

Preface

Opinions differ concerning what should be taught in critical reasoning courses. Most of the current textbooks deal with at least four or five of the following topics:

1. Formal principles of valid reasoning.
2. The fundamental role played by background beliefs in the evaluation of arguments.
3. Fallacies.
4. Linguistic devices that tempt us into fallacious reasoning.
5. Methods for evaluating extended arguments (essays).
6. Practice writing cogent argumentative essays.
7. Impediments to cogent reasoning (self deception, prejudice, wishful thinking, stereotypic thinking, etc.).
8. Information about the major information sources (the mass media, advertising, public school textbooks) and non-mass media alternatives.
9. Reasoning about values, including moral values.

Logic and Contemporary Rhetoric is unique in dealing with all of the above.

The critical thinking movement arose because of a felt need for a course that would help students to reason better when dealing with problems regularly encountered in everyday life, in particular those in which we all have an interest because of their social or political nature. That is why the focus of this text has been and still is on how to help students improve their reasoning about the problems they encounter in everyday life (hence the subtitle: “The Use of Reason in Everyday Life”).

Given that the point of a critical reasoning course is to help students to reason well, it is tempting to believe that course content should revolve around the principles of formal logic, both deductive and inductive. But good reasoning consists in much more than merely moving correctly from premises to conclusions. It also requires that we bring to bear relevant evidence and information, in particular so as to adequately assess the believability of premises. That is why the need to have *accurate, justified* background beliefs should be emphasized at least as much as the validity rules so dear to logicians.

But acquiring good background beliefs requires an understanding of the nature of the major information sources, in particular the mass media (television, radio, newspapers, magazines), advertisements (especially the political variety), and the Internet. That is why it is important to discuss how these information sources can be used to best advantage, and to inform students about less popular, more sophisticated information sources—“non-mass” magazines, books, and the like.

We also need to remember that most students enter college having been taught to believe

that the world, their society, and other people, are a good deal different (usually better) than they actually are. Public school social studies and history texts teach them about how our democratic system is supposed to work, but not about how and when theory and everyday practice part company. They provide young people with a sanitized version of our past that is designed to make them loyal citizens but hinders student understanding of the world that exists today. (Today's problems, after all, exist in large part because of what has happened in the past). Students need to know that they haven't been told the unvarnished truth about how their society works or about the true history of their own nation (not to mention that of the rest of the world).

Most critical reasoning texts that concentrate on the principles of rational conclusion drawing seriously neglect discussion of the non-rational side of human nature. But even the most complete understanding of *modus ponens*, analogical reasoning, and the rest of the principles of rational thought is of little use to the person whose reasoning is continually warped by prejudice, self deception, superstition, or wishful thinking. That is why it is extremely important to try very hard to help students overcome the irrational tugs on their reasoning.

Some theorists in the critical thinking movement argue against a large part of the content of *Logic and Contemporary Rhetoric* on the grounds that it is not the business of a critical thinking class instructor to present students with any facts other than those directly concerning the nature of cogent reasoning. The merit of this view is that it fits nicely with the desire we all should have to avoid touting our own views concerning moral values and social and political issues. The drawback is that it leaves to students the task of figuring out all sorts of general facts needed in the evaluation of virtually all matters that come up in everyday life—facts that can be explained relatively quickly but would take even a brilliant student a good deal of time to learn starting from scratch. An important example is the way in which the mass media operate and how this affects the news they sell to the rest of us. Since the solutions to most problems encountered in everyday life, certainly all that have to do with social and political questions, depend on information gleaned from the media, textbooks, and the like, *Logic and Contemporary Rhetoric* contains detailed discussions of these information sources.

A Few Teaching Suggestions

What works best for one instructor may not work for another. The suggestions that follow have proved useful to many who have taught critical reasoning over the years. In general, these suggestions are designed to get students to *do* something—to get involved with

the material rather than just to memorize this point or that. (But several suggestions are designed to do something about the “garbage in garbage out” problem. In this age of television, the mass media, and the Internet, perhaps the most important thing that we can do for our students is to get them interested in reading serious books, magazines, and journals. The most important knack in critical thinking is the ability to bring relevant background information to bear on an issue or problem, and this requires having intelligent background beliefs at one’s command.)

