The nature of knowledge

'A man with only one theory is a lost man.'
Bertolt Brecht, 1898–1956

'The will to a system is a lack of integrity.'
Friedrich Nietzsche, 1844–1900

'Science is the belief in the ignorance of experts.'
Richard Feynman, 1918–88

'Knowledge is the small part of ignorance that we arrange and classify.'
Ambrose Bierce, 1842–1914

'Man is a credulous animal, and must believe something; in the absence of good grounds for belief, he will be satisfied with bad ones.'
Bertrand Russell, 1872–1970

'We must rise above the obsession with quantity of information and speed of transmission, and recognize that the key issue for us is our ability to organize this information once it has been amassed – to assimilate it, find meaning in it.'
Gregorian Vartan, 193

'Information is acquired by being told, whereas knowledge can be acquired by thinking.'
Fritz Machlup, 1902–83

'It is the mark of an educated man to look for precision in each class of things just so far as the nature of the subject admits; it is evidently foolish to accept probable reasoning from a mathematician and to demand from a rhetorician scientific proofs.'
Aristotle, 384–322 BCE

'The average man's opinions are much less foolish than they would be if he thought for himself.'
Bertrand Russell, 1872–1970

'If 50 million people say a foolish thing, it is still a foolish thing.'
Anatole France, 1844–1924

'If the world should blow itself up, the last audible voice would be that of an expert saying it can't be done.'
Peter Ustinov, 1921–2004

'Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information upon it.'
Samuel Johnson, 1709–84

'The more connections and interconnections we ascertain, the more we know the object in question.'
John Dewey, 1859–1952

Introduction

Having looked at the problem of knowledge, we now need to say something about the nature of knowledge. The word 'knowledge' is what might be described as a *thick concept* in that it is not exhausted by a short definition and can only be understood through experience and reflection. Indeed, the whole of this book is, in a sense, a reflection on the meaning of the word 'knowledge'. Having said that, a definition can still give us a useful preliminary hook for thinking about the meaning of a word. So we shall begin by exploring a definition of knowledge as *justified true belief*. But it is important to keep in mind that this should be the starting point for reflection rather than its finishing point.

Knowledge as justified true belief

Taking our preliminary definition of knowledge as *justified true belief*, let us consider the three elements that make it up.

Truth

The most obvious thing that distinguishes knowledge from belief is truth. If you know something, then what you claim to know *must* be true, but if you merely believe it, then it may be true or it may be false. This is why you cannot *know* that Rome is the capital of France, or that pigs have wings, or that the earth is flat.

Truth is another thick concept, which we shall have a lot to say about in Chapter 14. For the time being we can say that, as traditionally understood, truth is independent of what anyone happens to believe is true, and that simply believing that something is true does not make it true. Indeed, even if *everyone* believes that something is true, it may turn out to be false. For example, during the Middle Ages, everyone thought they knew that there were seven 'planets' orbiting the earth (Sun, Moon, Mercury, Venus, Mars, Saturn and Jupiter). They were wrong: we now know that there are nine planets orbiting the sun.

This raises the question of how can we ever be sure that what we think we know really is true. Perhaps in the future they will discover a tenth planet, and what we thought we knew will turn out to be false. Since we are fallible beings, this is indeed possible. But, as we saw in Chapter 1, this simply shows that knowledge requires something less than certainty. In practice, when we say that something is true, we usually mean that it is 'beyond reasonable doubt'. Since we are willing to imprison – and in some cases execute – people on the basis of evidence that is beyond reasonable doubt, this is surely an acceptable criterion for saying that we know something.

Belief

If you know something, then what you claim to know must not only be true, but you must also *believe* it to be true. We might say that, while truth is an objective requirement for knowledge, belief is a subjective requirement for it. If you have no conscious awareness of something, then it makes little sense to say that you know it. That is why encyclopaedias do not *know* that Paris is the capital of France, and pocket calculators do not *know* that 2 + 2 = 4.

1 Can you think of any cases in which someone might be said to know something without knowing that they know it?

2 As technology develops, do you think it will ever make sense to say that a computer knows things?

Since the time of Plato (428–348 BCE), some philosophers have argued that when you know something you are in a completely different mental state to when you merely believe it. For when you know something you are certain of it, and when you merely believe it you are not. However, we shall adopt a less demanding standard of knowledge. Rather than think of knowledge as being completely different from belief, it may make more sense to think in terms of a belief–knowledge continuum, with unjustified beliefs at one end of the continuum, beliefs for which there is some evidence in the middle, and beliefs which are 'beyond reasonable doubt' at the other end.

