do your very best work in this course.
   f. He's sick! How could someone say something like that?
   g. He's sick; he's got the flu.
   h. Cats enjoy killing birds.
   i. Murder is wrong.
   j. Your answer to Exercise 3 in Chapter 1 of this book is wrong.
   k. Demons caused me to kill my brother.
   l. (In a court of law, said by the defense attorney) The defendant is insane.
   m. Zoe is more intelligent than Dick.
   n. Zoe gets better grades in all her courses than Dick.
   o. Suzy believes that the moon does not rise and set.
   p. Dick's dog Spot ran to his bowl and drooled when Dick got his dog food.
   q. Dick's dog Spot is hungry.
   r. Fifty-four percent of women responding to a recent Gallup Poll said they think that women do not have equal employment opportunities with men.
   s. Fifty-four percent of women think that women do not have equal employment opportunities with men.
   t. Zeke failed the lie-detector test.
   u. Zeke is lying.
   v. God exists.

6. Bring to class two advertisements, one that uses only subjective claims and another that uses only objective claims.

7. a. Give an example of someone treating a subjective claim as if it were objective.
   b. Give an example of someone treating an objective claim as if it were subjective.

8. What, if anything, is wrong with these?
   a. Tom: It is more likely for a teenage girl to get into an automobile accident than a boy.
      Zoe: That's a sexist remark!
   b. Zoe: I'm so tired.
      Dick: C'mon. You can't be tired, you just got 12 hours of sleep.

    c. Dick: You're going for a run now? That's crazy. It's way too hot for a run.
             Tom: No it isn't. It's just right.

9.

    Is Zoe right? How should Dick respond?

10. Go back to some of the essays you've written for other courses and find where you used a phrase like "I think" or "It seems to me that." Did you really mean your words to be taken as just your personal opinion?

11. Give an example of a claim that you thought was intersubjective but later you found out that you were wrong.

12. Bring to class a movie criticism (Netflix is a good place to look) and decide whether the writer is trying to convince you that claims he or she is making are not just his or her opinion. Explain how the writer does it.

C. Prescriptive Claims and Value Judgments

"Dick should take Spot for a walk this afternoon." "Suzy should study more." "People shouldn't litter." Sometimes we don't describe how the world is but rather how we think it should be.

> ***Descriptive and prescriptive claims*** A claim is *descriptive* if it's meant to describe what is. A claim is *prescriptive* if it's meant to describe what should be.

Every claim is either descriptive or prescriptive.

Examples Are the following prescriptive or descriptive claims?

Example 26 Drunk drivers kill more people than sober drivers do.
Analysis This is a descriptive claim.

Example 27 There should be a law against driving drunk.
Analysis This is a prescriptive claim.

Example 28 Selling cocaine is against the law.
Analysis This is a descriptive claim.

Example 29   Zeke shouldn't sell cocaine.

Analysis   This is a prescriptive claim.

Example 30   Dick: I'm hot.

     Zoe: You should take your sweater off.

Analysis   Dick has made a descriptive claim. Zoe responds with a prescriptive one.

Example 31   The government must not legalize marijuana.

Analysis   This is a prescriptive claim where "must" is meant as a stronger idea of "should."

Often when someone says that something is "good," "better," "best," "bad," "worse," "worst," or makes some other ***value judgment***, it's meant as prescriptive in the sense that we shouldn't do what is bad/wrong/worse and that we should do or choose what is good/better/best.

Example 32   Texting while driving is bad.

Analysis   This is prescriptive. It's meant that no one should text while driving.

Example 33   Dr. E: It's just plain wrong to cheat on an exam.

Analysis   This is prescriptive, for by "wrong" Dr. E means that his students shouldn't do it.

Example 34   Physician to Professor Zzzyzzx: You should see some improvement in your chest pains by the end of the week.

Analysis   Sometimes people use "should" to mean that they think it's probable. There's no prescription here.

Example 35   Dick: Cats are really disagreeable animals.

Analysis   Dick is making a value judgment, but there's no "should" in it or implied by it. Not every value judgment is prescriptive.

Example 36   Tom: Abortion is wrong.

