2   Sources of Conviction

Introduction

PHILOSOPHERS EVALUATE PATTERNS OF THINKING. In particular, they have often tried to find patterns of thinking which will give certainty about the world and about morals. Philosophical doubt is a way of finding out what beliefs are not certain, **and logical arguments are a way of going from one belief to another belief that is just as certain. Many philosophers have doubted beliefs which others have thought certain – for example, the existence of God – and other philosophers have tried to Find logical arguments to support these beliefs.**

Rationalist philosophers are optimistic that we can get certainty about the world or about morals by using logical arguments and similar kinds of reasoning. They consider extreme forms of doubt in order to prove how certain their beliefs are . . .

Chapter Objectives

By the end of this chapter you should be able to answer the following questions.

◆ *Why is skepticism used to undermine authority?*
◆ *What is a logical argument?*
◆ *What arguments can be used to show that there is a God?*
◆ *Why do modern philosophers now think that neither authority nor reason alone can be a source of knowledge?*

Definitions

The following words used in this chapter are defined in the list of definitions at the end of the book:

argument	*logic*	*reason*
authority for belief	*paradox*	*traditionalism*
faith	*proof*	

2.1 Authority

You have questions and you want answers. And you want your answers to be as certain as possible. The questions are of many kinds: what is the explanation of some physical events, what political system should your country adopt, what is your friend likely to do next, what can happen to the stock market, or whatever? And because there is no obvious best way of getting the answers you want, you might consider different ways of getting them.

Any general way of getting answers to questions will be a way of thinking, the sort of thing philosophy aims to evaluate. But considering a way of thinking as a strategy for acquiring knowledge focuses attention on some particular qualities this strategy may have, or may lack. You want it to give you true answers. But even if it gives you some true answers the method may be so flawed – it may be based on guesswork or prejudice – that you couldn't say that what it gives is at all certain or reliable. Or it may give you a mixture of true and false answers, and then you must ask what the proportion of true to false is likely to be, and whether there is any way of telling them apart.

Very often we trust that a way of thinking will give us reliable true beliefs because it draws on a source of knowledge. It is as if it rests on some very solid ground. For example, we usually treat our senses, such as our eyes and ears and touch, as reliable sources of knowledge. If we see something, we normally assume that it is real. But there are limits to what we can learn just from our senses, so we often look for other trustworthy sources. Two such sources that make frequent appearances in philosophy are *authority* and *reason*. We use authority as a source when we appeal to some collection of beliefs which we think we can trust. They could be the traditional beliefs of a culture, or the contents of some book, or the opinions of some wise person. We use reason as a source when we trust our own capacities to think and argue. Authority and reason have often been seen as rivals, especially when "authority" has meant religious faith and "reason" has meant science and philosophy.

First, consider authority. There are many possible authorities. One is simply the standard opinions of your culture – "what everybody knows." Another is sacred books, such as the Bible. Another is the opinions of people with special qualities: experts, wise people, prophets. (Parents are authorities for most children's beliefs.) Science can be an authority, if it is taken as a collection of textbooks rather than as a method of making and testing theories. Experts who know the standard scientific theories and explanations come up with opinions that many people accept without question. People believe what their doctors tell them; scientific textbooks are treated as bibles.

Some philosophies give authority a large place. They are usually versions of *traditionalism*, the view that it is reasonable to accept the traditional beliefs of your society as true. Traditionalism is often expressed as a three-stage process. You start with beliefs that people generally feel confident about.

(Especially intelligent or wise people, of course.) You then consider any new information available to you, and you try to integrate it into this background of traditional belief as smoothly as possible. (You may have to modify some traditional view – for example saying that it doesn't hold in some special cases – or you may have to reject some new data, perhaps labeling it as an illusion. But both of these are to be kept at a minimum.) Lastly, armed with modified traditional beliefs and cleaned-up new information you try to deduce answers to the questions that concern you.

> An authority for beliefs provides a stock of shared beliefs, which people can use as a basis for resolving disputes or making new discoveries.

One important feature of traditionalism is that it allows a common ground between people. That is, when people disagree about something they can usually find a way of continuing a constructive discussion if there is some authority that they both accept as a source of beliefs. The most basic way this can happen is when we treat our senses as authorities. Suppose that two people disagree about whether, say, there are any orange and black striped cats, but both agree that our eyes give accurate information about the world around us. Then they can resolve their disagreement if one can show the other an orange and black striped cat and say "see, here's one." (The philosophy of empiricism, discussed in Part II, Chapter 9, is based on this.)

But this won't always settle a dispute. Suppose no orange and black striped cat can be found, or suppose that one person produces an orange and black striped animal and the other says "that isn't a cat." Then some more extensive agreement may be needed to allow the discussion to continue. Perhaps they can both take commonsense beliefs as an authority ("it looks like a cat and its parents were cats, so it's a cat"). Or perhaps they can both take contemporary science as an authority ("the laws of cat genetics say this combination of colors ought to be possible"). The important point here is that an authority for beliefs does not usually solve people's disputes by just giving them an answer. More often, it provides the common ground from which they can go on to find some way of agreeing.

The ancient Greek philosopher Aristotle suggested something like traditionalism as an all-purpose strategy. And a number of moral thinkers have suggested something like it as a way of answering moral questions. Moreover, some scientific ways of thinking seem to fit the traditionalist pattern.

But the important question is not whether some intelligent people have been traditionalists. (That would be to justify authority by appeal to authority.) The important question is whether in fact there is any authority that we can trust as a reliable source of true beliefs. Is there any person or book or tradition that we can use to say "this is certainly true, because the authority tells us so"?

The greatest enemy of traditionalism is the skeptical attitude. Skeptics will object to any authority: "How do we know that it is not part of a closed-belief trap?" That is, what assurance do we have that the authority is not giving a pattern of answers that disguises the fact that much of what it says is false?

