CHAPTER 2

Moral Reasoning

Moral reasoning, like all reasoning, involves at least two things: a set of reasons, and a conclusion that these reasons are meant to support. When you put these two things together, you have what philosophers call an **argument**. This isn't a matter of bickering or angrily exchanging words. An argument is simply any chain of thought in which reasons (philosophers call these **premises**) are offered in support of a particular conclusion. Watch for such words as *therefore*, *hence*, *thus*, or *so*—a claim that follows these words is usually the conclusion of an argument someone is offering you.

Not all arguments are equally good. This is as true in ethics as it is science, mathematics, or politics. It is easy to mistake one's way when it comes to ethical thinking. We can land at the wrong conclusion (by endorsing child abuse, for instance). We can also arrive at the right one by means of terrible reasoning. We must do our best to avoid both of these mistakes.

In other words, our moral thinking should have two complementary goals—getting it right, and being able to back up our views with flawless reasoning. We want the truth, both in the starting assumptions we bring to an issue and in the conclusions we eventually arrive at. But we also want to make sure that our views are supported by excellent reasons. And this provides two tests for good moral reasoning: (1) we must avoid false beliefs, and (2) the logic of our moral thinking must be rigorous and error-free.

There is no surefire test for determining when a belief is true or false. This goes for all beliefs, not just moral ones. Many people are firmly convinced by beliefs that turn out to be false; indeed, this probably describes you, me, and everyone we know. Of course we aren't aware of which of our beliefs are false, or else we'd change them. Still, none of us is omniscient. We all have our blind spots and intellectual limitations.

This isn't meant to be a counsel of despair. Though each of us is likely to have at least a few false beliefs, we also have lots of true ones. And while there is no surefire test to sort the true from the false, we can always seek to support our views by means of evidence and argument.

Importantly, it is possible to develop moral arguments that fail, even though every single one of their premises is true. The failure is of the second sort mentioned earlier: a failure of logic. Since logical reasoning is a key to successful reasoning, let's take some time to consider some of the basic elements of logic.

A. VALIDITY AND SOUNDNESS

Consider this argument:

1. Heroin is a drug.
2. Selling heroin is illegal.

Therefore,

3. Heroin use is immoral.

This is a moral argument. It is a set of reasons designed to support a moral conclusion. Both of the premises are true. But they do not adequately support the conclusion, since one can accept them while consistently rejecting this conclusion. Perhaps the use of illegal drugs such as heroin really is immoral. But we need a further reason to think so—we would need, for instance, the additional claim that all drug use is immoral.

The argument in its present form is a poor one. But not because it relies on false claims. Rather, the argument's logical structure is to blame. The logic of an argument is a matter of how its premises are related to its conclusion. In the best arguments, the truth of the premises guarantees the truth of the conclusion. When an argument has this feature, it is **logically valid**.

The heroin argument is invalid. The truth of its premises does not guarantee the truth of its conclusion—indeed, the conclusion may be false.

Since the best arguments are logically valid, we will want to make sure that our own arguments meet this condition. But how can we do that? How can we tell a valid from an invalid argument, one that is logically perfect from one that is logically shaky?

There is a simple, three-part test:

1. Identify all of an argument's premises.
2. Imagine that all of them are true (even if you know that some are false).
3. Then ask yourself this question: supposing that all of the premises were true, could the conclusion be false? *If yes*, the argument is invalid. The premises do not guarantee the conclusion. *If no*, the argument is valid. The premises offer perfect logical support for the conclusion.

Validity is a matter of how well an argument's premises support its conclusion. To test for this, we must assume that all of an argument's premises are true. We then ask whether the conclusion must therefore be true. If so, the argument is valid. If not, not.

Note that an argument's validity is a matter of the argument's structure. It has nothing to do with the *actual* truth or falsity of an argument's premises or conclusion. Indeed, *valid arguments may contain false premises and false conclusions.*

To help clarify the idea, consider the following argument. Suppose you are a bit shaky on your US history, and I am trying to convince you that John Quincy Adams was the ninth president of the United States. I offer you the following line of reasoning:

1. John Quincy Adams was either the eighth or the ninth US president.
2. John Quincy Adams was not the eighth US president.

Therefore,

3. John Quincy Adams was the ninth US president.

In one way, this reasoning is impeccable. It is logically flawless. This is a valid argument. If all premises of this argument were true, then the conclusion would have to be true. It is impossible for 1 and 2 to be true and 3 to be false. It passes our test for logical validity with flying colors.