1. Panel Debates: One of the best techniques to stimulate interest and galvanize students into action is to hold panel debates early in the semester. Debates are an excellent way to develop in students the ability to think critically and to write argumentative essays. They exchange information, share sources, try ideas out on each other, discover loopholes in arguments—in short, they do exactly the kind of critical thinking necessary in developing cogent arguments. Another advantage is that students genuinely become engaged in the process, and, probably because they are under pressure to perform in front of their peers, they usually do a pretty good job.

The best way to structure a panel debate is to model it on an argumentative essay, with an introduction, two or three reasons, rebuttals and a summary statement. Use whatever format best fits the quality of your students, the amount of time available, and so on. If you have, say, a class of 28 students, you could hold one large panel debate with 14 students on each side or two debates with seven on each side. In the first case, you might ask students to assign one person to introduce the argument, two students to present each of the three reasons (six people in all), two to rebut each of the opposition’s reasons (again, six in all) and one to make the summary statement. At first glance, this may seem unwieldy, but in practice it works quite smoothly once students understand the ground rules, which need to be carefully explained and strictly followed. For example, you will want to decide how many reasons each side will present and how much time will be allotted to each person (usually three to five minutes). Also, the format will need explaining: the pro team goes first, starting with the introduction, then reason #1, followed by the rebuttal from the opposition, then reason #2, and so on. The summary statements usually aren’t given until both sides have presented their arguments. Since students can get quite heated during the debate, it’s a good idea to allow no interruptions whatsoever.

The teams will need to meet in class two or three times before the debates to fix on strategies. (Interestingly, these meetings tend to increase class cohesiveness and classroom discussion. Students quickly get to know each other on a first name basis and develop a sense of camaraderie that lasts throughout the semester.) Have the students themselves pick the

topics to be debated from a list selected either by you or by the students themselves. Students often pick topics like capital punishment, AIDS, gay rights, and so on, which are all right since these topics are easier than, say, those concerning economic issues, foreign policy, and so on.

In writing classes, an argumentative essay may be the final product of the debate. In other classes, students may be graded on the debate alone.

2. Have students keep a notebook containing outside assignments, and have them hand in the notebooks for grading at mid-term and then towards the end of the semester. As the semester goes along, assign several of the out-of-class exercises, including some of the following (arranged by chapter):

Chapter 1: Find a short argumentative essay in a magazine or newspaper or on the Internet, parse it into its premises and conclusions, indicate whether each argument the essay contains is inductive or deductive (and explain why it is, or isn't). Include a copy of the essay in the notebook.

Chapter 2: Invent a valid deductive or inductive argument that has the same form as one of the arguments discussed in this chapter. Explain whether or not it is cogent as well as valid.

Chapter 3: Find an argument in a newspaper or magazine or on the Internet that contains a fallacy discussed in this chapter and explain why it is fallacious. A good place to look for this item is in letters to the editor, which often include fallacious reasoning. Include a copy of the item in the notebook.

Chapter 4: Do the same with respect to fallacies discussed in this chapter.

Chapter 5: Do the same with respect to fallacies discussed in this chapter.

Chapter 6: Give one or two examples of self-deception or wishful thinking that have misled you or a friend. Explain the consequences.

Chapter 7: Find examples of language used to mislead readers of books or magazines, or viewers of television, and explain the deception in each case.

Chapter 8: Evaluate one of the short arguments in this chapter or find one in a magazine or newspaper. First parse it into its premises and conclusion, and then explain why it is, or isn't, convincing.

Chapter 9: Develop an outline for an argumentative essay. Include the thesis, major premises and supporting evidence.

Chapter 10: Find two examples of ads for the same product in different magazines (for instance, ads for a Volvo in *Family Circle* and in *Money* magazine). Explain the appeals to the audience for each ad.

Chapter 11: 1. Compare the way a controversial topic or news item is discussed in a liberal and in a conservative magazine. 2. Compare the headlines for a particular news item in

three different newspapers. 3. Compare the coverage of the same news item on a television news program and in a newspaper article. 4. Try to find media coverage in which motion pictures, photographs, graphs, or the like, appear to be designed to favor one side or another concerning a politically controversial topic.