Analysis   What standard is Tom invoking? In disagreement with the commands of the Bible? In disagreement with what a priest said? In disagreement with the Koran? In disagreement with moral principles that are not codified but are well-known? Until he and Zoe are clear about the standard, there's nothing to debate.

     On the other hand, Zoe might say, "Maybe abortion is wrong to you, but it's O.K. to me." No further standard is needed then, for she views "Abortion is wrong" as a subjective claim—the standard is personal. But if so, there's nothing to debate.

> ***Prescriptive claims and standards***   A prescriptive claim either asserts a standard—this is what should be, and there's nothing more fundamental to say than that—or else it assumes another prescriptive claim as standard.

Example 37   Ahmad: Eating dogs is bad.

Analysis   This is intended as a prescriptive claim, since it carries with it the idea that we should not eat dogs.

Zoe agreed with Ahmad when he said this to her, but did she really know what standard Ahmad had in mind? Perhaps he's a vegetarian and believes:

You should treat all animals humanely, and butchering animals is not humane.

Or Ahmad might believe just:

Dogs taste bad, and you shouldn't eat anything that tastes bad.

Or perhaps Ahmad believes:

We should not eat anything forbidden by the standard interpretation
of the Koran, and it is forbidden to eat carnivores.

Or Ahmad might just believe what almost all Americans believe:

Dogs should be treated as companions to people and not as food.

Until Zoe knows what Ahmad means by "bad," she has no reason to view what he's said as a claim.

Example 38   Harry: The Federal Reserve Board ought to lower interest rates.

Analysis   This is a prescriptive claim. Zoe's mother disagrees with Harry, since she wants to see her savings earn more interest. Harry says the standard he's assuming is "The Federal Reserve Board should help the economy grow," which is what he and Zoe's mom should debate.

Example 39   Zoe: That's enough ice cream for you, Dick.
Dick: What do you mean? There's no such thing as too much ice cream.

Analysis   Zoe is making a prescriptive claim. When she says "That's enough," she means that Dick should stop eating. Dick challenges her unstated standard.

Example 40   It's wrong to kill people.

Analysis   This is a prescriptive claim. It's usually taken as a standard rather than assuming any other standard.

People who believe that all prescriptive claims are subjective are called ***relativists***. They think that all standards—for beauty, morality, and every other value—are relative to what some person or group of people believe. Most people, though, believe that at least some prescriptive claims are objective, such as "You shouldn't torture dogs."

Often when you challenge people to make their standard explicit, they'll say, "I just mean it's wrong (right) to me." Yet when you press them, it turns out they're not so happy that you disagree. What they really mean is "I have a right to believe that." Of course they do. But do they have a *good reason* to believe the claim? It's rare that people intend their moral views to be taken as subjective.

I've got a right to believe this. ≠ *I have a good reason to believe this.*

Example 41   [The author cites various conflicting standards on which to base economic policy.] The problem with all these criteria is that the choice among them seems entirely arbitrary. . . . I suspect though that the choice of a normative [prescriptive] criterion is ultimately a matter of taste.   Stephen Landsburg, *The Armchair Economist*

Analysis   This author seems to be a relativist. But he might just be committing the subjectivist fallacy, mistaking lack of agreement for subjectivity.

Example 42   Almost all economists believe that rent control adversely affects the availability and quality of housing and is a very costly way of helping the most needy members of society. Nonetheless, many city governments choose to ignore the advice of economists and place ceilings on the rents that landlords may charge their tenants.
                                      Gregory Mankiw, *Principles of Economics*

Analysis   That "nonetheless" slips in a value judgment that city governments shouldn't adopt a policy that adversely affects availability and quality of housing and is a costly way of helping the most needy members of society. You may agree, but you need to be aware that in doing so you're accepting a prescriptive standard.

Exercises for Section C

1. What is a prescriptive claim? A descriptive claim?

For each of the exercises below, explain why you understand the sentence as prescriptive or descriptive, and if necessary provide a standard to make it clear enough to be a claim. That is, for each answer the following:

    Prescriptive or descriptive?
    Standard needed?