(See Chapter 1, Section 5 on the closed-belief trap.) The force of the worry is easiest to see when the authority is the beliefs of a culture or a religious tradition. Suppose that some of the beliefs of a culture are seriously false. Then if the test of whether something is to be believed is whether it is consistent with traditional belief, these serious falsehoods may never be abandoned. (Suppose, for example, that one traditional belief is that all diseases are caused by evil spirits, and another is that everything seen through a microscope is an illusion. Then microbes seen through a microscope will never be considered real, and thus never count as causes of disease.)

Or suppose that a holy book tells people that some form of behavior is wrong. Perhaps it tells you that it is a great sin for you to eat in the presence of your mother-in-law. (A ridiculous example is best here, to keep the discussion away from any particular moral code.) It will also probably say that God or some other more-than-human power has inspired the book. So if we question the moral advice the answers we get will lead eventually to a circle: it is a sin to eat in the presence of your mother-in-law because the holy book says so, and the holy book is right because it was inspired by God, and we know that it was inspired by God because it says so in the holy book.

Do not conclude from this that there are no scientific or moral authorities. That does not follow at all from worries about closed-belief traps. The conclusion to draw is that it is very hard for a traditionalist to persuade a skeptic that the source of traditional beliefs really has the authority it claims, that it really is a source of true beliefs. The traditionalist may be right, but the skeptic will not be persuaded.

Below there are four mini-dialogues. In each one the first person makes a claim that is challenged by the second person. Several of the speakers appeal to authority for what they say. And several are skeptical of the claims of other speakers.

Which speakers are appealing to authority? What authorities is each one appealing to? When is the purpose of a speaker's skepticism simply to doubt what the other speaker says; and when is the purpose to support an appeal to a different authority?

Mathieu: I think my cat can do arithmetic. If two cars and three motorcycles go past the house she wags her tail five times.
Miriam: Don't be silly. Everyone knows cats are stupid.

Marc: I expect my children to be intelligent, good-looking, and well adjusted, like me. You see, my wife is almost as intelligent, good-looking, and sensible as I am, so our children will doubtless inherit all our qualities.
Naomi: Why are you so sure that children have to resemble their parents? Perhaps when children are like their parents it is because they have been raised the same way and had the same experiences. Or perhaps it is just

chance. Anyway, don't be surprised when your offspring turn out to be stupid, ugly, and mixed up. Or bright and rebellious.

Luc: My guru says that love is only possible between people with the same color soul. My soul is purple. He taught me that, and it has helped me understand many things about my life. But my girlfriend has a dark green soul. Even I can see that. And that is a very bad combination. So we will have to split up.

Leah: Have there been any experiments to test this theory of color and love? I mean, real experiments where the experimenter can't fix the results. I read in a psychology book that when people are too similar they find friendship rather than love. Perhaps you and your girlfriend should have some proper personality tests.

Jean: I have just read a book about human evolution, which explains to me why men go bald. It seems that millions of years ago babies used to hang on to their mothers' hair. And since men didn't take care of babies until the 1970s men had no need for long hair. I had been really worried about going bald in a few years' time, but now I see that it is all according to nature's plan.

Judith: I'd treat any theory about what happened millions of years ago with a lot of suspicion. Really, for all we know, anything could have happened back then. And I think a lot of bald men look really sexy.

2.2 Faith

A special kind of authority shapes the beliefs of many people. It is religious faith. For many people, also, this plays no role in determining what they believe, so that there is often a very deep divide between people, not only about what they believe but also about the reasons they accept for justifying belief. Each side thinks the other is missing something important. The purpose of this section is not to settle the issue, but to get clearer about what the important things might be that you might miss either by having or failing to have religious faith.

"Faith" can mean many things, so let us start with a definition. Faith for our purposes now is a trusting attitude to some very special source of information about basic aspects of life, typically a source associated with revelation by God, that is not subject to correction by evidence or rational argument. Suppose, for example, that it is a part of a person's faith that she should be charitable to others even at great cost to herself, because that is how God wants people to live. Suppose that someone gives her reasons why it is not a good idea for her to act in this way. "It just makes you poor, and these people you're giving it to, they just fritter it away on luxuries." If it is really a matter of faith, she will not try to rebut these reasons, but will just say "It doesn't matter what evidence you produce: my faith goes deeper than evidence so I'll stick with what

I believe right." So the idea is that faith is a kind of trust that is an alternative to giving reasons, not a kind of reason-giving or a competitor.

Here are three attitudes one could have to faith, as just described.

(a) *Dismissive.* The description doesn't really make much sense. It allows someone to have fairly weak reasons for belief and to ignore their weakness by saying that they are trusting rather than reasoning.

(b) *Acceptance for religion.* Religious beliefs have a special role in our lives that makes it inappropriate to ask for reasons for them. Sometimes a person is lucky enough to live among others whose faith she can share: that is a very special gift that she shouldn't ask too many questions about.

(c) *General acceptance.* You can't question everything. There are many things that you just have to take for granted: that other people are generally good, and generally telling the truth, that what people you respect believe is true, that scientific authorities know what they are saying. If you don't accept these things you'll find you're just lost.

If representatives of these three positions were trying to convince one another, there are many points they would make. Some are:

(i)   Some of the things it seems sensible to trust may turn out to contradict one another, and then you have to do some hard thinking.

(ii) It may be socially inappropriate to question a belief although in fact it is false.

(iii) A person may be unable to give convincing reasons for a belief although it is true.

(iv) If your belief is true and given by some trustworthy source it should survive hard questioning.

(v)   A person may be unable to give convincing reasons for a belief although it comes from a trustworthy source.

(vi) Sometimes when you live among others you pick up their beliefs unquestioningly, although there are serious problems with those beliefs.

(vii) Different people can take different things for granted. Then when they disagree they have to find some way of thinking through their differences.

Which of the points (i)–(vii) is relevant to which of the attitudes (a), (b), (c)?

2.3 Reason

Reason is the capacity to think. Human beings have just enough thinking power to solve many practical problems and to organize their societies. They can also take part in complicated discussions, trying to change one another's beliefs.