But the argument is still a bad one—not because of any logical error, but because it has a false premise (number 1; Quincy Adams was the sixth US president) and a false conclusion. The truth of an argument's premises is one thing; its logical status is another.

The lesson here is that truth isn't everything; neither is logic. We need them both. What we want in philosophy, as in all other areas of inquiry, are arguments that have two features: (1) they are logically watertight (valid), and (2) all of their premises are true. These arguments are known as **sound** arguments.

Sound arguments are the gold standard of good reasoning. And it's easy to see why. They are logically valid. So if all of their premises are true, their conclusion must be true as well. And by definition, sound arguments contain only true premises. So their conclusions are true. If you can tell that an argument is valid, and also know that each premise is correct, then you can also know that the conclusion is true. That is what we are after.

You're now in a position to avoid a rookie mistake: referring to arguments as true or false. Premises can be true or false. Conclusions can be true or false. Arguments, though, are

neither. Arguments are valid or invalid, sound or unsound.

I started this section by claiming that not all moral arguments are equally good. We're now able to see why. Some arguments rely on false premises. Others rely on invalid reasoning. Still others—the worst of the lot—commit both kinds of error. When developing your own arguments to support your moral views, it pays to keep both types of error in mind, so that you can be alert to avoiding these mistakes.

B. NECESSARY AND SUFFICIENT CONDITIONS

Logic is a huge field, and we are going to touch only the tip of the iceberg. In my experience, however, there are just a few key ideas that you need to master in order to be in a position to construct valid arguments and to determine whether those you are considering really do have a good logical structure.

One of the key ideas in logic is that of a **sufficient condition**. A sufficient condition is a guarantee. If X is a sufficient condition of Y, then X suffices for Y; X is enough for Y; X guarantees Y. If X is true, then Y is true; if X is the case, then Y is the case. In most classrooms, getting a 95 percent average is a sufficient condition of receiving an A. Being a human is a sufficient condition of being a mammal. Having a child is a sufficient condition of being a parent.

The importance of this will become clear in a moment. But first, consider another key logic concept: that of a **necessary condition**. Necessary conditions are requirements. If X is a necessary condition of Y, then X is needed for Y; X is a prerequisite of Y; X is required for Y. Y can be true only if X is true; Y can occur only if X does. Having some money is a necessary condition of being a millionaire; having a brain is a necessary condition of being a philosopher; for some, having one's morning caffeine is a necessary condition of being able to function properly.

Both sufficient and necessary conditions are conditions *of* or *for* something else. It doesn't make sense to speak of something as a sufficient or necessary condition, full stop. This becomes clear when you abandon the technical talk and just think of a guarantee or a requirement. If someone told you that this was a guarantee, or that was a requirement, you'd naturally ask: a guarantee *of what*? What is it a requirement *for*?

OK, why is any of this important? Here's one reason. One of the big goals of ethical thinking is to try to identify a good, wide-ranging test of what's morally right (or wrong). One way to think about such a test is to view it as a statement of conditions that are *both necessary and sufficient* for being morally right (or wrong). A claim that supplies necessary and sufficient conditions is called a **biconditional**, because it incorporates two conditions. A shorthand way to state biconditionals is to use this phrase: if and only if. To take a familiar example: someone is a bachelor if and only if he is an unmarried male. This says that being an unmarried male is both sufficient and necessary for being a bachelor: *if* someone is an unmarried male, then he's a bachelor, and he's a bachelor *only if* he's an unmarried male.

Think of this as a kind of fill-in-the-blank exercise. In moral philosophy, we want sufficient conditions for being morally right. So: if _____ (fill in your sufficient condition), then an act is morally right. Now make sure that however you filled in that blank is also a necessary condition: An act is morally right only if _____. The very same thing needs to fill in both blanks. So: an act is morally right if and only if _____. If you can fill in that blank in a way that withstands scrutiny, you will have done something truly great. You will have identified conditions that guarantee the moral rightness of an act, and that are also required for the act to be right.

Here's why we are on the lookout for conditions that are both necessary and sufficient for the morality of actions. Suppose your friend tells you: an act is wrong *only if* it causes pain. Notice what's going on here. Your friend is saying that

an action's causing pain is a necessary condition of its being wrong; causing pain is a requirement of acting wrongly. I doubt your friend is right about this—there seem to be cases where people have acted immorally but no one has suffered as a result—but suppose my doubts are mistaken. Now this same friend tells you of a case where Tina has caused Tommy pain. Do you have enough information to know whether Tina's act is right or wrong? You don't. Sometimes it's morally OK to cause others pain; even if causing pain is a requirement of immoral action, it is *not* a sufficient condition, a guarantee, of immoral behavior.