2. Dissecting monkeys without anesthetic is cruel and immoral.

3. Dissecting monkeys without anesthetic is prohibited by the National Science Foundation funding guidelines.

4. Larry shouldn't marry his sister.

5. Employees must wash their hands before returning to work.

6. Downloading a pirated copy of this textbook is wrong.

7. It's better to conserve energy than to heat a room above 68°.

8. It's about time that the government stop bailing out the bankers.

9. Dick and Zoe have a dog named "Spot."

10. The government should raise the tax rate for the upper 1% of all taxpayers.

11. This school should require students to take critical thinking their first year so that they can improve their comprehension in all their other courses.

12. Dogs are good and cats are bad.

D. Definitions

We've seen that we can get into problems, waste our time, and generally irritate each other through misunderstandings. It's always reasonable and usually wise to ask people we are reasoning with to be clear enough that we can agree on what it is we are discussing.

There are two general methods of making clear what we say.

- Replace the entire sentence by another that is not vague or ambiguous.

- Use a definition to make a specific word or phrase precise.

Definition   A *definition* explains or stipulates how to use a word or phrase.

"Dog" means "domestic canine."

Puce is the color of a flea, purple-brown or brownish-purple.

"Puerile" means boyish or childish, immature, trivial.

There are several ways we can make a definition. One, as with the definition of "dog," is to give a *synonym*, a word or phrase that means the same and that could be substituted for "dog" wherever that's used.

Another way is to describe: A lorgnette is a kind of eyeglass that is held in the hand, usually with a long handle.

Or we can explain, as when we say a loophole is a means of escaping or evading something unpleasant.

Or we can point:

Though pointing isn't part of language, it serves to make our language clear.

A definition is not a claim. A definition is not true or false but good or bad, apt or wrong. Definitions tell us what we're talking about.

People often use what sounds like a definition to hide a claim that should be debated. For example, if someone defines "abortion" as "the murder of an unborn child," she's made it impossible to have a reasoned discussion about whether

abortion is murder and whether a fetus is a person. A ***persuasive definition*** is a claim that should be argued for but which is made to sound like a definition.

> If you call a tail a leg, how many legs has a dog? Five?
> No, calling a tail a leg don't *make* it a leg.
>   attributed to Abraham Lincoln

Examples   Which of the following are definitions? Persuasive definitions?

Example 43   A dog is a mammal.
Analysis   This is not a definition. We can't use "mammal" in place of "dog" in our reasoning. It doesn't tell us how to use the word "dog"; it tells us something about dogs. Not every sentence with "is" in it is a definition.

Example 44   "Exogenous" means "developing from without."
Analysis   This is a definition, not a claim. It's an explanation of how to use the word "exogenous."

Example 45   Fasting and very low calorie diets (diets below 500 calories) cause a loss of nitrogen and potassium in the body, a loss which is believed to trigger a mechanism in the body that causes us to hold on to our fat stores and to turn to muscle protein for energy instead.   *Jane Fonda's New Workout and Weight Loss Program*
Analysis   Definitions aren't always labeled but are often made in passing, as with this definition of "very low calorie diet."

Example 46   Meyer Friedman and Ray Rosenman . . . identified a cluster of behavioral characteristics—constant hurriedness, free-floating hostility, and intense competitiveness— that seemed to be present in most of their patients with coronary disease. They coined the term *Type A* to describe this behavior pattern; *Type B* describes people who do not display these qualities.   Daniel Goleman and Joel Gurin, *Mind Body Medicine*
Analysis   Here the definitions are embedded in a text, too. But these are not good unless some standards are given for what is meant by "constant hurriedness," "free-floating hostility," and "intense competitiveness" (none were given in the text). How could you determine whether someone you know is Type A or Type B from this definition? A good definition must use words that are clearer and better understood than the word being defined.

Example 47   —Maria's so rich, she can afford to pay for your dinner.
                   —What do you mean by "rich"?
                   —She's got a Mercedes.
Analysis   This is not a definition since by "rich" we don't mean "has a Mercedes." Many people who are rich don't have a Mercedes, and some people who own a Mercedes aren't rich. This is an argument: "Maria has a Mercedes" is given as evidence that Maria is rich; "means" is used in the sense of "because."

I just tried to convince you that "has a Mercedes" is not a good definition of

"rich." How? I pointed out that someone could own a Mercedes and not be rich, or be rich and not own a Mercedes.