And they can understand mathematical proofs and scientific theories. These are rather different kinds of thinking. Philosophy began with a rather naive picture of humans as having a single power of thinking, which might work with or conflict with authorities such as traditional beliefs and what was written in books. As philosophy has developed it has become less naive, distinguishing different kinds of reasoning. For the moment, simply take reason to be the capacity to find reasons for beliefs, not by appeal to any authority but by the power of thinking.

Some of the most convincing reasons are found in mathematics. Mathematicians make proofs, which are particularly strong arguments that make conclusive cases for their conclusions. Here is a simple mathematical proof. Take any two even numbers, and consider what you get when you add them together. Each even number will be two times some other number (that is what makes it even). So the sum of the two even numbers will be two times the sum of those other numbers (that is, $2n + 2m = 2(n + m)$). So this sum will itself be even. So we can conclude that the sum of two even numbers is always even.

That was a very simple proof of a very simple fact. But the important thing about it is that it makes a completely convincing case for its conclusion. When you understand it, you *know* that the sum of two even numbers is always even. And you know that you can be completely sure of it. As sure as you can be of anything. Mathematics is full of proofs that are just as convincing as this. (Many of them are longer and harder, of course. But they usually break down into steps that are not much more complex than this.)

Since the beginning of philosophy, philosophers have been impressed by the capacity of mathematical proof to make things certain. (In the early days of philosophy, mathematics was mostly geometry – the proofs were of facts about triangles and other geometrical shapes. Since then, mathematics and philosophy have developed together, and some of the great philosophers have also been mathematicians.) Mathematics proves facts about such things as numbers and geometrical shapes. Could we also have proofs of facts about science, religion, and ethics?

The view that some basic facts can be proved beyond doubt is called *rationalism*. Rationalism has a great faith in the power of reason; it takes reason to be the main source of certain belief. There is rationalism about science, about religion, and about morals. These are different: it is quite possible to think that, for example, reason alone can show us the right system of morals though we cannot prove what the truth about any scientific matter is.

Rationalism about any topic holds that reason can guide us to the truth about that topic. A really strong rationalism holds that reason all by itself can discover the truth. All the truth: science, religion, morals, anything we can know. But it is very hard to believe that, for example, we can do science just by thinking and arguing, without having to perform experiments or collect data. (And even if we could prove the existence of God by reason alone, it does not follow that we can construct a whole religion just by the power of proof

and argument.) One thing that needs to be considered here is the relation between reason and *evidence*. Evidence includes all kinds of information that we get by experience, using our senses. So it includes the results of observations and experiments in science, and the things that people learn every day by perceiving the world around them.

Can rationalism succeed? Can the power of reason show us how to find out the truth about the world, or religion, or morals? The first step toward seeing what reason can do must be to think a bit more deeply about proof and argument. The next section discusses argument; the section after that discusses proof, looking in particular at proofs of the existence of God.

2.4 Arguments

There are many ways of persuading someone of something you believe. Suppose you are having a disagreement with someone about cows. "Cows have horns," you say. "No," your friend replies, "bulls have horns, but cows don't." One thing you may then do is to take him by the arm and show him a cow with horns. Another is to repeat your claim with such conviction and sincerity that he accepts you as an authority on cows and changes his opinion. Neither of these is guaranteed to work. (People are stubborn.)

Another way is by *argument*. This does not mean quarreling. It means reasoning with him, saying things to him that make him share your belief. You might try saying: "Horns are for defence against predators, and cows need horns to defend themselves and their calves, just as bulls do, so it would be surprising if only bulls have horns." Or: "Remember that river where we had a picnic on an island, last September? It was called the 'Cow's horn river.' Do you think the name was a joke?"

The things you are saying to persuade him are arguments. They start with assumptions that you hope he will accept: that horns are for defense; and that you had a picnic on the Cow's Horn River. And they go on to a conclusion, that cows have horns, which you are trying to get him to accept. So the basic plan of an argument is to find assumptions that the other person accepts and that will then lead on, step by step, to the conclusion you want them to accept. This will not work if you disagree about so many things that you cannot find assumptions that you both share. Nor will it work if the other person does not accept the way in which you draw conclusions from the assumptions.

> An argument leads step by step from some assumptions to a conclusion.

(So an effective argument requires some common ground between the person making the argument and the person whose beliefs the argument is meant to change.)

Philosophers have a standard way of writing out an argument, with the assumptions, called premises, at the top, and beneath them the steps of the argument leading down to the conclusion, with a "therefore" or a "so" before it. For example:

If George comes to the party and Alice is still there, there will be trouble.
George is coming at 10.
Alice will not leave till 11.
Therefore there will be trouble.

or

Martha is in New York or San Francisco or Tokyo.
If she is in New York she will have gone to the Empire State Building.
If she is in Tokyo she will have gone to the Imperial Palace.
She did not go to the Empire State Building.
She did not go to the Imperial Palace.
Therefore she is in San Francisco.

Call this way of writing out an argument *skeleton form* (because usually it represents just the frame, on which a person trying to argue for a position will have added many other details). Writing arguments out like this is meant to make the shape of the argument clearer: what the premises are and how the conclusion is supposed to follow from them. In simple cases, like the first of the two arguments above, this way of writing them out is enough to make the pattern clear. But in more complicated cases like the second one this may not be enough. Then a more complicated presentation may help; call it *tree form*, as in the example in Figure 2.1.
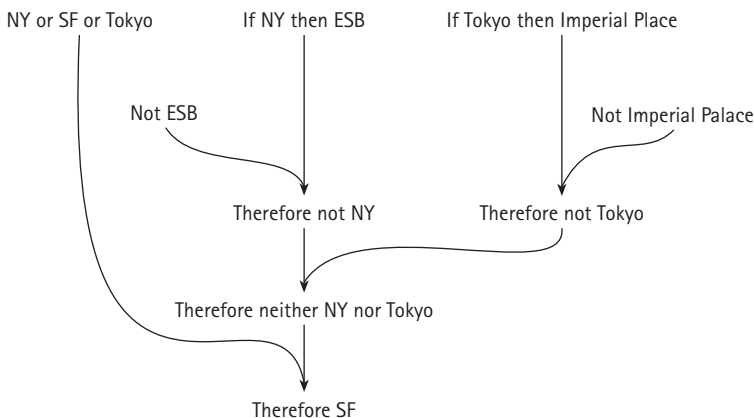

