

Chapter 1: Basic Critical Thinking

First, a few house-keeping issues. Any ideas discussed in this reader, or applied in the homework, may appear on the assessments. However, at the end of each chapter there is a list of major ideas that should help guide your studying.¹ Note that after the homework and classwork at the end of this first chapter, there is a section on how you will be graded in this class. Although the focus of the assessment for this chapter will be the major ideas, there will also be some questions on the grading section.

This is a philosophy class. When many people hear the term “philosophy” it calls to mind deep thinkers, pondering the nature of the world or the meaning of life. How does this relate to critical thinking? One answer is that philosophy is a very general, wide-ranging discipline. So, while it's true that philosophers ponder the meaning of existence, they also ponder the inner workings of language and reasoning, and the latter will be our focus for this class.

Philosophy translates from Greek as “lover of wisdom.” Clearly knowledge and wisdom are different things, but using reason to acquire knowledge and apply it can lead to the growth of wisdom itself, which is what philosophy is all about. Some philosophers have created webpages with justifications for studying philosophy.² One of the highlights is that philosophy majors tend to outperform other majors on the GRE (the major test for graduate school), the MCAT (for medical school), and the LSAT (for law school). And philosophers tend to earn more than you might think—more than people who major in accounting, international relations, journalism, and even some of the hard sciences. Some employers also love to hire philosophy majors since they tend to be

¹ Some of the material was inspired by the textbook *Critical Thinking* by Moore and Parker. Although students in the past have succeeded with these readings alone, some have found it valuable to have Moore's and Parker's book for deeper explanation of particular concepts. If you want the book, I suggest getting a previous edition, like the 9th or 10th.

² See for example: Landauer, J. & Rowlands, J. (2001). *The Importance of Philosophy*. Retrieved from <http://www.importanceofphilosophy.com>. See also the following websites: <https://sites.google.com/site/whystudyphilosophy/#Why%20Study%20Philosophy> and <https://philosophy.unc.edu/undergraduate/the-major/why-major-in-philosophy>.

more reasonable and open-minded. Finally, some important entrepreneurs majored in philosophy and cite their studying it as having a positive impact on their careers: from Overstock.com founder Peter Byrne to hedge fund manager George Soros to civil rights leader Angela Davis (who has spoken at Southwestern College!).

Of course, the main reason people study philosophy has nothing to do with money or social status; people who choose to study it generally do so for the sake of the questions themselves, because they have an intellectual curiosity in understanding the world. Still, not everyone is a philosopher, and that's ok. That's why it's important to point out the practical benefits/consequences to studying philosophy, as I did above. Because this class will teach you how to reason well in *any* context, it is likely to have a positive impact on any career path that you choose.

There are generally three branches to philosophy, though some philosophers divide them up a bit differently. The material in this class falls mostly under epistemology—the theory of knowledge. Another branch is metaphysics, which asks questions about what *is*, what exists in the universe, what is real, purpose, causality, etc. And the other major branch is value theory (or axiology) which, surprise surprise, asks questions about value, often relating to ethics, politics, and society. Again sometimes other philosophers stipulate more branches, but what's important is that you know that philosophers generally discuss foundational issues relating to reality (metaphysics), knowledge (epistemology), and values of some kind.

Since this is the introductory reading, as I've done above, it is necessary to continue to define terms and lay some ground rules. Terms are sometimes used inconsistently across critical thinking textbooks and writings, but I have tried to be as consistent as possible. Defining at least some basic terms is necessary to reasoning effectively, which is why we do it. What's most important, however, is that you *understand* the meanings and uses of the terms in practice, rather than memorize their definitions. The assessments in this class primarily measure

understanding, not memorization. For more on understanding in relation to the assessments and writing projects in this class, see the section on grading at the end of this chapter.

Critical Thinking

Critical thinking: the careful application of reason in the determination of whether a claim is true.