Example 48 Microscope: an instrument consisting essentially of a lens or combination of lenses, for making very small objects, as microorganisms, look larger so that they can be seen and studied.   *Webster's New World Dictionary*

Analysis This is from a dictionary, so it's got to be a good definition. But if you're trying to convince someone that what she sees through a microscope is actually there —that it's not in the lens or inside the microscope like a kaleidoscope—then this definition won't do. "See, there really are little living things there. After all, it's part of the definition of a microscope that it's just enlarging what's there." What counts as a persuasive definition can depend on the context.

Example 49 Pluto is not a planet.

Analysis There was a lot of heated debate about this in 2006 when astronomers re-classified Pluto using a new and what they considered better definition of "planet." But really the only issue was whether that was a better or worse definition.

Example 50 According to the U.S. Supreme Court, to be obscene, material must meet a three-prong test:

> (1) an average person, applying contemporary community standards, must find that the material, as a whole, appeals to the prurient interest (i.e., material having a tendency to excite lustful thoughts); (2) the material must depict or describe, in a patently offensive way, sexual conduct specifically defined by applicable law; and (3) the material, taken as a whole, must lack serious literary, artistic, political, or scientific value.   From the FCC.gov website

Analysis This is the definition the Federal Communications Commission uses to determine whether speech broadcast on public airwaves is obscene—in which case it is not protected by the First Amendment and may be punishable by multimillion dollar fines. However, saying some expression is not serious, is patently offensive, and is prurient to a hypothetical "average person" is not any clearer than saying it's obscene.

Example 51 Intuition is perception via the unconscious. Carl G. Jung

Analysis This is a definition, but a bad one. The words doing the defining are no clearer than what's being defined.

Example 52 Dogs are domesticated canines that obey humans.

Analysis This is a bad definition because it's ***too narrow***: it doesn't cover cases it should, like feral dogs.

Example 53 A car is a vehicle with a motor that can carry people.

Analysis This is a bad definition because it's ***too broad***: it covers cases that it

shouldn't, like a golf cart. So we can't use the words doing the defining in place of the word being defined.

Good definition   For a definition to be good:
- The words doing the defining are clear and better understood than the word or phrase being defined.
- The words being defined and the defining phrase can be used interchangeably. That is, it's correct to use the one exactly when it's correct to use the other.

The key to making a good definition is to look for examples where the definition does or does not apply in order to make sure that it is not too broad or too narrow. For example, suppose we want to define "school cafeteria." That's something a lawmaker might need in order to write a law to disburse funds for a food program. As a first go, we might try "A place in a school where students eat." But that's too broad, since that would include just a room where students can take their meals. So we might try "A place in a school where students can buy a meal." But that's too broad, too, since that would include a room where you could buy a sandwich from a vending machine. How about "A room in a school where students can buy a hot meal that is served on a tray"? But if there's a fast-food restaurant like Burger King at the school, that would qualify. So it looks like we need "A room in a school where students can buy a hot meal that is served on a tray, and the school is responsible for the preparation and selling of the food." This looks better, though if adopted as a definition in a law, it might keep schools that want money from the legislature from contracting out the preparation of their food. Whether that's too narrow will depend on how the lawmakers intend the money to be spent.

Steps in making a good definition
- Show the need for a definition.
- State the definition.
- Make sure the words make sense.
- Give examples where the definition applies.
- Give examples where the definition does not apply.
- If necessary, contrast it with other likely definitions.
- Possibly revise your definition.

Exercises for Section D

1. What is required of a good definition?
2. Why should we avoid persuasive definitions?

3. Classify each of the following as a definition, a persuasive definition, or neither. If it is a definition, state why you think it is good or bad.

   a. "Dog" means "a canine creature that brings love and warmth to a human family."

   b. Domestic violence is any violent act by a spouse or lover directed against his or her partner within the confines of the home of both.

   c. A feminist is someone who thinks that women are better than men.

   d. A conservative, in politics, is one who believes that we should conserve the political structure and laws as they are as much as possible, avoiding change.

   e. A liberal is someone who wants to use your taxes to pay for what he thinks will do others the most good.

   f. Love is blind.

   g. Sexual intercourse is when a man and a woman couple sexually with the intent of producing offspring.

   h. *Less-developed countries* (LDCs) The economies of Asia, Africa, and Latin America.   (From an economics textbook)

   i. A killer whale has a sleek, streamlined, fusiform (tapered at both ends) body shape.

   j. A real fan has season tickets.

   k. Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.   Association of American Colleges and Universities

4. For each of the following, give both a definition and a persuasive definition:
   a. Homeless person.
   b. Spouse.
   c. School bus.

