How to Become a Philosopher

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About this Ebook

The purpose of this book is to help people learn how to reason well (about philosophical issues in particular), to have a grasp of certain intro-level logical and philosophical issues, and to have a better idea about what philosophers have been doing for all these years.

The essays within this ebook were originally posted on my website at http://ethicalrealism.com/. If you like this ebook, you might want to take a look. You can download more of my free ebooks there, or just take a look at what I have to say on various philosophical topics.

This ebook has not been officially published. It is in a rough draft stage.

Updates

- 6/25/10: I made minor changes to the section on absurd conclusions (see “Four Requirements for Good Arguments”) and I added the section on taking notes.
- 9/23/10: I added the following chapters: (1) 10 Myths about Beliefs; (2) Intellectual Virtues, Dogmatism, Fanaticism, & Terrorism; (3) Knowledge, Justification, and Theoretical Virtues; (4) the Conclusion; and (5) A Proposal for a Philosophical Community.
- 11/6/10: Several minor grammatical and spelling errors have been corrected.
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Part I: Introduction

Chapter 1: Philosophy & Sophistry

Many people confuse *sophistry* with *philosophy*. They think that philosophers are arrogant charlatans who foolishly think they know something. However, that description better fits those we now call 'sophists.' What is sophistry? And what is philosophy? Socrates considered philosophy to be a force of good in opposition to sophistry. I will discuss both of these domains in order to help us understand what philosophy is, and why philosophy is not sophistry.

What is sophistry?

The sophists were rhetoric teachers in Athens who lived at the same time as Socrates. They were major intellectual figures, and the term 'sophist' means “wise person.” We still use the term *sophisticated* to refer to intelligent or crafty people. However, *sophistry* was originally roughly equivalent to *rhetoric*, and rhetoric is the *art of persuasion using language*. However, the term 'sophistry' is now generally used to refer to *manipulative forms of rhetoric*.

Why sophistry was important

The reason that rhetoric was considered to be important at the time was likely for at least two reasons:

One, public speaking (i.e. “oratory”) was very important for their democratic form of government—especially when concerning matters of justice. The citizens would side with experts, such as doctors, when making decisions relevant to the domain of the expert, but no one was considered to be an expert of justice. Justice was a “matter of debate.” So, they relied on arguments and debate in order to decide what should be done concerning matters of justice. Many such arguments were manipulative, just as they are now. You can watch television and see political pundits debate moral issues to see what I'm talking about.

Two, people needed to know how to argue well in case they would go to court. The Athenians settled disputes and investigated crimes similar how we do now. They went to court and sued each other. It happened a lot at the time, and people who knew how to argue well were at an advantage to prove their innocence.

Sophistry and manipulation

The fact that rhetoric concerns persuasion means that it can be used for any situation and for any purpose. The orator, Gorgias, said that having profound oratory skills allows him to be more persuasive to non-experts than the experts are. He could convince a patient that his medical advice is superior to a doctor's, even though he personally knows little to nothing about medical science. Sound familiar? Gorgias is referring to the sophist's ability to be a charlatan—a false expert who people take too
seriously. For example, he could trick people into buying a product for the wrong reasons, just like a
snake oil salesmen. Snake oil salesmen sell medicine that doesn't actually work, so no one should buy
their product. And yet these guys have been incredibly popular for thousands of years and can make a
great deal of money.

Experts can be persuasive, and rhetoric can be used by experts. The problem with rhetoric is that it is so
often used for the wrong reasons.

Consider all the unqualified charlatans who pretend to be experts, such as various snake oil salesmen,
new age gurus, cult leaders, astrologers, fortune tellers, spin doctors, political pundits, and conspiracy
theorists. These people can make a lot of money, even when they lack the relevant expertise. They are
masters of the art of deception and manipulation. False philosophers, false scientists, false doctors,
false political experts, and false wise people have been swindling people out of their money for the
entirety of human history. There's more of them than truly qualified philosophers, scientists, doctors,
and wise people—and those who are truly qualified rarely make very much money.

Manipulative argument techniques are known as fallacies or sophisms. For example, to slander one's
opponent often causes an audience to dismiss the arguments of that opponent even though arguments
are either good or bad regardless of what the person is like who makes them.

Socrates saw sophistry (and rhetoric) as being manipulative. He thought we should rely on the best
arguments and expertise rather than the nonrational forms of persuasion that rhetoric was often using.
The terms 'sophistry' and 'sophist' are usually defined in the way Socrates saw them—sophistry as
manipulation and sophists as manipulative people.

Sophistry and ethics

Many of the sophists traveled the world and realized that each society had somewhat different moral
rules. This convinced many of them that morality is relative—there are no moral facts. Instead, there
are merely conventional moral beliefs that people in an area will agree with. Perhaps this also
reinforced the “democratic spirit” that everyone's opinion concerning justice was equally good because
there are no ethical experts.

Socrates thought that philosophers could become ethical experts, so he rejected the idea that everyone's
ethical opinion was equal. Socrates thought the sophists who used persuasive arguments in political
debates were being charlatans—they were not experts, and their opinions were being taken more
seriously than the actual experts.

What is philosophy?

Philosophy literally means “love of wisdom” in Greek. It refers to the attitude of those who want to
know the truth and be wise rather than dogmatically hold onto their false beliefs. At one point in time
philosophy referred to this general attitude being applied to all domains—science, theology, ethics, and
logic were all part of philosophy. Moreover, philosophy referred to a method of rational argumentation
and debate to be used in order to attain knowledge. We can then try to sincerely consider what beliefs
are supported by the best arguments and evidence. We should generally believe whatever is best
justified by arguments in this way. That is also how natural science works. Scientists also consider how well justified various beliefs are, and there are arguments they consider for and against scientific beliefs.

Philosophy is often confused with rhetoric, and people often think philosophers are charlatans—false experts who are taken too seriously. However, the truth is that philosophers are the closest thing we often have to experts, and yet good philosophy is rarely taken seriously by anyone. Philosophers know a lot about logic, but people are rarely interested in learning about logic. Formal logic is now used by computers, and informal logic helps us understand and identify fallacious arguments.

**The domain of philosophy**

The domain of philosophy is now based on what educational institutions teach in philosophy classes. Natural science is no longer considered to be part of the philosophical domain mainly because it's now better taught in classes outside of the philosophy department. Now philosophy includes ethics, metaphysics (the nature of reality), epistemology (the nature of justification, rationality, and knowledge), and logic (the study of reasoning). Philosophy now mainly involves topics that are more controversial than scientific ones. However, that is not the case with logic, which is often less controversial than natural science. Scientists have to rely on our best logic rather than the other way around.

**Philosophy as a way of life**

The term 'philosophy' now mainly refers to the domains of philosophical expertise rather than to general concern for wisdom and knowledge. The interest to attain knowledge is merely assumed to be a goal of philosophy, just like it's assumed to be the goal of any other person who wants to attain expertise (such in mathematics or science). Such an interest could be considered to be part of a concept of philosophy as being a “way of life.” Additionally, philosophy as a way of life includes an interest to become a better person, to attain happiness, and to live one's life in accordance with the best ethical expertise available. Those who live a philosophical as a way of life want to know how we should behave, and they try to behave in better ways. They also try to improve themselves by improving their skills of rationality, skills of ethics, and to learn anything that will help them become more ethical.

**Are philosophers experts?**

Although we know that philosophers want to know something about various things that doesn't mean they ever do know something about anything at all. However, I think they do know quite a bit. Consider the following:

- Philosophers of the past who later became known as *scientists* seem to clearly know something. We seem to know a lot about the laws of nature and how we can apply our knowledge to technological achievements.
- Philosophers who are experts of logic (also known as “logicians”) seem to clearly know something. We now know how to use formal logic to create computers and knowledge of informal logic is used by scientists in order to know which beliefs are best supported by arguments. For example, we know that an insult against a person is not a good reason to reject
the person's argument.

- We do seem to know something about epistemology. For example, we know that we shouldn't form beliefs based on fallacious arguments. If we find out that an argument is fallacious, then we should reject the argument. Epistemologists can study the most relevant arguments concerning epistemology in order to have the most informed epistemological beliefs possible.

- We do seem to know something about ethics. For example, we seem to know that killing all the people we can is the wrong thing to do. Ethicists can study the most relevant arguments concerning ethics in order to have the most informed ethical beliefs possible.

- We do seem to know something about metaphysics. For example, we seem to know that other people exist and they have minds of their own. Metaphysicians can study the most relevant arguments concerning metaphysics in order to have the most informed metaphysical beliefs possible.

Finally, having informed beliefs are better than uninformed ones. We often form beliefs for the wrong reasons and being informed gives us an opportunity to realize which beliefs are the best supported by arguments.

Conclusion

Experts can persuade others using language. Experts can use rhetoric. However, rhetoric alone does not actually offer us the expertise we need, and it's often used in manipulative ways. We can call that use of rhetoric 'sophistry.' We have a good reason to think that there are philosophers who are not sophists—philosophers who genuinely want to be experts. Finally, we also have a good reason to think that some philosophers are experts.
Chapter 2: Philosophy is Important

I think philosophy is important for two main reasons: (1) it can help improve critical thinking skills and (2) it's a good way to know certain things. Even so, much more can be said—especially considering each specific thing philosophy can teach us. Many things it can teach us are important for various other reasons.

There are many people who question the importance of philosophy (such as Lawrence Krauss), and I suspect that the main reason that they are unconvinced is because they don't think philosophy can make progress or provide us with knowledge. Consider that at one point Krauss said, “[Science progresses and philosophy doesn’t.”

What is philosophy? It is the attempt to reason well about certain traditional domains of study: logic (the study of good reasoning), epistemology (the study of knowledge), metaphysics (the study of reality), and ethics (the study of morality). Just like science, some philosophy is better than others, and a lot of philosophy done by amateurs misses the mark so badly that it is often better described as something else entirely. When science is done very badly, it's often appropriately called “pseudoscience;” and when philosophy is done very badly, it's often appropriately called “sophistry.” (However, sophistry is generally thought to be deliberately manipulative rather than a sincere attempt to be reasonable.)

1. Philosophy can help improve critical thinking skills.

Most fields of study, such as physics, history, and economics, are mainly about providing us with knowledge of some sort. However, some fields of study are more practical, such as computer engineering, and they are mainly about providing us with skills. Practical fields are supposed to help improve our abilities, so that we can do something using them. Philosophy is not necessarily a primarily skill-oriented field of study, but it is the specialized field of study for critical thinking, and it can help us improve skills that help us reason well.

Some people have thought that philosophy automatically helps improve critical thinking skills as a byproduct, and no special attention is required for it to do so. There might be some truth to this, but non-critical-thinking-oriented philosophy classes don't seem to be so much better than various other classes in the humanities. Perhaps writing argumentative essays in any field of study can help improve critical thinking skills. According to a meta-analysis by Claudia María Álvarez Ortiz, Does Philosophy Improve Critical Thinking Skills? (PDF), the most effective classes at improving critical thinking skills are those devoted to critical thinking, and the analytic philosophy tradition in particular is effective at teaching these classes.

Critical thinking skills are highly related to logic (a philosophical domain), which is the study of proper

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reasoning. That shouldn't be surprising because the main idea of critical thinking is to reason well. The critical thinking classes taught by philosophers teach students about logic in addition to providing practice problems that can improve their critical thinking skills.

Although philosophy can be used to improve critical thinking and most people want to reason properly, it's a hard sell because people who know the least about logic think they know just as much as those who know quite a bit about it thanks to a cognitive bias known as the Dunning-Kruger effect (PDF). How many people think they reason properly and understand logic? Very few seem to realize that they need to improve their understanding of these things and one relevant study showed that people who were tested in their competence in logic “overestimated their logical reasoning ability relative to their peers. On average, participants placed themselves in the 66th percentile among students from their class, which was significantly higher than the actual [average score] . . .it was participants in the bottom quartile... who overestimated their logical reasoning ability and test performance to the greatest extent.”

You might think, “Okay, some people know less about logic than they think, but maybe people know all they need to know about logic anyway.” If you are optimistic, you might think people are automatically logical for the most part and don't need to learn more about it. However, Tim Van Gelder has discussed some startling facts about critical thinking, such as the fact that “[a] majority of people cannot, even when prompted, reliably exhibit basic skills of general reasoning and argumentation.”

2. Philosophy is a good way to know certain things.

Philosophers have a type of expertise—they know a lot about various philosophical issues, the history of various philosophical debates, and quite a bit about what it means to reason properly. They tend know more about these things than those who aren't philosophers (and getting a degree is a step in the right direction to becoming a philosopher). For this reason we can learn a lot from philosophers concerning their various specializations, and we can sometimes learn a lot by doing philosophy on our own as well. We can all learn a little about what philosophy has to offer by actually doing some philosophy on our own. After all, philosophers didn't attain their expertise just by twiddling their thumbs. It took a lot of hard work, and we can attain greater philosophical expertise for ourselves.

Not everyone thinks we have anything to learn from philosophers. What makes us think philosophers know more about logic, epistemology, metaphysics, or ethics than the rest of us? If anyone can know anything about these things, then it's philosophers considering the rich history of ideas and the great deal of time they devote to studying various issues. Even so, I think everyone knows something about these issues. For example, everyone knows at least one thing about logic logic—the fact that it's inappropriate to argue in the following way—“Rocks exist. Therefore, whales are not fish.” It is also indisputable that philosophers do know quite a bit about logic precisely due to the progress they have made. For example, there was a time before we knew what argument form was, but now we know quite

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Natural scientists agree that we can reason properly, that we can know something about proper and improper reasoning, and that logic as developed by philosophers restrains how natural science can be done. (For example, two observations that contradict one another can't both describe reality properly.)

Moreover, we know that some people know more about logic than others (such as that shown by the Dunning-Kruger effect), and we know that logic as developed by philosophers is very helpful for improving critical thinking skills. According to the scientific studies examined by Tin Van Gelder, “The lesson from cognitive science is that if we want students to substantially improve their skills, we must at some point help them develop theoretical understanding as compliment to the crucial hands-on know-how.” The theoretical understanding he is talking about are logical concepts (and how they are to be properly applied), such as premise identification, argument form, valid reasoning, and informal errors in reasoning.

One important question is what type of knowledge philosophy can offer us. For example, is it like the knowledge natural scientists can give us or is it mainly knowledge of concepts and logical implications? Or both? Let's consider both of these options:

**(a) Factual knowledge**

Factual knowledge is the type of knowledge good natural science seems to give us: Knowledge about laws of nature, causal relations, and things that exist in the world. These are the kinds of things physicists, chemists, and biologists are interested in. However, it's not entirely clear what entities science gives us factual knowledge about. There's a debate over which scientific entities really exist (such as electrons), and philosophers debate over how we should answer this question. Those who think invisible theoretical entities, such as electrons, exist are “scientific realists” and those who don't think so are “anti-realists.”

Moreover, some philosophers think that there's also moral facts, facts about logic, or facts about mathematics. Philosophers are then thought to be able to help us decide if we should believe such facts exist (and therefore be realists of those things), and if so, what we should believe about them. These are not the type of facts scientists study, but philosophers might still help us attain factual knowledge about these things.

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5 Consider the following argument—“All fish are mammals. All sharks are fish. Therefore, all sharks are mammals.” This argument as the following argument form—“All A are B. All C are A. Therefore, all C are B.” Argument form is what happens when we remove the content from an argument, and the same argument form can be used by multiple arguments.


7 Premises are statements given to support a conclusion. For example, consider the following argument—“Socrates is a man. All men are mortal. Therefore, Socrates is mortal.” The conclusion is “Socrates is mortal.” The premises are the other two statements (i.e. *Socrates is a man*; and *all men are mortal*).

8 Logical validity refers to an argument having a form that guarantees that it can't have true premises and a false conclusion. An example of a valid argument is “If trees are plants, then trees are organisms. Trees are plants. Therefore, trees are organisms.” This argument has the form “If A, then B. A. Therefore, B.” No argument with this form will have true premises and a false conclusion.

9 Informal errors in reasoning are “informal fallacies.” They are generalizable problems with arguments other than having an invalid argument form. Good arguments can't be fallacious.
The view that there's facts about logic and mathematics is especially promising because scientists often have to presuppose that there are certain logical and mathematical facts—that we can discover these facts and that scientific observation is mistaken when it contradicts these facts. For example, logicians almost unanimously agree with the principle of noncontradiction, which states that a statement can't be true and false at the same time. If one statement is true, then all statements that contradict it are false. Sometimes we have an observation that contradicts a scientific theory we believe to be proven. At one point Mercury didn't revolve around the Sun as Newton's theory of physics predicted. We could say that our understanding of the observation is wrong or that the theory is wrong. There is a problem if someone says that both the observation and the theory is true, and there's a problem if a scientist says that contradictory observations prove the principle of non-contradiction to be false.

Some people argue that philosophy is not meant to give us factual knowledge. It is often thought that philosophy is inherently unresolved—that philosophers debate endlessly without ever expecting to give us a final answer. Sometimes it's said that "there's no right answer" (perhaps in the sense that there are multiple different answers that could be rationally defended). Of course, we might wonder if the same is really true of science. Perhaps science also will continue to make progress endlessly and the answers it provides will continue to be refined without ever giving us a "final answer."

Although I am sympathetic to the view that philosophy can provide factual knowledge, I don't think philosophy has to give us a final answer to make progress or be informative. A great deal of the factual knowledge philosophy seems to provide is knowledge about what's not the case. We can sometimes eliminate a belief or philosophical theory similar to how scientists can often eliminate a failed hypothesis. For example, we can eliminate the belief that "all conclusions are true."

(b) Conceptual knowledge

Some people who don't think philosophy is meant to give us factual knowledge still agree that philosophy can be informative and that philosophers have a type of expertise, and they often say that philosophy is really about clarifying concepts and finding logical implications. For example, some philosophers are compatibilists who think we could have free will, even if the world is deterministic (which is the view that everything that happens has to happen exactly one way). They don't think there's a logical implication that would make a world with both of these things impossible based on their conceptions of free will and determinism. Compatibilism doesn't state that we actually have free will or that the world is actually deterministic. It is a view about what could be the case in the world rather than what's actually the case.

One important question is if conceptual knowledge is really so different from factual knowledge. Some people think philosophers can't tell us anything about the world, but that they could help provide conceptual knowledge of the type described above. They don't think conceptual knowledge is factual, and some people will hesitate to even call it "conceptual knowledge" because they don't think philosophy is about generating knowledge. Even so, I think it is clear that even conceptual discussions can involve progress and they can be very informative, such as when we developed the concept of argument form. If it's not knowledge, then calling it "conceptual understanding" might be more appropriate.

10 This is what some logical positivists thought.
However, some people do think conceptual knowledge can be factual. For example, perhaps understanding certain moral concepts is enough to know that causing pain just for fun is wrong. (We can analyze what it means for actions to be morally wrong, the concept of pain, the concept of doing something just for fun, etc.)

One purpose of conceptual knowledge is to make clarifications and avoid sloppy thinking, but another purpose could be to help us know what beliefs should be rejected, which is quite similar to how I suggested philosophy could provide us with factual knowledge. For example, if compatibilism is true, then we should reject incompatibilism (the view that free will can never exist in a deterministic world).

**Specific philosophical issues**

Even if philosophy can be informative and give us some type of knowledge, we might wonder if philosophy is important in any sense. Some people criticize philosophers for doing research in an armchair or being in an “ivory tower” (with everyday life far from their mind's eye). One possible answer is simply that knowledge has value—that it's always better to be knowledgeable. Even if philosophy isn't useful, it might still be worth doing. Mathematicians don't always tell us what we can do with their results, but most of us seem to accept that it has some sort of a value anyway. However, there are many other answers as to why philosophy has value and I think philosophy can be of the utmost importance to making our lives better. The reason I think this is the case is because various philosophical issues have unique ways of helping people. One philosophical domain in particular that I think we should all agree has practical importance for everyday life is critical thinking (and logic by extension). For example, consider the research that shows that people tend to lack in critical thinking skills, and the link between logic-oriented critical thinking education and critical thinking skills. Of course, someone might say they see no reason to think reasoning well is important. My reply would be that reasoning well helps us avoid deception (such as the deception used by advertisers, political pundits, quacks, etc.), make better decisions in general, and to increase the odds of persuading others to believe things that they should agree with.

Finally, the reasons that logic education is important can also be refined based on all the specific things it can teach us, such as logical form, logical validity, and informal fallacies. Each of these things have unique lessons to teach us, as was discussed in *Why Logic is Important*.

**Conclusion**

Although many people are unconvinced that that philosophy is important, I think there are good reasons to think it is important. Philosophy can not only help improve critical thinking skills, but it can help provide us with knowledge of logic that can greatly help improve critical thinking. Moreover, I do not find the view that philosophy makes no progress and provides us with no knowledge to be plausible based on the fact that it seems clear that everyone knows something about at least one philosophical domain (logic), and some people know more about that domain than others.
Chapter 3: Can We Know Anything About Facts of Philosophical Issues?

Many people think philosophers aren't experts, that we can't really know anything about philosophical issues, or that everyone's opinion is equal concerning philosophical issues. Philosophical issues are often narrowly understood to be those concerned with the nature of reasoning, knowledge, morality, or reality; and many people say we can't know anything about such issues. I will argue that we can know something about philosophical issues, which suggests that there can be expert philosophers, and that not everyone's philosophical opinion is equal. We do seem to know something about philosophical domains and it is plausible to think we can give meaningful philosophical arguments within these domains. Such a position is actually more consistent with how people think about the world.

I will introduce the plausible view that we can know about facts concerning scientific issues, and describe the common view that many people have that we can't know about facts concerning philosophical issues. I will argue that rejecting philosophical knowledge is a lot like rejecting scientific knowledge. I will explain why we can't reject philosophy without being inconsistent, and I will give examples of various plausible philosophical beliefs and reasonable philosophical arguments.

Introduction

Can we know about scientific facts?

Most of us believe that scientists are experts. They know more about biology, chemistry, physics, and psychology than the rest of us because they conduct experiments and know about a lot of the relevant data. There are scientific arguments that are given for various hypotheses using the data because we can find out that certain hypotheses are supported by the data better than others. But are philosophers also experts? Many people think philosophers aren't, and very few people seem to take the arguments given by philosophers very seriously. Many people think philosophy is nonsense. That we shouldn't trust what philosophers have to say.

At one point natural science was called 'natural philosophy' and it was considered to be part of the philosophical domain. Now people think science is clearly better than philosophy, which is now restricted to certain major domains of inquiry, such as logic (the study of reasoning), epistemology (the study of knowledge), ethics (the study of morality), and metaphysics (the study of reality).

Consider the following beliefs:

1. **Scientists are experts.** (They know more about their domain of expertise than the rest of us.)
2. **Everyone's opinion about science is not equal.** (Some scientific beliefs are supported by the evidence better than others.)
3. **We can know something about scientific issues.** (We can know some hypotheses are better than others.)

None of these beliefs are scientific beliefs. Science can't tell us what science should be like or the difference between science and pseudoscience. It can't tell us the difference between a justified or an
unjustified belief. That's what philosophy of science is about—the nature of science. All of these beliefs are highly related to the nature of knowledge itself. “What is knowledge? Can we know anything? If so, what?” If scientists know more about science than the rest of us, then we are assuming that we can know what knowledge is, that we can know something about science, and that some people know more about scientific facts than the rest of us.

Can we know about philosophical facts?

Although most people think it's obvious that scientists can know more about science than the rest of us, many do not think it's obvious about philosophy. In fact, many people reject philosophy. People endorse scientism when they think science is the only way to know something in particular when it's not—and many scientifically-minded people think philosophy fails to be science. Therefore, many will claim that there is no philosophical way to know anything. There can be no philosophical experts. We can't really know about any facts concerning the philosophical domains. Everyone's opinion is equal concerning philosophical issues.

The point is that many people don't think anyone can know more about the nature of reasoning, knowledge, morality, or reality than anyone else. Philosophers might be experts concerning philosophical trivia, but no philosophical belief is actually better than another.

People who reject philosophy believe that there are people out there who call themselves “philosophers.” We could say that so-called philosophers are “doing philosophy.” Such people can learn about the history of philosophical arguments and ideas. However, those who reject philosophy think there is no real philosophical progress. For example, we can't know anything about the nature of argumentation. We can't even know that certain beliefs about logic are false. Perhaps then we can't even know that “it is not the case that all men are mammals” is logically equivalent to saying “some men are not mammals.”

Consider the following beliefs:

1. **Philosophers aren't experts.** (Philosophers don't know more than the rest of us concerning philosophical domains.)
2. **Everyone's opinion is equal concerning philosophical issues.** (No philosophical belief is more justified than another.)
3. **We can't know anything about philosophical issues.** (We can't know if one philosophical statement is better than another.)

None of these beliefs are scientific and they aren't self-evident. They are beliefs that fall within the philosophical domain. Again, the main philosophical domain at interest here concerns the nature of knowledge. The first belief listed is not plausible if it's possible for some people to know more about philosophical issues than other people. The second and third beliefs about philosophy are self-defeating because they are such strong statements against philosophy, but they are philosophical beliefs.

If we can know philosophers aren't experts, then how can we know that “we can know philosophers aren't experts”? Perhaps everyone is an equally good philosopher, but that seems unlikely.

If everyone's opinion is equal concerning philosophical issues, then the belief “everyone's opinion is
equal concerning philosophical issues” is no more justified than the belief that “some opinions concerning philosophical domains are better than others.” If one person knows something is true and someone else only thinks she knows, then their opinions are not equal. Whether or not everyone's opinion is equal is a philosophical issue because the nature of knowledge is a philosophical issue.

Finally, if we can't know any facts concerning philosophical issues, then we can't know that “we can't know anything about philosophical issues.” What exactly the limits of knowledge are is a philosophical issue because the nature of knowledge is a philosophical issue.

The real issue here is whether or not we can know anything about the reality of philosophical issues. Many people don't think we can. Could we prove that we can't know anything about philosophical issues? That itself would seem impossible because it's a philosophical issue. If we know nothing about philosophical issues, then we actually do know something about philosophical issues.

More examples of philosophical beliefs and arguments

One reason to think we can know something about philosophical issues is that there are good examples of things we think we know about them already. People who think they know something about a philosophical issue yet deny that anyone knows anything about philosophical issues are being inconsistent.

One reason to think that we can learn more about philosophical issues (and to think there can be philosophy experts) is that there can be reasonable philosophical arguments. One way to give philosophical arguments is by showing how we think we know something already, and that what we think we already know implies that something else must also be true.

Perhaps one reason that so many people distrust philosophy is because they think philosophers are doing something esoteric and far-removed from everyday life (unlike scientists). However, I believe that everyone actually has philosophical beliefs and engages in philosophical reasoning. Their beliefs are often justified, and their reasoning is often reasonable. What philosophers do is not so different, but they keep it up, and philosophers are aware of several arguments for and against various issues.

I will give examples of various things we think we know concerning issues from four major philosophical domains (logic, epistemology, ethics, and metaphysics).

Logic

We think we know that a belief can't be factually true and false at the same time. If I say, “It's raining” and you are in another place and say, “It's not raining,” we are not actually contradicting one another because we are merely saying “it's raining where I am.” However, to say that “there is life on another planet in the universe” and that “there isn't life on another planet in the universe” would be to give contradictory statements. When two factual statements contradict one another, at least one of the statements must be false.

I think this belief is plausible. If I am right that this belief is plausible, then we can know something
about a philosophical issue (that at least one philosophical belief is plausible). However, anyone who thinks we can't know anything about philosophical issues can't consistently believe it to be plausible.

A simple argument using this belief as a premise is the following:

1. A belief can't be factually true and false at the same time.
2. Some people believe that it's factually true that there is life on another planet in the universe.
3. Other people believe that it's factually true that there is no life on another planet in the universe.
4. If “there is life on another planet in the universe” is true and “there is no life on another planet in the universe” is also true, then a belief would be factually true and false at the same time.
5. Therefore, it's not the case that “there is life on another planet in the universe and that there is no life on another planet in the universe.”

I think this argument is reasonable. However, anyone who rejects philosophy must not find this argument to be reasonable. The only way for this argument to be reasonable is if we can know certain things about philosophy (such as the premise concerning logic mentioned earlier).

However, it's a bit worse than that for those who reject philosophy entirely. Scientists who reject logic won't be able to support their hypotheses with good arguments. Scientists are committed to giving logical arguments (good arguments using criteria given by logicians), even though logic itself is a philosophical domain. We don't observe that two factual beliefs can't be true at the same time. It is a plausible belief about logic anyway.

Anyone who rejects philosophy will have to also reject logic. They will have to reject the idea that we can know anything about proper ways to reason about things, or that a good argument must be consistent with logic.

**Epistemology**

We think that we can know something about the future by knowing about the past. For example, you can know that rocks that are dropped two seconds from now (on our planet) will fall to the ground based on the fact that all similar objects that were dropped in the past also fell to the ground.

I find this belief to be plausible. If I am right that it's plausible, then we can know something about philosophy (because we can know that a philosophical belief is plausible). However, anyone who rejects philosophy will not be able to consistently believe it to be plausible.

An argument using this belief as a premise is the following:

1. All cats observed by scientists throughout history were mammals.
2. We can know something about the future by knowing about the past.
3. If we can know something about the future by knowing about the past and all cats observed by scientists throughout history were mammals, then all cats are probably mammals.
4. Therefore, all cats are probably mammals.

This argument could very well be one given by a scientist, but notice that one of the premises is a philosophical one. Sometimes scientists rely on philosophical premises. There is no absolute boundary
between science and philosophy.

It is inconsistent for scientists to assume any philosophical belief is justified while simultaneously claiming that we can't know anything about philosophical facts. The fact that we can know something about the future by knowing about the past has never been proven by a scientist. Assume for a moment that a scientist did prove it. How could she prove it? Perhaps by seeing if future data resembled past data in the past. But how does that prove it? Does the fact that future data resembles past data prove that we can know something about the future from the past? If so, we can know something about the future by knowing about the past. That's circular reasoning. We can't use the conclusion of our argument as a premise.

She might as well argue the following:

1. We can know something about the future by knowing about the past.
2. Therefore, we can know something about the future by knowing about the past.

This is not a good way to argue. It's no better than just repeating an assertion. People can repeat any assertion, but that doesn't mean we should agree that it's true.

**Ethics**

We think we know that we shouldn't cause people intense pain unless we have an overriding reason to do so. For example, it's wrong to kick a two year old child really hard while having a pleasant conversation with the child because there is no overriding reason to do so.

I find this belief to be plausible. If I am right that it's plausible, then we can know something about a philosophical issue. However, anyone who doesn't think we can know anything about philosophical issues will not be able to consistently believe it to be plausible.

An argument using this belief as a premise is the following:

1. We shouldn't cause people intense pain unless we have an overriding reason to do so.
2. Torturing people who are caught smoking marijuana would cause them intense pain.
3. We don't have an overriding reason to torture people who are caught smoking marijuana.
4. Therefore, we shouldn't torture people who are caught smoking marijuana.

I find this argument to be well-reasoned. If I am right, then we can know something about a philosophical issue (because we can know that a philosophical argument is well-reasoned). However, anyone who rejects philosophy will not be able to consistently believe it to be well-reasoned.

**Metaphysics**

We think we know that other people have mental activity. I know that I see things, hear things, feel things, and have thoughts because I experience all of that for myself. However, I also know other people also see things, hear things, feel things, and have thoughts.

I find this belief to be plausible. If I am right, then we know something about a philosophical issue
(because we would know a certain philosophical belief to be plausible). However, anyone who doesn't think we can know anything about philosophical issues could not consistently believe it to be plausible.

An argument using this belief as a premise is the following:

1. Other people have mental activity.
2. If other people have mental activity, then other people who have functioning eyes can see me when I am standing in front of them.
3. Therefore, other people who have functioning eyes can see me when I am standing in front of them.

I believe this argument to be well-reasoned. If I am right, then we know something about a philosophical issue (because we would know a certain philosophical argument to be well-reasoned). However, anyone who doesn't think we can know anything about philosophical issues could not consistently believe it to be well-reasoned.

**What is philosophical knowledge like?**

Many scientific facts are considered to be *proven* at some point. We hypothesized that germs existed and we eventually found them under a microscope. Perhaps philosophical facts can't be proven like that. Philosophical and scientific progress can be somewhat different, but related.

In both cases we think we know certain facts. For example, we think we know that rocks exist. Scientists and philosophers should generally use those plausible factual beliefs as *evidence* rather than reject them as *unproven prejudice*. We have to start from somewhere.

In both cases we can accept a hypothesis until we have an overriding reason to reject it. The hypothesis must be consistent with the data and it must not be significantly worse than alternatives.

In both cases we should reject a hypothesis when we believe it to be *falsified*. At this point the hypothesis seems to contradict the facts we think we know about. We have to decide if the hypothesis is less plausible than the factual beliefs it contradicts. For example, we don't necessarily reject the laws of physics when they don't predict the motion of the stars perfectly. Instead, we might think the factual knowledge we have about outer space is incomplete. (We now believe there is *dark matter* involved.) In that case what we thought we knew about outer space (such as the position of stars) was not taken as seriously as the laws of nature we think we know about. We rejected a certain view of the contents of the universe rather than our current understanding of the laws of nature.

The progress found in both philosophy and science is often of elimination. We think we know that certain beliefs are better supported than others, and sometimes a belief is *rejected* because it's not consistent with our understanding of things. The main difference between the progress found in science and philosophy is that there might be a point when science proves something to be true once and for all, which might never happen in philosophy. (This point is up for debate.)
Conclusion

Many people think we can't know anything about philosophical issues, but such a belief is inconsistent because *what we can know* itself is a philosophical issue. Moreover, people who claim that we can't know about philosophical issues are also likely to think they do know about certain philosophical domains—they are likely to think they know certain things about logic, epistemology, ethics, and metaphysics. That is also inconsistent of them.

When we find out our beliefs are inconsistent concerning factual matters, we know one of our beliefs are false. Otherwise we've given up on logic entirely and no argument will matter any longer. It would be impossible to have a good reason to believe anything.

When we find out our beliefs are inconsistent, we should try find out which ones are false. In this case I think the belief that “we can't know anything about philosophical issues” is quite implausible and should be rejected. Some of our philosophical beliefs are much more plausible and should be taken seriously.
Chapter 4: Intellectual Virtues, Dogmatism, Fanaticism, & Terrorism

Fanaticism can be understood as a form of irrationality, and as the worst sort of intellectual vice. Intellectual virtues include an appropriate sort of open mindedness and skepticism. Lacking open mindedness and skepticism makes a person gullible or unwilling to correct their poorly formed beliefs. Fanaticism is a form of dogmatism—an unwillingness to form beliefs based on good reasoning. However, the fanatic is the most extreme sort of dogmatist. In order to describe my position, I will explain good reasoning, intellectual virtues, intellectual vices, dogmatism, and fanaticism. I will then suggest that terrorism and other horrific crimes are what we should expect from fanaticism.

Good Reasoning

Good reasoning requires an understanding of argumentation, justification, and logic. This reasoning can, for a large part, be unconscious. Everyone knows that “1+1=2” despite not being able to fully explain how they can know such a thing. We aren't required to verbalize justifications in order to reason well.

Nonetheless, our automatic unconscious ability to reason is inadequate and often leads to fallacies (mistakes in reasoning). Consider the following argument:

1. Either evolution is true or creationism is true.
2. The theory of evolution is inadequate to explain all biological phenomena at this time.
3. Therefore, the theory of evolution is false.
4. Therefore, creationism is true.

This is the sort of argument made by many people, but it fails for many reasons. One, there might be an alternative to evolution and creationism that could also be true. Two, a theory is not false just because it is inadequate to explain all of the relevant phenomena. Three, even if evolution was an inadequate theory, that would not make creationism a superior theory. We have to assess the evidence in support of both theories to decide which is more plausible.

What's the solution to relying solely on an unconscious ability to reason? Having a conscious one. You can learn about argumentation, justification, and logic. You can take philosophy courses, read books on these topics, etc.