Compare: a person is alive only if she has a heart; having a heart is a necessary condition of a person's being alive. Suppose I tell you that the person over there has a heart. Do you now know whether that person is alive? You don't. The person could be a corpse. Having a heart isn't a sufficient condition of being alive.

So you might think: fine, necessary conditions aren't all that helpful; it's sufficient conditions that are really important. Yet you're usually going to want something more than a sufficient condition, too. After all, I could tell you that betraying a vulnerable child just for kicks is sufficient for your action to be wrong; *if* you engage in such betrayal, then you're acting wrongly. I think this is true. But how often do you encounter such cases? This sufficient condition doesn't provide a good general test for moral wrongness, because most situations don't involve such betrayals. You're looking for a test that applies across the board and that can help you with the moral difficulties you're actually facing. That requires that you identify conditions that are both necessary and sufficient for moral rightness (or wrongness, depending on what you're trying to figure out).

C. VALID ARGUMENT FORMS

Necessary and sufficient conditions are important not just because of the role they play in constructing a general test for the morality of actions. They are central to understanding why some classic forms of valid argumentation work as they do.

There are lots of ways to construct logically valid arguments—and, as a quick review of our public culture reveals, a lot of ways to construct invalid arguments! (More on these in the next section.) Insofar as you care about supporting your ideas with solid reasoning, you'll want to avoid the latter and devote yourself to the former. We can't review every kind of logical argument, but we can do a quick survey of the ones that will take center stage in this book. After a chapter or two, you'll become quite familiar with them and will hopefully be in a position to construct such valid arguments on your own. Ideally, you'll incorporate true premises into those arguments, yielding the best kind of reasoning, and applying it to moral issues of great significance.

For the remainder of this chapter, I'm going to explain things by using variables—symbols that can be replaced by lots of different items of the same kind. If you're like me, and you see variables, you start to freeze up. Don't worry, all will be well. In particular, I'm going to use Ps and Qs as my variables; these stand in for any declarative sentence at all. Whenever you see 'P' or 'Q', feel free to replace it with whatever declarative sentence you like, no matter how short or long, no matter how plausible or crazy. It won't make any difference to the points we're about to discuss.

There are three argument forms that I'll be using over and over. They have fancy Latin names that you just need to memorize—sorry. The first is called **modus ponens**, and it takes the following form:

1. If P, then Q.
2. P.

Therefore,

3. Q.

As I mentioned earlier, 'P' and 'Q' are just meant to stand in for any declarative sentence. Try it

out with any sentences you like, from something totally commonplace to something outrageous. The key thing is that no matter what sentences you substitute for 'P' and 'Q'—no matter whether they are true or false, related to each other or not—you are going to end up with a logically valid argument.

Here are two examples to soften you up:

1. If humans have rights, then you have rights.
2. Humans have rights.

Therefore,

3. You have rights.

1. If you have rights, then pencils have rights.
2. You have rights.

Therefore,

3. Pencils have rights.

The first one looks pretty good, yes? Its logic is impeccable: if premises 1 and 2 are true, the conclusion, 3, has to be true. The argument is not just valid; it is also sound, as all of its premises (1 and 2) are true. This guarantees that the conclusion is true.

The second argument probably looks fishy to you. But its logic is also flawless: if premises 1 and 2 were true, its conclusion would have to be true. Recall the test for validity: imagine that all premises are true, even if you know they aren't. Then ask whether the conclusion would have to be true. The answer here is *yes*; that indicates that this second argument is valid. But of course it is unsound—not all of its premises are true. Premise 1 is false, as is its conclusion.

Every instance of modus ponens reasoning is logically valid. That might seem an unsupportable claim; there are billions of ways to fill in 'P' and 'Q' in the formula—how could we know that every single one will yield a valid argument?

To answer that question, I need to introduce another technical term, one that may be familiar to you from middle school grammar lessons: a **conditional**. A conditional is just an 'if-then' sentence. The first premises in both of the arguments we just considered are conditionals. A conditional has two parts, the 'if' part and the 'then' part. These, too, have names that you may recall from sixth or seventh grade. The 'if' clause is called the **antecedent** (literally: that which comes before); the 'then' clause is called the **consequent** (literally: that which comes after).

Now reread that last paragraph. I know there have been a lot of technical terms thrown at you all at once. But we'll use these repeatedly, so it pays to really get them ingrained. And we need to rely on these terms to understand exactly why every instance of a modus ponens argument is logically perfect.