Figure 2.1

   In real life people do not present arguments like this. They speak to each other in much less formal ways and somehow get across what they are assuming and what they are trying to show. So often in philosophy we take an argument presented very informally and we rewrite it, to make clearer what

is going on. In doing this the order of some parts may have to be changed and some parts may have to be left out or, sometimes, added. So someone may argue as follows:

> *Generations of conformists and nonconformists will always alternate. I mean, first you have some conservative people with very fixed opinions, who bring up their children very rigidly. Like my grandparents for example. Then their children, children of people of that generation, will inevitably rebel against them, as children always do, and turn into radical nonconformist types, trying out alternative beliefs and alternative lifestyles. Of course they will raise their children in a loose, permissive style. But children want authority and so this will just make tension between them and their children. So when these children rebel against their parents they will become conservatives again. Then it will all have gone round in a circle.*

Philosophers would take this argument and rewrite it in skeleton form, as follows.

> **Children always rebel against their parents.**
> **When children rebel against their parents they adopt the opposite attitudes.**
> **The opposite attitude to conformity is nonconformity.**
> **Therefore the children of conformist parents will be nonconformist.**
> **Therefore the grandchildren of conformist parents will be conformist.**
> **Therefore the great-grandchildren of conformist parents will be nonconformist.**
> **Therefore conformist and nonconformist generations will alternate.**

This example brings out several important points. First, notice how the order in which things are stated has got changed between the informal statement and the skeleton form version. The conclusion, which is stated at the end in the skeleton form, is stated at the beginning in the informal statement. This is quite common. For example, in newspaper editorials the conclusion, the thing that the editorial is trying to get you to accept, is very often not stated at the end. More often it is stated first of all.

Notice also how some assumptions that were not stated in the informal statement have been stated explicitly in the skeleton version. These are usually assumptions that the person making the argument would have considered too obvious to state, for example, that the opposite of conformity is nonconformity. (But sometimes when you state something that is considered "too obvious to state" you find that it is not obviously true at all.) And a number of things that were in the informal statement (like the attitude of the speaker's own grandparents) have been left out of the skeleton argument because they are irrelevant to its force as an argument.

The most important thing to notice about the example is that the argument is not completely convincing. There are two problems with the argument, two ways in which it might not convince someone. It is important that they are different. The first problem is that the premises are not obviously true. Children sometimes do not rebel, and when they rebel they do not always adopt opposing attitudes. The second problem is that even if the premises were true, it is not clear that the conclusion would follow from them. The premises could be true even if the conclusion was false. For suppose that at one time there are both conformists and nonconformists, and that their children are nonconformists and conformists respectively. Suppose some of these people marry. How will they raise their children and what attitudes will these children have? They could be part of a pattern that makes the conclusion false even though the premises are true.

Ideally, an argument should have true premises that lead in a clear and completely persuasive way to the conclusion. That is called a *sound* argument. Then it will show anyone who accepts the premises that the conclusion is also true. But this ideal is often hard to meet. If the premises are not true the argument can still be *valid*. That is, it can still show that if the premises were true the conclusion would be true. (So all sound arguments are valid, but some valid arguments are not sound.) The above argument about conformists and nonconformists is neither sound nor valid. (But see Section 2.7 below.) The part of philosophy that studies valid argument is *logic*. One central concept of logic, that of a deductively valid argument, is discussed in Chapter 5, Sections 4, 5, and 6.

2.5 Eight Short Arguments

For each of the arguments below, first find the main conclusion. (Think carefully about this. What is the argument trying to make you believe?) Then write the argument out in skeleton form, as described in the previous section, beginning with premises and going step by step to the conclusion. Remember that a skeleton form will often leave out some things mentioned in the informal statement of an argument, and you will sometimes have to supply things that have been left unstated.

(a) Even small children have human rights. For all human beings have rights. And while children are not the same as adults, they are human.

(b) For every activity there is appropriate clothing. Welders' eyes must be protected by goggles, and motorcyclists need windproof outer garments. And you would not go swimming in a winter coat. Eating is an activity like any other, and it too has its appropriate clothing. So to eat properly you have to change into the right clothes.

(c) Men are more creative than women. Just think of Bach, Beethoven, Plato, Einstein – all men. There just aren't any women among the great composers and mathematicians and scientists. It seems that it is always the men who come up with the novel ideas.

(d) When patients with cancer of the colon are operated on, sometimes it is discovered that the cancer has spread from the original site. These patients have a very high mortality rate. Those whose cancers have not spread and who survive the operation have a mortality rate roughly the same as the general population. Early diagnosis would reduce the mortality from this particular cancer. Then operations could be performed before the cancer had spread.

(e) If boys are allowed to wear earrings to school, parents will think that the school has no standards and will cease to support the school. For parents associate academic standards with proper dress. Girls on the other hand can wear earrings since there is a tradition of females wearing them. There is no tradition of males wearing earrings: they should be forbidden to do so at school.

(f) Acheulean stone tools are made from large flakes struck from boulders. Such tools are found where early humans and the australopithecines were both present. It seems that humans were the main toolmakers, though. Stone tools are not directly associated with the australopithecines that lived before the emergence of humans, and stone tool manufacture continued to flourish after the australopithecines became extinct. Furthermore, when hominid fossils (human or australopithecine) and stone tools are both present at the same site, at least some of the hominids tend to be human.

(g) It could be that everything I seem to perceive is really an illusion. For my senses quite often deceive me. For example, I sometimes look at a straight stick half in and half out of water, and I think it is bent. It is very hard to tell how common such illusions are. Some of them are very subtle and hard to detect.