Although humans have done many great things with their intelligence, they have also done many foolish things. Even very smart people can be unreasonable, or fail to think critically. Sometimes critical thinking is unnecessary—when enjoying a beautiful sunset, for example—but other times it's imperative, like when buying a new car or deciding whether to move to a new city or town.

Critical thinking, to put it more simply, is *thinking about thinking*. Our actions depend on what thoughts, beliefs, or ideas we've accepted. This means that it's important to accept the right thoughts as a guide to action. Think about that for a minute. Just consider someone who believes that "family comes first." Based on this abstract belief, we can predict how this person might act. Faced with a choice between her own happiness (like moving to another state for a great job) and her family's well-being (being a good daughter), she is likely to choose the latter. Although this is speculation, our beliefs clearly have some effect on our actions, with more deeply held beliefs likely having more influence. In fact, in the past twenty years or so, research in psychology has revealed specific ways that we are unconsciously influenced, known as *cognitive biases*.

Cognitive Bias: A Type of Fast Thinking

Perhaps the most recent, widely discussed model of how our minds work is the dual processing model.³ This model suggests that human beings

³ The originators of this theory are Daniel Kahneman and Amos Tversky. Here is their original paper: Kahneman, D., & Tversky, A. (1979). *Prospect Theory: An Analysis of Decision Under*

generally think in two ways: fast and slow. Slow thinking is when we deliberate consciously about some idea or action. This class is about cultivating slow thinking. When we think about thinking, we are by definition slowing our thought process down to see what mistakes we are making, and how we can become more reasonable.

Fast thinking, on the other hand, is just what it sounds like: it is what happens when we think very quickly, without any reflective or critical thought. There is nothing inherently wrong with fast thinking, and it is a byproduct of our instincts for survival. For example, our fast thinking is what tricks our brains into believing that a curved stick in the distance might be a snake, all below our level of conscious awareness. Maybe it's not a snake, but for survival, we are wired to make quick decisions: hence, fast thinking.

Fast thinking is more or less the mind's attempt to simplify the vast amount of raw data (sounds, feelings, thoughts, sights, etc.) we are faced with from second to second. As you can tell by the name, cognitive biases happen when there are errors in this simplification. One common bias, for example, is the availability heuristic, or the tendency to think that because we've seen recent examples of some event—that is the examples are more "available" in our minds—that it must be a highly common or probable event. But probability and statistics have little to do with recent examples. For instance, many people hold the belief that violence is on the rise. However, some evidence suggests that violence is on the decline.⁴ Granted, it may depend on how we define "violence" but I'm guessing that many people who say violence is on the rise are motivated by recent news stories on violence that they've seen (meager evidence), rather than on scientific data (statistics). This is one of the implications about not taking bias seriously—being potentially wrong about the facts.

Risk, 47(2), 263-291. Kahneman also wrote a book about the theory later: Kahneman, D. (2011). *Thinking Fast and Slow*. New York, NY: Farrar, Strauss, and Giroux.

⁴ PEW Research Center. (2013). *Gun homicide rate down 49% since 1993 peak; public unaware*. Retrieved from <http://www.pewsocialtrends.org/2013/05/07/gun-homicide-rate-down-49-since-1993-peak-public-unaware/>

Human biases must be fully felt and understood, in my view. These biases are not individual prejudices, but a collective human ailment. During my first year of my doctoral program, I studied the confirmation bias. When people asked about my research and I told them I was studying bias, I often got similar responses. "Ah bias! Just like those folks at Fox news" or "Just like those republicans" or "Just like those religious folks" or whatever. The problem is that, in recognizing bias, as these quotes illustrate, our own bias comes through. The problem is that *everyone* is biased, not just republicans or democrats or atheists, as can clearly be seen from the research.⁵ When I was writing up my thesis on the confirmation bias for my doctoral program, I at one point realized I was looking at the data in such a way to confirm my own hypothesis—that is, I was using the confirmation bias while studying the confirmation bias.