Here's the explanation. Look at the first premise of a modus ponens argument. It is a conditional. It has two parts, its antecedent and its consequent. A conditional contains two crucial bits of information. The first is this: its antecedent is a sufficient condition of its consequent. In simpler terms: the 'if' clause is a guarantee of the 'then' clause. In a modus ponens argument, the second premise says that the guarantee is in place. The antecedent, which guarantees the consequent, is true. It follows that the consequent, which has been guaranteed, is true as well.

Think about this for a minute. In a conditional, you are stating that if one thing holds (I've arbitrarily labeled it 'P', but you could call it anything you want), then another thing (Q) will hold as well. In the conditional premise of a modus ponens argument, you are saying that the antecedent guarantees the consequent, that P guarantees Q. When you proceed, via premise 2, to affirm P, you say that the guarantee is secure. It follows logically that Q—the thing guaranteed by P—is also secure. This is why every modus ponens argument is logically valid.

Here is another type of argument that is always logically valid: it's called **modus tollens**.

A modus tollens argument has the following form:

1. If P, then Q.
2. Q is false.

Therefore,

3. P is false.

Note that modus tollens arguments start out just like modus ponens arguments do—with a conditional. Now here's where things get a little bit unexpected. I said earlier that there are two crucial bits of information contained in a conditional. The first, already mentioned, is that its antecedent is a sufficient condition of its consequent. Perhaps this seemed obvious to you. But the second bit of information rarely strikes people as obvious. When I took logic for the first time, I kept bumping up against it—I didn't find it intuitive at all. The second piece of information contained in a conditional is this: its consequent is a necessary condition of its antecedent. Sticking with our talk of Ps and Qs, the second bit of information says that Q is a necessary condition of P; P is true *only if* Q is true; P's truth requires Q's truth; Q's truth is necessary for P's truth.

So when I say, for instance, "If humans have rights, then you have rights," I am conveying two things. First, that humans have rights guarantees that you have rights. But second, and perhaps less obviously (it certainly seems less obvious to me), I am also relaying this information: humans have rights only if you have rights, too.

This second bit of information is crucial to seeing why every instance of modus tollens is logically valid. In a modus tollens argument, the conditional tells you that the consequent is a requirement for the antecedent. The second premise says that this requirement fails to hold. So the antecedent can't hold, either.

Perhaps a simpler way to see this is by introducing a principle that logicians take for granted but that we ordinary folk can find it hard to see. The principle says that the following two statements are logically equivalent:

1. If P, then Q.
2. P only if Q.

In other words, whenever you write a conditional in the first way, you could also write it the second way (and vice versa), and the truth (or falsity) of the conditional would not change. Since it's true that *if* (P) humans have rights, *then* (Q) you have rights, it's also true that (P) humans have rights *only if* (Q) you have rights. Since it's false that *if* (P) you have rights, *then* (Q) pencils have rights, it's also false that (P) you have rights *only if* (Q) pencils have rights.

So we can see that modus tollens arguments can also be written in this way:

1. P only if Q.
2. Q is false.

Therefore,

3. P is false.

Maybe this makes the validity of all modus tollens arguments more intuitive. Written this way, it's clearer that the consequent, Q, is a necessary condition of the antecedent, P. The second premise says that Q, which is needed for P, is false. So P is false as well. And this is so no matter what 'P' and 'Q' stand for.

We're now in a position to show how to test for the truth of a conditional, which is going to be very important in the rest of the book, since so many of the arguments presented there take the form of a modus ponens or modus tollens argument. Here's the test: try to come up with a case in which the conditional's antecedent is true, but the consequent is not. If you can identify such a case, then the conditional isn't true. That's because the antecedent is supposed to guarantee the consequent; if you can come up with a case in which it fails to do so, then the conditional is false. It's also because the consequent is meant to be a necessary condition of the antecedent; if there is a case in which the

antecedent holds even though the consequent doesn't, that shows that the consequent isn't, after all, a requirement of the antecedent. And so the conditional is false.

The **hypothetical syllogism** is a third type of argument whose instances are always valid. A hypothetical syllogism takes this form:

1. If P, then Q.
2. If Q, then R.

Therefore,

3. If P, then R.

Though I've written this with just two premises, a hypothetical syllogism can have three or more premises, so long as each additional one is a conditional that takes the consequent of the previous conditional and makes it the antecedent of the next.