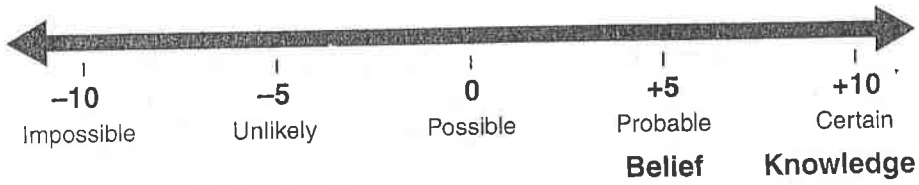

Figure 2.1 Belief–knowledge continuum

Here are three examples of various kinds of belief:

- *A vague belief* I may vaguely believe that eating tomatoes helps to reduce the risk of heart disease, but have no idea where I came across this idea and readily abandon it in the light of counter-evidence.
- *A well-supported belief* I may believe that Smith killed Jones, and be able to give evidence for my belief, but still be unwilling to say that I know that this is the case.
- *A belief that is beyond reasonable doubt* I may find the evidence which supports the claim that the Americans landed on the moon in 1969 so convincing and the counter-evidence of conspiracy theorists so flimsy that I am willing to say that I know the Americans landed on the moon.

Given this way of looking at things, the question of exactly where we should draw the line between belief and knowledge does not strike me as a very interesting one. It is like asking where, in a spectrum of shades running from black to white, black ends and white begins. The important thing, surely, is to try to develop as reasonable and well-supported a set of beliefs as possible.

Where on the belief–knowledge continuum, running from –10 to +10, would you put the following propositions?

a Christopher Columbus 'discovered' America in 1492.
b If A is bigger than B and B is bigger than C, then A is bigger than C.
c Human beings are descended from apes.
d Murder is wrong.
e Aliens have visited the earth at some time during its history.
f All metals expand when heated.
g Human beings have an immortal soul.
h It is possible to construct a square with the same area as a given circle.

Justification

You might think that true belief is a sufficient condition for knowledge, and that if you believe something and your belief is true, then you can be said to know it. However, something more is in fact required – your belief must also be justified in the right kind of way. Imagine that someone claims to know that there are nine planets in the solar system. When you ask how they know, they reply that there is an analogy between the 'microcosmos' of the human body and the 'macrocosmos' of the solar system, and that, just as there are nine 'windows' in the temple of the body – two nostrils, two ears, two eyes, a mouth, and two windows in the lower portion of the body – so there must also be nine planets in the solar system. This person believes that there are nine planets in the solar system, and his belief is true, but we would not want to say that he *knows* this because his belief has not been justified in the right kind of way. To us it makes no sense to talk of an analogy between the 'windows' in the human body and the planets in the solar system.

The point, in short, is that in order to be able to say that you know something you must be able to justify your belief, and your justification must be of the right kind. We usually justify our knowledge claims by appealing to one of the four ways of knowing. If someone asks you how you know, you might reply:

'Someone told me' (language)
'I saw it' (perception)
'I worked it out' (reason)
'It's intuitively obvious' (emotion)

With respect to our planetary example, you might be said to *know* that there are nine planets in the solar system if you are part of a team of astronomers that have made the relevant observations, or if you came across this fact in a reputable encyclopaedia or science magazine.

Now, you might ask why some kinds of justification, such as perception, are usually considered acceptable, while others, such as telepathy, are not. Imagine that a psychic asks you to think of an animal, and then correctly says that you are thinking of a zebra. When you ask her how she knew, she replies that she read your mind. I think that most people would not find this an acceptable justification, and would say that the psychic did not really *know* that you were thinking of a zebra, but simply made a lucky guess.

The key thing that distinguishes acceptable from unacceptable justifications seems to be *reliability*. Although it is not infallible, perception is a generally reliable source of knowledge. Telepathy, by contrast, is unreliable, and the scientific evidence to date suggests that psychics do no better than chance when it comes to trying to read other people's minds. The sceptic and magician James Randi has offered a prize of $1 million to anyone who can demonstrate psychic powers. At the time of writing, the prize remains unclaimed. This does not prove that telepathy is false, but it does suggest that it cannot be appealed to as a reliable justification for our knowledge claims.