(h) Sometimes there is no objection to the use of drugs by professional athletes. One purpose of professional sport is to provide an exciting competitive spectacle for the audience. In some circumstances the use of drugs by athletes, to increase their strength or stamina or even to increase their competitive spirit, will lead to a more exciting and competitive spectacle. And since professionals take part in sports willingly they freely assume the risks involved.

Which of these arguments are more persuasive, and which are less persuasive? (You can't answer this until you have determined what they are arguments for – that is, found their conclusions.) Rank them on a scale of 0 to 10, with 0 representing a completely unpersuasive argument and 10 representing a completely persuasive one. Find out if others agree with your rankings.

If they do not, then find out why. Try to separate out disagreements about whether the premises of an argument are true from disagreements about whether the argument succeeds in showing that the conclusion follows from the premises.

State, very roughly and informally, why the less persuasive arguments do not convince you of their conclusions. Then try to find similar reasons why someone might fail to be convinced by one of the arguments you do find convincing. Choose an argument you gave a score of 8 or more to, and state the strongest criticism you can of it.

Now write out arguments (b), (d), and (f) in tree form, as described in the previous section.

2.6 Puzzling Arguments

Sometimes an argument can lead from pretty obvious assumptions to pretty surprising conclusions. Here are three examples. Each of them leads to a conclusion you probably would not accept if it was just stated out of context. Yet the argument seems to lead you in a few easy steps towards accepting them. (Read them slowly and think about the ways in which they do or do not convince you.)

Cheap horses are rare.
Rare things are expensive.
Therefore cheap horses are expensive.

San Francisco is to the west of London.
Moscow is to the west of San Francisco.
So Moscow is further to the west of London than San Francisco is.
So Moscow is to the west of London.

Groucho has a brother, Harpo.
Harpo has a brother, Groucho.
The brother of a brother is a brother.
Therefore Groucho is his own brother.

These arguments are definitely not convincing. One reason that you are probably not convinced by them is that the conclusions are so implausible. So something must be wrong with the arguments. The puzzle comes in trying to see what this can be. The premises of the arguments look right, the argument itself seems reasonable, and yet the conclusion seems crazy.

Here are two ways you might react to the arguments after thinking about them:

◆ The premises might be false, even though they seem at first to be true. Perhaps it is not really true that all rare things are expensive; perhaps it is not true that Moscow is to the West of San Francisco; perhaps it is not true that the brother of a brother is a brother.

◆ The conclusions might be true even though at first they seem false. Perhaps cheap horses are expensive; perhaps Moscow is to the west of London; perhaps Groucho is his own brother.

These are not the only ways you could react to the arguments. You could also say that the premises are true and the conclusion is false and there is something wrong with the pattern of argument itself. (That is, in the terminology of Section 2.4 above, the argument might not be valid.) But if you had to choose between the two reactions above, which seems right for each of the three arguments?

2.7 Arguments within Arguments

Very often an argument contains smaller arguments. This will happen when an argument goes from its premises to its conclusion in several steps. Each of these steps will be a smaller argument within the full argument. Each will be a subargument. For example:

> **If George can love anyone he can love Louise.**
> **George can love his dog.**
> **Therefore George can love someone.**
> **Therefore George can love Louise.**

Here the second premise, "George can love his dog," leads to the first conclusion, "George can love someone." So the subargument is:

> **George can love his dog.**
> **Therefore George can love someone.**

The way the subargument fits into the whole argument is clearer if we write it out in tree form.
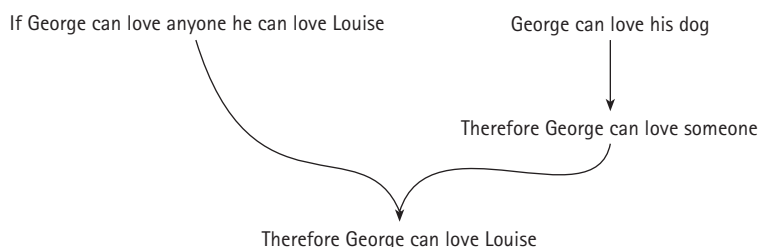

If George can love anyone he can love Louise   George can love his dog

Therefore George can love someone

Figure 2.2   Therefore George can love Louise

The argument that was used as an example in Section 2.4 above has several subarguments.

> **Children always rebel against their parents.**
> **When children rebel against their parents they adopt the opposite attitudes.**
> **The opposite attitude to conformity is nonconformity.**
> **Therefore the children of conformist parents will be nonconformist.**
> **Therefore the grandchildren of conformist parents will be conformist.**
> **Therefore the great-grandchildren of conformist parents will be nonconformist.**
> **Therefore conformist and nonconformist generations will alternate.**

The subarguments can be seen more clearly if the argument is presented in tree form.
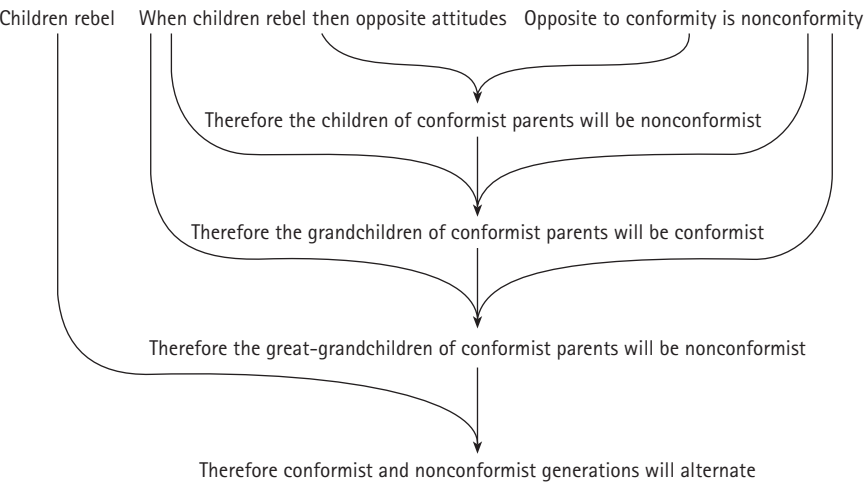

Figure 2.3

Find three subarguments. Write them out in skeleton form.