Chapter 12: Find an example of textbook bias in a grade school or high school text and explain the problem. Include a copy of the example in the notebook.

One of the authors who regularly requires notebooks has discovered that students who keep notebooks in this way have a much better grasp of the material in the text (they actually read it!) than those who don't. Fallacy examples are somewhat time-consuming to grade, but other notebook items can be evaluated relatively quickly.

3. At the beginning of the semester, have the class select some topic of interest on which the class is to concentrate during the semester, in addition to whatever else is assigned. Students often pick subjects such as abortion or capital punishment, which work satisfactorily, but more topical matters may work better yet.

4. The *Selected List of Periodicals* at the back of the book can be used to acquaint students with a wider selection of magazines than they usually are even aware exist. Divide the class into several groups, and assign each group a different set of magazines, one set definitely to the left on the political spectrum, one conservative, one journalism magazine, etc. The job of each group is to write a report on the accuracy, bias, etc. of the periodicals on their list, in particular, perhaps, with respect to a given topic of general interest. (The variations on this theme are endless.)

5. In this day and age, it is easy to make videotapes of political speeches, debates, TV advertisements, and so on, to be viewed in class when evaluating extended passages. Being up to date, these cassettes tend to be quite effective in demonstrating how politicians employ linguistic devices to con and in showing how TV ads get us to buy the product. Try a presidential inaugural address or the latest state of the Union address.

6. The number of today's students who believe in astrology or other pseudosciences is astounding. (Of course, they won't always admit to their addiction.) Often, merely talking sense about pseudobaloney is not effective. One way to make criticisms more effective is to bring a newspaper horoscope column from the day before into class and explain about its lack

of empirical confirmation, vague generalities, and so on. If students rally to the defense of the astrology column, arguing for its accuracy or aptness in their case, follow up by bringing in another astrology column, only this time make up your own by randomly mixing phrases from several newspaper columns, and after they again claim accuracy or aptness reveal the hoax. (There is a small risk that this will backfire, for instance, if students don't find your made up horoscope fitting.)

7. In the same vein, come into class some time in the middle of the semester, well after the material in Chapter 6 has been discussed in class, and announce that you have had some very strange experiences over the weekend indicating that you have some sort of ESP powers. In the spirit of the class, you'd like their help in testing whether or not this is the case. (This works best if you act a bit sheepish about admitting that perhaps there is something to the ESP business.) Then perform some sort of carnival trick, say the following one in which you start out by telling the class:

"I'm going to think of a number between one and 50 and try to convey that number into your minds right after I say "ready." I want you to concentrate at that time and yet be receptive to outside forces. The number will have two odd digits in it, but not the same digit twice. That is, I might think of 15, but not 11. To repeat, the number will have two odd digits, but not the same digit twice, so I might think of, say, 17, but not 11. At the appropriate time, write down whatever number of this kind that comes into your mind."

Repeat the spiel, and then say "ready." Allow a few moments to "transfer" the number from your mind to theirs and for them to write down the numbers that came into their heads. Then continue talking:

"Oh, my. I think I messed things up. I thought of one number and somehow then switched to another. Perhaps we should start over. Oh, well, let's see how we did anyway. At first, I thought of the number 35." [There should be some gasps from students who wrote down this number.] "But then, for some reason, I thought of 37." [More gasps from students.]

In a typical class, well over half of the students will have written either 35 or 37. In part, this is accounted for by the fact that the instructions eliminate all but eight possible candidates out of the fifty numbers—namely 13, 15, 17, 19, 31, 35, 37, and 39—and deter students from

choosing 15 or 17 because these numbers have already been mentioned. So even if students picked their numbers randomly, the odds would be better than one in four that they will pick either 35 or 37. But for psychological reasons that are not yet understood, they usually pick either 35 or 37 more than half of the time. In most classes, some student will finally see the true odds and expose that part of the trick. In any case, after having impressed students with the apparent success of your ESP experiment, then show the class how it's done. (On one occasion, out of dozens when we've tried this trick, less than half the students picked 35 or 37. Oh, well, there are risks in every trade.)