What are the implications to human bias? Well for one, it should humble us. We shouldn't be so quick to think we're right or that we've fully understood something. Doesn't mean we can't still *be* right or that we have to constantly doubt ourselves; it just means we should be more careful in forming opinions and beliefs. Do you want your most cherished belief to boil down to a basic perceptual fallacy that afflicts all humans? Don't you want at least some of your beliefs to be guided by truth? (If you believe that truth is unknowable or relative, views of that nature will be addressed in chapter 2; moral relativism is addressed at the end of this chapter).

In any case, I'll ask you to be cognizant of potential cognitive biases on all assignments and discussions throughout the class. We will deal with more complicated mistakes in reasoning, called fallacies, in the last two chapters. Here are just some of the common cognitive biases, with examples:

⁵ Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of General Psychology*, 2(2), 174-220.

Confirmation bias: The tendency to seek or interpret evidence in ways that “prove” your existing beliefs. Here’s an example:

- Imagine a person tells you that God does not exist. You ask him why, and he just shows you a bunch of atheist websites to prove his point, when you know that there are plenty of websites that contradict his view as well. Because this person is only seeking evidence that supports his view, he’s engaged in the confirmation bias.

Availability Heuristic: unconsciously assigning a probability to a type of event on the basis of how often one thinks of that event.

- Imagine that you read about natural disasters in the paper three days in a row. You start thinking about natural disasters. You might then say that “natural disasters are happening way more often than they used to” but this isn’t how probabilities work.

False consensus effect: assuming our attitudes are shared by society at large.

- “I believe in God, so everyone must.”
- “I think this class sucks, so everyone else does.”

Negativity Bias/ Loss aversion: the tendency people have to weight negative information more heavily than positive information when evaluating things, or to be more strongly motivated to avoid loss than to accrue gain.

- Some advertisers will point out that another product doesn’t work, rather than that their product does work.
- We are more worried that we will lose money we already have, than that we might not gain money we could have gained.

In-group Bias: we find it easier to form negative opinions of those who aren't in our group (tribalism).

- Muslims may see Christians as being less moral or “all the same” and vice versa.

Fundamental Attribution Error: failure to appreciate that others' behavior is as much constrained by events and circumstances as our own would be if we were in their situation.

- If John trips over a rock, we assume he's being careless. But if we trip over the same rock, we assume the rock was placed in an awkward spot.

Better-than-average Illusion: when most of a group rate themselves as better than most of the group relative to some characteristic

- People tend to think they are smarter, think more clearly, have better memories, etc., than most other people.
- “Most Americans are stupid... except me.”

More on Critical Thinking

Critical thinking affects us at all levels of decision-making, from insignificant decisions to significant ones. When I'm evaluating my friend's two sentence Facebook post I am thinking critically just as when I'm reading philosophy (though we might say there are different levels of critical thinking in each case). The wise person is the one who knows how to minimize her errors in critical thinking as much as possible (we are always going to commit some errors in thinking no matter what).

Another part of thinking critically is assessing our own beliefs and the beliefs of others.

Belief: subjective acceptance that something is true, right, or that something exists.

Subjecting someone's beliefs to scrutiny and analysis does not have to be a personal attack; instead, it can be an exploration of ideas and their

consequences. Also, if you're paying attention, you'll notice that you already judge the behavior of others (we all do to some extent), so why not make those judgments more honest and rational?

Beliefs and ideas can be expressed in many ways, but in this class we will try to clarify these expressions through claims, issues, and arguments.

Claims and Issues

Claims: statements, sometimes called propositions, that can in principle be true or false.

One claim is “A bachelor is an unmarried man” and another is “Earth is the second planet from the sun.” Claims can be true or false, sometimes referred to as the claim's *truth value*. It's true that a bachelor is an unmarried man. It's false that the earth is the second planet from the star we call the sun. Some claims are either true or false but we don't have the information to know which. “There is life on other planets” is an example of such a claim. It's possible that future developments in space travel will show this claim to be true or false, but for now we don't know.