Here's why every single hypothetical syllogism is valid. Focus on the first bit of information contained within a conditional: its antecedent guarantees its consequent. So, in the first premise, P guarantees Q. In the second premise, Q guarantees R. If one thing guarantees a second thing, and the second guarantees a third, then the first guarantees the third—the guarantee flows from the initial antecedent to the final consequent. A hypothetical syllogism basically represents a chain of guarantees, with the initial "hypothesis" (hence the name of this argument) guaranteeing the last link in the chain of conditionals.

There is a *lot* more logic one could learn about. But this is all you need to know in order to succeed with the material in this book.

D. FALLACIES

A **fallacy** is a mistake in reasoning. A formal fallacy is a kind of argument all of whose instances are logically invalid. In other words, no argument that commits a formal fallacy is *ever* logically valid. Informal fallacies are other kinds of mistaken patterns in reasoning. Here, as earlier, I'll need to be selective—whole courses and textbooks are devoted to the nature of logical (and illogical) reasoning. I'll draw your attention to a few of the more common mistakes we make in our reasoning, with the hope that being alerted to them will enable you to purify your reasoning and avoid these errors when engaging in your own critical reflections.

Let's first take a look at a couple of classic formal fallacies. Here's an example of one of them. Suppose your friend tells you that if God exists, then abortion is immoral. But she proceeds to claim that God doesn't exist. So, she concludes, abortion is morally OK. Or suppose that someone makes you the following offer: if you buy this item now, then you'll get 50 percent off. So you think: well, if I don't buy it now, then I'm not going to get that discount. Both of these lines of thought are **fallacious** (i.e., commit a fallacy). They are instances of the **fallacy of denying the antecedent**. This occurs when one reasons as follows:

1. If P, then Q.
2. P is false.

Therefore,

3. Q is false.

The fallacy gets its name from the action taking place in premise 2—denying the antecedent of the conditional in premise 1. The problem is that when you assert a conditional and then deny its antecedent, you have given *no* basis for denying the consequent. To see this, recall what the antecedent does: it serves as a sufficient condition, a guarantee, of the consequent. Premise 2 says that this guarantee doesn't hold. What follows? *Nothing*. That's because there can be many sufficient conditions for something. Suppose I tell you, correctly, that if someone is currently riding a bike, then he is alive. But I'm not riding a bike. Therefore . . . I'm dead? Not so fast. There are many sufficient conditions of being alive: riding a bike, reading an ethics textbook, having a conversation, eating breakfast, listening to music, and millions of other

possibilities. The fact that someone fails to fulfill one of these sufficient conditions for being alive gives us no basis at all for thinking that he's dead.

To cement this thought, consider another example of denying the antecedent: if I'm a millionaire, then I have at least ten dollars. (True.) I'm not a millionaire. (True.) Therefore, I don't have ten dollars. (False.) This is a terrible argument, right? All premises are true; the conclusion is false; therefore, this argument cannot be valid. Note, though, that it has exactly the same logical form as the argument about God and abortion, and the argument about receiving a discount. Each of these arguments fails—they are all fallacious—though it is sometimes difficult to see this, especially if you find its conclusion attractive.

Another formal fallacy is known as the **fallacy of affirming the consequent**. This also begins with a conditional. And then, as the name implies, one affirms its consequent (i.e., states that it is true). One then concludes that its antecedent is true: if P, then Q; Q is true; therefore, P is true.

Consider: if life is meaningful, then God exists; God *does* exist; therefore, life is meaningful. Or: if God exists, then morality is objective; morality *is* objective; therefore, God exists. Many people have found these arguments persuasive. But they are fallacious. We can see this if we compare them to other arguments with the very same logical structure. Suppose I tell you that if I'm a millionaire, then I have ten dollars. (True.) I have ten dollars. (True.) Therefore, I'm a millionaire (sadly, false—if only it were that easy!) Or: if you're a famous ex-president, then you're a person. You're a person. Therefore, you're a famous ex-president. Again, both of these premises are true; the conclusion is false; therefore, this argument is invalid. Yet this argument and the one before have the very same logical structure as the two arguments that opened this paragraph. All four of those arguments are invalid.

The reason is simple. Think of the second crucial bit of information contained in a conditional—namely, that the consequent is a necessary condition, a requirement, of the antecedent. If Q is needed for P, you can't determine that P is the case just by determining that Q is the case. That's because there can be many necessary conditions for something. You need a lot of things to build a house, for instance—there are many necessary conditions that have to be met. You can't tell if a house has been built just by knowing that one of these conditions has been fulfilled. If there are many requirements for P, then you're in no position to know whether P is the case just because you know that one of its requirements is met. That's why affirming the consequent is a fallacy.