5. For each of the following, replace "believes in" with other words that mean the same:
   a. Zoe believes in free love.
   b. Dick believes in God.
   c. Zoe believes in the Constitution.
   d. Zoe believes in herself.

6. Bring in an example of a definition used in one of your other courses. Is it good?

7. Sometimes we can make an apparently subjective claim objective by making a definition. For example, "Harry is intelligent" can be objective if we define "intelligent" to mean "has a B average or better in university courses." Give definitions that make the following subjective claims objective.
   a. It's hot outside.
   b. Eating a lot of fat every day is unhealthy.

8. Go to one of your other textbooks and find a definition that is made in passing, not explicitly stated as a definition.

9. Verify whether the presentation of the definition of "claim" in Chapter 1 follows the steps in making a good definition.

Summary   We need to be able to distinguish different kinds of claims and be aware of sentences that look like claims but aren't.

A sentence is vague if it's unclear what the speaker intended. We can learn to recognize when a sentence is too vague to use in our reasoning. But it's bad reasoning to say that just because we can't draw a precise line, there's not any clear meaning to a word. An ambiguous sentence is vague in a bad way, for it has two or more clear interpretations. Ambiguous sentences should never be taken as claims.

Often the problem with a vague sentence is to determine what standards are being assumed. They could be objective—independent of what anyone or anything thinks/believes/feels, or they could be subjective, or there might not be any standard at all. A sentence that's too vague to be an objective claim might be all right as a subjective claim.

Considering whether a claim is objective or subjective can save us a lot of heartache because we won't debate someone else's feelings. Confusing subjective and objective claims leads to bad arguments.

Often we make prescriptive claims about what should be, not just what is. Moral claims usually are meant as prescriptive and objective, though often people retreat to saying they're subjective when they can't defend their views.

We need to eliminate ambiguity and excessive vagueness if we are to reason together. We can do so by rewriting our arguments or speaking more precisely. Or we can define the words that are causing the problem. A definition isn't a claim, though; it's something added to an argument to make the words in it clearer. A definition shouldn't prejudge the issue by being persuasive.

Key Words	vague sentence	prescriptive claim
	drawing the line fallacy	descriptive claim
	ambiguous sentence	value judgment
	objective claim	relativist
	subjective claim	definition
	intersubjective claim	synonym
	subjectivist fallacy	persuasive definition
	confusing objective with subjective	good definition

Exercises for Chapter 2

Here are a few of Tom's attempts to do exercises using all the ideas we've learned in this chapter, along with Dr. E's comments. Tom's supposed to underline the terms that apply.

Dogs bark.

<u>claim</u>   subjective   ambiguous or too vague

not claim   objective   definition   persuasive definition

Yes, it's a claim. But if it's a claim, then it has to be either objective or subjective.

Cats are nasty.
<u>claim</u>   <u>subjective</u>   <u>ambiguous or too vague</u>
not claim   objective   definition   persuasive definition

No–if it's ambiguous or too vague, then it's not a claim. This is an example of a subjective claim.

Rabbits are the principal source of protein for dogs in the wild.
<u>claim</u>   subjective   ambiguous or too vague
not claim   <u>objective</u>   <u>definition</u>   persuasive definition

No–if it's a definition, it's not a claim. And this is not a definition—what word is it defining? Certainly not "rabbit."

Dogs are canines that bring warmth and love to a family.
claim   subjective   ambiguous or too vague
<u>not claim</u>   objective   definition   <u>persuasive definition</u>

No. If it's a persuasive definition, then it's a claim—masquerading as a definition.

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1. State which of the following can together apply to a single sentence.

   claim   subjective   ambiguous or too vague
   not claim   objective   definition   persuasive definition

For each of the following, indicate which of the terms from Exercise 1 apply. If you think your instructor might disagree, provide an explanation.