The whole argument is not valid. But the three subarguments are valid. (Remember that validity means that the conclusion would be true *if* the premises were true. If, moreover, the premises are true the argument is sound.) Are any of the subarguments sound?

2.8 Proofs of God

Philosophers and theologians have often thought up proofs of the existence of God. These are arguments which are meant to persuade anyone who doubts God's existence that they are wrong. Whether or not any of these proofs do

show what they are meant to, many of them raise deep questions about time and space, causation and explanation, good and evil. And thinking about them raises important points about logic.

In order to put these arguments in context, here is a dialogue, a discussion between two imaginary students, in which some of the standard arguments about God emerge.

Andrea [*a biology student*]**:** I'm taking a fascinating course this semester, on the chemical origins of life. We're studying how the chemicals present in the world billions of years ago could have led to life. That's what the prof. says, anyway. He's not easy to understand, but if I can make sense of him in two months' time I'll know why we're here.

Brian [*a philosophy student*]**:** No you won't. You'll know how one scientist proposes to replace a mystery with another mystery. Your prof. may persuade you that we are here now because of chemicals billions of years ago. But why were they there? Why those particular chemicals at that particular time, and why did they happen to combine to form life?

Andrea: Well, what do you expect? You can't explain everything. If I say that a window broke because someone threw a rock at it you'll probably say I should tell you why they threw it. But maybe I just don't know.

Brian: If I knew why the rock was thrown it would sure make a lot more sense to me than if I thought maybe it was just a random act. I'd have someone to blame. It's just the same with the origin of life. If I can see some purpose behind it then I'll feel I really know why it happened.

Andrea: You're going to be disappointed, then. All we know yet is that the causes go back and back. We can get a bit beyond the chemistry of the early earth, though it gets rather vague. We can go back to the Big Bang, if you want to be really speculative, but you don't find purposes.

Brian: You do, you do, if only you'll raise your nose out of the chemicals for a moment. Think. There has to be some purpose. For otherwise everything is the effect of some cause which is the effect of some other cause which is the effect of some other cause. And so on backwards for ever. Nothing is ever explained. But we do know why things happen. And that's because we know that in the end there's a purpose. God made the world in the first place and laid down the laws of nature, the rules which it follows from then on.

Andrea: Sure, that sounds nice, but how do you know there is any such God?

Brian: Weren't you listening? I just proved there is a God. If there weren't a God then the chain of causes and effects would go back forever and we wouldn't ever know why anything happens. But we do know why things happen. I know you're talking to me now because you want me to buy you a beer. So there has to be a God.

Andrea: Isn't your God just another of this endless series of causes? Why did he make this very universe, and not some other one? Why did he make a universe in which I need you to buy me beers?

Brian: We don't know why God made this very universe. But we know we can't know this: God's mind is more complex than ours. So we have to stop there; it's not an arbitrary break. When we explain the universe in terms of God we are moving from one kind of cause to a very different one. So it isn't just the same series going on.

Andrea: I suppose I think that the random combinations that made the first life may have been so unlikely that we couldn't ever see why they had to happen either. Perhaps chaos is my God.

Brian: Sounds like you've proved the existence of lawyers. Let's have that beer.

The two people in this dialogue tried to persuade each other of their views. To do this each used a variety of arguments, and in addition some of what each one says is meant not as direct argument but as objections to the other person's arguments. Which one makes the better case? In order to get an intelligent opinion on this you need to know what each person's arguments really are. One technique that philosophers use to do this is to extract simple arguments in skeleton form from the actual details of what people say, in order to have a clearer view of what the argument says and the ways in which it may be convincing or unconvincing. (Modern philosophers do this to the argumentation found in the works of older philosophers. They get skeleton arguments out of the works of Plato, Descartes, or Hegel and then evaluate them.) Here are some skeleton arguments that may or may not be found in the dialogue above.

(1) Every event has a cause.
So there is something that causes all events.
So there is a God.

(2) We only understand why an event occurred when we see the reason why it happened.
To see why something happened we need to see a purpose behind it.
We do understand why things happen.
Therefore there is a purpose behind the universe.
Therefore there is a God.

(3) We do not understand why something happens just by citing a preceding cause of it.
Therefore giving causes earlier and earlier in time does not explain why anything happens.
Therefore we can only understand why anything happens by relating it to a cause outside time.
God, if he exists, is outside time.
Therefore there is a God.

(4) We do not understand why something happens just by citing a preceding cause of it.
Therefore giving causes earlier and earlier in time does not explain why anything happens.
Therefore we only understand why anything happens if we have an explanation of the very first moments in time.
Therefore there is a God.

(5) The causes of any event must be as mysterious as that event.
God's motives are mysterious.
Therefore God's motives are the causes of all events.
Therefore there is a God.

Of these five arguments, three can be found in the dialogue. That is, a case can be made for taking each of these three skeleton arguments as an outline of the way in which some person in the dialogue is trying to convince the other. Two of them cannot be found in the dialogue. They may be interesting arguments; they may even be right; but they are not what either person in the dialogue is saying.

Which are the three arguments that can be found in the dialogue? For each of the three arguments, find the parts of the dialogue that suggest it.

Which of the arguments (1) to (5) are the most convincing? Which are the least convincing? Suppose that you do not believe in a God: what objections would you make to each of the arguments? Suppose that you do believe in a God: which arguments would you choose as expressing part of the reason for your belief?