Some claims do not need investigation and are obviously true or false. It's obviously false that a T-Rex still roams the earth (since, fortunately, we're not living in *Jurassic World*). It's either true or false that it's raining outside and all you have to do to know is look outside.

There are subjective and objective claims. A subjective claim depends on the opinion of a person. “Vanilla ice cream is the best” is a subjective claim. It's not objectively true that vanilla ice cream is the best. An objective claim does not depend on what anyone thinks. “Renee thinks vanilla ice cream is the best” is objective because it's either true or false that Renee thinks this. Notice the difference between the two claims, despite the fact that both have similar content. I suggest taking one extra moment to make sure you understand the difference.

Issues: questions we raise about claims.

If we ask whether a claim is true or false, we are raising an issue. To think critically about a claim is to call it into question and make it an issue. Notice that an issue always asks whether something is the case; it does not say that something is or isn't the case. For example, imagine that someone says the following: "The central government has too much power. Just the other day they forced a local business to shut down." Now, the issue in this sentence is *whether* the federal government has too much power, and the person being quoted is taking a stand on that particular issue. An issue can only ask a question. "I am tall" is not an issue, but "whether or not I am tall" is an issue. "Jimi is not the best guitarist of all time" is not an issue, but "whether Jimi is the best" is an issue. Do you see the difference? I suggest taking a moment to make sure you fully understand what an issue is, and how it differs from a claim. We can also phrase issues as questions. For example, "whether I can dance" expresses the same logical information as "can I dance?"

To assess a claim, it's good to know under what conditions it could be true or false. Does God exist? And if so, which God or how many? Are there parallel dimensions? Can we even conceive under what conditions some of these questions would be true or false? The answer to some questions depends on definitions (for more on definitions, see the end of this chapter). For instance, some people define God as "a being beyond the physical world." Here God is defined in such a way that no evidence or argument could ever prove that He exists or does not exist. But if God is defined as a being that intervenes in the universe, then we might expect to see evidence of his intervention (with miracles, for example). In philosophy, such concerns fall under the branch of metaphysics.

Even some less abstract claims are hard to assess, like this one: "It is in human nature to seek power and dominate others." At first glance, there seems to be a lot of evidence for claims like this, but some terms are undefined, like "power" and "human nature." Once we fully define the

necessary terms, I wonder how easy it would be to collect legitimate evidence to support the claim?

There is a personal element involved in accepting a claim, because to accept a claim is basically to have a belief. According to the definition above, if I accept the claim that the earth is round then I *believe* that the earth is round. When Galileo argued to the Vatican many years ago that, based on observations in his telescope, the earth is revolving around the sun, many members of the Catholic Church would not accept Galileo's claim due to the personal element (their belief that God created the earth at the center of the universe). If you believe something, there is an attachment there, there is a “me” connected to that claim. Couple this with cognitive bias, and you can see why there are so many disagreements, sometimes over what even counts as evidence (*The Bible? The Qur'an? Scientific studies? Personal experience?*).

As will be discussed in future chapters, there are still unresolved issues here that philosophers and other academics are trying to understand, like what it even means to call something “true,” or what does in fact count as evidence.

But let's now turn to a term that will be with us for the rest of the class: arguments.

Arguments

Arguments: giving a reason (or reasons) for thinking that a claim is true or right.

Determining whether an argument is good or bad is the crux of this class. Below are more key terms, the two major components of an argument. Notice that an argument is composed of claims (as discussed above), *at least* one of which is the premise and *only* one of which is the conclusion.

Premise: a claim that is offered as a reason for believing another claim.

Conclusion: the claim for which the premise is supposed to give a reason.

Whether an argument is good depends on whether the premise really proves or supports the conclusion. For a premise to fully prove the conclusion, the premise must be true and relevant to the conclusion, and the conclusion must follow logically from the premise (we'll talk about just what this means in more detail in the next chapter when we discuss *validity*). For the premise to support the conclusion, it should be true and relevant to the conclusion. When we ask what makes an argument good, truth and relevance are two of the most important considerations.