Good reasoning is so important because good reasoning leads to well justified beliefs, and beliefs lead to action. We want people to have well justified beliefs because they lead to better actions. Consider the following:

1. A person who thinks that Jews are evil could decide that killing Jews is a good idea.
2. A person who believes that killing people isn't such a big deal could decide that it's not too hard to justify murder.
3. A person who believes that homosexuality is wrong could try to make it illegal or stop gay marriage.
4. A person who believes that evolution is false could try to take it out of our educational system. The most dramatic sort of consequence of people having poorly formed beliefs is when it leads to violence, and that is common. We have to wonder what would happen if potential school shooters, serial killers, and religious terrorists had well-formed beliefs.

When we realize that beliefs should be properly informed by evidence, we are less likely to try to hurt others. We can't decide to hurt people just because we feel like it. We need to be reasonably certain that violence is appropriate. People thinking about hurting others should be cautious and make sure to only do so when it is morally necessary.

**Intellectual Virtues**

We know of many moral virtues, such as courage, moderation, self-control, and so on. However, there are virtues of the intellect as well, such as appropriate open-mindedness and skepticism. These virtues are the sort required in order for people to demand that their beliefs be appropriately reasoned and justified.

1. **Appropriate Open-Mindedness**

To be appropriately open-minded means to look for good reasons to have beliefs and to reject our beliefs when we have good reason to. For example, many people used to think that all swans were white, but we later saw black swans in Australia. It would be irrational to insist that all swans are white, even after we find out that black swans are in Australia.

2. **Appropriate Skepticism**

Appropriate skepticism means to refuse to have a belief when it isn't adequately justified. For example, there might be some evidence that fairies exist, but we don't currently have enough evidence to believe in fairies. Some philosophers would argue that we should not only refuse to believe in fairies, but we should believe fairies don't exist. (Refusing to believe in fairies could include the option to be undecided.)

Open mindedness and skepticism are related. If you require your beliefs to be sufficiently justified, then you will be open to the possibility that some of your beliefs are false (and could be proven to be false), and you are skeptical insofar as you will refuse to believe something that lacks sufficient justification.

**Intellectual Vices**

Intellectual vices arise when we fail to have intellectual virtues. If we aren't willing to have beliefs when and only when they are appropriately reasoned, then we will have the intellectual vices of gullibility and close-mindedness.
1. Close-Mindedness

Close-mindedness is a complete lack of being open minded. If you require too much evidence to believe something, then you are close-minded. For example, some Christians refused to believe that the Earth revolves around the sun even after proof was given. Additionally, some people still don't believe in evolution despite the fact that evolution is so highly justified and it's taken to be an uncontroversial fact by all respectable biologists.

2. Gullibility

Gullibility is the opposite of being appropriately skeptical. To be gullible is to easily believe things without appropriate evidence. For example, some people believe in the Loch Ness monster despite having no good evidence for its existence.

Close-mindedness and gullibility are highly related. If you are willing believe in something despite a lack of sufficient justification, then your belief is based on gullibility insofar as it lacks evidence, and it is close-minded insofar as you are unwilling to believe it could be false.

Dogmatism

People are dogmatic who refuse to change their erroneous beliefs. Such a person is intellectually vicious by being both gullible and close-minded. Dogmatic people are gullible because they will keep their beliefs without requiring them to be adequately justified, and they are close-minded insofar as they are unwilling to consider the possibility that they have a better reason to believe something else. They aren't willing to give other people's beliefs and arguments a fair chance.

Plato called dogmatists 'philodoxers,' which are “lovers of their own opinions.” They are unwilling to love the truth and good reasoning. They would prefer to keep their beliefs at the expense of their rationality and at the expense of knowing the truth. These people are the opposite of philosophers—people who love wisdom.

A person who believes that the Bible is infallible is in danger of being dogmatic. When confronted with a Bible passage that seems false, many people will conclude that the Bible is not infallible, and this response could be a good case of using reasoning to reject beliefs. In order to believe that the Bible is infallible without being dogmatic, a person has to show that the passage isn't false after all. It might be a metaphor, over simplification, or require a certain context. This sort of behavior is rational as long as the interpretation of the Bible is sufficiently justified.

However, a person is clearly dogmatic when confronted with a potentially false part of the Bible and replies, “No, it must be true! Being in the Bible makes it true no matter what!”
Fanaticism

A person is a fanatic when she is excessively dogmatic. Religious fanatics will often find their religion to be infallible and perfect. Few mistakes can be corrected with this mind set. Violence committed because of the religion will more likely be considered to be justified. We can describe people as being fanatics when they are a dogmatic extremists—people who are unwilling to admit that encouraging, allowing, or committing violence (or oppression) requires a sufficient justification.

Most religious people will admit that the inquisition, acts of terrorism, and slaughtering children is “going too far.” Such actions are unjustified. Such people can be dogmatic without being fanatical as long as they make sure their beliefs don't encourage or justify violence or oppression without a sufficiently good reason for it.

Avoiding fanaticism is morally necessary. It is morally wrong to be fanatical. We can't think that we personally have the right to encourage, allow, or commit violence without a very good reason to do so, but then demand that no one else do so at our expense. If I decide one religion is morally repugnant for allowing unreasonable beliefs to encourage violence, then I must decide that all other religions are also morally repugnant when they use unreasonable beliefs to encourage violence.

Note that religious fanaticism isn't the only source of fanaticism. It is quite possible that serial killers, school shooters, and other sorts of criminals fit into this category.

Terrorism

Now that terrorism is widely accepted as being an immoral activity of harming civilians without an appropriate justification to do so, I think we should agree that we have at least one good reason to want to be intellectually virtuous rather than vicious. Dogmatism and fanaticism can lead us to terrorism and other horrific actions. Well reasoned beliefs rarely lead to such horrific crimes.

Conclusion

We have a good reason to want to form good beliefs based on good reasoning. Such beliefs are more likely to lead to good results. The best defense against the harms that can be caused from unjustified beliefs is to be intellectually virtuous. To reject intellectual virtues is a good way to become fanatical, which encourages violence without an appropriate justification to do so. Fanaticism can lead to unjustified acts of violence.

One of the best ways to assure that we use good reasoning to form our beliefs is to learn more about argumentation, justification, and logic. We should be more like philosophers and less like philodoxers.
Part II: Argument Mapping

Chapter 5: Introduction to Argument Mapping

Argument maps are visual representations of arguments to help people better understand them. A meta-analysis of various studies found that classes with lots of argument map practice are the most effective type of critical thinking class to help improve critical thinking skills.

We want to know how to create and identify good and bad arguments insofar as we want to know what we should believe. Good arguments give us a good reason to believe something. Some arguments fail to give us a good reason to believe something, and we should make sure not to form beliefs on the basis of bad arguments. Argument maps can help us identify good and bad arguments, but they are insufficient to do so. There are many issues that should be studied in order to better understand the difference between good and bad arguments, such as logical fallacies and argument interpretation. Argument mapping might help us better understand informal fallacies and argument interpretation, but the focus here are the specific distinctions argument maps help us understand.

Argument maps are mainly helpful because they help us better understand the distinctions between the following:

1. Premises and conclusions
2. Arguments with one and multiple premises
3. Multiple arguments and multiple premises
4. Simple and extended arguments
5. Supporting arguments and objections
6. Objections to conclusions, premises, and forms of reasoning

I will present examples of argument maps that illustrate each of these distinctions.
Chapter 6: The distinction between premises and conclusions

A rational argument is supposed to give us a reason to believe something is true. Arguments require both premises and conclusions. Premises are statements (true or false sentences) that are used as a reason (or part of a reason) to believe something. Conclusions are statements that are supported by premises.

Consider the following argument:

We should believe that rocks exist because we can see them.

In this case the word 'because' makes it clear that “we can see them” is the reason to believe the conclusion, so it's a premise. The phrase “we should believe that” helps indicate that the conclusion is “rocks exist.” We can then rephrase the argument with a statement representing the premise and the conclusion as the following:

1. We can see rocks.
2. Therefore, rocks exist.

An argument map can represent the rephrased version of the argument as the following:

Consider the following:

1. Each statement of the argument is put into a separate box and that the word 'therefore' was removed from the conclusion.
2. The argument map is a visual representation of the argument, and there are various features to help us understand how the argument works.
3. The word 'conclusion' is written above the box containing the conclusion, and the word 'premise' is written above the box containing the premise.
4. The box containing the premise is blue.
5. An arrow points from the premise to the conclusion.
6. The word 'supports' is written alongside the arrow.

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Chapter 7: The distinction between arguments with one and multiple premises

Although some arguments only have one premise, almost all good arguments actually require more than one premise. The argument above only uses one premise, but it could be considered to be rationally persuasive for those of us who make a certain assumption—that if we can see rocks, then rocks exist. The assumption should be made explicit to make it clear why seeing rocks is sufficient to conclude that rocks exist. Only then will we have a truly good argument.

Now that we have identified an assumption, we can add it to the argument as an additional premise in order to form the following argument:

1. We can see rocks.
2. If we can see rocks, then rocks exist.
3. Therefore, rocks exist.

The argument map for this argument is the following:

This time there are two premises and each are in a separate blue box. There is a single line connecting both premises that lead to the arrow to make it clear that both premises are part of a single reason to believe the conclusion is true. In this case the assumption that both premises are true is sufficient to assume the conclusion is true. If either premise is false, then the other premise will not be sufficient for us to know that the conclusion is true.
Chapter 8: The distinction between multiple arguments and multiple premises

The above argument map featured a single argument that had multiple premises, but sometimes there are also multiple arguments for the same conclusion. Consider the following passage:

We should believe that rocks exist because we can see them, and also because we can touch them.

In this case the passage presents us with two separate arguments:

1. We can see rocks.
2. Therefore, rocks exist.

1. We can touch rocks.
2. Therefore, rocks exist.

A single argument map can represent both of these arguments at the same time:

![Argument Map Example]

This time there is no line connecting both premises to a single arrow. Instead, each premise has its own arrow pointing separately to the conclusion. This makes it clear that each premise is a separate argument for the conclusion. They are considered to be different reasons to believe the conclusion to be true.
Chapter 9: The distinction between simple and extended arguments

Simple arguments in this context are those with a single conclusion. Extended arguments have more than one conclusion—at least one premise is also a conclusion that is supported by another argument.

Consider the following passage:

We should believe that rocks exist because we can see rocks; and if we can see rocks, then they exist. Moreover, sight is a reliable way to know what exists, so we should believe that if we see rocks, then they exist.

In this case we could rephrase this passage as the following two arguments:

1. We can see rocks.
2. If we can see rocks, then they exist.
3. Therefore, rocks exist.

1. Sight is a reliable way to know what exists.
2. Therefore, if we see rocks, then they exist.

These two arguments are represented by a single argument map:

In this case the main conclusion (that is not a premise) is in a white box with 'conclusion' written over
the box, but the premise that is supported by an argument is in a blue box with 'premise' written over it.
Chapter 10: The distinction between supporting arguments and objections

All the arguments above are supporting arguments. They are meant to tell us why we should believe something. Objections are attempts to tell us why we should reject something. An objection is meant to tell us when a statement is false or unjustified. Unjustified statements are those that we currently have insufficient reason to believe to be true, and such statements could be either true or false. However, all statements we prove to be false are also proven to be unjustified.

Consider the following passage:

Karla believes that rocks exist because she sees them, but we should believe that rocks don't exist because that's what my parents believe.

In this case the passage contains the following two arguments:

1. We see rocks.
2. Therefore, rocks exist.

1. My parents believe that rocks don't exist.
2. Therefore, rocks don't exist.

These two arguments can be represented with a single argument map:

The argument map above makes it clear that there is an argument for and against a conclusion. This time the premise of the supporting argument is in a blue box as usual, but the premise of the opposing argument is in a pink box. Additionally, the box containing the objection has an arrow pointing to the conclusion and the word 'opposes' is written alongside the arrow to make it clear that the premise is an argument against the conclusion.

When having a debate we are interested in arguments both for and against a certain statement, and
argument maps are capable of representing multiple such arguments at once.

Finally, the above argument map makes it clear that there is no winning side of the debate at this point in time. There's an argument for and against a conclusion, but it is not yet clear which side has the better argument. Of course, we know that the opposing argument should be rejected because what my parents believe is not relevant to the debate.
**Chapter 11: The distinction between objections to conclusions, premises, and forms of reasoning**

I discussed an objection to a conclusion above, but objections can also be given against premises and forms of reasoning. I will now present an example of an objection to a premise and an objection against a form of reasoning.

**An objection to a premise**

Consider the following passage:

Jenny believes that rocks exist because we see them; and if we see them, then they exist. However, we should reject that if we see rocks, then they exist because we can see things that don't exist when we are dreaming.

This passage contains the following two arguments:

1. We see rocks.
2. If we see rocks, then they exist.
3. Therefore, rocks exist.

1. We see things that don't exist when we are dreaming.
2. Therefore, we should reject the belief that *if we see rocks, then they exist.*
These arguments can both be represented in a single argument map:

This argument map makes it clear what particular premise is being opposed. Keep in mind that this objection is not against the conclusion. If this objection succeeds, then we will wonder if there's a better reason to believe that rocks exist than the one presented here.

If anyone argues for a conclusion that we believe to be false, then we might want to provide an objection to that argument in addition to an argument against that conclusion. If there is only an argument for and against the conclusion, then we will still need to know if either argument is a good argument. If there is only an objection against the supporting argument, then we still need to know why we should reject the conclusion.

For example, imagine that someone argues that all dogs are reptiles because dogs have cold blood and scales. In this case we can object to the conclusion by saying that dogs aren't reptiles because they are warm-blooded, have mammary glands, and give birth to live young. Additionally, we can object to the supporting argument by stating that biologists have unanimously confirmed that dogs are not cold-blooded and don't have scales.

An objection to a form of reasoning

An argument has a logically valid form of reasoning when it would be impossible for any argument with that form to have true premises and a false conclusion at the same time. If we assume the premises are true, then we have to assume the conclusion is true. An example of a logically valid argument is, “If dogs are reptiles, then dogs are animals. Dogs are reptiles. Therefore, dogs are animals.” In this case a
premise is false, but the form of reasoning is valid. We object to the form of reasoning of an argument when it's not valid or has contradictory premises.

Consider the following passage:

Mark argues that we should believe that rocks exist because life used to be on Mars and life never used to be on Mars. However, Mark's argument requires us to accept two contradictory premises and two contradictory statements can't be true at the same time, so at least one of Mark's premises has to be false.

This passage contains the following two arguments:

1. Life used to be on Mars.
2. Life never used to be on Mars.
3. Therefore, rocks exist.

1. Both those premises form a contradiction.
2. It's impossible for two contradictory premises to be true at the same time.
3. Therefore, at least one of the above premises are false.
An argument map can represent both of these arguments:

This time the objection is against both premises at the same time, so there are two arrows pointing at each of them. We don't currently know which premise is false, but we know one of them is because they form a contradiction. One premise literally says the other premise is false.

The reason that this objection is against the form of reasoning is because the form of reasoning contains a contradiction. A contradictory form of reasoning occurs when two statements state “A and not-A.” In other words, they state that something is both true and false at the same time. 'A' could be any statement. For example, 'A' could be that “there's intelligent life on another planet.” In that case the contradictory statements would be “there's intelligent life on another planet, and it's not the case that there's intelligent life on another planet.”
Part III: Formal Logic

Chapter 12: What is Logic?

Logic is a domain of philosophy concerned with rational criteria that applies to argumentation. Logic includes a study of argumentation within natural language, consistent reasoning, valid argumentation, and errors in reasoning. It is divided into two main domains: Formal and informal logic.

Formal logic

Formal logic is the traditional domain of logic in western philosophy. It is a domain that covers logical form, consistency, valid argumentation, and logical systems.

Logical form

Logical form allows us to symbolize statements by stripping statements of their content. For example, consider the statement “if it will rain today, then the roads will become slippery.” The logical form of this statement would be presented in propositional logic as “if A, then B.” In that case ‘A’ stands for “it will rain today” and 'B' stands for “the roads will be slippery.” Logical connectives are kept, such as 'if,' 'and,' 'or,' and 'not.'

Logicians don't usually write statements as “if A, then B.” Instead, they usually use a symbol for logical connectives, such as “→.” We can state “if A, then B” as “A → B.”

Consistency

Two statements are consistent if it's possible for them both to be true at the same time. For example, the statement “if it will rain today, then the roads will be slippery” is consistent with the statement “it will not rain today.” Logic provides us with a way to determine when statements are consistent, which is important to us because all true statements about the world are consistent. (Two true statements can never form a contradiction. For example, “Aliens live on another planet” and “aliens don't live on another planet” form a contradiction, so one of the statements is false.)

We know that two statements are consistent as long as they can all be true at the same time, and contradictory when they can't. Whenever two propositions contradict, one proposition can be symbolized as “A” and the other can be symbolized as “not-A.” For example, “it will rain today” contradicts “it will not rain today.”

Some statements are also self-contradictory, such as “one person exists and no people exist.” Many self-contradictions can be symbolized as “A and not-A.” These statements are always false.

Tautological statements are always true, such as “either the Moon revolves around the Earth or the Moon doesn't revolve around the Earth.” Many tautologies can be symbolized as “A or not-A.”
Valid argumentation

A valid argument has an argument form that could never have true premises and a false conclusion at the same time. For example, “If it will rain today, then the roads will be slippery. It will rain today. Therefore, the roads will be slippery” is valid because it has the argument form “If A, then B. A. Therefore, B.” All arguments with this form are valid.

Logic gives us the tools to determine when an argument is logically valid. If a deductive argument is not logically valid, then it does not provide us with a good reason to agree with the conclusion. If the premises are true, then the conclusion could still be false.

An example of an invalid argument is “At least one person exists. If at least one person exists, then at least one mammal exists. Therefore, no mammals exist.” Although the premises are true, the conclusion is false. This argument does not do what arguments are supposed to do—provide us with a good reason to think the conclusion is true.

Logical systems

Logical systems have (1) a formal language that allows us to symbolize statements of natural language, (2) axioms, and (3) rules of inference.

1. A formal language is a way we can present the form of our statements involving logical connectives.
2. Axioms are rules, such as the rule that states that contradictions can't exist.
3. Rules of inference are rules that state what premises can be used to validly infer various conclusions. For example, a rule known as modus ponens states that we can use “A” and “if A, then B” as premises to validly infer that “B.”

Logical systems are needed in order for us to best determine when statements are consistent or when arguments are valid.

Informal logic

Informal logic is domain that covers the application of rational argumentation within natural language—how people actually talk. What we call 'critical thinking' is often said to involve informal logic, and critical thinking classes generally focus on informal logic. Informal logic mainly focuses on rational argumentation, the distinction between inductive and deductive reasoning, argument identification, premise and conclusion identification, hidden assumption identification, and error identification.

Rational argumentation

Arguments are a series of two or more statements including premises (supporting statements) and conclusions (statements that are supposed to be justified by the premises). For example, “All human beings that had lived in the distant past had died. Therefore, all human beings are probably mortal.”
The idea of rational argumentation is that it is supposed to give us a good reason to believe the conclusion is true. If an argument is good enough, then we should believe the conclusion is true. If an argument is rationally persuasive enough, then it would be irrational to think the conclusion is false. For example, consider the argument “All objects that were dropped near the surface of the Earth fell. Therefore, all objects that will be dropped near the surface of the Earth will probably fall.” This argument gives us a good reason to believe the the conclusion to be true, and it would seem to be irrational to think it's false.

**The distinction between deductive and inductive reasoning**

Deductive arguments are meant to be valid. If the premises are true, then the conclusion is supposed to be inevitable. Inductive arguments are not meant to be valid. If the premises of an inductive argument are true, then the conclusion is supposed to be likely true. If an inductive argument is strong and the premises are true, then it is unlikely for the conclusion to be false.

An example of a valid deductive argument was given above when valid arguments were discussed. Let's assume that “if it will rain today, then the roads will be wet” and that “it will rain today.” In that case we have no choice but to agree that “the roads will be wet.”

An example of a strong inductive argument was given in the argument involving dropping objects. It is unlikely that dropped objects will not fall in the future assuming that they always fell in the past.

**Argument identification**

Knowing what arguments are and why people use them helps us know when people give arguments in everyday conversation. It can also be helpful to know the difference between arguments and other similar things. For example, arguments are not mere *assertions*. A person who gives a mere assertion is telling you what she believes to be true, but a person who gives an argument tells you why she believes we should agree that a conclusion is true.

**Premise and conclusion identification**

Knowing what premises and conclusions are helps us know how to know which are which in everyday conversation. For example, a person can say “the death penalty is wrong because it kills people.” In this case the premise is “the death penalty kills people” and the conclusion is “the death penalty is wrong.”

**Hidden assumption identification**

Knowing that an argument is meant to be rationally persuasive can help us realize when hidden assumptions are required by an argument. For example, the argument that “the death penalty is wrong because it kills people” requires the hidden assumption that “it's always wrong to kill people.” Without that assumption the argument will not be rationally persuasive. If it's not always wrong to kill people, then perhaps the death penalty is not wrong after all.
Error identification

Knowing about several errors of reasoning (i.e. fallacies) can help us know when people have errors of reasoning in arguments they present in everyday conversation. For example, the argument “my friend Joe never died, so no person will die in the future” contains an error. The problem with this argument is the unjustified assumption that we can know what will happen to everyone in the future based on what happened to a single person given a limited amount of time. This type of error is known as the “hasty generalization” fallacy.

What's the difference between logic and epistemology?

Epistemology is the philosophical study of knowledge, justification, and rationality. It asks questions, such as the following:

1. What is knowledge?
2. Is knowledge possible?
3. What are the ways we can rationally justify our beliefs?
4. When it is irrational for a person to have a belief?
5. When should a person agree that a belief is true?

These issues are highly related to logic, and many philosophers have equated logic with epistemology. For example, the Stoic philosophers included epistemology in their domain of logic.

I believe that logic should now be considered to be part of the domain of epistemology. However, for educational purposes it is considered to be a separate subject and it's not taught in epistemology classes.

Logic classes deal with argument form and certain rational criteria that applies to argumentation, but epistemology classes generally deal with somewhat abstract questions, as were listed above. Perhaps one of the most important issues that logic deals with much less than epistemology is justification—logic tends not to tell us when premises are justified and how well justified they are, but epistemology attempts to tell us when premises are justified, and when a premise is justified enough to rationally require us to believe it's true.

Why do logic and epistemology classes teach different things? Perhaps because philosophers who have an interest in epistemology have historically not cared as much about logic and vice versa.

But why would philosophers who care about epistemology not care as much about logic? Perhaps because logic tends to be concerned with issues that can be answered with a much higher degree of certainty. We know what arguments are. We know that good arguments must apply certain rational criteria. We can determine when arguments are valid or invalid. We can determine that many arguments have hidden premises or various errors. However, we can't determine the nature of knowledge, justification, and rationality with that degree of certainty. It is more controversial when a belief is justified and at what point a belief is justified enough to rationally require us to believe it's true.
**What is the essence of logic?**

I don't think that logic has an essence. It's a domain concerned with certain rational criteria involved with argumentation, but not all criteria. Epistemology also covers related issues. What we consider to be logic or epistemology mainly has to do with a history of philosophers (and mathematicians) who label themselves as *logicians* or *epistemologists* and teach classes in the corresponding domains. These terms are used merely because they are convenient to us.

However, I think we can say that logic is a domain of epistemology that has a restricted focus, and that focus is mainly restricted to issues that we generally think we can answer with a much higher degree of certainty than usual. Logic and mathematics are now often taken to be part of the same domain, and both generally offer us with a degree of certainty higher than the natural sciences. Whenever scientific findings conflict what we know about logic, we are much more likely to think that our scientific findings are false than that our understanding of logic is false.

The same cannot be said of epistemology once logic is removed from it. Even so, there are examples of epistemological issues that do seem to involve a great deal of certainty. I think we should be confident that we should believe that “1+1=2” and that it's irrational to believe that “1+1=3.” Epistemology tells us what we should believe in that sense. However, there is also a great deal of uncertainty that is usually involved with epistemology. The big questions in epistemology are still very controversial.
Chapter 13: Why Logic is Important

Why is logic education important? The main question here is what the real point of logic education is. The real point of logic is not to teach people how to be logic professors, or to increase test scores, or to impress potential employers. Philosophers and mathematicians were very interested in understanding logic long before it was taught in universities precisely because of how important it is. Why is logic so important? The answer is that logic helps us better understand good arguments—it helps us differentiate between good and bad reasons to have a belief. We should want to have well-justified beliefs. We want to know what we should believe. Understanding good argumentation helps us understand when we should believe something, and understanding logic helps us understand good argumentation.

How exactly does logic help us understand good argumentation? There are many necessary characteristics that good arguments must have, and logic tells us what some of those characteristics are. Logic also helps us better understand concepts that are relevant to good argumentation.

What is a good argument?

Good arguments are good reasons to believe something is likely true. If we know of a good enough argument to believe something, then we should believe it. For example:

1. All dogs are mammals.
2. If all dogs are mammals, then all dogs are living organisms.
3. Therefore, all dogs are living organisms.

People should agree that “all dogs are living organisms.” We know the premises are true (that “all dogs are mammals” and “if all dogs are mammals, then all dogs are living organisms”). We know that if the premises are true, then the conclusion has to be true as well. The premises can't be true and the conclusion false at the same time because the argument is logically valid.

What characteristics do good arguments have?

Ultimately good arguments must have sufficiently justified premises, and the premises should be appropriately relevant to the conclusion. Even so, there is much to be said about this criteria. Many of the necessary characteristics of good arguments are covered by the various issues discussed in logic classes—logical form, logical validity, the distinction between inductive and deductive reasoning, argument interpretation, informal fallacies, etc. Examples about what various general logical issues can teach us about good argumentation includes the following:

1. **Logical form** – Understanding logical form is of paramount importance to understanding good deductive argumentation, but ordinary language makes it very difficult to discuss logical form. It is much easier to understand logical form and how it relates to good argumentation after
learning about logical form in a logic class. For example, “If Socrates is a man, then he is mortal” has the logical form “If A, then B.”

2. **Logical validity** – Logically valid deductive arguments have premises that guarantee the truth of the conclusion (assuming they are true). An invalid deductive argument gives us no reason to think the conclusion is true. In that case the premises can be true and the conclusion can be false at the same time.

3. **The distinction between inductive and deductive reasoning** – All good deductive arguments are logically valid, but good inductive arguments aren't. Inductive arguments are not meant to be valid because the premises are only supposed to make the conclusion probable. A good inductive argument is unlikely to have true premises and a false conclusion, but it can happen. For example, the evidence scientists use to support scientific theories is *inductive* and it is possible that the theories are actually false (imperfectly accurate). The predictions made by scientists could always turn out to be false, but they are likely to be true when they are well-justified. Even dropped objects could fail to fall in the future. Even so, we should agree that dropped objects will fall in the future anyway.

4. **Argument interpretation** – It is important to fully understand people's arguments and to know how to clarify their arguments. It's important that we know what exactly the premises and conclusions are. Sometimes understanding an argument also requires us to identify unstated assumptions and some creativity could be required. It is impossible to properly debate with someone who doesn't understand your arguments. An argument can't be properly refuted unless it is understood properly.

5. **Informal fallacies** – Informal fallacies are errors in reasoning other than having an invalid argument form. Interpreting arguments uncharitably is one common type of fallacy called the *straw man* fallacy.

There are innumerable specific examples about how each general issue can apply to good argumentation. One example is that people often refute the conclusion of an argument by arguing against a premise. However, it is possible for a different argument to be given for any given conclusion. Refuting a premise of an argument does not simultaneously refute the conclusion. Consider the following argument:

1. If the President of the United States is a lizard, then the President is a mammal.
2. The President is a lizard.
3. Therefore, the President is a mammal.

In this case both premises are false, but the conclusion is true. Stating that the premises are false gives us no reason to think the conclusion is false. Such an argument could look like the following:

1. “The President is a lizard” is false.
2. Therefore, we should reject that “the President is a mammal.”

This argument is clearly invalid. The premise is true, but the conclusion is false. This example shows how understanding validity can help us understand why certain arguments fail to be good arguments. Actual people do argue this way now and then, so learning about it in a logic class could actually help people come to a realization that they might not think about otherwise.

Many examples were given concerning how logic classes can help us better understand good
argumentation. However, there are potentially other characteristics of good arguments that are not discussed in logic classes. The philosophical domain called 'epistemology' concerns the nature of knowledge, rationality, and justified belief. There are certain details about what counts as sufficient justification and rational thought that logic does not cover, but is covered by epistemology instead. Epistemology is the domain concerning how open-minded we should be to avoid being close-minded, how skeptical we should be to avoid being gullible, and how much evidence a belief requires in order to be sufficiently justified. Also, logicians don't tell us if any beliefs are self-evident, if intuition is ever a good reason to believe something, or when we can rationally assume a premise to be true without argument. Those are issues concerning epistemology.

Why is good argumentation important?

Logic alone can't tell us why good argumentation is important. It's a philosophical question. Answers include the following:

1. We want to know what's true. Good arguments can tell us what is likely true.
2. We often can't believe what we should believe unless we understand good augmentation. Understanding good argumentation helps us know what we should believe, and it helps us prove to other people what they should believe. Moreover, we should believe certain things because we know about good arguments. Believing what is true at random is not appropriate. We should believe what is likely true based on a good reasoning process.
3. Our beliefs can motivate us to behave in certain ways, and false beliefs are more likely to motivate us to behave in inappropriate ways. For example, we found out that lead is poisonous and we try to make sure children's toys no longer contain lead for that reason. People felt free to put lead in children's toys until their beliefs were corrected.

Many people want to manipulate us to believe certain things, and understanding good argumentation can help us spot the faulty arguments that are used to manipulate us. For example, charlatans want to sell us products that don't actually work. Many medical products are sold that don't actually do what they are said to do. People waste their money on those products when they get duped.
Chapter 14: Valid Argument Forms

A formal logic class or textbook should teach us ways to know when an argument has a valid argument form, and that can take a significant amount of time to learn. I encourage everyone to learn formal logic one way or another because it is of central significance to rational argumentation, and it is not something we spontaneously understand instinctively or through personal experience. Perhaps the first philosopher to understand formal logic and the importance of validity was Aristotle, and philosophers would have liked to understand it sooner. It was a great achievement because it can be so difficult to figure out on our own. Even so, we can learn a lot about valid argument form very quickly. I will explain why we need to make sure our deductive arguments are valid, give examples of valid argument forms, and explain how we can improve our arguments.

What are valid arguments?

The definition of valid argument is the following:

An argument with a form that guarantees us that it's impossible for the premises to be true and the conclusion to be false at the same time.

An example of a valid argument is the following:

1. All dogs are mammals.
2. If all dogs are mammals, then all dogs are animals.
3. Therefore, all dogs are animals.

This argument is valid because it has the following valid argument form:

1. A.
2. If A, then B.
3. Therefore, B.

A and B can stand for any two statements, and they can both be replaced by any two statements. Any argument with this form is logically valid, such as the following:

1. All dogs are reptiles.
2. If all dogs are reptiles, then all dogs are animals.
3. Therefore, all dogs are animals.

In that case A and B stand for the following two statements:

A: All dogs are reptiles.
B: All dogs are animals.

Notice that valid argument does not mean good argument. It is merely one important requirement of a
good deductive argument. The problem with the above argument is that the first premise is clearly false —it is false that all dogs are reptiles. We know that all dogs are mammals.

**Why deductive arguments need to be valid**

One lesson that we learn from formal logic is the importance for deductive arguments to have a valid argument form. The premises of a valid argument are a reason to believe the conclusion because if we assume the premises of a valid argument to be true, then we will also have to assume the conclusion to be true. If a deductive argument is invalid, then the premises don't give us a reason to believe the conclusion to be true because the conclusion could be false, even if the premises are true.

Other than having a valid argument form, good deductive arguments must also have sufficiently justified premises. We need the premises to be justified (perhaps by everyone already agreeing with them in a debate). We do not necessarily need to know that the premises of our arguments are true because we often have to base our opinions on limited information. What we should believe and what is actually true are not always identical. We should believe our best scientific theories to be true, even though it is possible that they will be found to be false at some point in the future.

Most people seem to know that the premises of their deductive arguments need to be justified, but many people don't know that their deductive arguments need a valid argument form. If we should believe that a valid deductive argument has true premises, then we should also believe the conclusion is true (because a valid argument with true premises also has a true conclusion). In that case the argument should be persuasive.

One problem is that many people who don't properly understand the implications of valid argument forms won't fully understand that an argument can have true premises and a false conclusion. They might think that all arguments with true premises are good arguments, or they might simply not know why some arguments with true premises fail to be good arguments.

Consider the following invalid argument:

1. All pythons are reptiles.
2. If all pythons are snakes, then all pythons are reptiles.
3. Therefore, all snakes are reptiles.

Does this look like a good argument to you? Many people are likely to think so, but it's not. The premises and conclusion are all true, but that's not good enough. The problem is that the argument has an invalid argument form. Even if we assume the premises are true, we could still assume the conclusion to be false. Someone who doesn't think all snakes are reptiles should not be persuaded by the argument.
The argument form of the above invalid argument is the following:

1. A.
2. If B, then A.
3. Therefore, B.

Another argument with this argument form, true premises, and a false conclusion is the following:

1. All pythons are reptiles.
2. If all pythons are lizards, then all pythons are reptiles.
3. Therefore, all pythons are lizards.

It is true that “all pythons are reptiles” and it is true that “if pythons are lizards, then all pythons are reptiles,” but it is false that “all pythons are lizards.” Actually, all pythons are snakes, not lizards.

To repeat—an argument with true premises can still have a false conclusion. Invalid deductive arguments are not good arguments, even though they can be persuasive. We need to make sure our deductive arguments have a valid argument form or they won't be good arguments.

Examples of valid argument forms

Knowing how to prove an argument is logically valid can take a logic class, but we don't need to take an entire logic class to know that certain argument forms are logically valid. Consider the following five valid argument forms:

**Modus ponens**

1. If A, then B.
2. A.
3. Therefore, B.

**Modus tollens**

1. If A, then B.
2. Not-B.
3. Therefore, not-A.

**Disjunctive syllogism**

1. Either A or B.
2. Not-A.
3. Therefore, B.
Hypothetical syllogism

1. If A, then B.
2. If B, then C.
3. Therefore, if A, then C.

Constructive dilemma

1. Either A or B.
2. If A, then C.
3. If B, then D.
4. Therefore, either C or D.

How to improve our arguments

In order to improve our arguments, we can memorize the above five valid argument forms and make sure our arguments have one of them. In order to learn to improve our arguments, we will want to get a lot of practice doing this. We can start small by considering beliefs we think are obviously true and how we know they are true.

Consider that we know that rocks exist. That will be our conclusion. How do we know that? Because we can see them and touch them. We can now formulate the argument as the following:

1. We can see and touch rocks.
2. Therefore, rocks exist.

This argument is invalid, and it clearly does not use any of the valid argument forms. The question we can now to ask is, “What does seeing and touching rocks have to do with knowing rocks exist?” Modus ponens seems like it would be appropriate here. The missing premise can be “if we see and touch rocks, then rocks exist.” The argument is now the following:

1. We see and touch rocks.
2. If we see and touch rocks, then rocks exist.
3. Therefore, rocks exist.

Complex arguments

Keep in mind that some arguments seem much more complex than those above, but those arguments can actually be taken to be more than one argument. In general, complex arguments are actually one main argument with premises that are also argued for.
For example, consider the following argument:

1. We see and touch rocks.
2. Our experience of sight and touch is a reliable way to know about what exists.
3. If we see and touch rocks, then rocks exist.
4. Therefore, rocks exist.

It might seem like the second premise is extraneous. The argument uses modus ponens as long as we eliminate the second premise. However, the second premise is informative and should not be removed from the argument. The reason for that is that the second premise is actually a justification for the third premise. We could take the justification to be part of a second argument, and reformulate it as the following two arguments:

1. We see and touch rocks.
2. If we see and touch rocks, then rocks exist.
3. Therefore, rocks exist.

1. Our experience of sight and touch is a reliable way to know about what exists.
2. Therefore, if we see and touch rocks, then rocks exist.