Figure 2.2

Whether or not you are justified in saying that you *know* something also depends on context. For example, you might claim to know that Mr Thompson is in his office because you just saw him go in, and you can hear his voice through the wall. But if, for some extraordinary reason, the future of the planet depended on whether or not Mr Thompson really is in his office, you might begin to feel less sure. Perhaps what you saw was only an actor who looked like Mr Thompson, and perhaps what you can hear is only a recording of his voice. This is the stuff of Hollywood dramas, and you are never likely to find yourself in such a situation. Since life is too short to raise sceptical doubts about everything you see, you have to make a judgement about when doubt is appropriate and when it is inappropriate. While *indiscriminate* scepticism has little to commend it, you would probably be more cautious about saying 'I know' in a court of law than you would in everyday life.

When you say you *know* something you are, in a sense, taking *responsibility* for its being true. If, for example, you say that you *know* the bridge across the chasm will support my weight, there is a sense in which you are responsible for what happens to me if I cross it. And if you say you *know* that Apollo 11 landed on the moon, you are implying that if other people look at the evidence with an open mind they *ought* to come to the same conclusion. Although we tend to think of facts as being completely different from values, this suggests that there is an ethical element built into the pursuit of knowledge.

Levels of knowledge

There is a lot more we can say about knowledge than simply that it is justified true belief. For a start, there are also different levels of knowledge. You may, for example, have a superficial grasp, a good understanding, or complete mastery of a subject. When five-year-old Jimmy says 'My mum's a doctor' his understanding of what this means is clearly not the same as his mother's. Much of what we claim to 'know' is in fact second-hand knowledge that we have acquired from other people and do not understand in any great detail. You might, for example, struggle to explain to another person what gravity is, or why the sky is blue, or how a mobile phone works. Young children who are continually asking 'Why?' are sometimes irritating precisely because they bring to light the superficial nature of our understanding.

Figure 2.3

If you study a subject in depth, your understanding of it is likely to grow and develop over time. For example, if you study the *theory of relativity* in your physics class, revisit it as a university student, specialise in it when studying for a doctorate, and finally teach courses on it as a university professor, your knowledge of the theory as a university professor will be deeper and more sophisticated than it was as a first-year physics student. You may already have had the experience of revisiting a topic several years after you first studied it and realising how superficial your previous understanding of it was!

Knowledge and information

At this point, we should make a distinction between *knowledge* and *information*. Imagine sitting a child down one afternoon and teaching them some disconnected facts: 'nine times seven is sixty-three'; 'the chemical formula for water is H_2O'; 'aardvarks live in Africa'; 'the heroine in *Pride and Prejudice* is called Elizabeth Bennett', and so on. By the end of the afternoon, the child may be said to have acquired some knowledge in the limited sense of information. After all, each of these statements is true, the child (we assume) believes they are true, and she is justified in taking them as true because you are a reliable authority. However, if the child does not know how to multiply, knows nothing about atoms and molecules, does not know where Africa is, and has never read *Pride and Prejudice*, there is clearly something missing from her knowledge. Drilling random facts into someone's mind may be good for quiz shows, but it does not lead to genuine understanding.

A person with genuine knowledge of a subject does not merely have information about it, but understands how the various parts are related to one another to form a meaningful whole. To clarify with an analogy, we might say that information is to knowledge as bricks are to a building. While you cannot have a building without bricks, a building is more than just a heap of bricks. Similarly, while you cannot have knowledge without information, an area of knowledge is more than just a heap of information. The point is that when you study a subject you are not simply taught endless lists of facts, but you also learn various background assumptions, theories and informing ideas that help you to make sense of the facts.

So, if you wish to understand something, it is not enough to merely acquire information about it – you also need to think about the information and see how it hangs together. In a well-known *Sherlock Holmes* story, the famous detective and his trusty assistant, Dr Watson, are at the scene of a murder surveying the evidence. Holmes turns to Watson and says 'I see it all now, I know who did it.' Watson says with astonishment 'My dear Holmes, I've examined this same room with you and I see nothing at all!' To which Holmes replies 'No Watson, you "see" everything, but you "observe" nothing.' While Watson has at his disposal exactly the same information as Holmes, he cannot see the pattern which has allowed Holmes to solve the crime. What this story shows is that you can sometimes acquire knowledge simply by reflecting on the information you already have at your disposal rather than by looking for more information. This is a point worth keeping in mind in the Internet age when many people have access to vast amounts of information.

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1. Have you ever passed an exam by cramming the week before, but felt that you did not really understand the subject? What does this suggest to you about the difference between knowledge and information?
2. What is the difference between knowing in the sense of understanding and knowing in the sense of being able to recite the relevant facts and theories without understanding them?