Arguments in the academic sense are not feuds or verbal fights between people. Arguments don't even require two people. We make arguments to ourselves all the time. For example, when we decide not to go Christmas shopping on a certain day because there will be too many people, we are making an argument. Here the premise is: There are too many people out in the stores today. And the conclusion is: Therefore, I will not go Christmas shopping today. You might not say it this way to yourself, but at the base of your thinking is an argument that we can assess. When we think about thinking, as we're doing in this class, we try to get at the base of our thinking, to expose our reasoning process to the light of day, so to speak.

To learn what something is, it often helps to compare it to what that thing is not. Arguments are *not* explanations, descriptions, or value judgments. If you say "I hate vanilla ice cream" you are not making an argument; it's a value judgment. There is no conclusion being supported by a premise/claim. Notice, however, that a value judgment can be *part* of an argument if it is supported by relevant reasons. For example, you could say: "It is wrong to treat people as expendable. Slavery treats people as expendable. Thus, slavery is wrong." This is an argument since the value judgment within it is not alone, and there is a conclusion

supported by a premise. Notice that the following is also an argument: “Anything that does not have rights can be harmed for the greater good. Animals do not have rights. So animals can be harmed for the greater good.”

We might disagree with the value judgment in an argument, but that is irrelevant to whether it is an argument. To be an argument, there only needs to be a relevant and coherent reason given (a premise) to support the conclusion. First determine if it's an argument, evaluating the content comes later.

It may help to consider that philosophers and academics sometimes represent their line of reasoning (or argument) with numbers for the premises, the final line being the conclusion that these premises are supposed to entail or support (referred to as “premise/conclusion format”). While this convention is not necessary to understanding an argument, it helps one to clearly visualize the relationship between the premises and conclusion. For example, here is the anti-animal rights argument I gave above in premise/conclusion format:

1. Anything that does not have rights can be harmed for the greater good.
 2. Animals do not have rights.
- Thus, animals can be harmed for the greater good.

If you're already evaluating the argument (maybe because you're a vegetarian), you're getting ahead of yourself. The first step in critical thinking is to recognize the reasoning itself, evaluation of the reasoning comes later. If we mix evaluation with recognition, we are more vulnerable to misunderstandings and bias.

So from this point forward, *it is very important to future assignments that you understand what I mean when I say “premise/conclusion format,” as explained above.*

Conclusions usually use words like *thus, therefore, so, consequently*, etc. Premises usually use words or phrases like *because, since, as a result*, etc. Notice that these premise and conclusion indicators are only a guide; they are not always present in an argument. “Eat your vegetables; they are good for you!” is still an argument despite not having premise or conclusion indicating words or phrases.

Inductive and Deductive Arguments

There are two kinds of arguments: deductive and inductive. We will be studying these two types of arguments in more depth in the next several chapters, but here's an introduction. Deductive arguments provide certain conclusions while inductive arguments provide the best possible support for a conclusion. If I know that all the clothes in my closet were made by my grandmother, then if I am wearing a shirt from my closet, I know *with certainty* that the shirt was made by my grandmother—this is deduction. If I know I did well on the first two exams in my algebra class, this is at least some evidence to believe I will do well on the next exam in the class—this is induction.

Unstated Premises and Conclusions

Arguments can have unstated premises or conclusions. Another way to say it is that premises or conclusions can be implied. Imagine that I say the following: “People who wear tight jackets always give me the creeps. And this guy is wearing a tight jacket.” I didn't state the conclusion but it's pretty clearly implied that my conclusion is, “This guy gives me the creeps.”

Now let's imagine that I am about to watch the NBA playoffs with a friend. Let's say that I suggest we order a pizza. Then my friend says, “I'm not calling the pizza place since I was the one who called last time we ordered pizza.” My friend provided an argument for why he wouldn't call the pizza place, but there was also an implied premise: “Anyone who has done something recently should not have to do that thing again

immediately.” There are other ways to state it, but this premise was part of my friend's reasoning in the example even if he didn't say it explicitly.