2. Donkeys can breed with other equines.

3. The manifest content of a dream is what a dream appears to be about to the dreamer.

4. A grade of A in this course means you know how to parrot what the professor said.

5. Public Health Is the Greatest Good for the Most Numbers
   (on the logo of the New Mexico Department of Health)

6. Too much TV is bad for children.

7. China has the largest land mass of any single country.

8. I've already seen the new *Star Wars* movie.

9. There are five countries in North America.

10. I'm going to throw up.

11. "We [the United States] are the leader of the free world."
            Senator J. Rockefeller on "Day to Day," National Public Radio, July 23, 2004

12. Science, when well digested, is nothing but good sense and reason.

13. Remember loved ones lost through Christmas concert.
                            Headline, *The Spectrum*, December 4, 1998

14. If America shows uncertainty and weakness in this decade, the world will drift
    toward tragedy.

15. Buying low-cost property and renting it out is a great way to create wealth and constant cash flow.   (from an extension course description)

16. Suzy: I can't take any more of these exercises!

17. That test was easy.   (Tom to Suzy after Dr. E's last critical thinking exam)

Further Study   Much of philosophy is concerned with attempts to give criteria that will turn apparently subjective claims into objective ones. A course on ethics will discuss whether claims about what's wrong or right can be made objective. A course on aesthetics will analyze whether all claims about what is beautiful are subjective. And a course on the philosophy of law or criminal justice will introduce the methods the law uses to give objective criteria for determining what is right or wrong.

Philosophy courses debate whether a claim being objective just means that it is believed by enough people—that is, whether objectivity is just intersubjectivity.

Courses in nursing discuss how to deal with subjective claims by patients and vague instructions by doctors.

For a fuller discussion of prescriptive claims and how to reason with them, see *Prescriptive Reasoning*, also published by the Advanced Reasoning Forum.

Some courses in English composition or rhetoric deal with the correct forms and uses of definitions. Courses on the philosophy of language and linguistics study the nature of definitions, ways in which definitions can be made, and misuses of definitions. Ambiguity and vagueness are also covered in English composition and rhetoric courses.

Writing Lesson 2

We know that before we begin deliberating we should make the issue precise enough that someone can agree or disagree.

Make the following sentence sufficiently precise that you could debate it:

Student athletes should be given special leniency when the instructor assigns course marks.

Your definition(s) or explanation should be at most one page long.
(At most one page, not at least or exactly one page.)

To give you a better idea of what you're expected to do, here are Tom's and Mary Ellen's homework on another topic, along with Dr. E's comments.

<div style="text-align: right;">
Tom Wyzyczy
Critical Thinking
Section 4
Writing Lesson 2
</div>

"All unnatural sex acts should be prohibited by law."

Before we can debate this we have to say what it means. I think that "unnatural sex act" should mean any kind of sexual activity that most people think is unnatural. And "prohibited by law" should mean there's a law against it.

You've got the idea, but your answer is really no improvement. You can delete the first sentence. And you can delete "I think." We can guess that, because you wrote the paper.

Your proposed definition of "unnatural sex act" is too vague. It's reminiscent of the standard the U.S. Supreme Court uses to define obscenity: prevailing community standards. In particular, what do you mean by "sexual activity"? Does staring at a woman's breasts count? And who are "people"? The people in your church? Your neighborhood? Your city? Your state? Your country? The world?

Of course, "prohibited by law" means there's a law against it. But what kind of law? A fine? A prison sentence? A penalty depending on the severity of the offense? How do you determine the severity?

Mary Ellen Zzzyzzx
Critical Thinking
Section 4
Writing Lesson 2

"All unnatural sex acts should be prohibited by law."

By "unnatural sex act" I shall mean any sexual activity involving genitals, consensual or not, *except* between a man and a woman who are both over 16 and in a way that could lead to procreation if they wanted it to and which is unobserved by others.

By "prohibited by law" I shall mean it would be a misdemeanor comparable to getting a traffic ticket.

I don't really think that everything else is unnatural, but I couldn't figure out any other way to make it precise. Is that what we're supposed to do?
Mary Ellen

You did just fine. Really, the burden to make it precise would be on the person suggesting that the sentence be taken as a claim. Most attempts are going to seem like a persuasive definition. But at least you now have a claim you could debate. If the other person thinks it's the wrong definition, that would be a good place to begin your discussions.