Notice that the second argument (for the second premise) is not a valid argument. Once again, we can use modus ponens and reformulate it. It is then missing the premise “if our experience of sight and touch is a reliable way to know about what exists; then if we see and touch rocks, then rocks exist.” The second argument will now be the following:

1. Our experience of sight and touch is a reliable way to know about what exists.
2. If our experience of sight and touch is a reliable way to know about what exists; then if we see and touch rocks, then rocks exist.
3. Therefore, if we see and touch rocks, then rocks exist.

**Conclusion**

Good deductive arguments must be logically valid. We are unlikely to properly understand valid argument form on our own without any educational resources, and it can take a lot of work to fully understand it. Even so, we can learn quite a bit about valid argument form quickly. In particular, we can learn about five different valid argument forms and try to make sure our arguments have one of them. Sometimes an argument will have premises that we should also argue for, but any deductive arguments for those premises should also have a valid argument form.
Chapter 15: Validity & Counterexamples

I have already described formal logic and explained why it's important for proper reasoning. One of the best ways to learn formal logic is to take a logic class. However, we don't have to take a class just to learn the basics and improve our intuitive grasp of formal logic. What I want to do here is explain how to use counterexamples to prove an argument to be logically invalid. This can help improve our understanding of logic and help us prove arguments to be logically invalid.

What are formal counterexamples?

Whenever someone asserts something false, we can attempt to give a counterexample. For example, someone who claims that all animals are mammals can be proven wrong when we give an example of an animal that's a reptile rather than a mammal, such as a lizard. *Formal counterexamples prove that an argument is logically invalid* rather than that beliefs are false.

An argument is logically valid if it's impossible for the argument structure to have true premises and a false conclusion at the same time. Any deductive argument that's not logically valid is invalid—the argument structure can have true premises and a false conclusion at the same time. A counterexample proves that a logical form is invalid because it can have true premises and a false conclusion at the same time. The counterexample proves that an argument can have true premises and a false conclusion at the same time by using the argument form, having uncontroversially true premises, and an uncontroversially false conclusion.

Consider the following argument:

1. All dogs are mammals.
2. All cats are animals.
3. Therefore, all dogs are animals.

This argument has true premises and a true conclusion, but it's logically invalid. The argument form is the following:

1. All A are B.
2. All C are D.
3. Therefore, all A are D.

A counterexample is the following:

1. All dogs are mammals.
2. All lizards are reptiles.
3. Therefore, all dogs are reptiles.

We kept the same argument form, replaced 'C' and 'D,' and the result is that both premises are still true, but the conclusion is false.
How do we create formal counterexamples?

To create a counterexample, you should (a) find the argument structure, and (b) find content for the argument form that will have true premises and a false conclusion by replacing the variables (letters).

For example, consider the following invalid argument:

1. If a human fetus is a person, then it's wrong to have an abortion.
2. It's wrong to have an abortion.
3. Therefore, a human fetus is a person.

The argument form can be revealed when we remove all the content until we are left with logical connectives and variables. In the case of this argument the content of the argument are statements—various truth claims. In this case the argument form is the following:

1. If A, then B.
2. B.
3. Therefore, A.

We can then replace these variables with new content (statements). A counterexample could use the following schema (content for the variables):

A: Dogs are reptiles.
B: Dogs are animals.

The counterexample using this schema is the following:

1. If dogs are reptiles, then dogs are animals.
2. Dogs are animals.
3. Therefore, dogs are reptiles.

The first two premises are true, but the conclusion is false. If dogs are reptiles, then they are animals, even though they aren't reptiles because “all reptiles are animals.”

Conclusion

Understanding logical form and validity is important for proper argumentation. Although we have an intuitive grasp of logical form and validity, we can learn more about it and improve our understanding. Learning formal counterexamples not only helps us to improve our understanding of logical form, but it also helps us learn how to prove that certain arguments are logically invalid.
Chapter 16: Unstated Premises

I will discuss what unstated premises are, how to identify them, and how to determine what they are.

What are unstated premises?

Unstated premises are premises that a deductive argument requires, but are not explicitly stated. Deductive arguments are popular and can be rationally persuasive, but people don't always state all of the premises that their deductive arguments require. These premises can be called “unstated premises,” “missing premises,” or “hidden assumptions.” For example, consider the following argument:

1. Socrates is a human.
2. Therefore, Socrates is mortal.

This argument might seem persuasive as it is stated here, but it would actually be logically invalid. (The form would be “A. Therefore, B.” This is logically invalid because it would be possible for arguments with this form to have true premises and a false conclusion at the same time.) The reason we might find it persuasive is because of our assumptions. The unstated premise might seem too obvious to even mention—that if Socrates is a human, then Socrates is mortal (or that all men are mortal). We could then write the argument along with that unstated premise as the following:

1. Socrates is a human.
2. If Socrates is a human, then Socrates is mortal.
3. Therefore, Socrates is mortal.

Once the unstated premise is added, the argument is logically valid. It would be impossible for arguments with that form to have true premises and a false conclusion at the same time. (The form is “A. If A, B. Therefore, B.”)

Identifying unstated premises

Identifying unstated premises requires common sense and a charitable interpretation. It also requires us to determine if an argument is deductive or if it's invalid. There is no mechanical process that can tell us when unstated premises are involved.

First, we need to know if an argument is inductive or deductive. If it's inductive, then it probably doesn't have an unstated premise. Inductive reasoning is based on generalizations and predictions. For example, we know that no dogs lay eggs (in part) because every dog that's ever reproduced gave birth to live young. We predict that they will continue to give birth to live young rather than lay eggs in the future, and we generalize that our observations are true of all dogs. Inductive arguments are meant to tell us what is probably true assuming the premises are true, so they are not meant to be logically valid. (It is possible for a good inductive argument to have true premises an a false conclusion.)
If an argument is not a prediction or generalization, then it's probably a deductive argument. In that case the conclusion should follow from the premises. The argument should be meant to be valid— whoever gives the argument should intend it to be impossible for the premises to be true and the conclusion false. Deductive arguments almost always have more than one premise. *If a deductive argument only has one premise, then there's generally an unstated premise.* It is charitable to determine an argument to have an unstated premise when it will assure us that a deductive argument with only one stated premise to be valid.

For example, consider the following argument:

1. If women have a right to their body, then abortion should be legal.
2. Therefore, abortion should be legal.

There's only one premise and one conclusion, and the argument is not a prediction or generalization. Here the unstated premise could be “women have a right to their body.” In that case the argument will be logically valid with the following two premises:

1. If women have a right to their body, then abortion should be legal.
2. Women have a right to their body.
3. Therefore, abortion should be legal.

Second, we need to know if a deductive argument should be interpreted as being invalid. Even if we are being charitable, it might be appropriate to determine an argument to be logically invalid. If an argument is logically invalid, then it's unlikely that there's an unstated premise.

Consider someone who argues the following:

1. If it's wrong to hurt people without an overriding reason, then punching people without an overriding reason is wrong.
2. Punching people without an overriding reason is wrong.
3. Therefore, it's wrong to hurt people without an overriding reason.

This argument is logically invalid and has the form “If A, then B. B. Therefore, A.” Another argument with this form, true premises, and a false conclusion is “If all dogs are reptiles, then all dogs are animals. All dogs are animals. Therefore, all dogs are reptiles.”

In this case it's not clear how a hidden premise could help, and we could imagine someone finding this argument to be persuasive. As a result it seems reasonably charitable to interpret the argument as having no unstated premises.

Determining when an argument is logically invalid can be done using a mechanical process. (See *What You Need From Propositional Logic* for more information.)
How to determine unstated premises

I have given examples of unstated premises, but how do we know what exactly the unstated premises are? Once more, some common sense and charitable interpretation is required. There is no mechanical process that can tell us what exactly the unstated premises are. Even so, I suggest trying to find unstated premises by using various valid argument forms as an outline:

**Modus ponens**

1. If A, then B.
2. A.
3. Therefore, B.

**Modus tollens**

1. If A, then B.
2. Not-B.
3. Therefore, not-A.

**Disjunctive syllogism**

1. Either A or B.
2. Not-A.
3. Therefore, B.

**Hypothetical syllogism**

1. If A, then B.
2. If B, then C.
3. Therefore, if A, then C.

**Constructive dilemma**

1. Either A or B.
2. If A, then C.
3. If B, then D.
4. Therefore, either C or D.

We can try to keep these valid forms of argument in mind when we decide which premise is missing. The stated premises and conclusion are often supposed to be part of a valid argument by adding a premise from one of these argument forms. Consider someone who argues the following:

1. If killing is always wrong, then the death penalty is wrong.
2. Therefore, the death penalty is wrong.

The argument has the form “If A, then B. Therefore, B.” The unstated premise could give this argument
the form of *modus ponens*, and the unstated premise will then be “killing is always wrong.” In that case the argument will be the following:

1. If killing is always wrong, then the death penalty is wrong.
2. Killing is always wrong.
3. Therefore, the death penalty is wrong.

Although this argument is valid, I believe it is still flawed. The fact that the argument is interpreted charitably does not guarantee that the premises are true. In this case I believe that the unstated premise is too extreme (that killing is always wrong). Perhaps killing is morally justified when necessary to save several lives.

Finally, consider someone who argues the following:

1. Evolution is not the best explanation for our experiences.
2. Therefore, creationism is the best explanation for our experiences.

If we add a hidden premise, then this argument could either use *modus tollens* or the disjunctive syllogism.

If the argument uses *modus tollens*, then the unstated premise is “if creationism is the best explanation for our observations, then evolution is the best explanation for our experiences” and the argument will become the following:

1. If creationism is the best explanation for our observations, then evolution is the best explanation for our experiences.
2. Evolution is not the best explanation for our observations.
3. Therefore, creationism is the best explanation for our observations.

This argument doesn't quite sound right. You wouldn't think that creationism being the best explanation for our experiences would somehow assure us that evolution is the best explanation for our experiences.

If the argument uses the disjunctive syllogism, then the unstated premise is “either evolution is the best explanation for our experiences or creationism is the best explanation for our experiences” and the argument will become the following:

1. Either evolution is the best explanation for our experiences or creationism is the best explanation for our experiences.
2. Evolution is not the best explanation for our observations.
3. Therefore, creationism is the best explanation for our observations.

This time the interpretation of the argument and the unstated premise seems charitable. Even so, we might reject one or both of the premises.
Conclusion

Debate can become difficult when we don't properly understand the arguments other people present, and identifying unstated premises is often necessary to properly interpret other people's arguments. To identify when an argument has an unstated assumption requires us to know when it's a valid argument, and when a deductive argument should be interpreted as being an invalid argument with no unstated premises. Moreover, we can often figure out what an unstated premise should be by understanding various types of valid argument forms. If we assume the argument is meant to be valid, then the unstated assumption can often be found by using the valid argument forms as a guide.
Critical thinking is an educational domain concerned with good reasoning. In the broad sense critical thinking includes both formal and informal logic. The narrow sense of critical thinking (as it is often taught in universities) is primarily concerned with (and often equated with) informal logic. Formal logic primarily involves the study of logical systems, logical axioms, logical consistency, and logical validity; and informal logic primarily involves argument identification, argument interpretation, unstated premise identification, and informal fallacies. (See “What is Logic?” for more information.) Critical thinking is generally not thought to be merely about memorizing logical facts. Instead, it is also thought to involve the development of critical thinking skills, the critical thinking attitude, and critical thinking virtues. The purpose of this paper is to briefly discuss critical thinking skills, the critical thinking attitude, and critical thinking virtues.

What do skills have to do with critical thinking?

Knowledge of logic (good reasoning) is not sufficient to guarantee that we are actually able to reason well in day to day life. Critical thinking is not thought to be completely divorced from reality. It is thought that we should not only want to know facts about logic, but also want to be skilled in actually reasoning well in day to day life. Knowing what it means to reason well can help us actually reason well, but it is not enough. Practice is needed to help improve our critical thinking skills. Various exercises given in critical thinking classes (e.g. to interpret arguments and identify unstated premises) give us an opportunity to apply our knowledge of logic and help us learn how to better apply logic to various unique contexts. We can continue to do these exercises outside the classroom and continue to become more skilled as a result.

What does our attitude have to do with critical thinking?

A person can have the knowledge and skill that enables her to reason well, but that doesn't mean that she will actually reason well. The person with a critical thinking attitude will actually be willing to reason well. (Some people have this attitude more than others.) We could generally say that a person with the critical thinking attitude wants to believe whatever is likely true and is interested in finding out which beliefs are best supported by the information currently available. A critical thinking attitude is related to the motivation to try to reason well, but it can also motivate an attempt to use various strategies to overcome personal limitations. For example, a person with the critical thinking attitude should also realize everyone suffers from cognitive biases that often make reasoning alone inadequate, so she should sometimes be willing to make her reasoning publically known to others who can help find errors in her reasoning process. (See “Cognitive Bias & Informal Fallacies” for more information.) Additionally, a person with the critical thinking attitude should often rely on the expertise of others rather than to try to assess all arguments on her own because expertise is often required to properly evaluate an argument. (A snake oil salesman might persuade many nonexperts that her medical product can cure various ills, but it is unlikely to persuade a medical scientist.)
What do virtues have to do with critical thinking?

A person can have the knowledge, skill, and attitude required to reason well, but still lack certain characteristics that help her reason well in various contexts. These characteristics are also known as 'critical thinking dispositions' or 'intellectual virtues.' (See “Intellectual Virtue, Dogmatism, Fanaticism, and Terrorism” for more information.) Perhaps the two most important critical thinking virtues consists in the right balance between skepticism and open-mindedness. A person with a disposition to refuse to believe anything that is insufficiently supported is appropriately skeptical, and a person with a disposition to be willing to believe anything that is rationally required is appropriately open-minded. On the other hand a person who has a disposition to believe certain things that are inadequately supported is gullible, and a person with a disposition to be unwilling to believe certain things that are rationally required is close-minded.

Consider a person who believes that she has lucky underwear because she often did well playing tennis when wearing the underwear. That's an example of fallaciously using anecdotal evidence to one-sidedly support a belief while simultaneously ignoring counter-evidence. She is being gullible insofar as she is believing something on inadequate evidence, and she is being close-minded insofar as she is unwilling to change her mind based on the counter-evidence. She is rationally required not to think she has magic underwear, but she does so anyway.
Chapter 18: Why Arguments Are Important

At some point you are likely to hear about how giving arguments is rude and we would all get along better without arguing. Arguing is often thought to be a shouting match or hostile disagreement of some sort. However, argumentation is central to thinking rationally and critical thinking. The success of natural science could not exist without it. Yes, some arguments are disrespectful, but not all of them are.

Arguments are reasons given to believe something. For example—“All men are mortal. Socrates is a man. Therefore, Socrates is mortal.” In this case the first two statements of the argument are a reason to believe that Socrates is mortal (the conclusion). If we know that “all men are mortal” and that “Socrates is a man,” then we can also know that “Socrates is mortal.”

Is it rude to present the above argument about why we should believe that Socrates is mortal? Doesn't seem like it. Is it part of a shouting match or hostile disagreement? That seems unlikely. In this case the argument could be considered to be rational persuasion. Being capable of giving good arguments and seeing flaws in poor arguments is central to thinking rationally and being capable of critical thinking. Even so, arguments can be disrespectful and manipulative. Imagine that someone argues, “Republicans just want to keep assault weapons legal because they want to use them to murder people.” That is insulting to Republicans and it fails to account for the best arguments given by Republicans to keep assault weapons legal. We could imagine this manipulative argument to be used during a shouting match or hostile disagreement. Manipulative arguments are used during so-called political debates and they are used as propaganda for a television commercials. Manipulative arguments should not be considered to be rational persuasion.

Arguments should generally be intended to be rational persuasion. There's nothing disrespectful about trying to persuade people to believe something based on good reasoning. In fact, science, logic, and philosophy would all be impossible without rational persuasion. The only reason that science can tell us anything about the world is because scientists can tell us how the evidence available is a good reason to believe something is true about the world (or refutes certain beliefs about the world).

It is true that any argument—including a good argument—can make people feel bad. A lot of people feel like they need to win every debate and that being proven wrong makes them look bad. They hate being proven wrong. They could get angry at anyone who disagrees with them and anyone who gives rational arguments with the “wrong conclusions.” Good arguments can motivate a great deal of anger and hostility, and they can be part of a “shouting match” or “hostile disagreement” when someone doesn't take kindly to them. Insults are often thrown around by those who don't like others who try to prove them wrong.

However, we should be ashamed of ourselves to reacting badly to good arguments (or even an attempt to give good arguments). It is perfectly respectful to expect people to want to hear good arguments—to want to know what we should believe and why we should believe it. Human beings are capable of rationality and generally do care about what we should believe. To assume that a person doesn't want to
know what we should is disrespectful. Such a person would be seen as “irrational.”

Moreover, psychologists have proven that people are very biased. Even scientists. Perhaps the worst bias we all suffer from is the “confirmation bias”—we too quickly accept evidence that supports our beliefs and we don't take counter-evidence as seriously as we should. One reason that science is so successful is because of peer review—scientists who give poor arguments and have biased experiments will likely be refuted by others at some point. Science is self-correcting in this way. But it's not just scientists that can benefit from peer review. We are all likely to justify our beliefs inadequately and reason poorly now and then. But if we tell other people about our reasoning process by giving arguments for our beliefs, then they are likely to be able to find flaws in our reasoning. We are much better at finding flaws in the reasoning of others than in the reasoning of ourselves.

In conclusion, arguments can be disrespectful and they can result in a hostile disagreement, but we should try to give rationally persuasive arguments anyway. It is perfectly respectful to assume that people in general want to know what we should believe, and giving arguments to others is a good way for them to help find flaws in our reasoning.
Chapter 19: What are Good Arguments?

What's the point of a rational argument? To give someone a good reason to believe something. A sufficiently good argument gives us a good reason to believe something is true. It is better for us to have beliefs that are supported by good arguments in the sense that they are more likely true based on our limited understanding of the world, but it is possible for them to be false.

I will describe good arguments in more detail, explain why they are important, and give criteria for them.

What are good arguments?

Before knowing what good arguments are, it can be helpful to know what arguments are.

Arguments are reasoning processes made explicit. Arguments have premises (the reason to believe something) and conclusions (the belief we want to argue for). An example of an argument is “All lizards are reptiles. All reptiles are animals. Therefore, all lizards are animals.”

Arguments are not always good reasons to believe anything, but rational arguments are meant to give us a good reason to believe something. Sometimes people want to manipulate others into believing something by using arguments. That's not what rational arguments are about. A rational argument is supposed to tell us what we should think is true. Rational arguments should help us know what is likely true. Having beliefs based on rational arguments should help us have more true beliefs.

People who try to give rational arguments don't always succeed. They don't always give us a good reason to believe something. A person can be sincere and tell us that all mammals give live birth to their young based on the fact that innumerable mammals give live birth to their young. However, the argument fails because we have discovered various mammals that lay eggs (such as the platypus).

A good argument is a successful rational argument. It genuinely gives us a good reason to believe something based on the information that's available to us. Scientists have good arguments for their best theories (such as Einstein's theory of relativity) because they have a good reason to believe their best theories are true. We have a good reason to believe something based on a good argument because beliefs that are supported by good arguments are more likely true than beliefs that aren't. The conclusions of good arguments are rarely guaranteed to be true, but people who reject the conclusions of sufficiently good arguments will be more likely to have a false belief.

Consider someone who thinks the following:

1. I should feed my young child healthy food.
2. It would be healthy for my young child to eat this apple.
3. If I should feed my young child healthy food and it would be healthy for my young child to eat this apple, then I should feed my child this apple.
4. Therefore, I should feed my young child this apple.
This could be a good argument. There are probably a lot of children we should give apples to. Even so, we could imagine that the apple might be secretly poisoned. In that case the second premise will be false. The fact that a premise is false does not necessarily mean it's not a good argument because we might have no reason to believe it's false. It would be reasonable to assume that an apple is not secretly poisoned, and it certainly wouldn't be reasonable to expect all of our food to be secretly poisoned.

Even if the second premise is false, this is still likely a good argument given most situations caregivers find themselves in. It would only fail to be a good argument whenever we have a good enough reason to doubt one of the premises to be true.

The same is true of good arguments for our best scientific theories. At one point we thought Newton's theory of physics was entirely true and complete, and we didn't yet have a good reason to adopt Einstein's theory of relativity. Good arguments gave us a reason to believe something false. Now we know better.

Also, it could be useful to note that good arguments are related to attaining knowledge, which is classically defined as justified true belief. If you have a belief that is properly justified and true, then you know it's true. Good arguments help assure us that our beliefs are properly justified. If we have a good argument for a true belief, then we know it's true.

Consider the following argument—“Every living mammal we've ever seen has a brain. Therefore, all living mammals probably have a brain.” This seems to be a good reason to believe that all living mammals have a brain, and anyone who believes that all living mammals have a brain based on this argument could be said to “know that all living mammals have a brain.”

Finally, it could be useful to note that some good arguments are sufficiently good to give us a sufficient reason to believe the conclusion and other good arguments are merely good enough to provide us with a conclusion that would we would be justified to believe.

Consider that we know all living dogs have a brain based on innumerable observations and scientific findings. Agreeing to the conclusion seems like it's a rational requirement because the argument is sufficiently good. Disagreeing with the conclusion seems irrational.

Other beliefs are optional because there's a good argument for the belief, but the argument is not sufficiently good to make the conclusion a rational requirement. It seems like the belief that intelligent life exists on another planet could be a rational belief based on our knowledge of how vast the universe is, but we don't know for sure. If someone is undecided about it, I wouldn't say she is being irrational.

Sometimes it might even be rational for two people to disagree based on their own understanding of the world because their opposing conclusions are both supported by good arguments. Perhaps there are times when two different scientific hypotheses are supported by the data and we can't yet be sure which one is true. That might be a time when it would be rational for various scientists to disagree about which one is probably true.
Why good arguments are important

Having beliefs when they are supported by good arguments helps assure that our beliefs are more likely true than if we form our beliefs based on poor reasoning. Many people will say that's enough to know that good arguments are important. They would say that we should often use good arguments and we need to base our beliefs on those good arguments. They could say that we want to know what we should believe, and we should believe the conclusions of good arguments rather than the conclusions of poorly reasoned arguments.

However, there might be some people who don't care about what's true. Why should we want to believe what's true? Consider the following answers:

1. There's something valuable about having knowledge, and good arguments help assure us that we have knowledge.
2. To reject good arguments and prefer to have beliefs based on poor reasoning is irrational. People who are consistently persuaded to believe things too easily are gullible and people who consistently refuse to believe things based on sufficiently good arguments are close-minded.
3. There are people who want to manipulate us into using poor reasoning. People are fooled into wasting their money on ineffective medicine, wasting their time believing in cults, and opposing good science because they believe things based on poor reasoning rather than good reasoning. To understand what makes something a good argument and to try to have beliefs based on good arguments can help people avoid being manipulated.
4. We want to satisfy our desires, but we are often wrong about how to do that. Having good reasons to believe that certain actions will satisfy our desires will help us know how to do it.

Criteria of good arguments

We know that certain arguments are good and others are bad, but it's not always obvious. Sometimes we even think an argument is obviously good when it's actually poorly reasoned and vice-versa. Philosophers and logicians have been researching the criteria of good arguments, but they aren't done yet. We are still learning more about what is required of a good argument.

The major types of criteria we can use to determine if an argument is good is the following:

1. The argument must not be informally fallacious.
2. The premises must be justified.
3. The conclusion must follow from the premises.

The argument must not be informally fallacious

Philosophers who study argumentation talk about informal fallacies. These fallacies are various errors in reasoning, which tells us improper ways people sometimes reason about things. There are hundreds of fallacies, such as the straw man fallacy.
One type of straw man fallacy is when we attribute a poorly reasoned argument to someone else that was never actually argued for. The poorly reasoned argument could either be taken to be obviously bad or it can be refuted by another argument. The argument that's rejected is worse than other arguments for the same conclusion. (Sometimes better arguments were already given by the person that the poorly reasoned argument was falsely attributed to.)

For example, imagine that Jennifer argues that “we shouldn't torture people because there's no good reason to cause that much pain, and we shouldn't cause pain unless we have a good reason to.” Tom then replies, “Jennifer says that we shouldn't torture terrorists because we should never cause anyone pain, but we know that we have to throw hardened criminals in prison, even though it can cause the criminals pain.” Notice that Jennifer did not actually say that we should never cause pain. What Tom said is irrelevant to Jennifer's argument, so he failed to give us a reason to reject her argument.

The straw man fallacy is what happens when we egregiously violate the principle of charity, which is the principle that states that we should properly represent other people's arguments, and that we should be careful to understand their arguments properly. We should also generally try to refute the strongest arguments for a conclusion rather than the worst. If we reject the worst arguments for a conclusion, then the best arguments for that conclusion could still give us a good reason to agree with it.

The premises must be justified

What exactly it means for a premise to be justified is not entirely clear. They must be properly justified. Ideally, we would have a good reason to think each premise is probably true. In a rational debate, the premises of an argument need to be either argued for or the person we want to persuade needs to agree with our premises.

Consider the following argument:

1. All reptiles are animals.
2. All dogs are reptiles.
3. We should believe that all dogs are reptiles because dogs breathe oxygen and have a tail, just like reptiles.
4. Therefore, all dogs are animals.

The conclusion is true, but the argument is not rationally persuasive because some of the premises are false. We know dogs are not reptiles. The premise that states “all dogs are reptiles” is poorly argued for (the fact that dogs breathe oxygen and have a tail does not mean that dogs are reptiles). That justification is not appropriate, so the second and third premises are ultimately not justified in the sense that would be required of a good argument.

Now consider another argument:

1. All dogs are mammals.
2. All mammals are animals.
3. Therefore, all dogs are animals.

I believe this to be a good argument. It is possible to justify each premise with more arguments, but it is
obvious enough that the premises are all true that further justification seems unnecessary (in most contexts). I would consider the premises to be justified, even without more arguments being given.

Also keep in mind that we can't justify all our premises with more arguments or we would have to have infinite arguments. Every argument has premises, and we can have an argument for every premise. If every premises needs to be argued for, then one argument will have at least one premise and an argument will have to be given for that premise, but the second argument will also have an argument for it (including at least one premise) on and on forever. It is absurd to think a good argument will require infinite arguments for the premises. My solution is that it is possible to have a properly justified premise without an argument for that premise. The premises we consider to be justified are generally those we agree with. We generally don't require arguments for conclusions we already agree with.

**The conclusion must follow from the premises**

*If the premises are true, then the conclusion is true or likely true.* There must be something about the premises that helps assure us that the conclusion follows from them. There are at least two different ways that a conclusion can follow from the conclusion depending on the type of argument we give. Inductive and deductive arguments have somewhat different requirements.

**Inductive arguments** are supposed to have probable conclusions based on the evidence available. For example, we know dropped objects will fall in the future because they always fell in the past (given the right conditions). Good inductive arguments must be logically strong, which means that it is unlikely for the premises to be true and the conclusion false at the same time. Considering that all objects fell in the past, it is unlikely that they won't fall anymore in the future.

A good inductive argument is strong and the premises are justified, so a good inductive argument will give us a reason to agree with the conclusion in proportion to how well supported the premises are and how strong the argument is. If we know the premises are true and the argument is strong, then we know the conclusion is probably true.

**Deductive arguments** are supposed to have true conclusions as long as the premises are true. For example, the above argument that all dogs are animals. If it's true that “all dogs are mammals” and “all mammals are animals,” then it must also be true that “all dogs are animals.” Good deductive arguments must be logically valid, which means they have an argument form that assures us that it's impossible for the premises to be true and the conclusion false at the same time.

A good deductive argument is valid and the premises are justified, so a deductive argument will give us a reason to agree with the conclusion in proportion to how well supported the premises are. If we know the premises are true and it's valid, then we also know the conclusion is true. If we agree with the premises, but disagree with the conclusion, then we will have inconsistent beliefs.

Logical validity is the focus of formal logic.
Conclusion

Good arguments are successful rational arguments. A good argument requires that a reasoning process is done the right way. If an argument is sufficiently good, then we say that people should agree with the argument, and we might even say people are being irrational who disagrees with it.

We need to understand and use good arguments because we want to know what we should believe. To have beliefs for the wrong reasons is irrational. To consistently form beliefs based on insufficient evidence is gullible, and to consistently refuse to form beliefs based on sufficiently good arguments is close-minded.

Finally, we can study various criteria of good argumentation. We can study informal fallacies, the difference between properly and improperly justified beliefs, and when premises are properly relevant to the conclusion. We can find out how to know when an informal argument is strong, or when a deductive argument is logically valid.
Chapter 20: Not All Good Arguments are Logically Sound

More than one person has believed that all good arguments are logically sound, but this is a mistake. Not all good arguments are logically sound. Even so, understanding why not all good arguments are logically sound can help us better understand what good arguments are. I will discuss what good arguments are, I will explain what it means for an argument to be logically sound, explain the distinction between deductive and inductive arguments, and present an argument that proves that not all good arguments are logically sound.

What are good arguments?

For our purposes here a good argument is one that is rationally persuasive and does not make use of informal fallacies (informal errors in reasoning). Good arguments give us a sufficient reason to rationally agree with a conclusion. I will not discuss informal fallacies in detail here.

However, it is not entirely clear what a good argument is because it is not entirely clear what precise criteria is needed for an argument to be rationally persuasive. What exactly rationality consists of is a somewhat controversial topic that is studied by epistemologists (philosophers who study reasoning, justification, and knowledge).

Even so, there are uncontroversial examples of good arguments. A common example of a good argument is the following:

1. All men are mortal.
2. Socrates is a man.
3. Therefore, Socrates is mortal.

(“Socrates” refers to a real historical figure discussed by Plato and other ancient philosophers and Socrates is said to have died by drinking hemlock.)

This argument gives us a sufficient reason to rationally agree with the conclusion that “Socrates is mortal” because the premises are highly justified, and anyone who believes the premises are true has no choice but to think that the conclusion is true. It would not be irrational for us to believe the conclusion and it might even be rationally required for us to believe the conclusion—perhaps anyone who knows about this argument yet believes that Socrates is immortal (or is even undecided about it) is irrational considering how highly rationally persuasive this argument is.

What does it mean for an argument to be logically sound?

Logical soundness requires that an argument is both logically valid and that all the premises are true.
What's a valid argument?

Logically valid arguments have a form that guarantees that the argument can't have true premises and a false conclusion at the same time. For example, consider the following valid argument:

1. If all dogs are mammals, then all dogs are animals.
2. If all dogs are animals, then all dogs are flowers.
3. Therefore, if all dogs are mammals, then all dogs are flowers.

This argument is logically valid because we can't imagine that the premises are true and the conclusion is false at the same time. If we imagine that both the premises are true, then the conclusion must also be true.

To better understand why an argument is logically valid, it can be a good idea to consider the logical form. In this case the logical form is the following:

1. If $a$, then $b$.
2. If $b$, then $c$.
3. Therefore, if $a$, then $c$.

All arguments with this logical form are logically valid. Each variable ($a$, $b$, and $c$) can stand for any proposition. Keep in mind that valid arguments can have false premises or conclusions. However, if an argument with this form has true premises, then it's logically sound—and we are guaranteed that the conclusion is also true. Why? Because valid arguments can't have true premises and a false conclusion at the same time.

It can also be a good idea to consider an invalid argument to see how it differs from a valid one. An example of an invalid argument is the following:

1. If all dogs are mammals, then all dogs are animals.
2. All dogs are animals.
3. Therefore, all dogs are mammals.

In this case we can imagine that the premises are true but the conclusion is false insofar as both premises could be true even if not all dogs are mammals.

The logical form of this invalid argument is the following:

1. If $a$, then $b$.
2. $b$.
3. Therefore, $a$.

Any argument with this form is invalid. We can replace the variables with new propositions to show that an argument with this form can have true premises and a false conclusion at the same time. Let's replace $a$ with “all cats are reptiles” and $b$ with “all cats are animals.” In that case we get the following invalid argument:
1. If all cats are reptiles, then all cats are animals.
2. All cats are animals.
3. Therefore, all cats are reptiles.

Now both premises are true, but the conclusion is false. The problem with invalid arguments of this kind is not that a premise or conclusion is false. The problem is that the premises do not give us a sufficiently good reason to think the conclusion is true—even if the premises are true, the conclusion can still be false.

**What's a sound argument?**

An example of a sound argument is plausibly the following:

1. If all dogs are mammals, then all dogs are animals.
2. If all dogs are animals, then all dogs have DNA.
3. Therefore, if all dogs are mammals, then all dogs have DNA.

One problem with just about any example of a sound argument is that there's some uncertainty involved. Our best science tells us that the premises are true, but there's a chance that the science is wrong. We can say that this argument is probably sound but we can't say we know it is sound for absolute certain. It is possible that one of the premises are false and that the conclusion is false as a result.

If it were true that all good arguments are logically sound, that would imply that we almost never know for sure if an argument is good. The best way could do is say that it's probably a good argument.

**What's the difference between inductive and deductive arguments?**

Inductive arguments are meant to give us a conclusion that's probably true based on limited data, but deductive arguments are meant to guarantee that the conclusion is true. Deductive arguments are meant to be valid, but inductive arguments are not meant to be valid. The above arguments were all deductive, but not all good arguments are deductive. For example, consider the following good inductive argument:

1. The laws of nature existed throughout human history.
2. Therefore, the laws of nature will probably exist tomorrow.

This argument could be considered to be logically invalid, but it's not meant to be logically valid. It's only meant to tell us what is probably true based on limited information. This is how scientific arguments for theories work. Science makes predictions based on limited data. The predictions could always have a chance of being false. For example, it is possible that the laws of nature will not exist tomorrow. We predict they will, but we can't prove they will for absolute certain.

The fact that we can have good inductive arguments is itself evidence that not all good arguments are logically sound. If all good arguments are logically sound, then the above argument about the laws of
nature would fail to be a good argument—and all scientific arguments for theories would be also fail to be good arguments. And yet many of the most persuasive rational forms of reasoning to believe anything is based on science (and inductive arguments).

**Proof that not all arguments are logically sound**

An argument against the belief that all good arguments are logically sound is the following:

1. At least some good scientific theories were proven to be false.
2. If at least some good scientific theories were proven to be false, then not all good arguments are logically sound.
3. Therefore, not all good arguments are logically sound.

**Premise 1** – Is it true that “at least some good scientific theories were proven to be false?” Yes. For example, I think Newton's theory of physics is a good example. It was believed that Newton's theory of physics was complete and could predict any physical motion, but it failed to predict the motion of Mercury. However, Einstein's theory of physics was able to predict the motion of Mercury and is now considered to be a better (and more complete) theory of physics.

**Premise 2** – Is it true that “if at least some good scientific theories were proven to be false, then not all good arguments are logically sound?” Yes. Scientists give good arguments in favor of good scientific theories. If all good scientific theories are proven to be true by sound arguments, then they can't be proven to be false. Sound arguments would guarantee the theories are true because the premises would be true and the arguments for the theories would be valid—valid arguments can't have true premises and false conclusions at the same time.

Given that we should accept these justified premises, the conclusion should also be accepted. We seem to know the premises to be true, so we have no choice but to think we can know the conclusion is also true. Why? Because this argument uses a valid logical form. The logical form is “a. If a, then b. Therefore, b.” This valid logical form is well-known to be valid and is called “*modus ponens*.”

**Conclusion**

I am all for good arguments, and I think people should know more about what good arguments are. I want them to know more about what it means to give people a sufficient reason to rationally agree with a conclusion. Saying that not all good arguments are logically sound doesn't mean we shouldn't try to present sound arguments now and then. However, it does mean that we can't condemn all arguments that fail to be sound.
Chapter 21: Not All Good Arguments Are Logically Sound Part 2

One reason that not all good arguments are logically sound is because good arguments used in science are inductive, and inductive arguments are not meant to be logically sound. However, not all good deductive arguments are logically sound either. There is a sense that deductive arguments would ideally be logically sound, but some deductive arguments have sufficiently justified premises, even if those premises aren't known to be true for certain. A good deductive argument must be logically valid, and it must have sufficiently justified premises. Even so, not all good deductive arguments are logically sound.