Let's turn now to some informal fallacies. One of these is the **ad hominem fallacy**, which occurs when you try to undermine a position by attacking the person who is advancing it. Politicians (and their supporters) do this all the time. "His views on immigration can't be trusted; after all, he's Latino." "She's rich, so don't believe a word she says about how to improve the economy." "He's a hypocrite; he didn't live up to his ideals, so his ideals must be bankrupt." These are all instances of bad reasoning. The truth is one thing; a person's motives, status, inherited traits, group membership, or character is another. The wisdom of an immigration or economic policy depends on the facts about these complicated matters, and not at all on the character or circumstances of the person who is defending them. Even bad people speak the truth sometimes. Even good people make mistakes. Greedy people can end up defending wise economic policies. And terrible immigration policies can be defended by those whose compassionate motives have misled them on this occasion.

A familiar type of ad hominem fallacy occurs when people discover that others have behaved hypocritically. If a person fails to live up to her ideals, then this shows that she lacks integrity. It says nothing, however, about the merit

of those ideals. After all, a person might preach generosity and kindness, all the while betraying these values in her personal life. Such hypocrisy does *nothing* to undermine these values, though it says a lot about her character. The truth of a position is one thing; the person advancing it is another. If you want to determine whether her claims are correct, then you need to focus on the evidence for or against her position, rather than on the content of her character.

Another informal fallacy involves **appeals to irrelevant emotions**. This occurs when someone tries to convince you of a claim by playing on your emotions, rather than by offering facts and evidence that bear on the truth of the claim. Many different emotions can be targeted. Marketers are experts in appealing to *jealousy*, *envy*, and *insecurity* when trying to sell something depicted as exclusive or prestigious or elite—you don't want to be left behind, do you? Had you done some research, however, you would have discovered in many cases that the advertised products were no better, and perhaps even worse, than more ordinary ones. Politicians and pundits often appeal to *anger* or *fear* when arguing to close borders against would-be immigrants. Rather than citing relevant facts about the actual costs and benefits of more welcoming immigration policies, many who seek to limit immigration present inflammatory images or biased claims designed to evoke emotions of fear and anger that will prompt opposition to such policies.

Almost any emotion can be manipulated. We need to remember this, since emotions play powerful roles in our moral thinking. And some of these are illuminating, rather than distorting. We are often alerted to morally relevant facts by having an emotional experience, as when someone's suffering elicits our compassion, or a gross injustice provokes our outrage. The essential point is not to place a ban on emotions in our moral reflections, but rather to recognize that many appeals to emotions will distract us from appreciating the relevant facts.

Another informal fallacy is the **appeal to authority**, which involves relying on authority figures to substantiate a position outside of their area of expertise. There is nothing wrong with trusting a doctor's advice when trying to recover from a broken ankle, because that's within the scope of the doctor's expertise. But suppose that someone tries to get you to adopt a pro-choice position by claiming that 80 percent of the doctors in the United States favor abortion rights. That's an example of this fallacy. A medical degree does not make someone a moral expert. Even if most doctors are pro-choice, that is not itself any evidence that a pro-choice position is morally correct. The same fallacy occurs whenever a parent tries to justify his political views by saying, "I'm the grown-up here, so what I say goes." As we all know, being a grown-up doesn't make someone infallible. Parents may want to silence their children, or just end a discussion and move on, but one doesn't acquire political wisdom just by raising a child.

The **straw man fallacy** depicts an opponent's position in a way that makes it easy to refute, thereby diverting attention from the real position being advanced. This occurs when someone avoids engaging with the best arguments for a position one opposes, and instead substitutes an obviously terrible argument for the one that has actually been offered. The terrible argument is the straw man—something that can be easily demolished. But it is a basic principle of good reasoning that one should *charitably* interpret the views of those one disagrees with. Rather than construing their beliefs in the worst possible way, one should instead seek to identify the most plausible version of their position, and then critically engage with that. It is easy to score cheap points by painting someone's argument as ridiculous, especially when a critic replaces the real argument with a substitute that can be easily torn apart. While this sort of move may win a politician some votes, or a radio personality more listeners, it blocks reasoned inquiry, rather than offering a path to understanding.