Suppose that you do not find one of these arguments convincing. Perhaps you do not find any of them convincing. How can you find ways of resisting them? Ideally, you do not just want to express the fact that you are not convinced; you also want to have some impact on the other person's views. You want to shake their confidence that their opinion is right, or at any rate that their opinion is easy to defend. One way of doing this can be seen early in the dialogue:

Brian: . . . Your prof. may persuade you that we are here now because of chemicals billions of years ago. But why were they there? Why those particular chemicals at that particular time, and why did they happen to combine to form life?
Andrea: Well, what do you expect? You can't explain everything. If I say that a window broke because someone threw a rock at it you'll probably say I should tell you why they threw it. But maybe I just don't know.

Let us take Brian to be arguing as follows:

> **Chemical explanations of the origin of life say that life was caused by the combination of chemicals billions of years ago.**
>
> **These explanations do not explain why these chemicals were there.**
>
> **Therefore these explanations do not really explain the origin of life.**

In reply to this, Andrea is saying that if this argument were correct then the following argument would also be valid:

> **My explanation of the fact that the window is broken is that this rock was thrown through it.**
>
> **This explanation does not explain why someone threw the rock through the window.**
>
> **Therefore this explanation does not really explain why the window is broken.**

Andrea takes this to be an obviously ridiculous argument. But it seems completely parallel to Brian's argument. So something must be wrong with Brian's argument.

This technique for attacking an argument consists in giving a *counterexample* to the argument: a parallel case in which premises analogous to those of the argument to be refuted lead to an obviously false conclusion. (Counterexamples to arguments are discussed in Chapter 5, Section 6.)

Some of the above arguments (1) to (5) for the existence of God are susceptible to attack by counterexample. Find counterexamples to argument (2). Note that there are two "therefores" in the argument. So you could apply a counterexample either to the argument leading to the first conclusion or to its extension to the second conclusion.

Suppose you think that the general idea of argument (2) is correct. How might you react to the counterexamples? (Argument (1) is also susceptible to counterexamples. They are harder to state, but they raise some interesting issues.)

Proofs of the existence of God often raise important issues that are not essentially about God. In the dialogue between Brian and Andrea each of the speakers seems to be relying on many unstated assumptions. Here is a partial list. Which ones seem to be implicitly assumed at which points in the dialogue?

(a) There must be a first point in time.
(b) The cause of an event must precede it.
(c) When we explain why something happens we give a cause of it.
(d) Sometimes simply giving a cause does not explain why something happened.
(e) A good explanation tells you more than just that the event occurred.
(f) Natural events occur in conformity with regular laws of nature.
(g) A random event cannot be explained.

Which of these are true?

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Box 4 The Ontological Argument

The arguments for the existence of God discussed in this section have required assumptions that we can only know to be true by observing the world, and seeing the patterns of cause and effect, order and disorder, in it. Some philosophers have thought that God's existence does not depend on the world he created, and so in order to prove that God exists we should not have to use any facts about the world. The most famous proof along these lines is the ontological argument, discovered by Anselm of Canterbury, who lived from 1033 to 1109. One version of the argument runs:

> **God is God.**
> **If God were not perfect he would not be God.**
> **Therefore God is perfect.**
> **If God did not exist he would be less perfect than if he existed.**
> **Therefore God exists.**

Some later philosophers have accepted versions of this argument. Others have rejected it. (Descartes accepted it, St Thomas Aquinas rejected it, Kant rejected it.) It seems to many that the argument captures a deep feature of religious belief. It also seems to many that there is something wrong with the argument. If you do not find the argument convincing, try saying where it goes wrong.

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2.9 Paradoxes

Sometimes an argument seems to show something that goes completely against what we believe. Such an argument is called a paradox. Here are two paradoxes.

Zeno's paradox. Suppose that the world's 100-meter champion is running from a starting line toward the finishing tape. Before he can get to the finish he will have to get halfway there. And before he can get halfway there he will have to get one-quarter way there. And before he can get one-quarter way there he will have to get one-eighth way. And before one-eighth, one-sixteenth. And so on. In order to run the short distance of 100 meters the champion will have to do infinitely many things. But doing infinitely many things will need infinitely much time. Therefore, despite appearances to the contrary, he will never get to the finishing tape.

The surprise exam. A logic professor says to her class: "You are going to have an exam next week. But it is going to be a surprise. It will be on a day when you do not expect it." All the students in the class wonder when the exam is going to be. They feel worried. But one clever student says: "Since it is going

to be a surprise it cannot be on Friday, because if there was no exam before then we would know that there was only one day left. So it cannot be on Thursday either, as by Wednesday we would know that since it cannot be on Friday it would have to be on Thursday, and this would not be a surprise. For just the same reason it cannot be on Wednesday. Nor on Tuesday. Nor on Monday. So relax, there can be no surprise exam."

With a good paradox everyone agrees that the conclusion is false. The world champion can run 100 meters in a very finite time; the professor can give a surprise exam. But, if it is a good paradox, everyone will not agree what is wrong with the argument. These are good paradoxes, in that people have very different reactions to them.

Paradoxes can be seen as making reason contradict common sense or perception. Find one commonsense belief that is contradicted by each paradox, and one belief given by perception that is contradicted by each paradox.

Each paradox makes several assumptions. If you do not want to believe the conclusion you should consider disagreeing with one of the premises. Which of the following premises would be the easiest to give up?

For Zeno's paradox:

(a) Before the runner can get to the finish he will have to get halfway there.
(b) And so on. (That is, for all n, in order to get to the finish the runner will have to get $1/2n$ of the way there.)
(c) Doing infinitely many things will need infinitely much time.

For the surprise exam:

(a) If there is no exam by Thursday we know it will be Friday.
(b) If there is no exam by Wednesday we know it will be Thursday.
(c) If we know the exam is going to be on Thursday or Friday we know it is going to be on Thursday.
(d) If we know the exam is going to be on a given day then it cannot be a surprise on that day.

2.10 What to Trust on the Internet

You may think that it is nearly always obvious what the good sources of belief are. Comparing notes with others should show you that different people base their beliefs on very different grounds. But in case that is not enough, this section discusses a case where everyone agrees that it is very hard to know what sources to trust, and different people adopt very different strategies to cope with the resulting uncertainty.