A good way to know if good deductive arguments can fail to be logically sound is to consider a good deductive argument that can fail to be logically sound. An uncontroversial example of a good argument is the following:

1. All men are mortal.
2. Socrates is a man.
3. Therefore, Socrates is mortal.

Is this argument logically sound? Probably, but maybe not. The premises are sufficiently justified, but that doesn't mean we know they are true for certain. If the premises are true, then it's sound. If the premises are false, then it is not sound. We need to know why we would believe the conclusion is true. The reason that we should believe the conclusion is true is because the premises are well-justified and the argument is valid, not because we know the argument is sound.

Consider the first premise in particular. Perhaps there is an immortal man who has kept his immortality a secret. If we found out a man is immortal, then the argument will no longer be a good argument. However, it would not be reasonable to require all good deductive arguments to have premises we know are true for absolute certain. Right now the premises are sufficiently justified and will remain so until we have significant counter-evidence against them.

Imagine that all good deductive arguments had to use premises that we know are true for certain. In that case scientific conclusions could never be used for the premises of deductive arguments. Our best science concludes that all men are mortal, but sometimes scientific conclusions are discovered to be wrong. It would be absurd to say that no good deductive argument could use scientific conclusions as premises. Our best scientific conclusions are sufficiently justified and uncontroversially good deductive arguments can use our best scientific conclusions as premises.

Examples of scientific conclusions are “if the laws of nature will still exist tomorrow, then the law of gravity will still help us make predictions tomorrow” and “the laws of nature will still exist tomorrow.” A perfectly good deductive argument that uses these conclusions as premises is the following:

1. The laws of nature will still exist tomorrow.
2. If the laws of nature will still exist tomorrow, then the law of gravity will still help us make predictions tomorrow.
3. Therefore, the law of gravity will help us make predictions tomorrow.
We don't know that these premises are true for absolutely certain. Sometimes the conclusions of science are proven wrong at some later point. The laws of nature might not exist tomorrow. Even so, it is perfectly reasonable to assume they will. This is a good argument, but it might not be logically sound.

We can summarize my argument that not all deductive arguments are logically sound as the following:

1. We know that the above deductive arguments are good arguments, but we don't know for certain that they are logically sound. They are good arguments whether or not they are logically sound.
2. If they are good arguments whether or not they are logically sound, then not all good deductive arguments are logically sound.
3. Therefore, not all good deductive arguments are logically sound.

In conclusion, not all good deductive arguments are logically sound. We hope our good deductive arguments are logically sound, but sometimes they aren't. Instead, I suggest that we define good deductive arguments as those that are logically valid with sufficiently justified premises.
Chapter 22: How To Have a Rational Debate

It can be difficult to find anyone willing and able to engage in rational debate, but it is something I think we should aspire to having. Many people refuse to engage in rational debate because they find it offensive or they would rather engage in name calling. I believe that rational debate has a lot to offer. It can help us better understand how to reason properly and to develop critical thinking skills. Rational debate is important to everyone who wants to know what they should believe about a controversial issue because we need to know if there's a good argument that supports a belief.

Based on my experiences, I believe that people tend to be much worse at rational debate in general than they realize. They not only give very bad arguments on occasion without realizing it, but it is often unclear how they think their arguments have any bearing on a debate whatsoever. This is likely because they don't quite understand how arguments and debates function. There is evidence that people don't know how to reason or argue well. For example, Tim Van Gelder discussed the research that found that “[a] majority of people cannot, even when prompted, reliably exhibit basic skills of general reasoning and argumentation.”

Rational debate has little to do with debate teams, debate competitions, or political debates as seen on TV. Debate is a discussion about what we should believe between two or more people who disagree on some subject. One side in a rational debate gives arguments for some belief and defends that belief from objections. The other side of the rational debate gives arguments for why we should reject the belief and defends their position from objections. Rational debate requires that we do not try to trick or manipulate our opponents. Instead, we must be sincere about what we should believe and why.

A simple diagram of a rational debate looks like the following:

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We can consider the initial argument, objection, and defense to all be the necessary steps of both sides of a debate. Each side should have its own initial argument and their arguments should be defended from objections. However, we should keep in mind that there can actually be several initial arguments for a position, several objections to each argument, and several ways to defend an argument from objections. Debates can become very lengthy and complicated for that reason. Some philosophical debates have lasted for thousands of years between several different authors.

I will discuss each major step of debate—the initial arguments, objections, and defenses. Examples will be given of each.

**Initial arguments**

People are motivated to participate in a rational debate when they both disagree about what we should believe. For that reason both sides of the debate present an argument for what they think we should believe.

Let's consider a potential topic for rational debate. Wendy might think we should use the death penalty and Casper might think we shouldn't. In that case Wendy would argue that the death penalty should be used and defend her view from objections; and Casper would argue that the death penalty shouldn't be used and defend his view from objections.

The conclusion of Wendy's argument is “we should use the death penalty,” and Casper's conclusion is a rejection of that belief—that we shouldn't use it.

The initial arguments are the reasons given for us to believe the conclusions. For example, each side could argue the following:

**Wendy's initial argument**

1. Evil people deserve to die.
2. If evil people deserve to die, then we should use the death penalty.
3. Therefore, the death penalty should be used.

**Casper's initial argument**

1. We shouldn't kill people unless it's necessary to save lives.
2. Therefore, the death penalty shouldn't be used.

**Objections**

After the initial arguments are presented, we have an argument to think something is true and an argument to think it's false. At this point in the debate we can't be sure that either of these arguments is successful. If both arguments are perfectly good, then we will have a good reason to think the death penalty should be used, but we have another good reason to think it shouldn't be used. We will then
have a good reason to think that two contradictory statements are both true, but we know that two contradictory statements can't be true.

That's where objections come in. These are arguments given against the arguments given by the opposing side. In this context objections are not against the conclusions of the opposing side—they are only against the arguments. In particular, an objection is meant to tell us that an argument given by the opposing side is not a good argument. There are two main reasons to think that an argument is not a good argument. One, a premise could be unjustified. Two, the premises might not properly support the conclusion.

An example of each type of objection is the following:

**Casper's objection against Wendy's initial argument**

1. All evil people can be reformed.
2. If all evil people can be reformed, then they don't deserve to die.
3. Therefore, evil people don't deserve to die.

This objection gives us a reason to think Wendy's first premise should be rejected. That premise is needed for her argument to give us a reason to agree with her conclusion. If we reject the premise, then Wendy's argument will not give us a good reason to think that we should use the death penalty.

**Wendy's objection to Casper's argument**

1. Perhaps the death penalty is necessary to save lives.
2. So, even if “we shouldn't kill people unless it's necessary to save lives” is true, perhaps we should use the death penalty anyway.
3. Therefore, Casper's argument fails to give us a good reason to believe that the death penalty shouldn't be used.

This time no premise in particular is objected to, but it is explained that Casper's argument isn't a good reason to think the death penalty shouldn't be used—even if his premise is true.

**Defenses**

A defense is a reason to think an objection isn't a good argument. A defense could be said to be an objection to an objection. During the debate Wendy will be required to tell us if she thinks her argument can be rationally defended from Casper's objection or if she retracts her initial argument, and Casper will be required to do the same.
An example of defenses include the following:

**Wendy's defense of her initial argument**

1. Casper doesn't give us a good reason to believe that evil people can be reformed.
2. If Casper doesn't give us a good reason to believe that evil people can be reformed, then Casper doesn't give us a good reason to believe that evil people don't deserve to die.
3. Therefore, Casper doesn't give us a good reason to believe that evil people don't deserve to die.

This time Wendy's argument is a bit weaker because it's merely stated that one of Casper's premises is not justified. This seems like an appropriate response to an argument in a debate that is particularly controversial. It could also be mentioned that the premise is controversial and our best science does not support it. We can prove pretty much anything in a debate if we are allowed to require everyone to agree with our controversial premises, so it is necessary to try to find premises that we believe our opponents will agree with. (At least assuming that the are properly informed about science.)

However, we should also note that it is important for both sides of a debate to try to find premises that everyone can agree with. If no premise is ever accepted during a debate, then the debate will never end. A person can be asked to justify premises with additional arguments over and over again forever. It would be unfair to ask one side to argue endlessly, so we should not require every uncontroversial premise to be argued for endlessly. Both sides should try to offer reasons to agree with any premises that could be considered to be controversial, and both sides should be allowed to have certain uncontroversial assumptions.

**Casper's defense of his initial argument**

1. Incarceration is just as effective as the death penalty at saving lives.
2. If incarceration is just as effective as the death penalty at saving lives, then the death penalty is not necessary to save lives.
3. If the death penalty is not necessary to save lives, then we should reject that “perhaps the death penalty is necessary to save lives.”
4. Therefore, we should reject that “perhaps the death penalty is necessary to save lives.”

It seems fair to assume that Casper's initial argument contained an unstated premise—that the death penalty isn't necessary to save lives. People don't always state all of the premises of their arguments, and that premise can be justified in order to defend his argument from Wendy's objection. In that case one premise of Wendy's objection in particular can be refuted.

**Conclusion**

Although I have discussed the basic requirements of rational debate, there is a lot more that could be said. Even so, this is a good starting place. If we want to know what we should believe, we should know arguments both for and against the belief when possible. We also need objections and defensive arguments. We need to know if we have a good reason to reject an argument, and we need to know why exactly it's a good reason to reject the argument.
Chapter 23: Advice for Better Debates

Debate can be an educational opportunity (for hopefully at least one participant), but many people find it to be a waste of time. This could be due to the fact that many people have bad habits and know very little about how to debate well. Nonetheless, the Internet gives us new opportunities to debate using message boards, blogs, and so on. I want to encourage people to debate informally in everyday conversation whether face-to-face or online, and I will discuss five argumentative virtues that can help us have better debates—charity, relevance, clarity, modesty, and justification. These virtues apply to any sort of debate including philosophical essays, but I will also discuss certain flaws I've encountered in informal debates.

What is a debate? Debate, broadly construed, consists of a disagreement between people when each person's opinion is justified and defended through argumentation (giving reasons to accept conclusions). There have been some philosophical debates spanning for thousands of years between hundreds of participants, some debates are made for spectators (such as so-called political debates), but most debates are found in informal conversation.

1. Charity

Debate often requires us to give objections to an “opposing” argument or belief—or to defend our own argument or belief from objections. Either way, we need to understand at least one argument, belief, or objection given by someone else. When considering the arguments and beliefs of others it's often a good idea to make sure we understand them as well as possible, and to understand why an intelligent person could agree with the “opposing” belief or argument. To do this, it's a good idea to try to see things from the opposing person's point of view.

To misunderstand or fail to properly describe an opposing argument or belief is often catastrophic to our argument. This is known as the straw man fallacy. It is uncharitable, and it's not relevant. If you change an opposing belief or argument and make it worse than it really is, then you are likely to try to object to the changed argument or belief, but such an objection can't prove that the actual opposing argument or belief is unjustified. Additionally, such distortion is manipulative, deceptive, and dismissive.

For example, Sue might argue that “abortion is wrong because each fetus is a person.” It would then be uncharitable for Jen to respond, “Why do you think a fetus is capable of rational thought?”

To belittle or quickly dismiss the opposing point of view, argument, or belief is often insulting and it's likely to make ourselves seem pompous. Such behavior is unlikely to advance the conversation.

I have noticed that being uncharitable is often accidental because people often try to read between the lines and others might assume you have the same beliefs and arguments in mind as countless others they imagine existing (or that they have encountered in the past). This might be inevitable to some extent because every conversation is likely to require us to have many assumptions, but it's often something that can lead to a straw man argument.
Being charitable requires us to be minimally respectful and modest. We are unlikely to have an informative debate if we don't consider the other person to be worthy of a debate.

2. Relevance

It's often a good idea to make it clear how our objections are relevant to the opposing belief or argument—and we should generally make it clear how we can defend our arguments and beliefs from objections.

First, one way to make sure that our objections are relevant is to make it clear whether we object to an opposing premise or conclusion. (A premise is a reason or part of a reason given to accept a conclusion.) If an argument is logically sound, then the conclusion has to be true. Therefore, we would often need to know that a premise of an argument is unjustified before we can demonstrate that the conclusion is unjustified. For example, consider the argument “hurting people is never wrong, kicking people hurts people, therefore kicking people is never wrong.” If this argument is logically sound, then the conclusion has to be true. However, the argument is not logically sound because it's false that “hurting people is never wrong.”

Second, the fact that a premise is false is not sufficient to know that the conclusion is false because a better argument might be possible. For example, someone could argue that “Dogs exist because the sky is blue.” It's true that the sky is blue, but that doesn't prove that dogs don't exist.

Third, it can be a good idea to keep in mind that deductive arguments must be logically valid or the premises aren't even relevant to the conclusion. Logically valid arguments have premises that logically imply the conclusion, but logically invalid arguments don't. For example, “Dogs are animals because dogs are mammals” is logically invalid insofar as proving the conclusion to be true (i.e. dogs are animals) would require an additional premise—that mammals are animals. A logically valid argument would be “dogs are animals because (a) dogs are mammals and (b) mammals are animals.” To fully understand logical validity, it can be a good idea to learn formal logic.

Keep in mind that many things said during debates are irrelevant, such as the fact that the opponent is lazy, unemployed, or foolish. Saying anything negative about the opponent is not only likely to make yourself sound pompous, but it's off-topic—totally irrelevant to the opposing beliefs and arguments.

If something is said during a debate that diverts attention away from the relevant arguments, then a red-herring fallacy has been used. To change the subject or divert attention away from arguments during a debate is unlikely to advance the conversation.

3. Clarity

It's not always clear how many arguments and objections are relevant in a debate, and it's not always clear what we want to say.
First, many words are vague—there's a gray area and it's not clear where we want to draw the line. For example, it might be clear that Socrates is a *good person* but it might not be clear if President Barack Obama is *good enough* to be a *good person*. We can clarify how we can draw the line or try to avoid using vague words.

Second, many words are ambiguous—there can be more than one meaning. For example, it's not clear that Karl Marx, one of the original communists, would consider the Soviet Union to be a communist country. If the meanings are considered to be similar (such as an alternative to capitalism), then the ambiguity is likely to cause confusion. We can clarify how we use words like 'communism' or we can avoid them.

Third, it's not always clear what our conclusions are. Does someone want to conclude that everyone should agree that Obama is a good president—or that it's rationally permissible to believe that Obama is a good president—or that the belief that Obama is a good president is a somewhat better belief than the alternative—or simply that there is some reason to believe that Obama is a good president?

Fourth, it's not always clear how our arguments work. It's a good idea to list every single premise that an argument requires, but hidden premises are very common. For example, we can argue that “It's usually wrong to hurt people, so it's usually wrong to kick people.” This argument might look perfectly reasonable, but it's actually missing a needed premise—that kicking people is likely to hurt them.

One common mistake during debates is to try to prove too much. We can rarely prove that everyone has to agree with us about anything, but this is often what people try to prove. To make matters worse, some people even argue that other people are idiots for disagreeing with them. Although it might be true that only idiots have certain beliefs, it is not usually something that would be worth debating about. (For example, everyone should agree that \(1+1=2\).)

Additionally, many people seem to think it's obvious what they want to argue, even though vagueness, ambiguity, and hidden premises plague our language. To tell someone who asks for clarification or misunderstands our arguments that she needs to “learn to read English” or that she “completely missed the point” will likely make us sound pompous and is unlikely to advance the conversation.

### 4. Modesty

Modesty requires that we realize what little our arguments actually prove, and that we don't have an arrogant attitude. It's often a good idea to be modest about our own capability to be rational or our capability to prove anything substantial using arguments. Implying that we are superior to others is also likely to be insulting and is unlikely to advance the conversation.

### 5. Justification

It's often a good idea to give justifications for our premises—a reason that others should accept them. For example, we should believe that Einstein's theory of relativity based on his expertise and scientific consensus. An appeal to expertise, observation, and the fact that certain beliefs are *intuitive* are all
common forms of evidence.

However, we can try to justify our beliefs endlessly. Consider that you tell someone something you know is true and that person continually asks for justifications. For example, I can say that I know Einstein’s theory of relativity is true, and Sue can ask, “How do you know that?” I can reply that scientific consensus confirms Einstein’s expertise. Sue can then ask, “How do you know that expertise counts as a form of evidence?” I can then say that we should trust the opinion of experts who are likely to have sufficient evidence for their beliefs (unless we are also experts)—such as when a math teacher tells the children that $1+1=2$. Sue can then ask, “How do you know we need to trust the opinion of experts including math teachers?” This can go on forever. So when is it a good idea to justify our opinions? My suggestion is that, at minimum, it's a good idea to try to meet the other person halfway.

How can we meet the other person halfway during a debate? The more an opponent offers justifications, the more justification we can offer. On the one hand if an opponent offers no justification, then we need not offer any either. What can be asserted without justification can be dismissed without justification. On the other hand if we merely ask an opponent to continually justify every assertion over and over forever, then the conversation will be one-sided and get boring. Instead, it's often better to be willing to offer objections to the opponent's assertions—when the opponent is willing to justify her assertions.

Moreover, it's a good idea to keep in mind that the justifications people give for their beliefs often fail to be good reasons to believe anything. Such failures have been categorized by philosophers and are known as 'informal fallacies.'

**Conclusion**

Many people understand debates as the silly banter between politicians or as shouting matches, but debate can be much more than that. It can be a social form of reasoning, and it's often helpful to have other people to double-check our reasoning process because we often overestimate our own ability to reason. Simply put, debating can be educational. Of course, debates are not always educational. I hope that the five virtues mentioned here can help change that. If our arguments attain higher levels of charity, relevance, clarity, modesty, and justification; then our debates are going to be likely to be more productive.
Chapter 24: Nonrational Forms of Persuasion

The world is full of manipulation, lies, and unreasonable thought. We all know we can't believe everything we read, but people still get manipulated and charlatans occasionally make a fortune anyway. The Internet is one of the greatest sources of information, but we still need to know what information is reliable. It can be difficult to know what to believe, it can be difficult to identify manipulation, and it can be difficult to identify errors in reasoning. Additionally, there is research that strongly suggests that even the most reasonable people suffer from a great deal of cognitive bias.

There are things we can do to be more unreasonable and biased, and there are things we can do to be more reasonable and unbiased. I will discuss various forms of nonrational persuasion, cognitive bias, manifestations of unreasonable thought, why it matters, and what we should do about it. Simply knowing about forms of nonrational persuasion can help us identify them and stay vigilant. However, I will also discuss other concrete suggestions that can help us be more reasonable. For example, we should try to understand why intelligent people disagree with us and we should generally try to avoid marginalizing people from "other groups."

Nonrational forms of persuasion

The main concern here are nonrational forms of persuasion that are used to influence what people think and believe. When intended, these forms of persuasion are forms of manipulation. Nonrational forms of persuasion include the following:

1. Informal fallacies – Philosophers specialize in understanding errors in reasoning (i.e informal fallacies), which are often used in nonrational forms of persuasion. These forms of persuasion are used in argumentation and should be familiar to people who watch political debates. Cherry picking, anecdotal evidence, and slandering opponents are common. However, not all forms of manipulation require arguments.

2. False balance – The news media often gives us two sides of a story and makes them both seem reasonable when there is actually only one reasonable side to the story. For example, a fringe scientist could be found in order to make it seem like there is a debate over the plausibility of evolution among the experts, when the actual experts do not actually debate over that issue. (Keep in mind that the tactics I discuss are not limited to the news media. There are other people who might use the same nonrational forms of persuasion.)

3. One-sidedness – The news media often gives us one side of a story without giving the other side. This is a form of cherry-picking (i.e. selective evidence), but no actual argument is necessary. Instead, the person who reads or watches the news is likely to “draw their own conclusions” based on the one-sided information presented—and are likely to draw the wrong conclusions. For example, the news often has stories that discuss the evils done by our “enemies” rather than stories about the good things they do in order to give the message that our enemies are inferior or evil.

4. Repetition – The news media can repeat the same story, similar stories, or message in order to
convince the audience of something. For example, repeating stories about shark attacks could give the impression that shark attacks are much more frequent than they really are. Also consider that many liberals have been known for repeating the message that “all opinions are equal” and many conservatives have been known for repeating the message that wealthy people are “job creators.”

5. Sensationalism – The news media often exaggerates stories. It often blows things out of proportion. This is to be expected in order to increase viewership, but the media is also likely to minimize the importance of stories that conflict with the financial interests of the company. For example, negative stories about certain other businesses could involve a conflict of interest—perhaps because the news depends on advertising from those other businesses.

6. Proof of sincerity – Many people will emphasize their sincerity (or the sincerity of their authority figures) rather than properly argue that their beliefs are true. Being willing to endure pain or death could be evidence of sincerity, but it doesn't prove any belief in particular is true.

7. Moral virtues – Many people will emphasize the moral virtues of their authorities to encourage us to agree with the authorities. Character witnesses can be important in a court room to assure us that someone is generally honest, but it doesn't prove that person's beliefs are rational.

8. Marginalization – By ignoring, insulting, dehumanizing, or demonizing others we can attempt to convince people that we are superior. They can't be trusted, but we can. Marginalization is effective at influencing what we think because people we don't respect are much less likely to be taken seriously or understood by us. We are much more likely to dismiss and misunderstand everything said by those we disrespect. This is highly related to the ad hominem fallacy—insulting people is often used to distract us from the actual arguments and make us biased against their arguments.

9. Peer pressure – Peer pressure can exist in the form of praise and blame. People can offer us friendship and community. Their approval is important to us in order to maintain friendship and attain various social benefits. We are likely to at least pretend to agree with those in our community if disagreement is likely to lead to negative social consequences. The suppression of disagreement might actually make it more likely that we learn to agree with others in our group.

10. Isolation – Some groups will require that we stay away from outsiders who might have differing viewpoints. We are more likely to have the same biases and beliefs as those we spend our time with, and we are unlikely to change our mind if no one criticizes our beliefs. People on Facebook who block everyone who disagrees are creating a group they interact with in which criticism is suppressed, and they are less likely to change their mind about their beliefs as a result.

11. No questioning – Some groups will require that we refrain from “negative thinking,” disagreement, or questioning the beliefs of the group. Asking people to suppress their questions and critical thought might actually make it likely that we will learn to agree with the beliefs of the group.
Forms of Cognitive Bias

One reason that nonrational forms of persuasion can be so convincing is because we commonly suffer from certain rational shortcomings (i.e. forms of cognitive bias). All people appear to fall victim to cognitive biases no matter how rational they are. Our ability to reason is much more restricted than we think. Here are various forms of cognitive bias:

1. **Confirmation bias** – If we find some belief to be initially plausible, then we are likely to rationalize that belief to others using any positive evidence we can come up with while simultaneously ignoring and/or dismissing counter-evidence. The confirmation bias is probably the most important bias we commonly suffer from.

2. **Selective perception** – People's expectations effect their experiences and observations. You are likely to have false positives based on your expectations. For example, if you think that you are in a haunted house, then a dish that falls off of a table will more likely be seen as being thrown off the table by a ghost.

3. **Halo effect** – We tend to think that we can generalize from certain positive characteristics of a person or group to other characteristics of that person or group (or negative characteristics of a person or group to other characteristics). This often takes the form of thinking a person who believes something we agree with is reasonable, or someone who believes something we disagree with is unreasonable; and arguments given by those who believe other things we agree with are more likely reasonable than arguments given by those who believe other things we disagree with. For example, if we think a group of people (or a person) is inferior, stupid, or evil, then we are less likely to understand their arguments, and we are more likely to dismiss their arguments out of hand. This is one reason why ad hominem fallacies (insults during arguments) are effective.

4. **Intergroup bias** – We have a tendency to view our group favorably and those who are not part of our group unfavorably based on any groups we believe we are a member of. Racism and sexism are generally caused by seeing one's own race or gender as superior to the alternatives. Partisanship is also related. People believe their political party or ideological association to be superior to the alternatives and believe members of their own group to be superior in many ways to the opposing groups.

5. **Dunning–Kruger effect** – Unskilled people tend to think they are much more skilled than they really are. (However, keep in mind that we have some reason to think even the most reasonable people generally overestimate how reasonable they are.)

6. **The Downing effect** – People with below average IQ often overestimate their IQ, but people with above average IQ often underestimate their IQ.

7. **Overconfidence effect** – People systematically have a false sense of certainty. For example, many people might feel that they are 99% certain that they are right about answers they give on quizzes when they are actually only 40% certain. (They actually only got 40% of the answers correct.)
8. Illusory superiority – People systematically think they have positive qualities in all areas—that they are at least “above average” at just about everything. This is similar to the overconfidence effect in that people think they are better than they really are.

9. Self-serving bias – People tend to falsely attribute their successes to skill and positive personal attributes, and falsely attribute failures to external and situational factors. For example, a person might think she did well on a multiple choice exam because she was prepared, but that she didn't do well on another exam because the test questions were too hard.

Manifestations of unreasonable thought

There are many unreasonable forces, ideas, thoughts, and groups many people fall victim to. There are charlatans, conspiracy theorists, cults, new age sophistry, pseudoscience, anti-science paranoia, bad science, manipulation in the media, and nonrational political arguments:

1. Charlatans – Charlatans are people who claim to have a product that does something it doesn't really do, or expertise that they don't actually possess. Swindlers, snake-oil salesmen, quacks, cult leaders, false prophets, false psychics, unqualified scientists, and unqualified philosophers are all examples of charlatans. They generally want to make money and hope that tricking people is a good way to do so.

2. Conspiracy theorists – Examples of conspiracy theorists are those who believe the Moon landing was a hoax and those who believe aliens landed at Roswell, New Mexico. Although conspiracies do exist, the evidence required to justifiably believe that a conspiracy exists tends to be quite high. Many conspiracy theorists have a false sense of certainty and require insufficient evidence for their theories.

3. Cults – Although there might be cults that aren't harmful, most people in cults are far too trusting of the cult leaders, who tend to be charlatans. Cult leaders tend not to have the expertise they claim to have—perhaps none of them actually have it. Additionally, harmful cults engage in forms of brainwashing to demonize outsiders, require members to keep a distance from family and friends, and keep questions to themselves in order to give members a false sense of certainty (and suppress critical thinking).

4. New age sophistry – The word 'philosophy' is supposed to refer to an honest and reasonable attempt to understand reality, but that's not how everyone uses the word. Many people (and bookstores) use the category “philosophy” to include the opposite of philosophy—sophistry (unreasonable assertions, arguments, and worldviews). Perhaps what we call “new age spirituality” is one of the most common offenders. Not all new age spiritual writings are necessarily sophistry, but a lot of it is. Moreover, almost no new age writings would qualify as “philosophy” according to those who are properly trained in the field.

5. Pseudoscience – Pseudoscience is material treated as science by many people that should not be treated that way. Homeopathy and astrology are not considered to be science by those who are properly trained in the field, so they should not be considered to be science. One reason that pseudoscience is a problem is because, like other forms of sophistry, it is not properly proven or justified and yet many
people arrogantly feel they are certain that their beliefs in them are justified anyway. (To emphasize the impact pseudoscience has on society, consider how just about every newspaper has an astrology section, but they don't have an Astronomy section.)

6. Anti-science paranoia – There's a great deal of distrust for good science. Evolution, global warming, and the the fact we need certain vaccines are not debated among the experts of the appropriate fields and they consider these positions to be the most justified available. Non-experts almost never have a good reason to denounce the most authoritative consensus of scientists, yet that is exactly what many anti-science advocates do.

7. Bad science – Many (perhaps most) published scientific findings are unreliable. Scientific studies generally should not be taken seriously until they are properly confirmed (e.g. through repeated results in other studies). People should not blindly believe what “science says.” That doesn't mean that we shouldn't trust scientists at all. It means that science is a process and good science generally takes time. What is not controversial in science among the proper experts should be taken seriously, but the fact that a single scientist believes something controversial among his or her peers is not sufficient evidence that we should agree.

8. Manipulation in the media – As stated earlier, there are various ways the media manipulates us (whether intentional or not). Outright lies are not needed. Instead, the media can present us with selective facts, exaggerate, present only one side, present two sides of non-issues, and so on.

9. Nonrational political arguments – Nonrational arguments can be very persuasive, and political debate might be the most common source of nonrational arguments. In general, politics is a wretched hive of scum and villainy. In addition, people who devote their loyalty to a political group commonly marginalize outsiders and fail to properly investigate why many intelligent people see things differently.

Why does it matter?

Unreasonable beliefs and unreasonable thought is probably harmless for the most part, but not always. Reasons to want to avoid being unreasonable include the following:

1. Unreasonable thought leads to false beliefs – The more unreasonable we are, the more likely our beliefs will be false. We will be more likely to form new false beliefs and continue to hold false beliefs. Learning to be more reasonable will help us form beliefs that are more likely true.

2. Unreasonable thought leads to manipulation – People want us to believe certain things because it benefits them in one way or another, and being unreasonable makes us easier to persuade (and more gullible in general). People in power want us to approve of the status quo to avoid losing power, people who want money want to convince us to give them our money, and so on. We can waste our money and votes if we allow people to manipulate us in unreasonable ways.

3. Unreasonable thoughts leads to mistakes – Many unreasonable people are sincere, but their beliefs can lead to harmful mistakes. People who believe evolution is false are more likely to want to prevent
children from learning it in schools, people who believe in homeopathy are more likely to waste their money on homeopathic “medicine,” people who believe vaccines are harmful are more likely to refuse the best medical advice available, people who believe certain groups are evil are more likely to be willing to harm those groups, people who think “all opinions are equal” are less likely to challenge unreasonable thought, and people who believe the wealthy are “job creators” (or in trickle down economics) are more likely to endorse corporate welfare when they shouldn't.

4. Unreasonable thoughts can waste our time – Believing in the wrong things often causes people to waste their time learning more about those unreasonable things (rather than good science and philosophy).

What we should do

Although we suffer from cognitive biases and are bombarded by unreasonable forms of persuasion, there are measures we can take to increase our ability to be reasonable. For example:

1. Educate ourselves – We can study informal fallacies (errors in reasoning) and nonrational forms of persuasion. Knowing what they are can help us look out for them.

2. Learn critical thinking and logic – There's more to being reasonable than knowing how to identify errors in reasoning. Critical thinking education should help us understand what good reasoning consists of in addition to including critical thinking activities that can improve our critical thinking skills through practice. Logic classes also have a great deal to say about what makes a good argument.

3. Peer review – We can present our beliefs and arguments to others who can double-check them. We are more likely to know when we have errors in reasoning if many other people know how we reason and criticize us when we make mistakes. This is one reason that science uses peer review and is so successful as a result. Sometimes scientific findings are wrong, but additional scientific research by other scientists can often help us know when that happens.

4. Understand both sides – We can seek out counter-evidence to our beliefs. We can try to understand why intelligent people disagree with our beliefs. We can also criticize our family and friends when we believe they have an unreasonable belief or argument.

5. We can try not to marginalize “outsiders” – We are less likely to understand others if we think they are inferiors.

Conclusion

Everyone suffers from cognitive bias and are bombarded by unreasonable forms of persuasion. Perhaps all of us fall victim to manipulation and bias, but we can still try to be more reasonable and avoid becoming less reasonable. Being unreasonable can not only cause us to have more false beliefs, but it can also cause us to make mistakes that can thwart human flourishing. We should try to avoid being unreasonable and we should try to help others avoid being unreasonable. Being willing to criticize
others and be criticized can help, but learning more about critical thinking and logic can also be a good idea.
Chapter 25: Manipulative Tactics

Manipulative tactics are those used to trick people into believing something rather than to persuade people to believe something rationally. Informal fallacies are errors in reasoning that are often used as manipulative tactics, but sometimes we can use a manipulative tactic without actually committing an error in reasoning. Although informal fallacies are only one type of manipulative tactic, philosophers often treat them as though they were the same thing. Just about every type of manipulative tactic has a corresponding fallacy. I will give examples of various manipulative tactics and corresponding fallacies. I hope to help make it clear that the difference between manipulative tactics and fallacies is generally not important enough to worry about. Some people might defend a manipulative tactic by insisting it's “not actually fallacious,” but that reply would usually miss the point.

Rational argumentation is persuasion based on having good reasons to believe something made explicit, and rational arguments are generally respectful as a result.

On the other hand manipulative tactics are generally considered to be inappropriate ways to persuade people to believe something. They are generally disrespectful. People generally use manipulative tactics to get people to believe something based on poor reasoning rather than because it's what they should actually believe. A manipulative tactic is not necessarily an argument (or argument-like reasoning). No one has to actually tell you why you should believe something. Instead, it can be considered to be a “logical booby trap”—something that is likely to cause other people to reason fallaciously.

On the other hand fallacious reasoning must have premises and a conclusion. Of course, not all fallacious arguments are explicitly made and we are often expected to fill in the blanks ourselves.

Types of manipulative tactics

1. One-sidedness

Also known as “cherry picking” and “selective evidence.” One-sided information is provided to give us the misleading impression that the information we have is sufficient to jump to a certain conclusion.

Consider that the news often talks about the bad things Muslims do in foreign countries. This gives us the impression that Muslims are bad guys. However, the news could instead keep talking about bad things done by Christians. That might give people the impression that the Christians are bad guys. The problem is that people are likely to reason about things based on having limited information and jump to conclusions based on their ignorance. Muslims also do good things, but such an idea is unlikely to shape public opinion concerning Muslims when it's never mentioned.
One-sidedness is also a fallacy—to conclude something based on limited information when crucial counter-evidence has been left out. The media could have explicitly argued the following:

1. Muslims do lots of bad things.
2. Therefore, Islam probably motivates bad behavior.

The problem is that people from every group do bad things, and it would not be a good reason to assume that their group affiliation is the cause of their bad behavior. Even so, almost no one would explicitly argue this way. The one-sidedness fallacy would be pretty useless if it only applied when people give such explicit arguments. The one-sidedness fallacy is mainly worth learning about because people are likely to try to use one-sided manipulative tactics against us rather than because explicitly one-sided arguments are often presented.

2. Red herring

A red herring is a distraction (often from counter-evidence or an objection). It's often used to change the subject. For example, a politician who is asked about her thoughts on invading other countries (and has unpopular thoughts on that topic) is likely to change the subject and say something like, “Well, what's really important to me is making sure more people have jobs, and I know how to do it.” Sometimes red herrings also deflect criticism by shifting people's attention to a negative characteristic of an opponent.

The red herring is also considered to be a fallacious type of argument. A more explicit version would be:

1. Carla argues that all whales are mammals because they are warm-blooded, unlike fish.
2. However, Carla also argues that the moon is made of green cheese based on a dream she had.
3. Therefore, Carla's argument must be poorly reasoned.

This argument is clearly more explicit than a person would likely ever present in real life. The conclusion (Carla's argument must be poorly reasoned) would almost certainly only be implied because the argument sounds so much less persuasive when it's spelled out explicitly. What we call the red herring fallacy is almost always a manipulative tactic rather than an explicit argument. Even so, we could generally say that a red herring fallacy is often implied by the manipulative words used by a person.

3. Ad hominem

Ad hominem are disparaging remarks, which are generally used the same way as a red herring.

Consider the following illustration:

John argues, “We know whales are fish because they are all warm-blooded.”

Carla then replies, “But all fish are actually cold-blooded.”

Then John says, “Carla wants to tell us what fish are like, but I saw her smoking marijuana an hour
ago."

The *ad hominem* in this case is meant to turn the audience against her and perhaps even reject her argument out of hand as a result. However, there was no explicit argument. Even so, we might think that the manipulative tactic used by John was meant to somehow be a reason to reject her argument—perhaps the conclusion that was implied is “Carla's argument must not be well reasoned.” Such a conclusion made explicit could make John's use of the *ad hominem* much less effective because it doesn't sound quite right when made explicitly. His use of the *ad hominem* will likely be much more effective when no explicit argument is actually made. I think it's clear that this is also true of fallacious *ad hominem* arguments generally. They are meant to distract us and turn us against someone.

4. Appeal to force

The appeal to force is persuasion based on a threat. For example, certain beliefs have been heretical and people who say heretical things have been put to death. This type of persuasion tells people what they are supposed to believe, but it's much more likely to cause them to just keep their mouths shut. Even so, such a threat of force could give people the false impression that everyone agrees that certain views are wrong in addition to silencing the opposition (which could lead to one-sided thinking).