The **appeal to ignorance**, known officially by its Latin name *ignoratio elenchi*, can take one of two forms. The first one, which we'll consider in this paragraph, occurs when one thinks that a claim is true because it hasn't been proven false. The basic idea is this: you don't know (hence the ignorance) that my claim is false. Therefore, it's true. The problem is that the absence of contrary evidence—the absence of good reason to doubt my claim—is not itself reason to believe my claim. Suppose I believe that there is an even number of stars in the universe. You can't prove me wrong. But that's no reason to think I'm right! Yet this is the same form of reasoning used by those who argue that the death penalty must be an effective deterrent, because it hasn't been proven to be useless. Or that plants and trees are conscious, because it hasn't been proven that they're not.

The second form that an appeal to ignorance can take is the mirror image of the first. This occurs when one thinks that a claim is false because it hasn't been proven true. Here, if we don't know that your claim is true, we just assume that it's false. Like the close cousin discussed in the previous paragraph, this form of reasoning is also fallacious. Some people assert, for instance, that scientists haven't proven that climate change is caused by increased fossil fuel consumption; therefore, it's false that such consumption is causing climate change. Set aside the contested question of whether climate scientists have or have not proven this link. Even if they haven't, this reasoning is fallacious. We can see this by applying it to a variation of an earlier example. I can't prove that there is an even number of stars in the universe. But you'd be making an obvious error if you concluded that there must be an odd number of stars out there! Likewise, even if we are ignorant of whether humans have caused climate change, this ignorance does not license us in claiming that they haven't.

The last of the informal fallacies that we'll consider is the **hasty generalization**, which occurs when someone illicitly draws a general lesson from only a small handful of cases. Consider the smear, popular in some circles, that all Muslims are terrorists. It's certainly true that *some* Muslims are terrorists. But so too are some Jews, some Christians, some Buddhists, some Hindus, and some atheists. It's obviously implausible to claim that all Christians or Jews are terrorists, even if one's attention is drawn especially to those who are. Some Americans commit acts of terror. That is no basis for thinking that all Americans are terrorists. The sort of fallacy at play here is common and easy to fall into—we naturally think that a few salient examples represent broader trends or even universal truths. But good reasoning requires that we survey a large and representative sampling of cases before making such sweeping claims.

E. CONCLUSION

Moral reasoning is a matter of creating and assessing arguments for some moral claim. Arguments are built from premises, designed to support a conclusion. The truth or falsity of the premises is one thing; the logical support they offer to a conclusion is another. Arguments can be poor despite having only true premises, because those premises can fail to logically support their conclusions. And arguments can be logically flawless—valid—even though their premises are false, leaving us no basis for believing their conclusions. The gold standard of moral reasoning is a sound argument—a valid argument all of whose premises are true.

Modus ponens, modus tollens, and hypothetical syllogism arguments are invariably valid. No matter whether their premises are actually true or false, every instance of these argument types is logically valid. In order to understand why this is so, one needs to grasp the notion of a necessary condition (a requirement) and a sufficient condition (a guarantee). Biconditionals are statements of conditions that are at once necessary and sufficient for something. If you are especially intrepid, you'll spend some time thinking about the biconditionals that

correctly specify the necessary and sufficient conditions for the moral concepts you're most interested in, while avoiding all of the fallacies that we have just discussed. Good luck!

ESSENTIAL CONCEPTS

Ad hominem fallacy: trying to undermine the truth of a position by attacking the person who is advancing it.
Antecedent: the 'if' clause of a conditional; the clause that specifies a sufficient condition of the conditional's consequent.
Appeal to authority: an informal fallacy that involves relying on authority figures to substantiate a position outside of their area of expertise.
Appeal to ignorance: an informal fallacy, also known as *ignoratio elenchi*, that can take one of two forms. In the first, one believes a claim to be true because it hasn't been proven false. In the second, one believes that a claim is false because it hasn't been proven true.
Appeal to irrelevant emotions: an effort to convince you of a claim by playing on your emotions, rather than by offering facts and evidence that bear on the truth of the claim.
Argument: a chain of thought in which reasons are offered in support of a particular conclusion.
Biconditional: a claim that supplies a condition that is both necessary and sufficient for something; an 'if and only if' sentence.
Conditional: an 'if-then' sentence.
Consequent: the 'then' clause of a conditional; it specifies a necessary condition of the conditional's antecedent.
Fallacious: the feature of exhibiting or having committed a fallacy.
Fallacy: a kind of poor reasoning. A formal fallacy is an argument form all of whose instances are invalid. Informal fallacies are other kinds of mistakes in reasoning.
Fallacy of affirming the consequent: any argument of the form: if P, then Q; Q is true; therefore, P is true.
Fallacy of denying the antecedent: any argument of the form: if P, then Q; P is false; therefore, Q is false.
Hasty generalization: illicitly drawing a general lesson from only a small handful of cases.
Hypothetical syllogism: An argument of the form: if P, then Q; if Q, then R; therefore, if P, then R.
Logical validity: the feature of an argument that guarantees the truth of its conclusion, on the assumption that its premises are true.
Modus ponens: An argument of the form: if P, then Q; P; therefore, Q.
Modus tollens: An argument of the form: if P, then Q; Q is false; therefore, P is false.
Necessary condition: a requirement, a prerequisite, a precondition.
Premises: the reasons within an argument that, taken together, are meant to support the argument's conclusion.
Soundness: the feature that arguments have when they are logically valid and all of their premises are true.
Straw man fallacy: a form of reasoning that depicts a position in a way that makes it easy to refute, thereby diverting attention from the real position being advanced.
Sufficient condition: a guarantee.