Another variation on this is to tell the class that you will convey some simple geometric shape into their minds. A majority of students will generally pick either a circle or a triangle, but a few will usually pick a square or rectangle. Mention a square as an example to reduce the possibility they will choose a square. (The point of doing experiments like this is, of course, the effect they have on students when you come clean.)

8. Have students do homework on a particular topical issue and then exchange the resulting papers with each other in class, so that each student evaluates the work of some other student. (One benefit of this, obviously, is that you have fewer papers to grade, but another is that students benefit twice, first from writing their own papers and then from their work in evaluating the papers of other students.)

9. Students are just as defensive against the idea that they ever deceive themselves, are prejudiced, or are superstitious, as are the rest of us. When discussing these topics, one way to break down defenses is to ask the class how many of them smoke cigarettes. Then discuss the facts, which students know pretty well anyway, and ask those who smoke if they want to kill themselves. Usually, at least one student will defend smoking by making a defensive remark, such as "Well, we all have to go some time, don't we?" or "It takes years for smoking to have bad effects; I intend to quit before that." Other students will then do your work for you. (By the way, if you, the instructor, smoke, the effectiveness of this ploy is vastly increased, as our smoking colleagues assure us, provided, of course, that you own up.)

10. Media Exercise: A very effective assignment for Chapter 11 ("Managing the News") is to have students figure out why we in this country are so ill-informed when we have so much information available to us from so many sources. A good way to do this is to ask students to quantify the amount of news in the mainstream media. For example, have them count the number of pages in their local newspapers devoted to local, national and international news; then count the pages dominated by ads, self-help articles, horoscopes, comics, etc. Do the

same for TV and Internet news. Have students use a stopwatch to time news items, sensational stories, talking heads, ads, and so on.

Once they have finished gathering information, ask them to evaluate their data to see what patterns emerge. It should become quickly apparent to them that we are fed a steady diet of fast food news, sensational stories and warm, fuzzy human interest items rather than in-depth coverage. Once they have noticed the patterns, ask them to explain why they think the news is presented this way. Is it because of pressure from advertisers, the networks, the reporters, the consumers, or all of the above? They can either write up their evaluations or, even better, give oral presentations in small groups of three or four. Oral presentations are easier to grade and have the added advantage of sparking in-depth classroom discussions.

11. Here are a few writing assignments that have worked well in our classes.

a. Write an argumentative essay in which you argue either for or against

_____. In the introduction develop a strategy designed to persuade the reader to your point of view before stating the thesis—your position on the issue. Develop the major premises of your argument in the body of the essay and provide convincing evidence and well-reasoned support. If you anticipate a counter argument to one of your premises, be sure to refute it. Include evidence from outside sources and cite in footnotes and in your bibliography. Conclude your essay by emphasizing or restating your position, without lapsing into uninspired summary.

b. Write an analysis of an argumentative essay, following this format:

(1) Start with a one-page summary of the essay to be evaluated, including the thesis and the main premises presented in its support.

(2) Construct a thesis statement for your analysis, indicating whether you believe the argument in the essay you are evaluating is, or isn't, cogent, or is generally well argued but has some problems. Then analyze the premises and conclusion, employing the critical thinking tools discussed in the text and in class (several pages).

If your thesis is negative, you must show either that (i) the argument being evaluated is not valid (its premises do not adequately support its conclusion), or (ii) one or more of its premises are questionable and the argument is not valid without the questionable premise(s), or (iii) evidence has been neglected which, when included, renders the argument unpersuasive (overturns its conclusion).

If your thesis is positive, you must show that (i) the argument being evaluated is valid (its premises do adequately support its conclusion), and (ii) give reasons for accepting its premises, and (iii) provide additional evidence as corroboration. If the thesis is generally positive but notes some problems with the argument, explain the strengths and the weaknesses.

In either case, of course, you need to do research on the topic in question, as well as a good deal of thinking pro and con the topic in question. Initial ideas frequently get overturned by diligent, unbiased, library research.