The appeal to force is also known to be a logical fallacy, but it is unlikely to directly persuade anyone to believe anything. Even so, it is clearly a manipulative tactic that can be used to silence opposition and perhaps even win a debate as a result.

5. Loaded language

Loaded language is used give people a certain attitude or assumption. For example, we call innocent people that our military kills “collateral damage,” but innocents killed by our enemies are called “massacred innocent civilians.” This gives the impression that the innocent people killed by our military don't matter much (and were unintentionally killed), but it makes it sound like the killing of civilians by our enemies is so much more horrific and unjustified. This is likely to soften the blow and prevent people from opposing certain questionable military actions or policies.

Loaded language is also known as a fallacy. An explicit example is the following:

1. Some job creators will hire fewer employees if we raise taxes on them.
2. We shouldn't do anything that could reduce the number of jobs out there.
3. Therefore, we shouldn't raise taxes on job creators.

In this case 'job creator' is being used as a synonym for *rich person*. This term leads to an equivocation between rich people and those who actually create jobs. It is assumed that taxing rich people will literally cause a drop in the number of jobs that are available.

The example above is unlikely to ever be explicitly given, and I expect no loaded language fallacies to be used in such an explicit way precisely because it is so much less persuasive. In this case talking about taxing job creators might be enough to get people to jump to the conclusion that taxing them could reduce the number of jobs.
6. Shifting the burden of proof

When in a debate, people have the burden of proof to argue for their controversial assertions (which is pretty much any assertion the opposing side disagrees with). Whenever a reasonable objection is raised against one side of the debate, it has the burden of proof and it is expected to respond to the objection. Some people try to illegitimately shift the burden of proof away from themselves and towards the opposing side.

Consider the following illustration:

Tina says, “We know God exists.”

Mark responds, “Why should I agree with that?”

Tina then says, “We should agree that God exists unless we have a good reason to think he doesn't exist!”

In this case Tina has attempted to shift the burden of proof off of her position (that God exists) and onto the person who questions the existence of God.

Shifting the burden of proof is also a type of fallacy. A more explicit example is the following:

1. We should assume unicorns exist unless they are proven not to exist.
2. We know of no proof that unicorns don't exist.
3. Therefore, we should assume unicorns exist.

Shifting the burden of proof is also much less persuasive when it's explicitly spelled out, so we shouldn't expect that to happen very often.

There's no major difference between manipulative tactics and fallacies

I see no good reason to worry too much about whether someone uses any of the above manipulative tactics in the form of a fallacious argument rather than some other type of manipulation. Why? First, because there is manipulation either way, and that's the reason these things are worth mentioning now and then. Second, because there is no clear line between a fallacious argument and a corresponding manipulative tactic. Fallacious arguments are almost never spelled out explicitly and the conclusions are often only implied. Manipulative tactics are similarly not made to look like explicit arguments, and they are also made in the hopes of causing other people to think fallaciously.

The distinction between manipulative tactics and fallacies is often blurred. For example, logic teachers talk fallacies found in advertising, even though they are mainly using manipulative tactics.
Accusing people of using manipulation

We should be careful in how we accuse others of using manipulative tactics or fallacious arguments for the following three reasons: (1) I suspect many people who use manipulative tactics do so unintentionally, (2) many times we think people are using manipulative tactics who aren't even trying to use persuasion, and (3) there's always a chance of believing arguments are fallacious that aren't really fallacious in the first place. (This is one reason we should try to be charitable—to try to interpret the arguments of others in a way that might make the arguments stronger than they really are rather than weaker than they really are.)

A while back Stephen Bond wrote about how people often wrongly accuse others of using fallacies, such as the *ad hominem* fallacy. I agree that probably happens quite a bit. However, Bond also says,

> [I]f you can't demonstrate that your opponent is *trying to counter your argument* by attacking you, you can't demonstrate that he is resorting to ad hominem. If your opponent's sarcasm is not an attempt to counter your argument, but merely an attempt to insult you (or amuse the bystanders), then it is not part of an ad hominem argument.

Actual instances of *argumentum ad hominem* are relatively rare. Ironically, the fallacy is most often committed by those who accuse their opponents of ad hominem, since they try to dismiss the opposition not by engaging with their arguments, but by claiming that they resort to personal attacks. Those who are quick to squeal "ad hominem" are often guilty of several other logical fallacies, including one of the worst of all: the fallacious belief that introducing an impressive-sounding Latin term somehow gives one the decisive edge in an argument.¹² (*The Ad Hominem Fallacy Fallacy*)

Bond is making it sound like *ad hominem* must be explicit and don't count when they aren't, but I don't agree with that. I don't think I've ever seen an *ad hominem* used as an explicit reason to reject an argument (or statement). Moreover, *ad hominem* could be used as a manipulative tactic, and I suspect they are very commonly used that way. When people intentionally use manipulative tactics, I think we can legitimately call it out. Even if they unintentionally use them, we still have a good reason to say something about it.

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Chapter 26: Cognitive Biases

Daniel Kahneman wrote *Thinking, Fast and Slow*, which is about the psychological research concerning cognitive bias. Kahneman could very well be the leading expert concerning cognitive bias at this point in time. His research concerns how people reason and why people often reason poorly, and it has some important implications for critical thinking. I will describe three cognitive biases that he discussed in his book, and explain how they relate to logical fallacies.

What are cognitive biases?

Critical thinking and logic are concerned with proper reasoning—the way we should reason about things. But human beings are not made to think properly all the time. What we call “cognitive bias” refers to consistent ways people reason poorly. Cognitive bias concerns how people actually reason as opposed to how they should reason.

“Cognitive bias” does not refer to prejudice, racism, a liberal preference in the media, or anything like that. Instead, it refers to how we consistently think in certain ways that often causes us to reason poorly. The human mind was not made to reason perfectly. To reason well can require a great deal of effort and people aren't usually going to spend hours doing formal logic to figure out if their beliefs are well-reasoned or not. How we actually reason is often intuitive, immediate, and effortless. We use shortcuts and jump to conclusions based on limited information without thinking much at all. This works well for the most part. Spending too much time and energy reasoning about whether we should take a shower would obviously not be a good way to live our lives.

We now know of over a hundred cognitive biases (such as the confirmation bias, outcome bias, and halo effect), and these biases are likely to cause us to use fallacious reasoning—or to find the fallacious arguments given by others to be persuasive.

It shouldn't be a surprise that we tend to think our own reasoning is perfectly good, even when it isn't. The most important lesson we can learn from cognitive bias research is that they are part of being human and we can't stop being biased. Instead, we need to share our thoughts and reasoning with others because we are much better at spotting the poor reasoning of others than our own. Others are likely to help spot the mistakes we make in our reasoning process, especially if they have a different view of the world.
Examples of biases and fallacies

Confirmation bias

Consider the following argument:

1. All dogs are mammals.
2. If all dogs are animals, then all dogs are mammals.
3. Therefore, all dogs are animals.

People are more likely to think this is a good argument because the conclusion is obviously true. However, it's actually an invalid argument. The confirmation bias causes us to be likely to think any argument in favor of a belief we agree with is well-reasoned, even when it's actually fallacious.

The above argument has the following argument form:

1. A.
2. If B, then A.
3. Therefore, B.

Another argument with this argument form is the following:

1. All dogs are animals.
2. If all dogs are reptiles, then all dogs are animals.
3. Therefore, all dogs are reptiles.

Both premises are true, but the conclusion is false. Any argument with this form can have true premises and a false conclusion. That means that the premises fail to give us a good reason to believe the conclusion. However, good arguments do give us a good reason to believe the conclusion.

The confirmation bias causes us to take any confirmation for our beliefs too seriously and it causes us to take any counter-evidence against our beliefs much less seriously than we should. We are also likely to fail to realize that some people disagree with what we believe and fail to learn about any counter-evidence against our beliefs.

For example, liberals are more likely to think that any type of environmental regulation is a good idea and fail to realize when they aren't; and conservatives are more likely to think any type of environmental regulation isn't a good idea and fail to realize when they are. People are more likely to read articles that support their beliefs, and they are more likely to dismiss or marginalize any evidence they read against their beliefs. Liberals would be more likely to read about the importance of an environmental regulation rather than the problems with it, but they are also likely to think any problems with an environmental regulation aren't really a “big deal.”

The confirmation bias is likely to cause us to find any fallacious argument for a conclusion we agree with to be a good argument when given by others, but it can also cause us to sincerely engage in
fallacious reasoning of our own. In particular, it often causes us to engage in “one-sided reasoning.” We are more likely to reason that any evidence for a belief justifies the belief, even when there's also evidence against the belief. We should consider “both sides” of a debate when we want to know what we should believe.

Consider the following one-sided argument:

1. Some people say that robbing a bank to take their money would be wrong because it could cause people to needlessly die.
2. However, the money we get from robbing a bank could be used to help pay the medical bills for poor people.
3. Therefore, we should rob a bank.

The problem is that robbing a bank is clearly wrong because it could cause people to needlessly die, even though we could use the money to help some people. We can't just dismiss the reasons against robbing a bank and think any reason is good enough.

**Outcome bias**

The outcome bias causes us to think that decisions are morally right or wrong based on the consequences rather than the reasoning process. Consider a person who drives drunk. If no one gets hurt, we are more likely to forgive her and judge her less harshly than if she ends up causing a car accident that kills someone. Her decision to drive drunk was poorly-reasoned either way, and getting someone killed did not actually make the decision more unethical.

It is important to consider what consequences our actions are likely to have, but the actual consequences do not determine how ethical our decisions are. A person who decides to drive a car safely and ends up killing a child who jumps in front of the car does nothing wrong whatsoever, even though it ends up killing someone. And a person who drives drunk is doing something wrong, even if no one gets hurt.

One obvious case of the outcome bias is how we judge revolutionaries. When revolutionaries fail, we are much more likely to see them as terrorists or murderers; but if the revolutionaries succeed, then we are more likely to see them as heroes and to call them “freedom fighters.” The founding fathers of the USA are considered to be freedom fighters, but any revolutionaries against the USA at any later point in time are considered to be terrorists.

The outcome bias is related to the one-sidedness fallacy because we are likely to take the outcome of a decision too seriously and to take the actual reasoning process less seriously than we should. If the decision was well-made, but caused something bad to happen, then we will likely think the decision was unethical, even though it was well-reasoned. If a decision was poorly-reasoned, but caused something good to happen, then we are more likely to judge the decision less harshly.
Consider the following one-sided argument:

1. Martha decided to go for a walk and got mugged.
2. The area is known to be safe and it is the first time anyone got mugged in the area for over a year, but Martha is a small woman and knew that such a thing could happen.
3. Therefore, Martha should have known better and she shouldn't have went for a walk.

The problem is that Martha would not be said to have done anything wrong if she went for a pleasant walk without being mugged. Perhaps it's one of her best opportunities to get some exercise. The area is known to be safe and it is part of human life to take small chances. Driving a car safely can get someone killed, but it's not wrong to drive a car. Going for a walk in a safe area is similarly a reasonable decision to make, even though there is a slight possibility of getting mugged.

**Halo effect**

The halo effect refers to the fact that we are likely to see a person as nearly all-good or all-bad based on our limited knowledge of the person. The halo effect is highly related to the power of first impressions, but the bias is not limited to first impressions. We change our mind about a person over time and we are still likely to see that person as mostly all-good or all-bad.

If someone is attractive, then we are more likely to have a good first-impression of that person and to see that person as mostly all-good. We are then more likely to think that person is more qualified for any job, has superior abilities, and will be more likely to give to charity.

We are more likely to trust and take seriously anyone we see as mostly all-good than one we see as mostly all-bad. If a person is well-groomed, articulate, well-dressed, and attractive; then we are more likely to think that person's arguments are well-reasoned, even if they aren't. We are also more likely to think someone we dislike gives poorly-reasoned arguments, even if they aren't.

The halo-effect is also likely to cause us to reason fallaciously using “hasty generalizations” and “ad-hominems.”

**Hasty generalizations** – We are often likely to make judgments based on insufficient data. Knowing that a person is attractive does not tell us how qualified she is, what abilities she has, or how ethical she is. We should try to make those judgments based on much better information than that. However, that is exactly how we tend to actually think about attractive people.

An example of a hasty generalization is the following:

1. The President has stated that he is against torture.
2. If the President has stated that he is against torture, then he is a good person and is qualified for the job.
3. Therefore, the President is a qualified for the job.

The problem is that the limited information presented here about the President is not sufficient to know how qualified she is for the job.
A person's limited information about a politician is likely to greatly influence her entire view of the person. If the limited information sounds good, then the politician is more likely going to be viewed as all-good. Of course, liberals are also more likely to view Democratic politicians as mostly all-good, and conservatives are more likely to view Republican politicians as all-bad.

Ad hominems – We are often likely to see a person as mostly all-bad based on limited information and jump to conclusions based on that view. If we see a person as mostly all-bad, then we are also likely to view their argument as poorly-reasoned based on very little information. To fallaciously base our judgments on a negative view of a person is called the “ad hominem” fallacy.

An example of an *ad hominem* is the following:

1. John wants us to legalize marijuana because it is much more harmless than cigarettes or alcohol.
2. However, John smoked marijuana when in college.
3. If John makes poor judgments like that, then we can't take his argument seriously.
4. Therefore, we should reject John's argument.

We are given a reason to think we should legalize marijuana. The argument is not going to be less reasonable based on any potentially negative characteristic of John. We should not reject the argument just because of that potentially negative characteristic. It's irrelevant.

**Conclusion**

Cognitive biases often cause us to reason fallaciously and to find fallacious arguments to be persuasive, but cognitive bias is based on effortless automatic thought processes that are often beneficial to us. It's not always entirely clear when our automatic process will lead us into fallacious reasoning, and we ultimately can't stop it from happening. However, we can look out for our biases and try to make our reasoning process public, so that other people have a chance to correct any mistakes we make in our thinking.
Chapter 27: Extraordinary Claims

Do extraordinary claims require extraordinary evidence? Is there a burden of proof against extraordinary claims? Should we literally assume that something extraordinary doesn't exist until it is proven to exist?

Many people say that those who claim that bigfoot, ghosts, and gods exist are making extraordinary claims and we should reject the existence of these things because we don't have enough evidence for them.

What does 'extraordinary' mean? In this case it refers to claims that conflict with what we think we know about the world. Many claims are extraordinary because they are extreme (likely false) or potentially impossible.

Extreme

Some claims are extraordinary because they are so extreme. Extreme claims are those that we should find to be unlikely given our understanding of the world. Such claims can be about rare characteristics or situations that are unlikely to actually describe anything.

An example of a rare characteristic that is unlikely given our understanding of the world is that someone is nine foot tall. This claim is extreme because the tallest person we know about was 8 foot 11 inches and died in 1940. Saying that someone will be born this year in New York City and will grow to be 8 foot 5 inches tall is similarly extreme because people don't grow to be that tall very often.

An example of a rare situation that is unlikely given our understanding of the world is that there's a celestial teapot going around the Sun in our solar system. This claim is extreme because all the teapots we know about are on the planet Earth, they exist here because they are made by humans, humans don't go to outer space very often, and we don't know how any teapots would end up going around the Sun.

Potentially impossible

What's potentially impossible is what might not be able to exist given our understanding of the world. What is impossible is what can't be true. There are different types of impossibility, such as the following:

1. Physical impossibility – What can't be true because it would require the laws of nature to be violated. For example, jumping to the Moon is physically impossible. Some people say that "miracles" are physically impossible, but still occur due to divine or supernatural intervention.

2. Metaphysical impossibility – What can't be true in any reality. What never happens in any possible world. Not even the supernatural could violate what's metaphysically impossible. For example, finding a world where water isn't H₂O is plausibly metaphysically impossible.
3. **Logical impossibility** – Logical contradictions. What can't be true because of logical constraints. For example, it's logically impossible for Socrates to be both mortal and immortal.

The sense of “impossible” that deals with extraordinary claims is “metaphysical impossibility.” To claim that something is true that we know to be metaphysically impossible is absurd, but to claim that something is true that we suspect could be metaphysically impossible (because of our understanding of the world) is extraordinary. Anything we know to be physically impossible is potentially metaphysically impossible—It might be metaphysically impossible for the laws of nature to be violated. Perhaps there are no possible worlds where the laws of nature are violated.

Miracles are extraordinary precisely because miracles are physically impossible by definition. However, miracles might still be metaphysically possible—we don't know for certain that there's nothing supernatural or divine. The claim that miracles exist is extraordinary because the assumption that everything happens because of laws of nature has helped make natural science the best source of knowledge about the world we have. For similar reasons claims that ghosts exist is extraordinary (because we don't know that it's metaphysically possible to have a mind without a body). Also, the claim that gods exist is extraordinary because it might be metaphysically impossible for them to exist.

Why would it be impossible for gods to exist? It might depend on the definition of gods. Pantheists claim that gods are identical to the universe. We know that the universe exists, and it could seem trivial that a god exists if we define it as the universe. That is not the type of god we find extraordinary in the sense relevant to this discussion. However, the following types of gods are extraordinary:

1. A god that can have a mind without a body. All minds seem to require bodies. To have a mind without a body would violate our scientific understanding of the world, and it could be metaphysically impossible.
2. A god that is all-knowing (omniscient) or all-powerful (omnipotent). Science has not confirmed that anything has any of these characteristics, and the scientific evidence we have indicates that knowledge and power is always limited from physical constraints. To be omniscient or omnipotent is as extreme as anything can be, and they might be metaphysically impossible.
3. A supernatural god that can violate the laws of nature is extraordinary in the relevant sense because we don't know for certain that it's metaphysically possible for anything to do such a thing. If miracles happen, then they are very rare (and extreme). So far there have been no scientifically confirmed miracles, and making predictions based on the assumption that everything will happen in accordance with the laws of nature has been very successful. Natural science is the most successful study of the world and it always works under the assumption that the laws of nature will not be violated. Natural science is successful precisely because it is so good at making predictions.

**What about ordinary claims?**

The reason that “extraordinary claims” are singled out is because some claims are so ordinary that we might suspect they are true just because of our understanding of the world. Let's say we know a neighbor lives in a house. To say that the person who lives in the house is less than ten feet tall is an ordinary claim, and we should believe it. It is probably true because we know of no one who has ever
lived taller than nine feet. It is so common for people to be less than ten feet that it is unlikely for such a prediction to ever fail. Such a prediction could very well have a perfect track record for the entirety of human history (and the future of human kind).

Other ordinary claims have a decent probability of being true. For example, to predict that a neighbor is less than seven feet tall is still a decent prediction, even though some people are taller than that.

Ordinary claims are known to be metaphysically possible. We know it is metaphysically possible for a person to be under ten feet tall.

Of course, there are gray areas that are neither ordinary nor extraordinary. Scientists hypothesize about laws of nature that might not exist. Such laws of nature might actually encourage scientists to make predictions that would violate the actual laws of nature (and be metaphysically impossible as a result). However, scientists should never hypothesize that a law of nature exists that we know contradicts the actual laws of nature. A hypothesis that repeatedly fails to make certain predictions will be rejected precisely because we will find out that it violates the actual laws of nature that actually exist.

**There a burden of proof against extraordinary claims**

People know something about the world and there are many scientific observations that are relevant to the claims we make. If someone makes an extraordinary claim (a claim that contradicts what we think we know about the world), then we should reject the claim until we are given a good reason to change our mind. The burden of proof is the requirement that those who make extraordinary claims have in order to rationally change our minds.

The existence of ghosts and tiny faeries are extraordinary. The scientific view of the world states that minds can't exist without bodies, and that bigger brains are required to have the intelligence of a human being. Ghosts have minds without bodies; and faeries are very small, but have the intelligence of a human being. These entities literally violate what we think we know about the world. We should be hesitant to believe in ghosts and faeries. We should require at least some evidence that these entities exist before deciding they exist.

We can certainly imagine having a good reason to change our mind and think ghosts or faeries exist. Perhaps we can literally find a tiny faerie that talks and interacts with us over a period of years. In that case the faerie's existence could be the best explanation for our experiences (as opposed to a hallucination or dream).

Once we find out that ghosts or faeries exist, that will require us to revise our understanding of the world. We might find out that minds don't require bodies, or that a tiny brain can be capable of having a human level of intelligence. Once we find out that ghosts or faeries exist, such a claim will no longer be extraordinary for those of us who find out that they exist. If anyone finds out that ghosts or faeries exist, then such people will not require a burden of proof that they exist because that debate will be over. Of course, anyone who believes in ghosts or faeries should stay open to the possibility that they are wrong, and the debate can be resumed at some point.
Do extraordinary claims require extraordinary evidence?

Extraordinary claims don't require some strange type of evidence that is so different from an ordinary type of evidence. Extraordinary claims can be proven to be true in much the same way as any other type of claim. In fact, extraordinary claims are not totally different from other types of claims. They are far fetched, but all claims are part of a single continuum that ranges from “far fetched” to “obviously true.”

Obviously true claims require no evidence, such as the claim that the person who lives in a house is under ten feet tall. The reason is simply because what we know about the world already proved it to be true. The evidence has already been attained, and no further evidence is required.

Extraordinary claims require extraordinary evidence in the sense that they require more evidence than usual before they are properly proven to be true. Claims that violate what we think we know about the world require more evidence because certain other claims we think were proven to be true are incompatible with them. For example, we think we know that minds require bodies, and the existence of ghosts violates that. We already have evidence that minds require bodies. In fact, we think we know certain types of bodies can have minds (such as that of a living mammal) and others can't have mind (such as that of a plant). So, we think we know that there are only certain types of bodies that can have minds.

Before we decide that ghosts exist, we should require better evidence that ghosts exist than the evidence we have that minds require bodies. We should not reject one well-justified belief (such as the belief that minds require bodies) just because we want to accept an extraordinary claim that contradicts the belief (such as the belief that ghosts exist). However, it is theoretically possible to have better evidence that ghosts exist than that minds require bodies. If we find a way to interact and talk with ghosts, perhaps we will eventually know that ghosts exist.

We do have some evidence that ghosts exist. People say they have seen ghosts, talked to them, or been touched by them. People have had observations, and they speculated that ghosts are an explanation of those observations. The problem is that there can be alternative explanations of our ghost experiences. One common alternative explanation is “misidentification.” We can simply think a ghost caused an observation when something else actually caused it. Hallucinations and dreams are also possible alternative explanations when more ordinary explanations are ruled out.

Should we literally assume that something extraordinary doesn't exist until it is proven to exist? Yes, we should assume a claim to be false when it contradicts what we think we know to be true. We should assume that a person didn't jump to the Moon, and we should assume that the snake oil doesn't actually cure all ills precisely because it would defy reasonable expectation.
Chapter 28: Four Requirements for Good Arguments

Formal logic can help us achieve clarity and help us make sure our arguments are relevant in various ways, but there are other requirements for a good argument. Most philosophers seem to get caught up discussing fallacies (errors in reasoning) rather than good reasoning. I will discuss the following four requirements for writing good arguments and the corresponding fallacies for failing to achieve the requirements:

1. Supporting evidence
2. Relevant evidence
3. Consider all viable options
4. Charity

1. Supporting evidence

Arguments must have premises and a conclusion. Premises are statements that must be accepted before the conclusion is accepted. Premises could be considered evidence for the conclusion, but even controversial premises be supported by evidence. Sometimes we might accept a premise because it is taken for granted as true, but philosophers often try to support every somewhat controversial premise they can.

An argument can only have relevant supporting evidence if (a) the conclusion is appropriately modest, (b) the conclusion isn't overly ambitious, (c) the premises are more likely true than the conclusion, and (d) the conclusion isn't illegitimately absurd.

(a) Modest conclusions

The premises of an argument must lead us to the conclusion. If the argument is valid and the premises are true, then we have no choice but to accept the conclusion. Such a conclusion is appropriately modest. For example:

1. If Socrates is a man, then he is mortal.
2. He is a man.
3. Therefore, he is mortal.

The conclusion must be accepted because the premises are almost certainly true.
(b) Overly ambitious conclusions

A conclusion that is not sufficiently supported by the premises is an inappropriate type of conclusion. Such conclusions tend to be what I call overly ambitious. For example:

1. If Socrates is a philosopher, then he is relatively wise.
2. Socrates is a philosopher.
3. Therefore, Socrates knows that the Earth is the third planet from the sun.

It is common knowledge that the Earth is the third planet from the Sun and we would expect that relatively wise people would know such a thing, but that is only common knowledge in our day and age. Socrates was from a different period of time, so he might have not known. The conclusion is overly ambitious because we can only accept the conclusion given certain unstated assumptions.

(c) Premises that are likely true

The premises should be more likely true than the conclusion. Conclusions must not be more likely true than the premises or the premises aren't really good evidence for the conclusion. Imagine that someone argues the following:

1. If people exist, then atoms exist.
2. People exist.
3. Therefore, atoms exist.

This argument is logically valid, but we are more certain that people exist than atoms exist. The fact that people exist shouldn't be accepted as evidence that atoms exist. That isn't to say that atoms don't exist. We just know less about atoms existing than people.

To have a conclusion that is more likely true than the premises is a fallacy, but I don't know the name of it. It might not have a name. I will call such a fallacy an argument with a trivial conclusion because the conclusion is already known to be likely true and the premises do not properly help assure us that the conclusion is true.

(d) Absurd conclusions

Even worse than having a trivial conclusion is having an illegitimately absurd conclusion. Absurd conclusions are extraordinary claims, and my point here is merely that extraordinary conclusions require extraordinary evidence. An absurd conclusion can be a conclusion that is almost certainly false even if the premises seem to be probably true. It is impossible to have an illegitimately absurd conclusion if the conclusion is appropriately modest, so the premises used must be questionable. But the fact that questionable premises can lead us to an absurd conclusion just makes us that much more certain that a premise has to be false. For example:

1. I have existed for over twenty years.
2. The past resembles the future.
3. Therefore, I will always exist.
Some people can't imagine not being immortal and they believe they probably have an immortal soul. After all, we have existed all our lives. However, the conclusion is so incredible that one of the premises is almost certainly false. In this case the premise "the past resembles the future" seems to be taken the wrong way. If we are ever to accept the immortality of the soul, we will need a much better argument than this.

To have an absurd conclusion, such as the argument above, is to commit a fallacy, but I don't know if it has a name. I will call it the “absurd conclusion” fallacy. In many cases this fallacy will be a type of suppressed evidence fallacy—there is usually information that will undermine the conclusion that isn't mentioned. Such information can be more important than the supporting premises for the conclusion.

Some people call the absurd conclusion fallacy a 'reductio ad absurdum' or a 'reductio' for short. However, there are nonfallacious ways to reason using a reductio ad absurdum.

Moreover, the above argument has insufficient premises to prove the conclusion. Even if the premises are true, the conclusion might not be true.

Another example of an argument with an absurd conclusion is the following:

1. Many people have past life experiences that provide insightful information.
2. Either past life experiences are caused by past lives or dreams.
3. It is very unlikely that a dream would lead to such insightful information.
4. Therefore, some people probably have past lives.

Although all of the premises look very likely to be true, the conclusion is absurd. The problem is that we have good reason to suspect that at least one premise is false. Perhaps there are other explanations for past life experiences than the two mentioned, and perhaps dreams can lead to the insightful information given by past life experiences. The fact is that we are uncertain about the premises all being true, and extraordinary conclusions require extraordinary evidence. Such extraordinary evidence isn't given.

2. Relevant evidence

The evidence used in arguments must be relevant or we have no reason to trust them. The fact that bread has always been nutritious (rather than poisonous) makes it reasonable to think bread is still nutritious. However, people seem to be drawn to distractions (red herrings) rather than relevant considerations.

For example, the fact that the Soviet Union had universal health care doesn't prove that universal health care is wrong. If everything the Soviets did was wrong, then we should never eat food or have sex. The temptation to dismiss some idea out of hand just because it was endorsed by an undesirable person or society is just a problem with human psychology.

The fallacy of using irrelevant evidence for a position is often called the red herring fallacy. Red herring fallacies are very common when people give objections to other arguments. Why? We often
ignore the other person's argument and just argue against their conclusion. It is often inappropriate to reject an argument just by rejecting the conclusion. For example, consider the following argument:

1. Abortion kills people.
2. Killing people should always be illegal.
3. Therefore, abortion should be illegal.

A common response is that abortion should not be illegal because that would violate women's rights. However, women's rights are somewhat irrelevant to the above argument. If we accept the premises, then the conclusion follows. If women's rights prove that abortion isn't forbidden, then we are stuck with contradictory arguments for and against the conclusion: Abortion should be legal and illegal.

A good objection to the abortion argument is likely going to oppose one of the premises. Is killing people always wrong? If so, war should be entirely illegal. Does abortion kill people? Why should we think fetuses are people?

If we find it important to argue against someone's conclusion, then we can do so, but we should often also give objections against the arguments given in support of the conclusion we reject.

An obvious example of the red herring fallacy is the following:

1. Bob argues that “we shouldn't throw people into prison who are found guilty of illegal drug possession because it makes everyone worse off.”
2. However, Bob probably takes marijuana and just doesn't want to go to prison for it.
3. Therefore, we should reject Bob's argument.

This argument gives us no good reason to reject Bob's argument. It actually changes the subject, then says we should reject Bob's argument. Fallacious arguments are generally not written in such an explicit way and the conclusion in particular would probably not be explicitly stated in real life.

3. Consider all viable options

Arguments require that we accept that something is true instead of something else. Every single premise could be challenged if it doesn't describe reality perfectly. When we argue that Einstein's theory of relativity is true, we need to take a look at how much better it is than any alternative. The same goes for any other theory.

It is difficult for us to consider every viable option, so beliefs that fail to do so are common. Consider the following assertions:

1. Either communism is good or universal health care is bad.
2. Either creationism is true or evolution is true.
3. Either God exists or morality is just a matter of taste.

We might wonder, Why can't both be false? Maybe capitalism is mostly good, but universal health care
can also be good. There are often more options than we see at first. To assume that there are less viable options than those that really exist is to suppress evidence and commit a popular fallacy known as the false dilemma.

An obvious example of the false dilemma fallacy is the following:

1. Either Socrates is a horse or a cow.  
2. Socrates isn't a horse.  
3. Therefore, Socrates is a cow.

The problem is that the first premise is false because it does not lay out the most plausible options. In particular, it should say “Either Socrates is a human, a horse, or a cow.”

### 4. Charity

When we object to an argument or belief, we need to be able to describe it and fully understand it, or what we have to say against it will be irrelevant. To properly describe an argument or belief is to be charitable. To misrepresent another person's view destroys our chances of saying anything relevant about it. Consider the following argument:

1. People who believe in God live a better life.  
2. We have some reason to engage in actions that offer us benefits.  
3. Therefore, we have some reason to believe in God.

Someone might then disagree with you and say the following: "You are saying that everyone has to believe in God because it offers us benefits, but we shouldn't have to believe something just because it benefits us in various ways!" This objection has misrepresented the argument because having some reason to believe in God is much different from the belief that "everyone must believe in God." Such an objection is irrelevant.

To misrepresent other people's arguments by making their argument worse is a fallacy called the straw man. However, to misrepresent someone's argument by improving it isn't wrong. Rather than argue against a flawed argument, we should generally want to argue against the best argument we can.

### Conclusion

Supporting evidence, relevant evidence, considering all viable options, and charity are essential for any good debate. People often fail to live up to these standards, and such standards are difficult to live up to without experience. People with no experience with logic have an even greater chance of providing us with inappropriate supporting evidence (trivial conclusions), overly ambitious conclusions, absurd conclusions, red herrings, false dilemmas, and straw men.
Chapter 29: Four Types of Justifications

Whenever we provide an argument we should provide some justification for any controversial premise that our argument requires everyone to accept. We need to answer the question, "Why should anyone agree?" I will discuss four kinds of justifications and the corresponding fallacies:

1. Appeal to Authority
2. Argument from Analogy
3. Generalization
4. Personal Experience

1. Appeal to Authority

We don't always have the time to find out every fact about the universe through scientific experimentation. Instead, we accept the knowledge of others. This is especially important when we want to know about science or technology. For example, we know that eating too much fatty food tends to be unhealthy. We can rely on expert opinion as long as the experts agree and arrived at their opinions through a reliable method.

If experts arrived at their opinions through a reliable method and they agree, then we have a great deal of reason to agree with them. If an expert knows much more than we do about something, then we might have no choice but to take their opinion seriously. The relevant opinions of experts aren't beliefs we necessarily have to agree with, but they are worthy of consideration (and permissible to hold), even when the experts disagree. For example, scientists aren't sure if string theory is true. Therefore, we have good reason to be uncertain about what to think on the subject. It seems plausible to think that it can be rational to believe that string theory is true or to reject it as false.

Appeal to Inappropriate Authority

It is inappropriate to cite an authority when (a) the person is not an expert (of the topic in question), (b) the experts disagree, or (c) the experts are unable to form a reliable opinion. For example, doctors are generally not experts in philosophy, so their philosophical opinions are not particularly relevant to any philosophical debate. When people cite an authority in order to support their argument in the wrong way, they are using a fallacy known as the appeal to inappropriate authority.

An obvious example of an appeal to inappropriate authority is the following:

1. Sylvia has no expertise in ethics or law, but she went to war, and she says that capital punishment is immoral.
2. Therefore, capital punishment is immoral.
2. Argument from Analogy

Analogenes are often useful to help us justify our arguments. Analogenes are comparisons between two things that reveal some relevant similarity about those two things. For example, punching people and kicking people are both generally wrong for the same reason—they hurt people. So, punching and kicking are analogous in that sense.

One example of an analogy in philosophy is Peter Singer's comparison of saving a drowning child in a small pool of water and saving lives through charity. He argues that both forms of behavior are moral obligations because we can do a great deal of good at little cost to ourselves.

False Analogy

Analogenes don't always work. To use an analogy to support an argument when the analogy doesn't reflect the relevant similarities is a fallacy known as a false analogy. Some people think Peter Singer's analogy is fallacious, but that is a contentious issue. An obvious example of a false analogy is the following:

1. The death penalty and murder are both analogous insofar as they kill people.
2. It is wrong to murder someone.
3. Therefore, it is probably wrong to have the death penalty.

The problem with this argument is that we know it is sometimes wrong to kill someone, but it might also be morally acceptable to kill others in certain extenuating circumstances. The death penalty might be one of the few times that killing a person can be morally acceptable.

3. Generalization

Generalization is essential for just about any justification to work. For example, we assume that the past will be like the future in certain ways. The Sun will rise tomorrow. Eating lots of fatty foods will still be unhealthy two days from now. And so on.

In particular, it seems rational to assume that the world will continue to be predictable in the future insofar as the laws of nature will remain the same. The law of gravity will continue to exist, the causal processes we interact with will continue to exist, etc.

Hasty Generalization

However, there are various ways generalization could be inappropriately applied. One common failure of generalization is the hasty generalization fallacy. We need a sufficiently large sample size before we can generalize. For example, fatty foods have always been unhealthy, so we think they always will be.

A common result of reasoning with a hasty generalization is racism. People who have had some bad experiences with people of a certain racial group sometimes decide that everyone of that racial group
has various negative traits. However, each of us has a very unique and limited experience of the world and we shouldn't judge a group of people based on a handful of experiences.

An obvious example of the hasty generalization fallacy is the following:

1. The last two weeks that I ate chocolate were also weeks that I lost weight.
2. Therefore, eating chocolate probably causes people to lose weight.

4. Personal Experience

One of the most common types of justification is personal experience. We know other people have thoughts in part because we personally have thoughts. We think they see the color green in part because we see the color green. Personal experience is an important factor in justification despite the fact that it requires a unique and limited experience of the world. Personal experience can be combined with generalization and observation to know that others have similar personal experience to our own.

For example, we experience that pain feels bad and that touching fire causes us pain. It is not such a leap to realize that other people don't want us to burn them with fire because pain also feels bad to them.

Anecdotal Evidence

Personal experience is often misused in justifications, which is known as the anecdotal evidence fallacy. What people call testimonial evidence tends to be used as a form of anecdotal evidence to argue that something is true for me and so it must be true for others as well (without the appropriate generalization or observations involved). For example, the fact that a drug works for us doesn't mean it will work for others.