DISCUSSION QUESTIONS

Consider these sample arguments. Some are valid and some are invalid. Reveal the logical structure of each argument by presenting it in terms of Ps and Qs and then explain why each argument is valid or invalid.

A1. The sun is a star.
2. The earth is a planet.

Therefore,

3. The earth is 93 million miles from the sun.

B1. If Hillary Clinton is president, then Bill Clinton is vice president.
2. Hillary Clinton is president.

Therefore,

3. Bill Clinton is vice president.

C1. If water at sea level boils at 212 degrees F, then water at sea level boils at 100 degrees C.
2. Water at sea level boils at 212 degrees F.

Therefore,

3. Water at sea level boils at 100 degrees C.

D1. Either God exists or life has no meaning.
2. God doesn't exist.

Therefore,

3. Life has no meaning.

E1. If there is an afterlife, then it is wise to be moral.
2. There is no afterlife.

Therefore,

3. It isn't wise to be moral.

F1. If I am riding a bike, then I am alive.
2. I am not riding a bike.

Therefore,

3. I am not alive.

G1. If fetuses are human beings, then abortion is immoral.
2. Abortion is immoral.

Therefore,

3. Fetuses are human beings.

H1. If I am a millionaire, then I can afford to buy a new TV.
2. I can afford to buy a new TV.

Therefore,

3. I am a millionaire.

I1. If euthanasia is legalized, then this will reduce the overall amount of misery in society.
2. If euthanasia reduces the overall amount of misery in a society, then it is morally acceptable.

Therefore,

3. If euthanasia is legalized, then it is morally acceptable.

J1. If animals have rights, then it is wrong to eat them.
2. It isn't wrong to eat animals.

Therefore,

3. Animals don't have rights.

K1. Anti-drug laws are morally legitimate only if paternalistic laws are morally acceptable.
2. Paternalistic laws are morally unacceptable.

Therefore,

3. Anti-drug laws are not morally legitimate.

L1. If societies disagree about moral issues, then there is no objective morality.
2. Societies agree about moral issues.

Therefore,

3. There is an objective morality.

M1. The death penalty is justified only if it gives criminals their just deserts.
2. The death penalty gives criminals their just deserts.

Therefore,

3. The death penalty for murderers is justified.

N1. If you want to succeed in your moral reasoning, then you have to master the details of this chapter.
2. If you have to master the details of this chapter, then you should ask your instructor for help if you don't understand any aspect of it.

Therefore,

3. If you want to succeed in your moral reasoning, then you should ask your

instructor for help if you don't understand any aspect of this chapter.

Review the following fallacious arguments and identify the informal fallacy committed by each.

O. The death penalty is an excellent deterrent of crime; after all, sociologists haven't been able to prove that it isn't.

P. Some philosophers argue that we are morally required to give away most of our earnings to the needy, even if it means devoting less money to our loved ones. But in times of family emergency, these philosophers will always end up spending money to care for their family members. That shows that the rest of us aren't morally required to give away most of our earnings to the needy.

Q. Some corporations have voluntarily taken steps to reduce their emission of greenhouse gases. So we don't need to impose any regulations in order to mitigate the effects of climate change.

R. How would you feel if someone killed a member of your family? Angry, right? That shows that the death penalty is morally justified.

S. Two politicians are engaged in a debate.

First politician: We should not spend billions of dollars building a border wall; the money saved could be better spent on other types of immigration enforcement.
Second politician: That might make you feel good, but I can't support giving illegal immigrants all the rights and protections of ordinary US citizens.

T. Abortion is immoral. How do I know that? Because my priest says so. How do I know I can trust my priest's opinions on this matter? Because my church tells me so.