As discussed later on, unstated premises can be tricky because, depending on what's being assumed, the argument someone is making might be deductive *or* inductive.

Critical Thinking and Moral Relativism

Critical thinking is significant in moral matters, even when there are clear differences of opinion and interpretation. You might be thinking that ethics/morality is relative, a view known as moral relativism. There is no absolute sense of right and wrong, you might argue, since all moral evaluations are merely based on the opinions of individuals or cultures, and how could critical thinking be relevant to that?

First of all, I already explained above the way value judgments (and this includes moral ones) can be parts of arguments. However, if you accept moral relativism, you may not be aware that this line of thought itself is an argument, and so by accepting it you are already mixing critical thinking and morality. Let's look in more depth at why this is so. Here is the argument that underlies the thinking of a moral relativist:

1. There are individual and cultural disagreements over morality. Thus, questions of right and wrong are only matters of opinion, and opinions vary from culture to culture.

If you consider yourself a moral relativist, here is your first lesson in critical thinking. Did you understand the difference between inductive and deductive reasoning discussed above? The question you should ask yourself is, does the premise prove the conclusion (deductive), or does it just make the conclusion more likely (inductive)? Let's look at a parallel argument:

1. There are individual and cultural disagreements over the shape of the earth.

Thus, there is no fact of the matter, just varying opinions.

We know the earth is round, so this argument seems ridiculous. But notice that the earth's shape argument makes the same logical inference from premise to conclusion as the moral relativism argument. So why would we accept one and not the other? More importantly, both arguments are inductive, so the first does not prove moral relativism, it merely suggests its potential likelihood. But the mere fact that people disagree over something doesn't seem to be a justification for believing there isn't a fact of the matter, since people can be mistaken about their beliefs.

Morality may or may not be relative, but one thing is clear: saying that morality is relative itself is an argument that we can evaluate, as I have just done and, therefore, involves critical thinking. For a famous discussion (well, famous within philosophy at least) of moral relativism and its implications, see the philosopher James Rachels' discussion of the topic.⁶ Whether morality is relative or not, in ethics and bioethics classes professors like myself apply critical thinking to moral issues like abortion, drugs, genetic enhancement, and more. And on the Supreme Court, the justices mix critical thinking and morality on just about every case that comes their way.

Ethos, Pathos, and Logos

Although value judgements can be parts of arguments, often they are just value judgments with no reasons given. Without reasons supporting or proving them, value judgments are a type of persuasion. The ancient Greek philosopher Aristotle recognized three ways that we can persuade others. *Ethos* refers to a person's personal circumstances, like the authority of the person giving us information. *Pathos* refers to an appeal

⁶ See chapter 2 in: Rachels, J. (2007). *The elements of moral philosophy*. New York, NY: McGraw-Hill. There is a free copy online here:
<http://www2.gsu.edu/~wwwphl/Graham2010/Rachels.pdf>

to emotions. And *logos* refers to the actual arguments, facts, and so forth that are being presented. It should be obvious that this class is all about getting at the logos hiding beneath the ethos and pathos.

Obviously authority is relevant, as we'll discuss when we get to credibility later in chapter 5, but we should evaluate arguments on the merits of those arguments (*logos*), not on the merits of those making the arguments (*ethos*) alone, or on their emotional appeals (*pathos*) alone. It's true that one might use a personal or emotional appeal to *complement* an argument, but even then, we should mostly be interested in the argument itself (as good critical thinkers).

We'll go into more depth on emotional and personal appeals, and more, when we discuss fallacies, or mistakes in reasoning, in the last two chapters.

Major Ideas for Basic Critical Thinking

Although anything from the chapters or homework might appear on the assessments, the following **major ideas** should be clearly understood.

- The dual processing model of mind
- The branches of philosophy
- Critical thinking
- Claims, Issues, and Arguments
- Cognitive biases
- Beliefs