We see the anecdotal evidence fallacy on television every day. People always say, "If I can do it, so can you!" Or "It worked for me, so it will work for you!" There is no way to know this without a scientific study and relevant data.

An obvious example of anecdotal evidence used in an argument in the following:

1. Several people got healthier after wearing one of these bracelets I sell.
2. Therefore, these bracelets I sell probably make people healthier.

Conclusion

We need to try to justify our arguments appropriately. To justify an argument appropriately seems rare in everyday life, so we should give our justifications a lot more thought and consideration. It might not be possible to always justify our arguments perfectly, but we can get better with experience.
Chapter 30: Four Terrible Ways to Argue

Philosophers have mentioned thousands of fallacies (errors in reasoning), but I will discuss four more in detail that I find to be very common. These fallacies are terrible ways to argue. I have already discussed several other fallacies, but here are four more that everyone needs to know about. Understanding these fallacies can help us develop better argumentation, and they can help us identify errors in reasoning given by others. The four fallacies are the following:

1. Appeal to Ignorance
2. Equivocation
3. Reversal of Burden of Proof
4. Begging the Question

1. Appeal to Ignorance

To say that something is true (or false) just because we don't know something is an error in judgment. Consider the following argument:

1. We haven't found any alien life in the universe, even though we have spent some time looking.
2. Therefore, we know there is no alien life in the universe.

This argument could be valid given an additional premise like the following:

1. We haven't found any alien life in the universe, even though we have spent some time looking.
2. If we can't find proof that something exists, then it doesn't exist.
3. Therefore, we know there is no alien life in the universe.

This argument is poorly reasoned. The view that proof is required for something to be true is clearly a false assumption. Such an assumption is often not one people generally have consciously, but their arguments occasionally imply such an assumption.

2. Equivocation

We need to use our terminology consistently. Sometimes a word has two different meanings, but it would be wrong to require an argument that requires us to use terminology inconsistently. Consider the following argument:

1. I am logical because I know when I see an argument that sounds bad.
2. Therefore, I don't need to take a logic class.

This argument requires that 'logical' means "know what arguments sound bad." However, that isn't what logic classes are about. Logic classes are about teaching criteria used to evaluate reasoning.
Although this argument is obviously horrible, I suspect that almost everyone equivocates now and then. They don't know what logic is in the philosophical sense, so they decide it isn't needed.

Another common equivocation is to confuse "socialism" as "Marxism" with "socialism" as "Soviet totalitarianism." Consider the following argument:

1. Universal health care is socialistic.
2. Socialism failed in the Soviet Union.
3. Therefore, universal health care will fail.

The fact is that socialism in the sense of government programs (Marxism) is very common throughout the world. Public education is socialistic in this sense. Such programs occasionally are very successful. Universal health care has had relative success in various countries. Universal health care does not have to be anything like Soviet totalitarianism.

People often decide that logic is faulty, philosophy is unreliable, and communism has failed. These thoughts are often based on equivocating the terms. People think an argument is logical merely if it "sounds good," philosophy means "my unsupported personal beliefs," and communism means "Soviet totalitarianism." This thinking infects our society at large and has caused all sorts of problems. For example, philosophy and logic often aren't believed to be worth teaching in high school. Without philosophy or logic it becomes utterly unclear what teachers think it means to teach critical thinking.

3. Begging the Question

One of the worst kinds of arguments beg the question. This means that someone uses controversial premises that make the conclusion trivial or that she uses circular reasoning. For example:

1. We know God exists because the Bible says so.
2. We know the Bible is reliable because God wrote it.

A premise of this argument requires us to accept that the Bible is reliable, but the conclusion is treated as evidence of that premise. The conclusion of an argument should not be used as evidence because it's what we want to prove in the first place.

Another obvious example of a begging the question fallacy is the following:

1. We have every reason to think marijuana should be legal, and no good reason to think it should remain illegal.
2. Therefore, marijuana should be legal.

This argument fails to present the reasons we need to support the view that marijuana should be legal, but the premise does support the conclusion. The problem is that the premise itself is controversial (perhaps more so than the conclusion), and such a premise would make the conclusion trivially true.
4. Reversal of Burden of Proof

Every argument requires us to decide, "Who needs to prove something?" If one conclusion must be proven, then that conclusion has the "burden of proof." If the conclusion is not proven, then we have reason to reject it. To misrepresent the burden of proof is a fallacy called the "reversal of the burden of proof."

Consider the following argument:

1. It is possible that there is life on Mars that we haven't found yet.
2. Therefore, we should believe in Martians.

This argument requires us to accept that people who don't believe in Martians have the burden of proof. They need to prove that there is no life on Mars, but they haven't done so. However, this is a misrepresentation of the burden of proof. If we want others to believe something exists, then we need sufficient evidence. We don't have sufficient evidence that there is life on Mars at this time, so it is plausibly rational for us to disbelieve in Martians. It is also plausibly rational for us to reject the existence of ghosts, bigfoot, and unicorns considering that scientists don't have enough evidence to confirm the existence of these entities (and that it seems likely that we would have been able to confirm their existence by now).

Conclusion

The fallacies mentioned here are serious errors in reasoning and we should keep them in mind to correct our thinking and identify fallacious thinking in others. To appeal to ignorance, beg the question, equivocate, or reverse the burden of proof is often to completely fail to give any reason to agree with our conclusion whatsoever.
Chapter 31: Four Argument Strategies

Argument strategies are the various ways we present our arguments and justifications. Some arguments are simple deductions and generalizations based on our experiences. However, there are a variety of other argument strategies, and a better understanding of them can help us learn to argue more effectively. Argument strategies are usually compatible, and we can often present our justifications using a variety of argument strategies. I will discuss four argument strategies and give examples of these strategies used within the philosophical literature:

1. Argument from analogy
2. Thought experiment
3. Argument from absurdity
4. Inference to the best explanation

1. Argument from analogy

An analogy is when we compare two different things to emphasize a relevant similarity between those two things. For example, both kicking and punching are often morally wrong because they are intended to hurt people and often succeed in doing so. We could say that kicking and punching are analogous insofar as they are both similar in a certain way and are often morally wrong due to that similarity.

Not all analogies are good. Some of them are false analogies. Many people even argue that “all analogies fail.” Is the analogy drawn between kicking and punching a false analogy? Someone could argue that kicking and punching is a false analogy because it's wrong to kick people in a boxing match, but it's not wrong to punch people in a boxing match. However, this objection is unconvincing. Many people seem to assume that analogies are meant to prove that two things are equivalent but that isn't the purpose. It is true that kicking and punching aren't equivalent. They are two different things. However, I think the analogy succeeds in revealing that they are similar in at least one important respect—they are both often wrong when they are used to hurt people. Whenever it's wrong to hurt someone in ordinary contexts, it's wrong to punch or kick that person.

When are analogies false? When they fail to have the relevant similarity. For example, some people have suggested that legalizing same-sex marriage is analogous to legalizing marriage between a man and dog, and they are both wrong for the same reason. However, marriage to a dog is morally wrong because dogs can't consent to the marriage. Two men can both consent to marry each other unlike a man and a dog.

An example of a philosophical analogy was given by Peter Singer in “The Drowning Child and the Expanding Circle.” He argues that a professor going to class who spots a child drowning in a shallow pool of water and can save the life of the child at minimum cost to herself has an obligation to save that child—and we have a duty to give to charities that can save lives at a minimum cost to ourselves for the same reason—because we have obligations to do a great deal of good when doing so is at very low cost to ourselves. The professor who can save the child and everyone else who can give to an effective charity are in analogous situations insofar as they can both save lives at a minimal cost. Some people
have objected to Singer's analogy by arguing that the professor doesn't have an obligation to help the child or by citing that there's some important difference between the two situations. It's not obvious that Singer's argument succeeds, but it is philosophical insofar as it's thought provoking and has been a rich source of debate.

2. Thought experiment

Thought experiments are imagined situations that are meant to illustrate a point. Thought experiments can be used to illustrate analogies, help us realize when a belief is intuitive (or counterintuitive), or prove a theory to be inconsistent.

Not all thought experiments prove what we would like them to. An example of a misused thought experiment is Aristotle's assumption that heavier objects fall faster than light ones, perhaps just by imagining it in his mind, and then concluding that it must be true. Such a thought experiment might prove that it's intuitive to expect heavier objects to fall faster and many people share this intuition, but it's false that heavier objects fall faster than less heavy ones.

Singer's analogy of the drowning child was illustrated by a thought experiment. Other examples of philosophical thought experiments include the following:

1. Hilary Putnam's “Twin Earth” – Imagine that another world doesn't have H₂O and instead has XYZ (another chemical) that functions exactly like water, and all the experiences of XYZ are exactly like our experiences of water. It quenches thirst, it looks and feels wet, it boils at 100 degrees Celsius, people call it 'water,' and so on. Putnam argues that XYZ is not water, and therefore meanings are not merely in our heads. Instead, the meaning of our words can have a component based on the nature of the world itself (and perhaps a causal connection or history of our words). When I say 'water' I'm referring to the stuff in our world (H₂O) because of the history involving the stuff I drink and call 'water' throughout my life. Twin Earth illuminates how intuitive it is to think that water is H₂O and no other chemical combination (no matter how such a chemical functions in our lives).

2. John Searle's “Chinese Room Argument” – Imagine that you perform the same tasks as a computer that seems to “speak Chinese.” A woman gives you a piece of paper with Chinese letters on it, you follow a set of instructions to write something in Chinese and give it back to her. What you write back makes sense. Do you know Chinese? Searle answers, No. Computers follow instructions just like you do to speak Chinese without actually understanding the language. Searle argues that this reveals to us that no amount of instructions is sufficient to understand a language—the meaning of the sentences (the semantics of a language). Searle's “Chinese Room Argument” emphasizes that we have little reason to think that we can understand semantics from following instructions alone because it's intuitive to think we wouldn't in the thought experiment he presents us with.

3. Judith Jarvis Thomson's “Defense of Abortion” – Imagine that people kidnap you and hook you up to another person to keep that person alive, and you alone can keep that person alive by staying connected. You could keep yourself connected to the person for nine months to keep her
alive, or you can disconnect yourself and let her die. Are you obligated to stay connected to her? If people's “right to life” overrides our rights to our own bodies, then yes. However, Thomson thinks not, and she argues that women (who become pregnant from rape) aren't obligated to stay pregnant for the same reason—the right to life doesn't override a person's right to her body (when we never chose to be responsible for another person's life). Thomson's thought experiment illustrates an analogy—between a far-fetched scenario and a women who wants an abortion (caused by rape).

4. Frank Jackson's “Epiphenomenal Qualia” – Imagine that Mary is a scientist who studies color but never experiences color. She lives in a black and white room with a black and white television, black and white books, and so on. She knows everything involved with color involving wavelengths of light and neurobiology. However, she will still learn something if she gets a color television and sees what color looks like. Jackson argues that this thought experiment is evidence that qualia—the “what it's like” element of our experiences—can't be known entirely from a description of causal processes. Jackson's thought experiment illuminates our experience of qualia and emphasizes that we have little reason to think a description of causal processes could tell us everything there is to know about experiencing qualia (because it's intuitive to think it couldn't within the thought experiment).

3. Argument from absurdity

The argument from absurdity is also known as the “reductio ad absurdum.” It is a strategy used to (a) provide evidence against a belief or argument, (b) prove that an argument is logically valid, or (c) prove that an argument is logically invalid. This is done by assuming an argument is invalid (or belief is true) and showing the absurd consequences of doing so. These absurd consequences are often counterexamples—states of affairs that would be impossible if the argument was sound (or belief was true).

How can we use the argument from absurdity to object to a belief? We could assume the belief is true and show that it requires us to reject another belief we can't rationally deny. For example, someone could claim to know that nothing is morally wrong, but we might argue that “if that's true, then there's nothing morally wrong with torturing a small child, but we know there is something morally wrong with that.” The fact that we know that it's wrong to torture children is a counterexample to the belief that nothing is morally wrong.

How can we use the argument from absurdity to prove an argument is invalid? We can assume that the reasoning used by an argument is valid (it can't have true premises and a false conclusion at the same time) or effective and show that true premises can lead us to a false conclusion. If a form of reasoning can use true premises to prove something false, then we know the form of reasoning to be invalid and unreliable. Consider the following two examples:
Example 1

Someone could argue:

1. All humans are mammals.
2. All humans are animals.
3. Therefore, all mammals are animals.

This could sound like a good argument because the premises and conclusion are all true, but it's actually an invalid form of reasoning that could be used to give us false conclusions (even when the premises are true). The argument form is: “All A are B, all A are C, therefore all B are C.” A counterexample will have to use this form of reasoning and have true premises, but A, B, and/or C will stand for something else. For example:

1. All humans are mammals.
2. All humans are primates.
3. Therefore, all mammals are primates.

We know that all mammals aren't primates because dogs and cats are mammals, but they aren't primates. Merely changing the word “animals” to “primates” was enough to create this counterexample. The fact that this argument form can have true premises, but a false conclusion proves that it's invalid and unreliable.

Example 2

1. If something is legalized, then people will probably become more tolerant and want to make more things legal.
2. Therefore, if we legalize same-sex marriage, then the next thing you know we might legalize marriage to nonhuman animals.
3. It's wrong to legalize marriage to nonhuman animals.
4. Therefore, we shouldn't legalize same-sex marriage.

In this case the first premise is questionable and how exactly the second premise can be derived is unclear. A good counterexample to this argument can show an analogous argument that makes use of the slippery slope fallacy in a very similar way. For example:

1. If something is legalized, then people will probably become more tolerant and want to make more things legal.
2. Therefore, if we legalize owning guns, the next thing you know we might legalize owning tanks.
3. It's wrong to legalize owning tanks.
4. Therefore, it's wrong to legalize owning guns.

This counterexample reveals how absurd it is to expect certain causal effects based on legalizing various behavior. The fact that we legalize same-sex marriage or ownership of guns is unlikely to have the terrible consequences that are discussed. This analogy rests on the assumption that there's no significant difference between the two scenarios. Some countries and civilizations have legalized same-
sex marriage without legalizing marriage to nonhuman animals, and the legalization of gun ownership of guns in some countries didn't lead to the legalization of owning tanks. We have no reason to expect these things to happen.

**Indirect proof**

The *reductio ad absurdum* is traditionally used in formal logic and mathematics as an indirect proof to show that a form of reasoning is valid by assuming it's invalid (the premises can be true and the conclusion can be false at the same time), then showing why it's impossible for it to be invalid because assuming it is leads to a contradiction. For example, the following argument uses valid reasoning:

1. If Lassie is a dog, then she's a mammal.
2. Lassie is a dog.
3. Therefore, Lassie is a mammal.

We can assume the premises are true and conclusion is false in an attempt to derive a contradiction. Such a contradiction would prove that the argument is valid. For example:

1. If Lassie is a dog, then she's a mammal.
2. Lassie is a dog.
3. Lassie is not a mammal. (Assumed premise)
4. Therefore, Lassie is not a dog. (If Lassie was a dog, then she would be a mammal, but we are assuming she's not a mammal.)
5. Lassie is a dog and she is not a dog. (This is a contradiction.)
6. Therefore, it's impossible for our original argument to be invalid. (The assumed premise lead to a contradiction.)
7. Therefore, the argument must be valid.

In logic the indirect proof tends to be written with placeholders (letters) to abstract away from the content and make it clear that we only want to prove that the form of reasoning is valid rather than that a certain premise is true. The argument form is “If A, then B; A; therefore B.” In order to prove this is valid, we can assume it's invalid. Let's assume the premises are true and the conclusion is false at the same time. We can assume the conclusion (B) is false by assuming “not B.” If that's impossible because it leads to a contradiction, then we know it's valid:

1. If A, then B. (Premise)
2. A (Premise)
3. Not B (Assumed Premise)
4. Not A (“If A, then B” and “not B” proves “not A” because the truth of A would prove the truth of B.)
5. A and not A (This is a contradiction.)
6. Therefore, the original argument can't be invalid.
7. Therefore, the original argument must be valid.

The indirect proof is not so different from the other forms of the argument from absurdity that I discussed. For example, if we wanted to prove that some things are right or wrong, we could assume that nothing morally wrong, and then we can explain how we know it's wrong to torture children, so it's
impossible for our assumption to be true. This is the same argument as given above without technically being an objection to a belief anyone accepts.

**Failed arguments from absurdity**

Not all arguments from absurdity succeed. For one thing we sometimes assume two beliefs to be incompatible that aren't actually incompatible. Someone might try to prove that evolution is false because of a counterexample—such as the argument that evolution must be false because evolution says we evolved from fish, but fish still exist. (Or that we evolved from monkeys, but monkeys still exist.) However, there's nothing about evolution that guarantees that all animals of one type will simultaneously evolve into another type. It's possible for one group of fish to evolve into something else without all fish evolving into something else. Imagine that human beings colonize Mars and end up stranded there for a million years. By the time the Earthlings meet up with the former-Earthlings again, they could both have evolved into different creatures by then. The former-Earthlings might evolve into green people, like how we might imagine Martians to look; and the Earthlings could have evolved into furry blue people with cat-like ears.

### 4. Inference to the best explanation

An inference to the best explanation (also known as abduction) requires us to consider all the viable explanations (and contrast them) to find out which is most likely true. We can consider various strengths and weaknesses of each explanation to find out which is best. This is an important part of the scientific method—scientific hypotheses are explanations for a phenomena and scientists use the best hypothesis (or theory) that's available. Such a hypothesis is often very plausible and many scientific theories seem to be proven to be very accurate, such as Einstein's theory of relativity.

An inference to the best explanation isn't enough to prove that everyone should hold a certain belief because it might not be entirely clear how likely it is that a best explanation is true. Moreover, sometimes rival explanations are also plausible, or that the best explanation available is itself implausible. Nonetheless, an inference to the best explanation could be a helpful argument even in these situations.

Two common forms of inference to the best explanation involve (a) identifying the possible existence of various things and (b) identifying possible causes. Scientists inferred that disease was often caused by small invisible organisms (germs) before we could ever see them using microscopes. This inference included both the possible existence of an entity and the possible causal effects of that entity. The fact that doctors who sterilized their instruments and washed their hands helped prevent infection provided evidence for the hypothesis that germs exist before we could see them.

The conclusion that all men are mortal seems like a very good example of an inference to the best explanation, which is based on our expectation that if any men are immortal, we would have found out about it by now, and people would spread such a discovery to make sure it's well known. There are alternatives—perhaps immortal men keep to themselves and don't stay in one place for long enough in order to be discovered. We simply don't think this is a likely possibility.
We must be careful when we think we make an inference to the best explanation because we could misjudge the plausibility of the alternative explanations. For example, the inference that a ghost must have moved my keys because they aren't where I remember leaving them is not proper an inference to the best explanation because there are alternatives that are more plausible. For example, I probably just misremembered where I left them.

An example of a philosophical argument for the best explanation is that we are justified to believe that other people have minds because it's the best explanation for their behavior. It's possible that (a) we are deceived by mindless bodies that behave as though they have minds, (b) that there's an elaborate hoax involving machines that look like people, or (c) that my entire life is a dream and no one else exists. However, all of these alternative explanations for the behavior of other people seem far-fetched. Other people seem to have a very similar biology to myself and it seems reasonable to think that similar biology leads both to similar minds and behavior guided by mental activity.

Almost every philosophical argument can gain strength through an inference to the best explanation because it requires us to consider both sides (or all viable sides) of an issue. For example, when considering if a drug should be legal we can consider the costs and benefits. To only analyze the benefits of making a drug illegal would make it harder or impossible to consider reasons for making the drug legal. We might find out that making certain drugs legal involves greater benefits than making them illegal and vice versa.

**Conclusion**

It is important to have sufficient evidence to reach our conclusions, but it's also important to present our evidence in a reasonable way that makes it clear how we reach our conclusion. Argument strategies are ways of presenting our evidence in a reasonable way. Every argument strategy can be misused. There are false analogies, misused thought experiments, failed arguments from absurdity, and failed inferences to the best explanation. That doesn't mean that these strategies are always misused. They are all common forms of reasoning and seem to be effective a great deal of the time.
Part V: Philosophy of Knowledge

Chapter 32: Is Knowledge Impossible?

Some people have thought that knowledge is impossible. It might seem implausible to think knowledge is impossible, but there are important philosophical concerns we can have about knowledge and challenges to the possibility of knowledge can be illuminating. First, I will discuss what 'knowledge' means and suggest three different definitions: (a) justified true belief, (b) certainty, and (c) a deep understanding. Second, I will discuss why the belief that knowledge is impossible seems to be self-defeating. Third, I will discuss an argument against the possibility of knowledge known as the Münchhausen Trilemma and explain where it might go wrong. The Trilemma supposedly shows how unsatisfying any proof is in order to show that none of our beliefs are proven—and knowledge is taken to be impossible as a result. I reject the Trilemma because it is too demanding about what counts as a justified belief. Perhaps proof or evidence is not always necessary to have a justified belief.

1. What is knowledge?

We all know what knowledge means to some extent already. We use the word in everyday discourse and we can often spot when someone uses the word wrong. We ask a child if she knows she has hands and she is supposed to say, “Yes” or we worry that she doesn't know what 'know' means. We ask a child if she knows what planets in the universe contain intelligent life and the answer, “No” seems like the correct response here. At some point we have an intuitive understanding of what 'knowledge' means. This intuitive understanding is based on how people actually use the word, but it is fallible. There can be mistakes made when a person uses the word.

Philosophers can give technical definitions for the word 'knowledge' in an attempt to help us understand and correct our intuitive understanding of the word. The technical definitions must be based on our intuitive use of the word, or we aren't even talking about knowledge anymore. We would be talking about something else. The intuitive use of the word should be sensitive to what ordinary practice says are examples of knowledge. If the police take me down to the station for questioning and ask me if I know that George is the killer, I’m not supposed to respond saying, “It's impossible to know if a person is a killer.” The police will not be amused by this statement and are likely to respond, “You know what we mean. Just answer the question.”

I don't think the word 'knowledge' necessarily has only one meaning. It can be used in different ways in different contexts. I suggest the following definitions:

- a) Justified true belief
- b) Certainty
- c) A deep understanding

I will discuss the three suggested different definitions of knowledge.
Consider an example of a justified true belief. I can see a cat on a mat and believe that a cat is on a mat as a result. The belief is true assuming there is a fact (an actual cat on a mat) that my belief refers to.

Justified true belief is a modest type of knowledge. A belief can be justified without being proven. As long as a belief is reasonable (compatible with proper standards of reasoning), the belief could count as being justified. A justified belief is a belief that is reasonable to have. It seems plausible to think that beliefs can be justified even when no argument is given for them at all because a belief could be reasonable as long as it's not unreasonable—as long as we don't keep a belief that we have good reason to reject. For example, I think we all know that “1+1=2” even though we can't all give an argument for it. This modest use of the word 'know' does not necessarily require an argument, certainty, or a deep understanding.

What does it mean for a belief to be true? The word 'true' often refers to a correspondence. If a statement corresponds to reality in the appropriate way, then it's true. We can say that true beliefs correspond to facts, and a fact is the reality that true beliefs correspond to. It might be that some beliefs correspond to reality better than others. For example, the belief that the Earth is a sphere is accurate, even though the Earth is slightly pear-shaped and spheres are ideal mathematical objects that can't be pear-shaped. We might say that it is true that the Earth is a sphere for most intents and purposes, but it would be more true (or more accurate) to say that the Earth has a shape somewhere between a sphere and a pear.

That the word 'true' itself is somewhat unclear, and we should often prefer to use the word to mean something like accurate (that allows for degrees of truth). This is one motivation behind fuzzy logic and multiple truth values, and it seems to capture how we use the word 'true' in everyday discourse pretty well. A person can say that they believe that it's true that the Earth is a sphere without implying that they think it maps reality perfectly.

I don't want to suggest it really is impossible to say something that turns out to be absolutely true, but that isn't generally a requirement of our knowledge of the justified true belief variety. General statements seem to be strong contenders for being absolutely true. Perhaps the statement that something exists is so general that we can know that it is absolutely true.

I think our use of the word 'knowledge' usually refers to something like “justified true belief” and this is how I usually use the word.

(b) Certainty

We often say that we don't know something when we are speculating, even though our speculations could be justified true beliefs. We might not be certain (sufficiently know) that someone is a murderer even when we witness that person commit the crime because our mind plays tricks on us, we might worry that the person has an evil twin, and so on. At least some certainty is required before we satisfactorily know that someone is guilty of murder. What we call reasonable doubt is enough to find someone to be not guilty in a court of law.

When we are certain that a belief is true, it is also a justified true belief. However, the demand for
certainty is a more demanding form of knowledge.

Some people equate “certainty” with “infallibility.” However, there can be degrees of certainty. This is what many call *degrees of confidence*. If something is absolutely certain, then there is no possibility of error. This is the highest degree of justification conceivable. However, not all types of certainty requires such a high level of confidence.

There are different philosophical positions about what a belief we *know for certain* must be like. For example, one type of certainty only requires that beliefs are justified in the best way we can hope for.)

(c) A deep understanding

Sometimes we think a belief isn't justified or that we don't know something if our understanding is too limited. Good examples can be found in what is now called the Gettier Problem. For example, I might see a cow in a meadow and believe that there's a cow over there. However, I might be looking at a cardboard cutout of a cow while there is really a cow over there hiding behind the cardboard cutout. I have a justification to believe that there's a cow in a meadow and it's true that there's a cow in a meadow, but there's a sense that I *don't know* that there's a cow there. This sense seems to be that I don't have the appropriate understanding of what it means for the cow to be in the meadow. The specific cow I thought was in the meadow wasn't actually there, and the justification I used to support my belief didn't support my belief in quite the right way.

Some people have said that beliefs must be causally tied to reality in the right way for us to have knowledge. This is a more demanding kind of knowledge than mere *justified true belief*. Either that kind of justification provides us with more certainty or it provides us with a deeper understanding. Either way, I don't find it to be a particularly impressive requirement for knowledge in everyday life because we have no way of knowing for certain when our beliefs are causally tied to reality in the right way. We would just beg the question when we say, “My belief is causally tied to reality in the right way.” Even so, some speculation involving *how our belief seems to be causally tied to reality* could provide us with the deeper understanding that we would like to have.

Similarly, we might prefer to have arguments and justifications for our beliefs, even though it can be perfectly reasonable to have some beliefs even when no argument or justification is attained.

Philosophers are interested in having a deep understanding of our beliefs. We want to know how our beliefs are causally tied to reality and we want arguments for them. However, it seems wrong to say that a deep understanding is always required. Even philosophers commonly rely on axiomatic assumptions. Such assumptions might be defensible, and they might have to be something we could reject on the basis of comparison—we might need to be able to decide one belief is better than an alternative for it to be justified.

2. What if knowledge is impossible?

Let's say that knowledge is impossible—of the modest *justified true belief* variety. In that case we can't know that knowledge is impossible. We would still be forced to have opinions and find some way to
explain why some opinions are better than others. In the long run we would still say we have justified beliefs and that we know many things based on the ordinary use of the word 'know.'

Can we know that knowledge is impossible? No. If knowledge is impossible, then we have no way of knowing that. We would have no way to persuade anyone that it's true. It wouldn't even be reasonable to try to do so. It would be strange to expect anyone to believe it or agree with it.

What if it's impossible to have true beliefs? We can have justified beliefs, even if none of them are true. It might be that no beliefs are absolutely true, but that is not the requirement of the modest sort of knowledge that I've discussed. There are different degrees of truth.

What about knowledge as certainty or deep understanding? It might be possible to have knowledge in the sense of having some degree of certainty or deep understanding, but it might be impossible to have absolute certainty or absolutely deep understanding. Those extreme kinds of knowledge could be impossible.

3. The Münchhausen Trilemma

Here is what wikipedia has to say about the Münchhausen Trilemma:

If we ask of any knowledge: "How do I know that it's true?", we may provide proof; yet that same question can be asked of the proof, and any subsequent proof. The Münchhausen Trilemma is that we have only three options when providing proof in this situation:

1. The circular argument, in which theory and proof support each other (i.e. we repeat ourselves at some point)
2. The regressive argument, in which each proof requires a further proof, ad infinitum (i.e. we just keep giving proofs, presumably forever)
3. The axiomatic argument, which rests on accepted precepts (i.e. we reach some bedrock assumption or certainty)

The first two methods of reasoning are fundamentally weak, and because the Greek skeptics advocated deep questioning of all accepted values they refused to accept proofs of the third sort. The trilemma, then, is the decision among the three equally unsatisfying options. In contemporary epistemology, advocates of coherentism are supposed to be accepting the "circular" horn of the trilemma; foundationalists are relying on the axiomatic argument. Not as popular, views that accept (perhaps reluctantly) the infinite regress are branded infinitism.
I understand the argument to be best formulated as the following:

1. All knowledge requires arguments.
2. All arguments are ultimately circular, regressive, or axiomatic.
3. Circular, regressive, and axiomatic arguments can't provide us with the justification that knowledge requires.
4. Therefore, there is no knowledge.

Let's assume that 'knowledge' here is the modest sort—justified true belief. Why do I reject this argument? First, because the conclusion that “there is no knowledge” seems to be self-defeating. If there is no knowledge, then how can we know that there's no knowledge?

Second, because the conclusion is so counterintuitive. Our everyday discourse requires that a modest use of the word 'knowledge' refers to certain things or we just don't think the person even knows what knowledge means. In other words, the Trilemma can be taken to be a *reductio ad absurdum*—the conclusion is absurd to the point that we've proven that something is probably wrong with the argument. Either the argument is invalid or at least one premise is false. People who take the argument to be a real proof that knowledge is impossible seem to *miss the point*.

Third, because the argument is overly ambitious. Extraordinary claims require extraordinary evidence. The conclusion is counterintuitive and the premises are not obvious. The premises could be false and need a great deal of justification, but I have never seen a satisfying justification for the premises. (In fact, the argument requires that the premises couldn't be satisfactorily justified.) That's not to say that I know for certain which premise is false. Any of the premises could be false and the argument gives us reason to question them.

Fourth, the premise that states *knowledge requires arguments* seems unjustified and I think it's probably false. (a) The belief that all justified beliefs must be justified through argumentation could be self-defeating if there is no good argument for it, and I haven't heard of any good arguments for it. (b) We seem to know some things even though we don't know how to provide good arguments in support our knowledge. I know that “1+1=2” even though I can't give an argument for it. This was already discussed in detail above. This implies that beliefs can be justified even when no argument can be given for accepting it.

Perhaps the Trilemma isn't meant to disprove knowledge of the modest sort. Perhaps it can be used to disprove that we can be absolutely certain that something is true, or that we can have a deep understanding of anything. I am not sure if the argument succeeds against those conceptions of knowledge, but I think such conceptions of knowledge are more ambitious than we should generally claim to attain anyway.

**Conclusion**

A modest definition for 'knowledge' is all that seems needed in most everyday contexts. It tells me if I can wake up in the morning, if I can type out an essay, and if I can think anything worth putting on paper. This modest definition is compatible with our quest for truth, certainty, and deep understanding;
but not all of our knowledge is absolutely certain to be true nor is all of our knowledge a deep understanding.

Given the modest definition, we will find the claim that *knowledge is impossible* self-defeating and the Münchhausen Trilemma to be unconvincing.
Chapter 33: Three Types of Evidence

An argument uses premises to reach a conclusion, but we can't just accept that every valid argument proves the conclusion to be true. If an argument has a valid form, we need to know that the premises are true before we can know the conclusion is true. We rarely know for certain that the premises of an argument are true. Instead, we do our best at justifying the premises. One way to do this is to provide evidence—reasons we should believe something to be likely true or accurate. Many people equate “evidence” with “observation,” but there could be other reasons to accept beliefs as well. I will discuss three types of evidence:

1. Observation
2. Introspective experience
3. Intuition

Observation

Observation is also known as “empirical evidence,” which is evidence based on experience. What we perceive with the senses is observation. For example, I can see a cat on a mat, feel my hands, taste my food, and hear a barking dog. Observation is the main source of scientific evidence, but it's also a source of much of our common knowledge. Consider the following argument:

1. Socrates is a man.
2. All men are mortal.
3. Therefore, Socrates is mortal.

This argument is valid, but are the premises true? Do we know that the conclusion is true because the premises are true? I think so. How do we know Socrates is a man? There were eyewitnesses who described him and his behavior. This information was recorded in texts. How do we know all men are mortal? Every man we have ever observed has died. There are no men we know of who have lived longer than 150 years. Both premises are justified using observation.

Not all observation is direct. We can observe germs in a microscope, but people hypothesized the existence of germs before we could actually see them based on the effects they have. It gave doctors a good reason to sterilize their equipment and wash their hands.

Additionally, we often rely on the experiences of others. I haven't known enough men to know that they are all mortal on my own, but we figure that if there were any immortal men, then they would have been discovered by now; and such a discovery would have been shared with the rest of us.

Observation is theory-laden in the sense that all observation must be interpreted and such interpretations are based on assumptions. For example, my observation that I have two hands is based on the assumption that I'm not sleeping, that an external world exists other than myself, and that the experiences I have are best understood with the assumption that my two hands are causing them. Without interpretation I would have experiences of colors, movement, feelings, and so on; but I
couldn't know that I have two hands without assuming that such colors, movement, and feelings are based on an external reality containing solid objects and so on.

**Introspective experience**

Introspection—an examination of what it's like to have experiences—involves observations without a concern for objects outside of ourselves. I have introspective experiences of my thoughts and feelings, and these experiences aren't merely based on sight, sound, touch, taste, or smell. These experiences aren't of anything outside of oneself or part of an external world. We tend to assume these experiences are within the mind and are based on experiences of our psychological activity.

Introspective experience gives us access to understand qualia—the what it's like element of our experiences. My experience of pain is a clear example of a qualia. One thing that's important about pain to me is what it's like to experience it.

Some of my introspective experience seems quite unlike perception. Sometimes I have thoughts that aren't put into words and don't seem like anything I can perceive with the five senses. However, many introspective experiences are related to perception. When I see a green frog, I think I'm experiencing something outside of myself that's part of an external world using my eyes. However, the green color of the frog looks a certain way to me that might not be part of an external world. Each color has a qualia, a way it looks to us that's not merely wavelengths of light reflecting off of objects. The qualia of each color is what differentiates the look of each other color and many people have a favorite color based on how it looks to them.

Consider the following argument that makes use of introspective experience:

1. Pain is bad.
2. We usually shouldn't make bad things happen.
4. Therefore, we usually shouldn't kick and punch people.

We know that “pain is bad” because we experience it that way. The second premise that “we usually shouldn't make bad things happen” is more difficult to justify, but it's a common assumption among people. The third premise that “kicking and punching causes people pain” is quickly discovered by people through observation after they are kicked and punched by others.

**Intuition**

We often say that a belief is intuitive (e.g. the belief that solid objects exist) or counterintuitive (e.g. the belief that solid objects don't exist), and what's intuitive is often taken to be justified and what's counterintuitive is taken to be unjustified. We often call intuitive beliefs common sense but not all intuitive beliefs are commonly believed. Intuitive justification can require maturity and understanding that most people fail to attain. Prejudice or having a hunch is not intuition of the philosophical variety, although we might often confuse them with the philosophical variety.
What exactly it means to say something is “intuitive” isn't entirely clear, and there are at least three different forms of intuition: (1) the justification for a belief that's hard to articulate in words, (2) assumptions we have found successful, and (3) noninferential justification. I will discuss each of these.

1. Justification that's difficult to articulate

It's often impossible to fully articulate why our beliefs are justified. We think we know some of our beliefs are true with a high degree of confidence, even if we can't fully articulate how we know the belief is true, and even if we can't fully justify our belief to others using argumentation. For example, “the laws of nature will still exist in the future” is intuitive, but it's hard for many of us to prove it's true and fully explain how we know it's true. Intuitive beliefs could be based on any form of evidence: Observation, introspection, successful assumptions, noninferential justification, etc. What we know from these sources of justification are not necessarily easy to fully understand or communicate to others.