(3) Discuss the language and tone of the essay you are evaluating, indicating whether you think it appropriate, given the intended audience. Analyze also, the way language is used, explaining whether it is neutral and even-handed or emotionally charged to persuade (or manipulate) the reader.

(4) Provide a concluding discussion comparing or contrasting your worldview to the writer's.

(Analyzing someone else's essay is a more difficult task than writing one's own, but it is an extremely valuable activity. If only one essay is to be assigned for the semester, we recommend this one. Students can choose the argument to be analyzed, or the instructor can do the selecting. Having done it both ways, we suggest the latter, primarily because that makes grading less time consuming.)

c. The text's chapter on impediments to cogent reasoning (Chapter 6) provides valuable critical thinking tools for an assignment in which students are required to write an essay about a work of fiction. Several novels that have worked well for some instructors are: *A Passage to India*, *Heart of Darkness*, *Chronicle of a Death Foretold*, *The Great Gatsby*, *Huckleberry Finn*, and *The Catcher in the Rye*. (At least half of the students will have read this in high school, but when they analyze it in college, using the impediments to cogent reasoning as their guide, they come to a much more complex and sympathetic understanding of Holden Caulfield.) Here are some instructions that might be given to students:

Write an analysis of _____, employing the critical thinking principles discussed in the text and in class. Write in the present tense, that is, as though the events in the work in question are happening now. In your introduction, identify the novel and the author, and briefly explain the worldviews of the characters portrayed, citing evidence from the text. Then state the theme of the story (the central insight) and your thesis, in which you sum up your plan of development.

In the body of the essay, analyze (describe the psychology of) the important characters. (Instructors might want to specify the characters students are to analyze.) Pay close attention to their self-deceptions, rationalizations, denials and delusions. Note instances of stereotyping, scapegoating, provincialism, sexism and the herd instinct. In addition, discuss any other elements that compromise the ability of these characters to reason clearly. When appropriate, link your discussion to your theme.

Conclude your essay by interpreting a quotation for the literary work that sums up the central problem or theme in it. (Instructors might cite a quote or let students choose their own.)

12. More about writing assignments: Students tend to write better essays if they are required to submit a draft the week before the assignment is due and are required to evaluate each other's work in editing groups. If the instructor gives clear instructions about what to look for, students generally do reasonably well, particularly when the better writers are placed strategically in each group. Even if there is no other benefit, students at least begin work on their essays a week in advance, not the night before the due date.

It also can be quite effective to have students evaluate each other's finished essays. They should bring in a copy of their essay (for the instructor) and a duplicate (for peer evaluation). Each student should be given time in class to complete at least one evaluation (possibly two or three, depending on the time available), commenting in the margins and summing up strengths and weaknesses, just as an instructor would do. This exercise serves two ends—it strengthens the evaluator's critical thinking skills and it gives the writer a real sense of audience.

Some Chapter-by-Chapter Teaching Suggestions and Answers to Exercises

Chapter 1:

Chapter 1 contains an overview of—an introduction to—the material discussed in the rest of the text. Some instructors, including the authors, discuss the material on deduction and induction rather briefly, the intent being to apprise students in some general way concerning what reasoning is all about, going into more detail at some point later in the semester (exactly when depending on how the class seems to be going).

We have moved the discussion of worldviews back to Chapter 1 to make students aware, early on, of the underlying beliefs central to arguments. Students sometimes have trouble distinguishing between their opinions on an issue (abortion is wrong, for instance) and the worldview it might stem from (human life is sacred, for example). In particular, students who have difficulty reasoning about abstract matters have a hard time making this distinction. Generally they come to a better understanding when the instructor asks them to identify their own worldviews on certain issues and to speculate on worldviews implied (or stated) in argumentative essays. Because the Declaration of Independence is so fundamental to American beliefs, it is a good place to start. Students can parse the deductive arguments and sort out the worldviews central to them. We've found it's a good idea to have students exposed to opposing worldviews as well (for instance, Adam Smith on capitalism and Marx and Engels on capitalism and communism).

Once students begin to distinguish different worldviews, they become more aware of their own thought processes. They start thinking about thinking in more depth and with greater clarity and sophistication.