Many of us get a lot of our information from the internet. We log on to news sites for current news and background articles; we look up information about entertainment and the weather. We find out facts about diseases and their treatments. We get opinions on controversies that interest us. We find stories, poems, movies, rants. Very often we believe what we find: we treat online newspapers like paper ones; we trust online weather forecasts as much as those on television. But there are many reasons for being much more cautious than we usually are. Anyone can put a document on the web, and when you access it you usually have no way of knowing who put it there, who is responsible for the site on which the document is found, or what commercial or political interests lie behind it. It is very easy to start a completely unfounded rumor by means of the internet. Why do we get such a lot of information from something so inherently fallible?

When getting information from a web page it is a good idea to be aware of the following:

(1) The identity of the authors and what organizations they are associated with.
(2) The credentials of the authors: if the information is medical, legal, or scientific, whether they have any professional qualifications.
(3) How up-to-date the information is: when the page was last modified, when the data was last checked.
(4) What the sources of information are, what references or links there are to standard authorities, databases, or experts.
(5) Whether there is advertising on the page and, if so, whether this is likely to affect the content of the page; whether the source of funding for the page is given.
(6) How much of the content of the page is presented simply as the authors' opinion: whether there are links to places where experimental and other evidence may be found.
(7) Whether contact information is given which could allow you to check up on the authors' qualifications, their sources and evidence, and their affiliations and funding.

How often do you find any of these? Which of them are most essential? What worries about the trustworthiness of the information will be raised by the absence of each of them?

Reflecting on these questions should make you more wary of trusting what you read on the internet. But perhaps it leads to reflections that can make you wary of other sources of information too. Which of considerations (1)–(7) above, or analogs of them, might suggest worries about: scientific textbooks, the things parents teach their children, the Bible, newspapers? Which of these worries are serious reasons for doubting the information found in these sources?

2.11 Transforming the Question

Philosophers used to debate whether reason or authority should play the main role in forming our beliefs. It is not hard now to see that this is an empty question. Early in the chapter we saw that an appeal to authority does not usually solve people's disputes by just giving them an answer. More often, it provides the common ground from which they can go on to find some way of agreeing. But in going on from a common ground people will need their powers of argument, in order both to persuade each other of what they believe and to keep a link with the common ground that makes argument possible. And they will need to find and evaluate new evidence in order to determine which belief has a better chance of being true. But both the power to argue and the power to evaluate evidence are parts of our power to reason. They are both part of that loosely linked ability that makes humans special, the power to think for oneself.

Reason cannot operate all by itself either. Arguments need premises, and the premises have to come from somewhere. One source of premises is an authority accepted both by the person making the argument and the people the argument is meant to convince. Another source is the evidence provided by our senses. Whichever is involved, something besides reason is needed. Pure intelligence will not give you the truth unless you have something to apply your intelligence to.

(Mathematical proofs, and some arguments like the Ontological Argument described in Box 4, can seem to get to a conclusion without needing any premises. Can they really? These are hard and controversial issues. Philosophers are still very puzzled about the nature of proofs in mathematics. But nearly all contemporary philosophers are convinced that most arguments that lead to knowledge about the world need premises that have to come from somewhere besides pure thinking.)

So the question we should be asking is not "Which is more important, reason or authority?" but "How can reason, authority, and evidence be combined to give us reliable knowledge?" (Perhaps sometimes reason and evidence alone can do the job, without help from authority. That would be a comfort to philosophers worried about the closed-belief trap.) To put the question this way is to think like a modern philosopher who does not see reason as a single human capacity, which might be able to give knowledge all by itself.

Conclusions of This Chapter

◆ *One way in which we can think out what is right is by using logical arguments.*

◆ *Logical arguments will not all by themselves settle all the important questions of philosophy.*

◆ *When people disagree about something they can very often find something else that they agree about, and then use their powers of logical argument to find an answer they can both accept.*

◆ *Questions such as the existence of God are very hard to answer just by logical reasoning, but when we try to evaluate arguments for and against the existence of God we find ourselves asking other important questions about what the universe is like and how we can understand it.*

Further Reading

On arguments

Chapter 1 of Martin Hollis, *Invitation to Philosophy*. Blackwell, 1985.

Chapters 3 and 4 of Willard Quine and Joseph Ullian, *The Web of Belief*. Random House, 1978.

Alec Fisher, *The Logic of Real Arguments*. Cambridge University Press, 1988.

Trudy Govier, *A Practical Study of Argument*, second edition. Wadsworth, 1988.

Merilee Salmon, *Introduction to Logic and Critical Thinking*. Harcourt Brace Jovanovich, 1984.

Chapters 7 and 8 of Robert M. Martin, *There Are Two Errors in the the Title of this Book*. Broadview, 1992.

On the existence of God

Chapter 1 of Nigel Warburton, *Philosophy, the Basics*. Routledge, 1992.

Chapter 7 of Richard Taylor, *Metaphysics*. Prentice-Hall, 1963.

Chapter 2 of Robert M. Martin, *There Are Two Errors in the the Title of this Book*. Broadview, 1992.

Robin LePoidevin, *Arguing for Atheism*. Routledge, 1996.

Kai Neilson, *An Introduction to the Philosophy of Religion*. Macmillan, 1982.

David Hume, *Dialogues on Natural Religion*. Anchor Books, 1990.

Selections from Anselm, Aquinas, Descartes, and Hume in Part V of John Cottingham (ed.), *Western Philosophy: An Anthology*. Blackwell 1996.

Electronic resources

Routledge Encyclopedia of Philosophy (available online at many universities): articles on Faith; God, arguments for the existence of; Necessary being; Reasons for belief.

Stanford Encyclopedia of Philosophy (http://plato.stanford.edu/): God, arguments for the existence of; *Logic, informal*; *Ontological arguments*; *Religion, epistemology of*; *Zeno's paradoxes* (*italicized* items are available as this book goes to press; the others should be available soon).