Although intuitive beliefs are difficult to prove to be true through argumentation, many philosophers try to justify them using arguments. This might actually just prove to other people that they share our intuitions. Consider the following intuitive argument:

1. Imagine that what always happens in the past isn't likely to happen in the future because the laws of nature will change. In that case we have no reason to think (a) the sun will rise tomorrow or (b) eating lots of fatty foods tomorrow will be unhealthy.
2. However, we know that the sun will probably rise tomorrow and that eating lots of fatty foods tomorrow will probably be unhealthy.
3. Therefore, what always happened in the past will likely happen in the future because the laws of nature will probably stay the same.

We often generalize about what happened in the past to predict the future, but it's difficult to prove that the future will ever be like the past—even though we often think we know it will be with a high degree of confidence. The first premise emphasizes the high confidence we have that the sun will rise tomorrow and eating lots of fatty foods tomorrow will be unhealthy to show how counterintuitive it is to believe that what always happened in the past probably won't be like the future because it requires us to reject certain beliefs we think we know are true.

2. Successful assumptions

Some intuitive beliefs could be successful assumptions similar to how scientists use provisional working hypotheses that seem to explain our observations until they are proven false. (e.g. Astronomers assumed that the Sun revolves around the Earth at one point.) In that case it's hard to explain how justified our intuitive belief is because it's hard to explain to people all the ways the belief has proven to be successful. It could be that our assumption that the laws of nature will still be the same in the future is a successful assumption of this kind, and it seems highly successful. Rejecting this assumption would make living our lives impossible. We could never assume that food will be nutritious or that money could still buy goods tomorrow, but we continually find these assumptions to be successful.

If a belief is a successful assumption, then we can explain how the belief is justified based on
successful risky predictions, the lack of viable alternatives, and the possibility of attaining counter-evidence. Our assumption that the future laws of nature will be the same has enabled us to make every successful risky prediction we've ever made, the rejection of such a belief seems absurd rather than a serious alternative, and we could imagine counterevidence against such a belief (e.g. if the law of gravity stopped functioning tomorrow).

On the other hand the assumption that I can't find my keys because a ghost moved them lacks support from risky predictions and it fails to be as viable as alternatives (e.g. maybe I just forgot where I put them).

3. Noninferential justification

Noninferential justification is evidence that we can understand without an argument. One possible source of noninferential justification is self-evidence. Some self-evident beliefs could be true by definition, such as “all bachelors are unmarried” and others could be justified based on the concepts involved. Perhaps anyone who understands what the concept of pain is will then understand that “pain is bad.” Many philosophers agree that what's true by definition can be known noninferentially, but it's much more controversial to think that conceptual knowledge can be justified using noninferential evidence beyond our definitions.

Noninferential justification is notoriously difficult to communicate to other people, but many mathematical concepts like infinity do seem to be plausibly understood in noninferential ways. Some mathematicians have attempted to understand different types of infinity in various ways, and have argued that some types of infinity can be larger than others.

Conclusion

Arguments without evidence are not informative. Whenever we provide arguments, we need to consider how we know something is probably true or justified. If this is difficult, then we can consider if our conclusion is either unjustified or that we have an intuitive justification for it.
Philosophers often discuss what beliefs are intuitive or counterintuitive to support their conclusions. I will argue that we should prefer theories and beliefs that are intuitive or sensitive to our intuitions rather than ones that aren't. The fact that a theory or belief is intuitive isn't conclusive proof and a theory or belief being counterintuitive isn't a conclusive refutation, but it is one important element when evaluating the plausibility of a theory or belief. Intuitive beliefs range from things we know with high degrees of confidence—such as “at least two people exist”—to beliefs that are merely plausible enough to take seriously as possibly true. When a theory isn't intuitive, then we call it counterintuitive, absurd, or revisionistic. I will argue that, all else equal, we should prefer that our theories are intuitive rather than revisionistic for at least the following three reasons:

a) Language has limits and ordinary discourse greatly determines how our language connects to our understanding of the world. An extremely revisionistic use of language can completely fail to communicate properly and can become off topic.
b) We think we know things with high degrees of confidence without always being able to provide good arguments for those beliefs.
c) We can't provide an argument for everything. We have to have some assumptions.

I will (1) briefly discuss intuition, and (2) argue that we should prefer intuitive beliefs and theories.

1. What is intuition?

We say our beliefs are intuitive when we believe they are justified, but we have a hard time giving good arguments for them. In many cases intuition is likely our unconscious ability to attain knowledge. It isn't when we have a hunch, it isn't popular opinion, and it's not a supernatural power. The problem with intuition is that we often refer to a belief or theory as being intuitive when we don't think we can provide non-intuitive evidence in favor of that belief or theory. It's hard for us to explain to others why we have certain beliefs despite our high degree of confidence. At that point we often hope they can agree how intuitive the belief or theory is.

An intuitive belief can be one that we think is strongly supported by an unconscious ability to attain justified beliefs, it can be necessary to explain our justified beliefs, or it can merely seem compatible with our justified beliefs. We have independent reason to accept beliefs in isolation when they are directly supported by intuition, but a belief that is merely compatible with our other justified beliefs is also more likely true than the alternatives (and might also be said to be intuitive).

We would prefer that a belief be justifiable without the use of intuition. It's much more clear why we should believe something based on observation than intuition because intuition is—by definition—an

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13 If a belief or theory is sensitive to our intuitions, then we can call it 'intuitive.' An intuitive theory or belief can be supported independently by our intuition—unconscious ability to attain knowledge—or it can merely be compatible with other beliefs, experiences, and knowledge. I will often discuss 'theories' rather than 'beliefs and theories' merely for the sake of brevity.

14 Perhaps the most common example of non-intuitive evidence is observation.
unconscious form of justification that is difficult to explain in words. Intuitive beliefs are not necessarily **impossible** to justify through non-intuitive forms of evidence, such as observation. Sometimes we can propose such non-intuitive forms of evidence to provide an argument in favor of our intuitive beliefs.

Many people dismiss intuition as *prejudice* because it is used to argue in favor of certain beliefs without entirely satisfying evidence. However, intuition has proven to be quite reliable upon occasion and I think it's too demanding to expect all of our beliefs to be proven (through non-intuitive evidence).

*We have good reason to expect that many of our intuitive beliefs would be difficult to justify through arguments and non-intuitive evidence.* What we think of as intuitive evidence is not incompatible with other forms of evidence. In fact, many (or all) of our intuitive beliefs are actually based on unconscious knowledge formation that is based on various forms of evidence. Such a knowledge formation process does not necessarily map onto a simple argument that's easy to communicate to others. Instead, it can be based on very complicated forms of reasoning, and they might even be based on forms of evidence that can defy our ability to communicate. Consider the following forms of intuitive justification that are not based on observation

**a. Self-evidence**

Self-evidence is a non-inferential form of evidence that doesn't make use of arguments. Robert Audi argues that we grasp self-evident truths through sufficient maturity and *contemplation*. Self-evidence might not exist at all or it might only exist in the form of conceptual knowledge. We can know that some things are true by understanding concepts, like “2 > 1,” “1+1=2,” and “all bachelors are unmarried.” Self-evident beliefs are not necessarily obviously true. For example, we aren't born knowing that “963/3 = 321” and it might not even be obvious to everyone. However, it is something we can figure out through time and by understanding the relevant concepts. Self-evidence, if it exists, isn't always easy to describe because it isn't a form of argumentative reasoning.

**b. Instincts**

What we understand or believe through instincts could be intuitive to us. Such intuitive beliefs would likely be a reproductive advantage in the majority of our existence, and could be advantageous because they beliefs are likely true in most circumstances. For example, children seem to recognize faces and understand some human psychology very quickly, and this understanding could very well be instinctive. If we know anything through instinct, then it's not easy to defend through argumentation because it's a product of our biology rather than a product of logical reasoning.

**c. Introspective evidence**

We experience our psychological states a certain way—our own thoughts, feelings, and experiences are not always easy to describe and how we know about them is not always easy to describe either. How a thought feels or what it's like to have thoughts is difficult to describe and it might be that we lack the words necessary to explain it to others. For example, how can we explain what it's like to see green to

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15 Observation tends to be pretty easy for us to communicate to others, but what we observe to be true can certainly be “intuitive” and need not be known through argumentation.
someone whose never seen it? It might be impossible to communicate such an experience to such a person. No matter what we say, we expect that they still won't quite understand. Introspection could be taken to be a form of observation, but it's about what it's like for us to exist rather than what it's like to perceive something with the five senses.

d. Coherence

Sometimes we can reason that something is probably true because it's compatible with on our current justified beliefs and experiences, or because it must be true assuming our other justified beliefs are true. It can be hard to fully justify a belief through coherence because there could be thousands of justified beliefs and experiences involved. For example, our belief that the future laws of nature will be the same (or extremely similar) as those in the past is necessary for thousands or millions of our other justified beliefs to be true—that the sun will rise tomorrow, that we can pick things up with our hands two seconds from now, that we will have bodies an hour from now, that bread will be nutritious rather than poisonous a week from now, and so on. To fully justify that the future laws of nature will be like those of the past through a coherence-based argument would take way too long.

e. Common sense

My definition of common sense justification is that we can provisionally assume a belief is true until we have more reason to reject it than accept it. This is the justification we use when we have a working hypothesis—which is mainly what scientific theories rely on. A belief need not have any independent evidence to accept it, but it can still be reasonable to assume it's true as long as the belief seems successful. Our assumption that the future laws of physics will be similar to those that exist now could ultimately require being a common sense assumption because it might be a justified assumption even before we attain a coherence justification in its favor. What we assume to be true through common sense justification is often difficult to formulate into an argument because the assumption has been successful (in part because there are no good objections against it). It can be difficult to list every single way that it's been successful. There might be thousands of ways that a belief has been successful.

2. Arguments to prefer intuition to revisionism

a. Intuition is sensitive to language

Proper use of language is based on our intuitive use of language, and language has philosophical implications. For example, when I say that I know that I have hands, I am (in part) proving that I know what the word 'know' means to competent users of the English language. Anyone who argues that I don't know that I have hands would seem to simply not know what know means or what hands are. We learn language in a great part by examples. People who learn what know means understands to tell others that they have hands and giving the wrong answer will be a great cause for concern. Sometimes our use of the word 'know' is very important, such as when a police officer asks you if you know who the killer is. It would be inappropriate to say, “It's impossible to know who killers are.” That would be a total failure of communication and perhaps a failure to even understand the police officer's question. She wants you to answer in a certain way and you should understand that.
Philosophers who ask interesting questions like, “When is knowledge possible?” will often define what 'knowledge' means, but that definition should be somewhat intuitive rather than radically revisionary. It should be sensitive to common examples of knowledge and how we use the word in everyday contexts. To prove knowledge is always impossible would require a radically revisionary definition of knowledge because the definition of knowledge is (in part) how we actually use the word in ordinary discourse including the examples we give of it. If a philosopher “proves that knowledge is impossible,” then we will think that philosopher doesn't even know what the word means. The philosopher better tell the police officer who the killer is as an eye witness and not claim that eye-witnesses can't possibly exist.

Also consider that water is H\_2O by definition. We had an ordinary definition of water at one point based on how we use the word in everyday life by referring to the stuff that rains, is found in streams, is necessary to quench thirst, freezes at the North Pole, can be easily boiled using fire, and so on. We had to discover that H\_2O is water by investigating the stuff involved when we use the word 'water.' If a philosopher at some point gave a revisionary definition of water as oxygen based on the fact that oxygen is found whenever we point to water, then we would think that the philosopher completely misses the point. Oxygen isn't going to quench our thirst or freeze near the North Pole.

Finally, consider how language has implications for the word 'morality.' We can't say that “killing people indiscriminately is always right” because what is considered to be right and wrong is defined (in part) through examples and one example of wrong behavior is killing people indiscriminately. Anyone who claims it's not wrong wouldn't know what “killing people indiscriminately” or 'wrong' means—or they are using an extremely revisionary meaning for 'wrong' that seems to totally miss the point. We could argue that they aren't really discussing morality at all and they are actually talking about something else that is unrelated.

b. We think we know things even when we can't argue for them

Perhaps the best reason to believe in intuitive beliefs is simply because it's intuitive to do so. Once we realize that we already accept uncontroversial examples of intuitive justification, we will understand why we have good reason to believe in intuitive beliefs and make use of intuitive justification. Consider the following examples:

2+2=4 – I don't know how to prove simple mathematical facts through argumentation, but I think I know they are true. I suspect other people are like me in that regard. We have a high degree of confidence that “2+2=4” and will likely think that any argument used to prove “2+2=4” will require premises that are less justified than the conclusion is anyway. People who argue that “2+2=4” is false or an unjustified belief are saying something striking that we would find absurd.

I know that I have two hands – I think I know that I have two hands even though I could be in a dream world, and I have a high degree of confidence about it. I can't prove with absolute certainty that my observation of my hands is reliable or that my entire life was in a dream world, but I think think that both of these beliefs are very likely true. I suspect other people are like me in this regard. People who say that they don't know they have hands are saying something striking that we would find absurd.

It's wrong to kill people indiscriminately – I think people know that it's wrong to kill people indiscriminately, even though many such people don't know how to explain how they could know such a thing. Any such explanation is also likely going to be less justified than the conclusion. Perhaps
people or their experiences have intrinsic value and that value is lost when we kill them. That's one possible explanation as to why it's generally wrong to kill people. Even so, not everyone would agree with that explanation and there are others. It's not obvious whose explanation is right or if they are all wrong. Nonetheless, I think most people know that it's wrong to kill people indiscriminately with a high degree of certainty and any argument we come up with to prove it will likely require premises that are less justified than the conclusion they are meant to support. Again, people who argue that it's not wrong to kill people indiscriminately are saying something striking that seems absurd.

An objection:

Isn't it circular reasoning to justify intuition by saying it's intuitive? Someone could argue that my argument here is that “intuition is intuitive, therefore intuition is relatively reliable.” That argument is viciously circular. We would have to assume that intuition is reliable to prove it is.

My replies:

First, we use intuition precisely when it is difficult or impossible to prove our justified beliefs through argumentation. Circular reasoning is a faulty form of proof through argumentation. I don't claim that my argument proves that intuition is reliable, but I think it points out that we can have a reason to think intuition is reliable. If I thought I could prove that intuition is reliable because it's intuitive to think it is, then my argument would certainly be viciously circular.

Second, my argument is based on practical considerations—we have no choice but to use intuition for our arguments because we can't prove everything in arguments. I develop this line of reasoning in more detail below.

Third, it's not always clear what kind of justification is at work when we use intuition. It's possible to justify one form of intuition with another. For example, I think some beliefs are justified just because they are successful assumptions and others are justified because they are coherent with other justified beliefs. The idea that some beliefs are justified for being successful assumptions is supported if we know that the belief that “we can use the past to learn about the future” itself is both justified and can only be justified as a successful assumption. In that case we can justify the use of common sense justification (successful assumptions) through a coherence justification.

Fourth, if intuition is justified through successful common sense assumptions (which could be experienced as a form of intuition), then the belief that “intuition is reliable” itself can be one of our successful assumptions. The belief that some justified beliefs are justified because they are successful assumptions might not need to be proven through argumentation because it might also be justified for being a successful assumption. That's not a circular argument because no argument would actually be required.

c. We can't provide an argument for everything

Even if any true belief can be justified by an argument in principle, that doesn't mean it's possible to actually provide an argument for every true belief. That would take forever. For every belief, we will provide an argument (with at least one premise), and every argument requires us to accept at least one other belief that will also need an argument, and so on. To think that a real flesh and blood person is
even capable of providing infinite arguments to justify a belief seems absurd because it would require infinite knowledge that makes the person capable of answering infinite questions. There are at least three ways we can avoid this problem:

1. We can justify our non-self-evident beliefs through self-evident beliefs that don't need to be justified through argumentation.
2. We can justify our beliefs through coherence—including coherence with our observations and experiences.
3. We can justify our beliefs through successful assumptions. Such assumptions should be capable of positive and negative qualities that can compete with alternative beliefs, so that a belief can be rejected (unsuccessful) at some point. Some people would say that the belief should be capable of falsification, but that might be a strong word for what I am considering. (This is what I call “common sense justification.”)

What does all this have to do with intuition? First, intuition is used as a practical way to avoid arguing forever. We can take certain beliefs as intuitive and therefore justified until we have overriding reason to reject them.

Second, I don't think every single belief can necessarily be justified through observation, coherence, or self-evidence; so I find it plausible that at least some justified beliefs are successful assumptions, which we often experience as being intuitive beliefs. Additionally, I think there are good examples of assumptions that are justified despite being in need of no argument—such as the assumption that “we can use the past to learn about the future,” and that assumption in particular does not seem to be self-evident or provable through observation. It might be partially justified through coherence, but I think the belief is justified prior to coherence because it should be an assumption we use in order to form all the beliefs it is coherent with in the first place—that bread will be nutritious in the future, that the sun will rise tomorrow, and so on.

**Conclusion**

Many people are dismissive of intuition and act like it's too mysterious to take seriously. They want an argument for every belief and they want non-intuitive forms of justification. I agree that it's preferable to have non-intuitive forms of justification, but that doesn't mean intuitive beliefs are worthless prejudice. People who demand that we justify every belief through nonintuitive argumentation are too demanding and their world would be a strange one where there's an argument for everything. That's not a realistic way to live life. Many of our beliefs are based on an unconscious ability to attain knowledge and transforming that unconscious process into arguments is not always feasible.

I agree that intuition is fallible, but it's still worth something. All else equal, an intuitive belief is more justified than a counterintuitive one.
Chapter 35: Three Types of Intuitive Arguments

Our arguments depend on assumptions. We prefer these assumptions to be intuitive and coherent with our other justified beliefs rather than counterintuitive and incompatible with our other justified beliefs. We might not be able to fully explain how we know “1+1=2” but we find it to be an intuitive belief, and we think it's absurd (and perhaps incoherent) to deny that it's true. Intuitive arguments are not only very common in philosophy, but it's possible that all our justifications are grounded in intuition in one way or another.

The following is an example of an intuitive argument:

1. Consider the following thought experiment: Jack punches Jill just because Jill has red hair. Intuitively, it seems like Jack did something wrong. Intuitively, we think we know that it's wrong to punch people with red hair just because they have red hair.
2. The best explanation for how we know it's wrong to punch people with red hair because they have red hair is that we know it's wrong to harm people without an overriding reason to do so, and having red hair is not an overriding reason to harm someone.
3. By reductio ad absurdum (an argument from absurdity), it's highly intuitive to think that it's wrong to punch people with red hair because they have red hair considering that it would be absurd to think otherwise. People who think that that punching people because they have red hair aren't doing anything wrong would seem to have no idea what morality is about. We think we know that it's wrong to hurt others unless we have an overriding reason to do so, but saying that it's not wrong to punch people because they have red hair would imply otherwise.
4. We have some reason to believe something if it's the best explanation of highly intuitive beliefs.
5. Finally, we may conclude that we have some reason to believe that “it's wrong to harm people without an overriding reason to do so.”

What exactly an intuitive argument proves depends on the argument. I will discuss three kinds of intuitive arguments with three different purposes: One, to defend that a belief is sufficiently rational. Two, to conclude that a belief is more rational than the alternatives. Three, to conclude that a belief is rationally required.

1. Intuitive Arguments that conclude beliefs to be sufficiently rational

Adequately justified beliefs are sufficiently rational or “rationally permissible.” We can hold these beliefs without being irrational. Rational people can disagree with one another. Perhaps the abortion debate can exemplify the idea of rational disagreement. I can believe that abortion should be legal and you can believe that it should be illegal. As long as we both have good enough reason to support our opinions, both of our beliefs could be rational. This is to be expected considering that we are ignorant and we can't prove whether abortion should be legal once and for all. Knowing for certain if it should be legal would require many questions to be answered. (Is a fetus a person? Can a person's right to their own body justify killing something?) Intuitive arguments that attempt to prove that a belief is sufficiently rational, tend to proceed in the following way:
1. First, we must prove that we have some reason to accept the belief, or that the belief does not seem to be offensive to reason in general. The belief must be shown to be intuitive (generally through analogy or thought experiment).
2. Second, we must prove that we don't have overriding reason to reject the belief. Objections to the belief are proven not to be serious given our current information.
3. Finally, we can then conclude that the belief is intuitive and it's inoffensive to reason.

The second step is the more important one. If no one can show a belief to be overriding offensively to reason, then the belief can be generally assumed to be rational. I propose that beliefs are innocent until proven guilty. Being a rational person doesn't seem to require us to completely prove everything. We have no choice but to have assumptions, and we can't expect every assumption to be rejected or nothing will be left of our knowledge.

Showing a belief to be overriding offensively often generally requires that we prove that there's a better—more intuitive—alternative, but it's possible that some beliefs are too ambitious or absurd, even when no alternatives are available.

Additionally, some of our permissible beliefs might be more likely false than true. There can be several alternative beliefs and each of them can have a 20% chance of being true, but it could still be rational to believe something that has a 40% chance of being true instead. (Perhaps virtue ethics has a 40% of being true, utilitarianism has a 20% chance of being true, deontology has a 20% chance of being true, and divine command theory has a 20% chance of being true.)

Consider someone who believes that we should improve public education through financial support, even if it requires us to increase income taxes by 1%. Such a belief doesn't seem irrational. It seems sufficiently intuitive—I certainly think education is important and improving education could be a good idea. Moreover, we know that schools can often be improved through financial support. Other people might object that the money would be better spent elsewhere, but it can be unclear who is right. (Perhaps greater financial support to schools would end up helping people less than using the financial support in some other way.) We could try to show that the money would not be better spent elsewhere to show that it's rationally permissible to believe that we should improve public education through financial support.

Examples of argument for rational permissibility in the philosophical literature include Thomas Nagel's *Possibility of Altruism* and Nathan Nobis's *Truth in Ethics and Epistemology*. Such arguments didn't prove that altruism is possible or that moral realism is true, but they do attempt to show these positions to be intuitive and defend them from objections.

### 2. Intuitive arguments that conclude that a belief is better than the alternatives

Intuitive arguments that attempt to prove that one belief is more intuitive than the alternatives also tend to attempt to prove that the belief itself is intuitive and rationally permissible—that there are no overriding reasons to reject the belief. These arguments are used to attempt to prove the above (that a belief is rationally permissible) in addition to attempting to prove that one belief is better than the
alternatives. This is one of the more ambitious forms of argumentation and they are known as **supporting arguments** because they are used to try to show that one belief is more justified than the alternatives. Philosophers don't usually think they prove that their beliefs are necessary to be rational nor that alternative beliefs are irrational. Beliefs that are better than the alternatives are the *most* rational and have the *best* justification, but the best beliefs are not necessarily mandatory for all rational beings. These arguments almost inevitably make use of arguments from the best explanation. These arguments tend to be argued in the following way:

1. First, we must establish that a belief is sufficiently rational. (See above.)
2. Second, we must establish that one belief is better than the alternatives. This is often done as an argument from the best explanation. We can compare and contrast each possible relevant belief that we can think of. We can consider objections and evidence for and against each relevant belief.
3. Finally, we can then conclude that one belief is the most justified.

An example of an intuitive argument used to conclude that one belief better than the alternatives is Peter Singer's argument that we have a duty to help others in “Rich and Poor.” He asks us to imagine a professor walking to class with no one around except a small child drowning in a shallow pool of water. He suggests that it's intuitive to think that the professor should assist the child and it's counterintuitive to say that the professor has no obligation to assist. He thinks that the *best explanation* for why the professor has an obligation to assist is that there's a general moral principle that we have a duty to help others when we can do something significant good for others at little to no cost to ourselves.

Arguments used to show that one belief is better than the alternatives are often used to attempt to prove that the alternatives seem counterintuitive or absurd. This is a very strong way to argue because we might then wonder if the alternatives are even rational options. Peter Singer might not think it's rational to think we don't have an obligation to help others, although I suspect that he would agree that we can rationally quibble about the precise formulation of the relevant moral principle—how much do we need to help others? Is there a point where helping others becomes *supererogatory* (above the call of duty)?

Arguments used to show that one belief is better than the alternatives need not mention all alternatives possible, but it ideally should mention alternatives that we know are taken seriously by philosophers. Many of our arguments are part of a greater discussion or dialectic, and we often rely on others to poke holes in our argument. Philosophers often admit that they personally don't see how any alternatives can make sense and let others have the burden of proof to show otherwise. Consider how Einstein's theory of physics is assumed to be true because we know of no better alternative to it.

### 3. Intuitive arguments that conclude that a belief is rationally required

Philosophers agree that many beliefs are irrational. It's irrational to think that *killing people is never wrong*, that *1+1=3*, that *all beliefs are equal*, and so on. Irrational beliefs are rarely endorsed by philosophers, but many people do seem to agree to such absurd beliefs. For example, many people say that, “all beliefs are equal.” Philosophers don't always make it clear when they conclude that a belief is irrational, and arguing that a belief is irrational can be a lot like arguing that a belief is better than the
alternatives. Many such arguments look like the following:

1. First, we must establish that the belief is rationally permissible.
2. Second, we must establish that it is better than the alternatives.
3. Third, we must argue that the alternatives to the belief are highly counterintuitive. This can be done by showing that the alternatives are incompatible with other beliefs we know are true with a high degree of certainty using an argument from absurdity (reductio ad absurdum) or by providing very strong objections to all the alternatives.
Finally, we can conclude that the belief is rationally required.

For example, consider the argument that it's irrational to think that “1+1=3” because it's inconsistent with our mathematical knowledge. The assumption that “1+1=3” will not work out well for us.

Conclusion

Philosophers aren't always explicit about whether or how their arguments make use of intuition, and they aren't always explicit about how strong of a conclusion their argument provides—whether they want to say their conclusion is rationally permissible, rationally required, or something in between. Many philosophers will say their argument provides intuitive support or some justification for a conclusion, but that doesn't necessarily fit the description of any of the kinds of inductive arguments that I discuss here. It's possible that there's some reason to believe something, but it might still be irrational to believe it. Arguing that we have some reason to believe something is a very modest way of arguing that avoids being overly ambitious. We don't want to jump to the conclusion that everyone who disagrees with us is irrational. Nonetheless, it's rationally required for us to believe that certain statements are false and it is possible to try to debunk irrational beliefs from time to time.
Part VI: How to Create Philosophical Arguments

Chapter 36: Writing Philosophical Arguments

Philosophy isn't just a form of creative writing. It's an attempt to use good reasoning, and writing good philosophical arguments requires an understanding of good reasoning. Most people have an intuitive grasp of what good reasoning is, but this intuitive grasp is often insufficient. Our reasoning can be improved from experience and philosophy education. Experience writing philosophical arguments can help us think more philosophically. I will discuss three steps of writing good philosophical arguments:

1. Make your argument explicit.
2. Consider the evidence for your argument.
3. Consider relevant objections and counterarguments.

1. Make your argument explicit

There are two main types of arguments—supporting and opposing. Supporting arguments give reasons to think a belief is true, and opposing arguments (objections) give reason to think a belief is false (or that there's a problem with a form of reasoning). Either way, we need to make it clear what the premises and conclusion of our argument are.

Imagine that Jill wants to argue that the death penalty is wrong in our current time period. She will need to know why she personally thinks the death penalty is wrong and why anyone should agree with her. The first thought that might come to mind is that human life has value. At this point her argument is the following:

1. Human life has value.
2. Therefore, the death penalty is wrong.

This argument might look good enough, but it's technically invalid. The argument form is “A, therefore B” and arguments using this form of reasoning can have a true premise and false conclusion. For example, “the sky is blue, therefore there is no oxygen in the air” has the same argument form, but it's clearly a poor argument.

Find unstated assumptions

The reason why the argument might look like a good argument is because we might have unstated assumptions. For example, we might think that human life's value makes it wrong to kill people, and the death penalty is an example of killing people. This assumption is not something everyone will agree with. Many people think we can occasionally be morally justified to kill people, such as when it's necessary to defend our lives. Even so, we should make sure to have all the necessary assumptions stated as premises. The argument will then look like the following:
Argument 1
1. Human life has value.
2. If human life has value, then the death penalty is wrong.
3. Therefore, the death penalty is wrong.

This argument is now valid because it uses the valid argument form known as *modus ponens* (the argument form “A; if A, then B; therefore B”).

Writing objections

There are two main kinds of objections in philosophy—objections to arguments and objections to conclusions. When objecting to arguments, we must make the premise that we object to explicit. When we object to conclusions, it is often also necessary to object to arguments as well.

Consider that someone has the following argument for the death penalty:

Argument 2
1. Evil people deserve to die.
2. If evil people deserve to die, then the death penalty is morally justified when used to kill evil people.
3. Therefore, the death penalty is morally justified when used to kill evil people.

This argument is incompatible with Jill's belief that the death penalty is morally wrong. She can object to both the argument and the conclusion.

Objections to arguments

If we want to object to the argument, then we can either object to the reasoning used or a premise. The reasoning used by philosophy professors tends to be pretty good, but the evidence for the premises is sometimes lacking. In the case of the above argument for the death penalty, no obvious poor reasoning is being used and the argument is logically valid. However, we might wonder if the premises are sufficiently justified. (I didn't actually present any evidence for any of the premises, but an actual philosophical argument would be likely to do so.)

We might object to the premise that “evil people deserve to die.” This premise might be impractical if no one is evil or if we have no way of knowing who is evil. Additionally, it's not obvious that evil people deserve to die. It might be that even evil human life has value. Objections to premises tend to use the following reasoning:

1. A certain premise is unjustified.
2. If the premise is unjustified, then the argument can't give us reason to accept the conclusion.
3. Therefore, the argument doesn't give us reason to accept the conclusion.
For example, Jill can object to Argument 2 using the following objection:

**Argument 3**
1. The argument in question requires us to accept that “evil people deserve to die,” but that premise is unjustified (because evil people might have value like everyone else, etc.).
2. If we aren't justified to accept that “evil people deserve to die,” then the argument doesn't give us reason to accept the conclusion—that “the death penalty is morally justified when used to kill evil people.”
3. Therefore, the argument doesn't provide sufficient justification to conclude that “the death penalty is morally justified when used to kill evil people.”

Notice that she didn't claim that the conclusion is false. If a premise of an argument is unjustified (or false), that doesn't prove that the conclusion is false. There could be a different argument that proves the conclusion to be true. For example, it might be that the death penalty is justified when we can't throw a dangerous criminal in prison as a form of self-defense.

**How do we object to forms of reasoning?** Many people use poor forms of reasoning. In that case it can be helpful to identify either that the argument uses a formal fallacy (an invalid form of reasoning) or an informal fallacy (some other mistake in reasoning). Once the poor reasoning is identified, we can explain it and present a counterexample.

*Consider an example of a formal fallacy and counterexample* – A person can argue that “if dogs exist, then they have four legs; dogs have four legs; therefore dogs exist.” The premises and conclusion are all true, but it's still a poorly reasoned argument because the same reasoning could easily be used to prove things that are false. The argument form is “If A, then B. B. Therefore, A.” We can then give a counterexample that shows how we can use this form of reasoning, true premises, but a false conclusion—“If unicorns exist, then they have four legs; unicorns have four legs; therefore unicorns exist.” It is true by definition that unicorns would have four legs if they exist, and that “all unicorns have four legs” as a result, but it's false that unicorns exist.

*Consider an example of an informal fallacy and counterexample* – A person can argue that “The death penalty is wrong because it's always wrong to kill people. Consider how it's wrong to go around killing people who make us angry, annoy us, and so on.” This seems like an example of a “hasty generalization.” It seems like quite a leap to think it's always wrong to kill people. We could then give a counterexample making use of hasty generalizations—“It is wrong to cut people because it's always wrong to hurt people. Consider how it's wrong to go cutting people with knives who make us angry, annoy us, and so on.” However, we know it's false that it's always wrong to cut people because surgeons cut people and hurt them as a result, but only do so because it's necessary to heal people. This is a counterexample insofar as it shows how a hasty generalization is one context is an example of poor reasoning and it's wrong in other contexts for the same reason.

**How do we object to conclusions?** In philosophy, objections are almost always expected to be against arguments rather than merely against conclusions because it's not usually obvious how successful arguments are that only object to a conclusion. In that case one argument attempts to prove the conclusion to be true, but another attempts to prove it's false. We would then need a way to decide which argument is better. Nonetheless, it is often important for strong objections to be given against both premises *and* conclusions because that's often the only way we can truly prove a conclusion to be
implausible.

We can object to a conclusion using a reduction to absurdity (*reductio ad absurdum*) and counterexamples. We can assume the conclusion is true and show that such an assumption leads to a contradiction—either from internal inconsistency or because it conflicts with our knowledge.

*Consider an example of a belief that lacks internal consistency* – Someone could argue that “all opinions are equally justified.” We could object that this belief would imply that the opinion that “not all opinions are equally justified” is a viable option (because that belief is just as justified as any other), but that belief contradicts the view that “all opinions are equally justified.”

*Consider an example of a belief that conflicts with our knowledge* – Someone could argue that “we don't know anything,” but we can object that such a belief would imply that we don't know that “1+1=2” even though we do know that. The fact that we know “1+1=2” is a counterexample to the belief that we don't know anything.

2. Consider the evidence for your argument

It's not enough for a philosophical argument to state our argument explicitly because our premises could be unjustified. We need to know why anyone would agree with our premises, and consider why we think the premises are probably true. We must find a way to present our evidence to people to support our premises in order to be assured that we have a good argument, and we must make sure that the premises really do prove our conclusion to be true.

Consider Argument 1. It requires us to accept that “human life has value” and “if human life has value, then the death penalty is wrong.” There are people who will reject these premises, so they can't just be assumed to be obviously true. We need to defend the premises and decide how plausible they are.

In this case Jill will justify her premises in the following ways:

1. **Human life has value** – Jill will find this belief intuitive because she seems to experience her own life to be valuable and she realizes that other people do as well. She can defend that we share her intuition that human life has value in at least two ways. One, it would seem strange to want people to commit suicide just because they are in a little pain. Two, we think it's generally wrong to kill people, and we find people who kill others without a justification to have done something morally wrong. One explanation to why it's generally wrong to kill people is that human life has value. She can then consider alternative explanations and try to show why they are less plausible than her suggestion. For example, some people might argue that we only think it's wrong to kill people because we care about them, but Jill could either argue (a) caring about people is merely one understanding of what it means for human life to have value or (b) that it seems inappropriate when people don't care about others (such as strangers), and there are many cases when people harm strangers because they don't care about them.

2. **If human life has value, then the death penalty is wrong** – Jill will find this intuitive because she thinks the fact that something has value is a reason not to destroy it. We think happiness is valuable, so we usually shouldn't try to make people miserable, and it would often be morally
wrong to do so. The same seems to be true of the value of human life. The two cases seem analogous. We have a reason not to destroy happiness if it has value, and we have a similar reason not to destroy human life if it has value. It's often morally wrong to destroy happiness if it has value, and it's often morally wrong to destroy human life if it has value. This still doesn't prove that the death penalty is wrong. Jill can then argue that there is no moral justification for the death penalty (at least in the society she lives in). It's wrong to kill people unless we have a good reason to do so, and there's no good reason to kill criminals who are safely in custody. She can consider various justifications for the death penalty and try to show them to be unsatisfying. For example, someone could argue that the death penalty makes the family of murder victims feel better, but Jill could argue that the good feelings people get from the death of others is never a good reason to kill anyone. Many murderers get a good feeling from killing others, but that doesn't excuse their behavior.

We need to make sure that our conclusion is proven

The plausibility of the conclusion depends on the plausibility of the premises. We could have premises and conclusions that are justified to the following degrees:

1. The premises can be intuitive, but we can admit that there could be alternative beliefs that are equally plausible. In that case the conclusion wouldn't be proven to be true. Instead, it would merely be compatible with intuitive beliefs.
2. Rejecting the premises could be “counterintuitive.” In that case rejecting the conclusion would require us to accept counterintuitive beliefs.
3. There's some reason to believe the premises, but we can admit that there could be overriding reason to reject them that haven't been discovered yet.
4. The premises could be the most likely option. Perhaps they are the “best explanation” for our experiences. In that case the conclusion would be based on the most likely options, but it might be unclear if the conclusion is probably true.
5. The premises could be probably true. In that case the conclusion would more likely be true.
6. The premises could be a rational requirement, and everyone should agree with them. In that case the conclusion would also be a rational requirement because rejecting the conclusion would require us to reject rationally required beliefs.