The obvious reason for having an introductory overview is to let students know what they're in for. But another reason is to gather information about student responses to this initial introduction to the material, so as to be better able to judge how much time will be needed for classroom discussions of later chapters.

Answers to Exercises

Exercise 1-1

1. Premise: Everyone deserves health care.
Premise: Over 40 million Americans don't have medical insurance.
Conclusion: The United States should institute national health care.
2. Premise: We don't know if genetically modified plants are bad for us in the long run.
Premise: Cross contamination could occur if they spread to other areas.
Conclusion: I have my doubts about genetically modified plants.
3. Premise: Everyone says Bonds pumped himself up with steroids and tarnished his image forever.
Premise: Aaron and Ruth got there on their own steam without any boost from drugs.
Conclusion: Barry Bonds will never be the hero Hank Aaron or Babe Ruth was.
6. Premise: The night sky looks different in the northern and in the southern parts of the earth, and that would be the case if the earth were a sphere.
Conclusion: The earth is a sphere.
7. Premise: Over the past 200 years humans have been responsible for the rising carbon dioxide levels and increased concentrations of green house gases.
Implied premise: Rising carbon dioxide levels and green house gases cause global warming.
Conclusion: Human activities have become the major source of global warming.
9. Premise: College costs big bucks.
Premise: When you put out big bucks, you should be allowed to decide where your money goes.
Conclusion: Students shouldn't have to take introductory college courses if they don't want to.
10. Premise: Letting illegal aliens have driver's licenses undermines immigration laws.
Premise: Terrorists would be able to get licenses and present security risks.
Conclusion: Illegal aliens should not be allowed to get driver's licenses.

Exercise 1-2

2. Premise: We are never going to find a cure for diabetes, cancer, Alzheimer's and a lot of other diseases unless we use the most promising research available.
Implied Premise: Stem cell research is the most promising research.
Conclusion: Stem cell research is the way to go.
3. Premise: Stem cell research costs a lot of money
Premise: We don't know whether it will cure people.
Premise: We don't know about the long-term effects--like over population.
Premise: It is wrong to take stem cells from embryos.
Conclusion (Implied): Stem cell research should be discontinued—or
should be postponed until we know more about it.
5. Premise: Legalizing prostitution is bound to increase sexually transmitted diseases.
Premise: It can't help but lead to the degradation of women.
Premise: Most people don't want to legalize prostitution.
Conclusion: Prostitution should not be legalized.
6. No argument
7. Premise: I don't want the government tracking me down.
Premise: I don't want anyone else invading my privacy.
Implied premise: Embedded chips will make infringement on my privacy possible.
Conclusion: I've got a problem with embedding computer chips.
8. Premise: Too much money is poured into college sports.
Premise: Athletes use college as a training ground for pro teams not for an education.
Premise: All the publicity and hero worship overshadows the
reason for going to college.
Premise: Many students pick colleges because of their teams not
their academic standing.
Conclusion: (Implied) College sports should be down played to an amateur status
and not given so much publicity.
10. Premise: Baseball players who take steroids have an unfair advantage over those who don't.

Premise: Inducting them into the Hall of Fame would corrupt the basic
fairness and integrity of the game.

Conclusion: Baseball players who take steroids should not be
inducted into the Hall of Fame.

11. Premise: The government doesn't expend enough money to repair the buildings let alone pay teachers a decent salary

Premise: Big business would demand more for its money—like higher standards and better discipline.

Conclusion: Public schools should take donations from private business.

12. Premise: When equality of condition is the common law of society, the most marked inequalities do not strike the eye.

Premise: When everything is nearly at the same level, the slightest are marked enough to hurt it.

Conclusion: Hence the desire for equality always becomes more insatiable in proportion as equality is more complete.

This conclusion becomes the premise for the following argument.

Premise: The desire for equality always becomes more insatiable in proportion as equality is more complete.

Conclusion: Men will never establish any equality with which they will be contented.

Exercise 1-3

1. Inductive
2. Deductive
3. Inductive
4. Inductive

(It isn't appropriate to provide answers to Exercises 1-4 through 1-7, because the individual quality of student answers has to be assessed by instructors. Some other exercises in L&CR are not answered in this instructor's manual for the same or similar reasons.)

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