I will discuss each of these possibilities:

1. Premises can be intuitive

Premises are only intuitive if we have no strong reason to reject them. Such beliefs are initially plausible. Many of our beliefs are merely assumptions that we find successful and consistent rather than something everyone has to accept. Also note that two incompatible beliefs could both be intuitive. It might be intuitive to think that killing people is usually wrong because human life has value, but it might be equally intuitive to think that killing people is usually wrong because we want to live in a society without people killing each other.

In that case premise 1 (human life has value) might not even be necessary to support Jill's conclusion because there could be more than one reason to think that killing people is wrong (unless we have an overriding reason for doing so). Jill could change premise 1 to be “killing people is wrong unless we
have an overriding reason to do it” and explain how there's more than one plausible explanation for this premise.

One reason to argue that a belief is intuitive is to show that it seems rational to hold the belief. If an argument uses intuitive premises, then perhaps the conclusion doesn't require us to accept anything irrational, and that makes it more plausible that the conclusion can be rationally held. However, there might be exceptions. An argument that uses intuitive premises should not lead to a conclusion that many people will find counterintuitive or far-fetched. If initially plausible premises lead us to a counterintuitive conclusion, then the premises will be proven to be less intuitive than we thought they were. For example, the fact that many people expect heavy objects to fall faster than less heavy ones conflicts with our observations, so such an initially plausible belief should be rejected based on more reliable conflicting information. We can't rationally accept such belief because it would require us to reject scientific observations.

2. It can be counterintuitive to reject the premises

If it's counterintuitive to reject a belief, then the belief seems to be strongly intuitive, and the other options are not equally intuitive. We can use an argument from absurdity and counterexamples to reveal that rejecting a belief is counterintuitive. The argument from absurdity requires us to assume that our belief is false, and then we can show why such an assumption leads to absurd results. For example, the belief that killing people is wrong unless we have an overriding reason to do so seems intuitive and rejecting it seems counterintuitive. (There could be overriding reasons to kill people, such as when it's necessary to survive while fighting in self-defense.) Let's assume that killing people isn't wrong when people lack an overriding reason to kill. In that case people could kill others indiscriminately. It would never be wrong to kill people. However, this leads to an absurdity because we know killing is often wrong, such as when a thief kills a family to steal their money out of greed.

Whenever rejecting beliefs is counterintuitive, we have found some support to the idea that it's rational to accept the beliefs (because rejecting them seems to lead to absurdity). Such beliefs could generally be said to be strongly intuitive. However, if such strongly intuitive beliefs lead us to a counterintuitive or far-fetched conclusion, then the argument loses credibility because we won't be sure if the premises should be accepted after all. If it's inevitable for some of our beliefs to be counterintuitive, then the fact that a belief is counterintuitive isn't necessarily a good reason to reject it. For example, much we have learned in quantum mechanics is counterintuitive and we have no choice but to accept the counterintuitive results. For example, quantum mechanics reveals that light can be both a particle and a wave when we don't observe it, but it will either be a particle or a wave while we observe it (without the possibility of being both).

3. There can be some reason to accept the premises

Many arguments are in favor of a belief without necessarily sufficiently proving the belief to be true. In fact, most philosophical arguments fail to convince everyone and many philosophical debates have lasted thousands of years. For this reason many philosophers merely argue that they provide some reason in favor of a belief rather than sufficient reason to accept a belief. For example, the fact that the death penalty kills a person seems like a good reason to think it's wrong, even though there could be an overriding reasons to think the death penalty isn't always wrong.
4. Premises can be more justified than the alternatives

When philosophers present arguments to explain why we have some reason to believe something, they could present their evidence in isolation from other perspectives and arguments. However, that's not usually how philosophers argue. Instead, philosophers tend to try to support the view that we have some reason to accept a belief as well as some reason to reject the alternatives. One of the most persuasive forms of philosophical argumentation will attempt to show why a belief is more plausible than the alternatives in an attempt to present all viable sides of a debate. This can be done by contrasting the most viable options we have and showing why one belief in particular is the best (at least when considering various objections and counterevidence).

Note that one belief that is more viable than the alternatives is not necessarily likely to be true. There could be many viable options that are all plausible. For example, at one point there were many competing versions of string theory in physics and there was no reason to find any of them to be particularly likely to be true. There could be three theories and they could all be around 33% likely of being true. In that case they are each individually more likely false than true.

Consider that Jill's argument that the death penalty is wrong is inconclusive and only provides us some reason to agree that the death penalty is wrong. Jill could strengthen her argument by considering arguments in favor of the death penalty and try to show them to be flawed. She could then contrast her belief that the death penalty is wrong with the opposing belief that the death penalty isn't wrong. For example, the objection to the view that the death penalty is justified to make a victim's family feel better seems to show how it's a poor excuse for killing a person. Jill could then argue that on the basis of various considerations, we have more reason to think the death penalty is wrong than right. At the same time she should admit that she is giving us reason to think the death penalty is wrong without providing sufficient proof. There could be relevant arguments and objections she didn't think of.

5. Premises can be probably true

Philosophers are rarely confident to the point of thinking they proved something to be probably true or accurate, but there many beliefs we have that we agree fits this status. For example, it's probably true that “killing people is often morally wrong.” We might even suspect that it's a rational requirement to agree with that statement.

6. Premises can be rational requirements

The strongest justification for beliefs can show that we know they are true for certain, and some philosophers think some beliefs fit this description, such as our belief that “1+1=2.” However, even beliefs that are rationally required are not necessarily known for certain. It seems that we are rationally required to believe many facts concerning logic, mathematics, and the natural world. It seems plausible to say that we are rationally required to believe that “something can't be true and false in the same respect at the same time” and that “at least one person has a mind.” Some of the best conclusions involving rational requirements in philosophy concerns what counts as irrational beliefs or failures in reasoning. Philosophers have cataloged several logical fallacies (poor forms of reasoning) and have discovered many beliefs to be unjustified based on poor reasoning. For example, the beliefs that “nothing is morally wrong” and “all opinions are equal” are unjustified beliefs (often based on poor reasoning).
Amateur philosophers often make the mistake of asserting that they know something is true or that something is proven despite the fact that what they are saying is based on imperfect reasoning and evidence. Controversial beliefs are rarely known to be true for certain and are rarely proven to be true. These amateurs might think everyone should agree with a conclusion and they might even think people are rationally required to agree. However, philosophical arguments aren't just examples of creative writing. Philosophers must be honest and aware of what their arguments prove, and they must not exaggerate their conclusions.

If you aren't sure how strong your argument is, you can merely say that you want to prove it's intuitive and/or that you want to present some amount of reason in favor of a position. If you are objecting to an argument, you can make it clear that you are merely challenging that argument, providing reason to find a premise to be unjustified, and that the argument seems to fail to prove the conclusion as a result.

Once Jill evaluates Argument 1 and her justification for that argument, she can rephrase her argument in the following way:

**Argument 1B**

1. It's counterintuitive to deny that “it's wrong to kill people without an overriding reason to do so” (because that would imply that indiscriminate killing isn't wrong).
2. The belief that “if it's wrong to kill people without an overriding reason to do so, then the death penalty is wrong in our society” is more plausible than the alternatives (because it's unclear how we can have an overriding reason to have the death penalty in our society).
3. Therefore, we have some reason to agree that “the death penalty is wrong in our society.”

**3. Consider relevant objections and counterarguments**

One way philosophers tend to strengthen their arguments and make them less one-sided is to consider objections to their arguments, and attempt to dispel the objections by replying to them. Replies to objections are usually also arguments known as counterarguments.

Consider Argument 1B and Jill's justifications for her argument. Jill's second premise should already take objections into consideration because she should argue that reasons to have the death penalty aren't good, so there's no overriding reason to kill our criminals in our society. She should argue that revenge, making people feel good, and the idea that evil people deserve to die are all insufficient reasons to kill criminals. However, there could still be more objections worth discussing. In particular, there could be objections given to premise 2. Some people might object that the death penalty might deter people from killing one another. If they know they will die for committing such a crime, then they might choose not to commit such a crime. Jill could then reply that there is no evidence that such a punishment is needed to deter such a crime—it doesn't seem to deter crime any better than life in prison.
Conclusion

Most arguments people give are missing premises, rely on unstated assumptions, lack sufficient evidence to reach their conclusions, the conclusions are arrogantly assumed to be proven, and they fail to take objections into consideration. Most objections people create against arguments are vague and fail to disprove the conclusions of the arguments they oppose because people tend not to consider the plausibility of the premises, conclusions, and form of reasoning used. Nonetheless, experience and careful thought can lead to improved reasoning. Philosophers sometimes make the same mistakes in reasoning as everyone else, but they are interested in improving their behavior and learning from their mistakes.
Chapter 37: An Example of a Philosophical Objection

We can learn how to think more like a philosopher by engaging in philosophical debate, reading philosophy, thinking about the nature of philosophical argumentation, and examining the thought process of philosophers. A philosophy professor can be very helpful as a guide to help people engage in philosophical argumentation by helping them verbalize their arguments and avoid fallacious reasoning. Since I am writing about philosophical argumentation, I am not able to help guide your philosophical thoughts as you engage in philosophical debate. However, I can help you peer into the thoughts of someone who engages in philosophical thought. In particular, I will discuss the thinking involved with constructing a philosophical objection.

Imagine Rose and Tina have a discussion and Rose argues the following:

It's immoral to be an atheist because the belief in God is needed to act morally. The evidence can be found in the Bible. For example, Psalm 14 states, “The fool hath said in his heart, There is no God. They are corrupt, they have done abominable works, there is none that doeth good.”

Step 1: What's Tina's argument?

Tina disagrees with Rose's argument. She doesn't immediately know what to say to Rose about that argument, but she spends time thinking about it and decides to write an email to Rose about why she disagrees. Before coming up with an objection to explain why she disagrees, Tina will think about what exactly Rose wants to argue. She should explain Rose's argument to the best of her ability and make sure to be charitable to Rose's argument rather than to distort it. She has to prove that the best formulation of the argument will fail because if Tina can prove that the most persuasive formulation of Rose's argument is unconvincing or implausible, then the debate could be over. Otherwise Rose could just rephrase and clarify her argument and the whole debate will have to start all over again. When we only refute a poor formulation of an argument, then people will not only be insulted, but they will find our objections to be irrelevant to their beliefs. Of course, this is just an ideal we can try to live up to. Tina might not live up to this ideal perfectly, even if she gives it a good try.

What exactly is Rose's argument? It has one explicit premise and a conclusion:

1. The belief in God is needed to act morally.
2. Therefore, it's immoral to be an atheist.

However, this argument has an invalid argument form as it is currently stated. Perhaps the belief in God is needed to act morally, but it might still be morally permitted to be an atheist. For example, if it's impossible to believe in God, then it might not be immoral to be an atheist, even if it is needed to act morally. To demand the impossible is inappropriate. Nonetheless, the argument can be given a valid argument form by figuring out what assumption is missing from the argument. Tina decides that the hidden premise is “if the belief in God is needed to act morally, then it's immoral to be an atheist.” We can then re-write the argument as the following:
1. The belief in God is needed to act morally.
2. If the belief in God is needed to act morally, then it's immoral to be an atheist.
3. Therefore, it's immoral to be an atheist.

This is now a valid argument—if the premises are true, then the conclusion must be true. It's impossible for the premises to be true, and the conclusion to be false at the same time.

Tina still isn't done analyzing the argument because she needs to fully understand why Rose would agree with the premises. She needs to know—what's the best justification for the premises? Let's consider the justification for them:

**Premise 1: The belief in God is needed to act morally**

Why is the belief in God needed to act morally? Rose thinks that the Bible says so, which would be an appeal to authority. However, arguments from authority are often fallacious and they will only succeed when the authority can provide sufficient justification for their claims. In this case the Bible doesn't actually provide the scientific research to prove it's claim.

Nonetheless, there might be a better justification. Rose could argue that some people might seem to behave in accordance with morality, but only people who believe in God have true moral worth insofar as they act because of their moral beliefs and proper moral reasoning. For example, evil people might give to charity to help improve their reputation without having any moral worth. The decision to give to charity in this example seems to be the right thing to do but it wasn't done because it's the right thing to do. Evil people could give to charity, even if it wasn't the right thing to do as long as it seems likely to improve their reputation.

On the other hand a good person can give to charity because it's the right thing to do, and will only give to charity when she believes it's the right thing to do (based on her moral reasoning).

Why would anyone think atheists can't behave morally? Why can't they be good people? That is unclear.

**Premise 2: If the belief in God is needed to act morally, then it's immoral to be an atheist**

It's wrong to choose to live in a state that makes it impossible to act morally. For example, it would be wrong to choose to live one's life asleep, to go insane, or to permanently lose one's responsibility through continual intoxication. The question is then to what extent one has a duty to try to believe in God. If a person is convinced that believing in God is needed to be moral, then it seems likely that such a person would at least have reason to study the most sophisticated arguments in favor of God.

**Step 2: Why disagree with the premises?**

Although Tina disagrees that it's immoral to be an atheist, she must still agree with Rose as long as Rose's argument is sound—if the premises are true, then the conclusion must be true. If the premises are rationally required, then the conclusion is rationally required. The question is then whether Tina can
find anything wrong with the premises. She considers each premise and why someone could rationally disagree with it:

**Premise 1: The belief in God is needed to act morally**

Tina will find this premise to be unconvincing for two reasons. First, atheists often do act in accordance with morality. Second, many atheists believe in right and wrong. Perhaps Tina is ultimately right that morality requires God, but many atheists disagree. Atheists can have moral worth as long as they can know enough about morality and choose to do the right thing because it's the right thing. Atheists are not required to know the ultimate reality involving morality. Whether God actually created morality is not something anyone fully understands. Tina could say, “Assuming morality exists but God doesn't, the atheist can still act morally and have moral worth.”

It might be impossible to know when an action has real moral worth. It's hard to know when a person does the right thing as a result of moral reason rather than as a result of self-interest and nonmoral desires. We might deceive ourselves into thinking we are more morally virtuous than we really are. Nonetheless, this seems like no more of a problem for atheists than for theists.

**Premise 2: If the belief in God is needed to act morally, then it's immoral to be an atheist**

A potential problem with this premise is that it's not obvious that atheists can choose to be theists. First, not all atheists think the belief in God is required for morality, so they aren't interested in finding a reason to believe in God. Second, even atheists who were at one time convinced that God was needed for morality and tried to persuade themselves that God exists might no longer be persuaded. It might not really be up to us to believe in God because we tend to believe whatever seems to be probably true based on the evidence available. Therefore, premise 2 is inadequately justified because we ought not do what is impossible of us. Even if God was needed to act morally, it seems plausible that atheists could still be unconvinced that God exists based on their ability to reason, and they might not have a choice to believe in God when they think it's likely that God doesn't exist. It can't be morally wrong when it's impossible for us to do otherwise.

Another potential problem with the premise is that it is plausible to think that we ought to believe whatever is likely true based on the available evidence. If atheists have good reasons to be atheists, then it might be unethical for them to believe that God exists.

**Step 3: Presentation of the objection**

Once Tina knows why one of the premises of Rose's argument is inadequately justified, she already has an objection, and she can explain to the best of her ability why the argument is unconvincing. At this point Tina has already thought of her objection, but it still needs to be written out.

Note that Tina is prepared to explain why Rose's argument is unjustified, even though she isn't yet prepared to prove that being an atheist isn't immoral. Perhaps there's another more convincing argument that could prove that it's morally wrong to be an atheist. Tina could eventually provide her own argument to prove that atheism isn't immoral, but that is not the task at hand here. The task at hand
here is to fully explain why Rose's argument is unconvincing. Tina can use a variety of argument strategies, give examples, and perhaps even use a thought experiment.

Rose's argument will require at least two premises to reach the conclusion, so all Tina has to do to make her point is prove a single premise of Rose's argument to be unjustified. For this reason she decides to only discuss why premise 1 is unjustified:

I will present an objection to the argument that “being an atheist is immoral because (a) we need to believe in God to be moral; and (b) if we need to believe in God to be moral, then it's immoral to be an atheist.” I will discuss two ways to justify the premise that we need to believe in God to be moral: One, the Bible says so. Two, it's impossible for atheists to behave as a result of moral reasoning. I will argue that neither of these justifications are persuasive enough to accept the premise. First, the biblical source is a fallacious appeal to authority. Second, some atheists seem capable of moral reasoning.

A biblical source doesn't prove it to be true because we don't know that the Bible is infallible or inerrant, and we might not even interpret the Bible correctly. The idea that atheists can't possibly do anything good is unjustified insofar as there is no scientific study with that conclusion, but it also seems false based on our experience that atheists don't go around committing crimes or hurting people. Using the Bible as a justification for an argument is inappropriate because the authority we appeal to must be able to independently justify its conclusions, but the Bible doesn't do that in this case. Additionally, an appeal to authority is fallacious when the authority is controversial. The Bible is an authority used by many people, but it is controversial and it contradicts similar sources of religious authorities, such as the Qur'an. We can't use the Bible as an authority in a debate for the same reason we can't use the Qur'an as an authority in a debate, and for the same reason we can't use the controversial opinion of a scientist as an authority in a debate when there is disagreement among the relevant scientists.

Although the Bible might not be an adequate justification, it might be claimed that atheists can't be moral insofar as they can't do the right thing by being motivated by moral reason. An evil person can give to charity to improve their reputation, but this action has no moral worth because it wasn't done to help people as a result of moral reasoning. Perhaps atheists only act out of self-interest rather than as a result of moral reasoning. However, we have no reason to think that atheists can't believe in morality and be motivated as a result of their moral reasoning. In fact, many atheists say that they do believe in morality and try to use moral reasoning. A good example is Epicurus, who was an atheist philosopher who developed his own virtue ethics. Many other moral philosophers alive today are atheists, such as Peter Singer. Their life's work is to understand moral reason, and they don't think God has anything to do with it. Well known atheist scientists Albert Einstein and Carl Sagan were also interested in being moral, understanding morality, and using moral reasoning. You can read some of Carl Sagan's thoughts about morality in his essay “The Rules of the Game.”

Rather than thinking atheists can't be moral, it seems more plausible to think that such slanderous beliefs against atheists is immoral. It's wrong to discriminate against groups of people without a very strong justification to do so. The idea that atheists can't be
moral seems like little more than a form of dehumanizing (or demonizing) prejudice. People have claimed that their “enemies” are evil, inhuman, subhuman, animalistic, and irrational throughout history. Atheists were seen as evil (as people who do abominable works and incapable of doing good works), as subhuman (as people who are incapable of moral reason), animalistic (people who act out of emotion instead of reason), and so on. Similarly dehumanizing things are occasionally said about women, black people, Muslims, and homosexuals. Imagine that someone claims that women, blacks, Muslims, or homosexuals are incapable of being moral or being motivated from moral reason. This seems like blatant prejudice against these minority groups, and yet people still think it's true about atheists. Why exactly atheists deserve this sort of discrimination but no one else does is unclear. It seems analogous to the same sort of prejudice against the other groups. We all have heard about racism, sexism, and homophobia. Prejudice against Muslims is still somewhat fashionable, but we now have the term 'Islamophobia.' Perhaps we should call prejudice against atheists 'atheistophobia.'

I haven't proven the premise that “we need to believe in God to be moral” to be false once and for all, but I have given us reasons to reject this premise, and to even find it to be immoral and unreasonable to have such a belief.

**Step 4: Consider counterarguments**

Although Tina has already explained her objection, more could still be said. It's usually a good idea to consider why people will disagree with your argument and try to explain why such counterarguments aren't persuasive. Why would anyone disagree with Tina's objection? For one thing theists could equate “morality” with “obedience to God.” If morality is nothing but the requirement that we obey God's commands, then atheists can't be moral. Perhaps the moral theories that atheists accept are false systems that only resemble proper moral reasoning. Tina will anticipate this objection and give the following reply:

Firstly, if morality is nothing but obedience to God's commands, then it seems reasonable to agree that atheists can't act based on moral reason because atheists don't believe in commandments given by God. However, it's implausible that morality is nothing other than obedience to God's commands. Such a notion raises the question about whether or not those commandments are justified from moral reasoning. Suppose God does exist. Does God forbid murder simply because she doesn't like it, or does she dislike murder because she knows that murder is wrong? If God only forbids whatever she doesn't like, then her commandments are subjective demands that don't seem to have the kind of importance we intuitively expect morality to have. Our parents can dislike our behavior (e.g. marrying someone of another race), but such demands can be immoral and we can have a good reason to be disobedient. It's not clear why God's desires and demands are so different than that of anyone else (unless they are based on moral knowledge beyond God's desires).

Secondly, if we can explain why murder is wrong without discussing God's desires, then *morality* and *God* are conceptually separable for people, and we can use moral reasoning
without believing in God. For example, human life might have value, and it might be wrong to destroy things with value without a sufficiently good reason to do so. Murderers don't have sufficiently good reasons for killing people, and that could be why murder is wrong. This is a much more plausible option. God doesn't have to be mentioned in any of this, so atheists are able to use moral reasoning without believing in God. If God exists and murder is wrong, then she could forbid murder because she knows why murder is wrong. If God doesn't exist and murder is wrong, then we can still know why murder is wrong.

Even if God is the source of all morality, it is not clear that we need God to reason about morality properly or to make moral decisions. Perhaps God is the source of the entire universe, but that wouldn't stop atheists from reasoning about the universe. Atheists would not then have to deny the existence of the universe. It would also seem possible for atheists to reason about morality and accept the existence of morality, even if God is the source of morality.

Thirdly, if we assume that morality is nothing other than obedience to God, then we might wonder if morality is arbitrary. We all agree that morality must include the idea that murder is wrong, but if morality is nothing other than our conformity to the desires of God, then it's not entirely clear that murder is always wrong or will always be wrong. What God commanded us in the past isn't necessarily what God will always command because—for all we know—God's desires could change. It's also not clear why we should even care about the arbitrary and subjective interests of God.

Fourthly, very few moral philosophers think morality requires God, and the view that morality is nothing other than obedience to God contradicts the opinions of just about every moral philosopher. Consequentialists and deontologists are the main groups of moral philosophers, but their moral theories can be applied without assuming the existence of God. The assumption that God exists is rarely even introduced in moral philosophy. Consequentialists, such as Peter Singer, think we should do whatever does the most good and the least amount of bad. W. D. Ross, a deontologist, thinks we have duties to keep our promises, help people, refuse to hurt people, etc.; but none of these duties mentions God.

My point is not that morality couldn't possibly be created by God, but that (a) the belief that real morality is nothing but obedience to God is counterintuitive, and (b) that very smart people who are very interested in being morally reasonable usually don't think moral reason requires the belief in God. The idea of proving that atheists can't be moral by defining morality in a theistic way is unacceptable based on the tradition of moral philosophy—the closest thing we have to moral expert opinion. It's not how the philosophical tradition currently understands morality.

I haven't proven that morality is more than obedience to God's commandments once and for all, but I have shown this position to be counterintuitive and given us reason to reject it based on the actual tradition of moral philosophy.
Conclusion

Each step discussed here requires a great deal of thought. A theoretical understanding of good reasoning and a great deal of practice can do a lot to help us improve our ability to be reasonable, and I hope that the illustration of philosophical thinking above will also help.
Chapter 38: Example of a Philosophical Supporting Argument

It's often a lot easier to pick apart someone else's argument than to come up with a supporting argument of your own. Additionally, it's usually a lot harder to present a philosophical argument for a controversial position than an uncontroversial one. It's not as hard to argue that bread is nutritious or that killing people is wrong than it is to argue that God exists or abortion is wrong. One way to learn more about how to create supporting arguments of your own is to read philosophy and examine the thoughts of a philosophical thinker who develops such an argument. It's a good idea to pay close attention to the kinds of questions and answers a philosophical thinker comes up with. I will try to do that here and present the thoughts involved with developing a supporting argument. In particular, I will discuss an argument against the existence of ghosts.

What's a supporting argument?

A *supporting argument* is contrasted with an *opposing* one—an objection. A supporting argument puts forward a justification or evidence for having a belief that isn't primarily meant to be used to challenge the justification of another argument. An example of a supporting argument is “we know bread is nutritious because people who eat bread as food seem to do well compared to those who eat certain other things, such as grass or sand.” An example of a negative argument is “the argument that bread is nutritious assumes that we can know the future from what happens in the past, but such an assumption wasn't properly justified.”

Positive arguments have a variety of different kinds of conclusions, and they aren't all meant to prove that something is true. You can argue that a belief is plausible, probable, accurate, or reasonable; or you can merely provide some consideration in favor of a belief.

Additionally, supporting arguments don't have to be *for a belief*. They can be *against a belief* instead. The common saying that “you can't prove a negative” is false. You can use a supporting argument to try to prove that a belief is implausible, improbable, inaccurate, or unreasonable; or you can merely provide some consideration against a belief.

Step 1: Initial thoughts

First, consider what belief you want to support and what reasons you have for having the belief. Imagine that Lisa doesn't believe in ghosts and she wants to persuade others that ghosts don't exist. She can't prove that ghosts don't exist for certain because they might be invisible, ethereal, and very difficult to find. However, she thinks rejection of ghosts is justified because the existence of ghosts seems *far-fetched*, just like beliefs in fairies, unicorns, and goblins. Any of these beings could exist, but they seem unlikely to exist based on a lack of tangible evidence of their existence. The existence of ghosts seems analogous to those other beings—it seems unlikely they exist for similar reasons. So far Lisa's argument looks like the following:
Step 2: Find your assumptions

This argument might look good, but we are actually missing something. The argument is logically invalid because the premise isn't enough to prove the conclusion. Even if the premise is true, the conclusion could be false. Perhaps an entity can be far-fetched, but we might have no reason to disbelieve in it—perhaps we shouldn't believe either way. The argument requires the assumption that if an entity is far-fetched, then we have a reason to reject the existence of the entity. Lisa can add this assumption to the above argument to correct it:

1. If an entity is far-fetched, then we have a reason to disbelieve in it.
2. Ghosts are far-fetched.
3. Therefore, we have reason to disbelieve in ghosts.

Step 3: Why agree with the premises?

Philosophical arguments can be logically valid, but that's not sufficient for them to be philosophical. An argument can be valid, but the premises could lack the justification they need. Controversial premises are especially important to justify. (e.g. “All dogs are mammals, some cats are dogs, therefore some cats are mammals” is valid, but we know one of the premises is false.) We need to know why people should agree with the controversial premises. This can be explained, in part, by why we hold a belief. Lisa should consider why she agrees with the two premises to tell others why they should agree with her. She comes up with the following justifications for her premises:

Premise 1: If an entity is far-fetched, then we have a reason to disbelieve in it

Lisa thinks that we have a reason to disbelieve in far-fetched entities, such as goblins, fairies, and unicorns. However, why should we disbelieve in such things? What makes these beings analogous?

Lisa should examine the terminology she uses. What exactly does it mean for an entity to be far-fetched? Lisa decides that an entity is far-fetched when it's a substantial claim about reality that is used to explain various phenomena when the phenomena could be substantially better explained without it. Goblins, fairies, and unicorns seem far-fetched; but dogs and cats aren't far-fetched.

Consider the following illustration of something that's not far-fetched. We know that many people live in houses and we could explain why a light is on in a house by saying, “A human being is in that house.” We are positing a substantial claim about reality—the existence of a human being—but the existence of such a being is plausible rather than far-fetched given our knowledge of houses and the humans who live in them. There isn't a substantially better option available.

We could say that we have a reason to disbelieve in far-fetched entities because they conflict with Occam's Razor insofar as they “multiply entities beyond necessity.” Some substantial claims about
reality don't actually violate Occam's Razor because they might be the best explanation for the phenomena given other considerations. For example, many people thought germs seemed far-fetched, but germs were still the best explanation for various illnesses. Nonetheless, a far-fetched entity that is meant to explain something, but a different explanation is significantly better seems to violate Occam's Razor. Germs seemed far-fetched to people who didn't know the facts, but germs were the best explanation for various phenomena. Goblins, fairies, and unicorns aren't the best explanation for any phenomena.

Consider the following illustration of Occam's Razor. Whenever my keys aren't where I left them, I might blame a “keyblin,” a goblin-like creature that moves our keys when we aren't watching. The belief in this entity violates Occam's Razor because there are better explanations (e.g. my mind is playing tricks on me) and it seems wrong to posit the existence of an entity to be used as an explanation when better explanations are available. Instead, it's appropriate to disbelieve in keyblins.

Occam's razor is perhaps the best reason to endorse premise 1, but it doesn't disprove the existence of keyblins, goblins, or anything else. The best explanation for phenomena is based on our current information and ignorance, and sometimes we find out that far-fetched entities really do exist. (e.g. Gorillas used to be thought to be mythical beasts.) Instead, premise 1 merely attempts to show that we have a reason to disbelieve in certain far-fetched entities, such as goblins, fairies, and unicorns. Such a reason can be merely one consideration among others.

Premise 2: Ghosts are far-fetched

Lisa thinks that ghosts are analogous to goblins, fairies, and unicorns; but it's not obvious that they are analogous. Are ghosts far-fetched? Do ghosts also violate Occam's Razor?

Lisa decided that entities are far-fetched when they are substantial claims about reality that are used as explanations when there are significantly better alternative explanations. Ghosts are a substantial claim about reality, and such a claim about reality seems like it violates Occam's Razor because any relevant observations used to support ghosts are significantly better explained in some other way. Lisa thinks an entity violates Occam's Razor if there are better alternative explanations. There is anecdotal evidence for ghosts based on personal experience, but such experiences are not best explained by ghosts. The experiences could be based on misidentification (mistaking one entity for another) or misinterpretation (thinking an experience is best described in a certain way when it's not). In extreme cases an experience of a ghost could be based on a hallucination or a dream.

Again, Occam's razor seems like a reason to disbelieve in ghosts, but it doesn't actually prove ghosts don't exist once and for all. Lisa merely wants to present us with a consideration to disbelieve in ghosts rather than prove that ghosts don't exist in any strong sense.

Step 4: Presentation of the argument

Lisa has thought of her argument and the justification for her premises, but it still needs to be written out and explained. She writes the following:

I will present an argument against the belief in ghosts. We have reason to disbelieve in
ghosts because (1) if an entity is far-fetched, then we have a reason to reject it and (2) ghosts are far-fetched. Ghosts are analogous to goblins, fairies, and unicorns; and we have reason to reject the existence of all of these things for the same reason. They all violate Occam's Razor—we should reject far-fetched entities because better explanations are available.

What does it mean to say that an entity is far-fetched? Entities are far-fetched in the relevant sense when they are substantial claims about reality that are used to explain something, but significantly better alternative explanations are available. Goblins, fairies, and unicorns are all possible explanations for various phenomena, such as legendary stories. It's possible that they really do exist and that the legendary stories of these beings exist because such beings really do exist, but it seems more likely that these stories were just made up by people. We know that people make up stories involving beings that are also made up, and goblins, fairies, and unicorns are probably in legendary stories for that reason. That seems more plausible than to require that these entities really exist. There is no need to posit such substantial claims about reality when there are better alternative explanations available that don't require substantial claims about reality.

Occam's Razor states that we shouldn't “multiply entities beyond necessity” and it's not necessary to posit the existence of a far-fetched entity because better alternative explanations are available, so the belief in far-fetched entities is a violation of Occam's Razor. Instead, Occam's Razor gives us a reason to reject the existence of far-fetched entities by favoring the alternative explanations.

Why should people agree that we have a reason to reject the existence of far-fetched entities? One reason is because we know that we should disbelieve in far-fetched entities, such as goblins, fairies, and unicorns because they are far-fetched. If we have no reason to disbelieve in far-fetched entities, then it's not clear why it's rational to disbelieve in goblins, fairies, or unicorns. None of these three entities has uniquely offensive characteristics other than being a substantial claim about reality that are used as explanations for various phenomena that could be better explained in some other way.

One possible explanation for why we should reject far-fetched entities and accept Occam's Razor as a theoretical principle is that substantial claims about reality involve more assumptions than insubstantial claims, and fewer assumptions have a higher chance of being true than several assumptions. If I claim that a light probably turned on at a neighbor's house because a human is in the house, then I am making a substantial claim about reality—a person exists in a house—but it's not far-fetched because we know lights often turn on in people's houses because people turn them on. What would be far-fetched is to claim that a goblin must have turned the light on. That claim requires more assumptions. Both claims require the assumption that an intelligent being turned a light on in a house, but only one of these claims requires us to accept that goblins exist. It's more likely that the first option is true than the second because the assumption that goblins exist is less likely to be true than no assumption about goblins at all. Occam's Razor doesn't prove that goblins don't exist, but it gives us a reason to find it unlikely that they exist, and that seems like a good enough reason to think that they don't when it's combined with our knowledge of people making up stories (involving beings that are
Why should we agree that ghosts far-fetched? Ghosts seem analogous to goblins, fairies, and unicorns. Ghosts are in stories and people claim to have testimonial evidence of ghosts, but such stories are likely made up, and such testimonial experiences are better explained in other ways. Such alternative explanations include misidentification (e.g. people can mistake an animal under a cloth for a ghost), misinterpretation (e.g. people can interpret their experiences in outlandish ways), hallucinations, and dreams. We know that many people have misidentified entities, misinterpreted their experiences, thought hallucinations were real, and thought dreams were real. One common and relevant form of misinterpretation is when we attribute human-like qualities to nonhuman entities. This is well documented in psychology. For example, people often attribute human-like thoughts to their pet dogs and cats. These various explanations are ordinary and to be expected, and the explanation involving the existence of ghosts adds an extra layer of assumptions that don't seem necessary. In particular, the existence of ghosts is a substantial claim about reality positing the existence of yet another intelligent being that is less likely to be true than the rejection of such a claim. When we combine that fact with the fact that we know people often make up stories involving entities they make up, it seems more likely that ghosts don't exist, and we have a reason to think that ghosts don't exist.

If we accept my two premises, then the conclusion follows—we have a reason to think that ghosts don't exist. I haven't proven that ghosts don't exist because far-fetched entities can exist, but I have proven that there's at least one consideration against the existence of ghosts.

**Step 5: Consider counterarguments**

Although Lisa has explained her argument in detail, not everyone will agree with her. There are people who believe in ghosts and they might try to find fault in the argument. Perhaps ghosts aren't analogous to goblins, fairies, and unicorns; or perhaps being far-fetched isn't a reason to reject the existence of an entity after all. Lisa should try to put herself in the shoes of her critic and see both sides of the debate. She could then discuss objections to her argument and try to reply to these objections to show why they aren't serious.

One counterargument in particular is that the belief in ghosts is culturally universal, which adds to the credibility of ghosts. This could mean that ghosts are significantly less far-fetched than goblins, fairies, or unicorns. We could have a reason to reject far-fetched things, but ghosts wouldn't necessarily be included. Lisa will respond to this objection with the following:

First, it is unclear that ghosts are culturally universal. What each culture believes in that we equate with “ghosts” could be quite different from how we think about them.

Second, culturally universal beliefs aren't necessarily less far-fetched. The belief that what's culturally universal is less far-fetched seems like an illegitimate appeal to
popularity—a logical fallacy when we assume something is more likely true when many people believe it to be true. We know that what's culturally universal is often false, which is evidence against the view that what's culturally universal is more likely to be true. For example, logical fallacies are persuasive to many people found in every culture, but they are still examples of poor reasoning; and in the same way many wrong-headed beliefs could very well be found in every culture. One possible explanation for why people experience intelligent beings, such as ghosts, where they don't exist is that we are instinctively made to look for signs of intelligent beings, and it would be a reproductive advantage to sense signs of intelligence when they don't exist rather than to fail to see the sign of intelligence (such as a tiger). We could decide that ghosts moved our keys as a practical joke much like how a human being might play a joke, that our pets have similar thoughts and feelings to human beings when they might not, and that weather is controlled by an intelligent being that rewards and punishes us with rain and drought.

Conclusion

Philosophical thought starts out small and simple, but it builds based on the various questions and answers we find relevant. Arguments have assumptions, logical implications, terminology, justifications, and strategies that should be discussed in detail. Finally, we must be careful how we use language and what we claim to prove with our arguments.