Sources of knowledge

Second-hand knowledge

The search for knowledge is not only an individual enterprise, but also a communal one, and one of our main sources of knowledge is other people. Since we can share our experiences through language, we are able to know a great deal more about the world than if we had to rely on our own resources. If Smith goes north and Jones goes south, and Bloggs goes east and Brown goes west, and they then come together and share their knowledge, they will do much better than if they each try to discover everything for themselves.

? How much do you think you could know about the world if you *never* trusted what anyone else told you, or anything that you read?

Our ability to communicate with one another also means that we are able to pass on our beliefs and practices from one generation to another in the form of **culture**. The existence of culture means that, rather than constantly reinventing the wheel, we can make progress by building on the accumulated achievements of past generations. The scientist Isaac Newton (1642–1727) once remarked: 'If I have seen further it is by standing on the shoulders of giants.' His point was that he was able to make his discoveries only because he was building on the contributions of other brilliant minds.

Despite the advantages of accepting knowledge 'second-hand' from other people, we must be careful that we do not fall into **authority worship** and blindly accept what we are told without thinking about it. For hundreds of years people believed that the earth was the centre of the universe, that everything was made up of four elements – fire, water, earth and air – and that some people were natural slaves – but they were wrong. As this example shows, the mere longevity of a belief is no guarantee of its truth.

Second-hand knowledge is also known as **knowledge by authority**, or **knowledge by testimony**. Among the main sources of such knowledge are:

- cultural tradition
- school
- the Internet
- expert opinion
- the news media.

While each of these can be a valuable source of knowledge, they are not infallible, and we should be aware of their limitations.

Cultural tradition

The culture we grow up in has a strong influence on the way we see the world, and is likely to determine our intellectual default settings. For we have a natural attachment to our own beliefs and practices, and they provide a point of reference for what we consider to be 'normal' or 'reasonable'. To see the power of traditional ways of thinking, you only have to look at the clock face in Figure 2.4. While it might seem more rational to divide a day into ten equal hours, most people would not want to decimalise time simply because they are used to dividing a day into two 12-hour periods, and it therefore feels right.

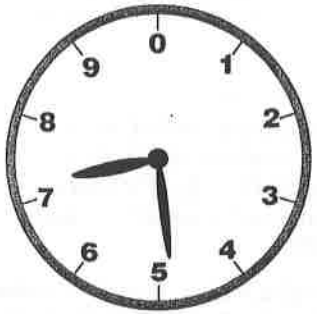

Figure 2.4 Ten-hour clock

Since a cultural tradition embodies 'the inherited wisdom of the community', we should, I think, approach different traditions with respect, and be open to the fact that we may have something to learn from them. At the same time, we need to keep in mind that *living* traditions change and develop over time, and we do not have to be imprisoned by what we have inherited from the past. A person living in Britain in the nineteenth century might have argued that it was a long British tradition, sanctified by time, to exclude women from political power. Fortunately, some people were willing to question this inherited belief. If we are to make progress in any area of knowledge, we need to find the right balance between respecting traditional ways of thinking and being willing to question them.

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1 Which of the following is natural and which is simply a matter of tradition or convention?
   a A seven-day week
   b A 365-day year
   c A base 10 number system
   d The value of pi
   e Reading from left to right
   f Wearing clothes

2 Which of the following would you be unwilling to eat or drink? Give reasons:
   a Cows
   b Pigs
   c Dogs
   d Snails
   e Cockroaches
   f Alcohol
   g Sulphuric acid

3 To what extent do you think our beliefs about what is disgusting are determined by the culture we grow up in? What, if anything, is considered disgusting in every culture?

School

Since the introduction of universal education, schools have played a key role in the transmission of knowledge from one generation to the next. The roughly 14,000 hours you spend at school are supposed not only to give you mastery of various subjects, but also to prepare you for life. Since it is impossible to teach literally everything, any school curriculum will inevitably be selective and cover only a limited number of topics. This raises questions not only about how we should decide what to include in the curriculum, but also about the difference between education and **indoctrination**. Some people would argue that the difference between the two concerns not so much *what is taught as the way it is taught*, and that the hallmark of a good school is one that – no matter what the curriculum – encourages you to question things and think for yourself.

1 The philosopher Bertrand Russell (1872–1970) once observed that 'In most countries certain ideas are recognized as correct and others as dangerous. Teachers whose opinions are not correct are expected to keep silent about them.' What opinions, if any, are teachers in your country expected to keep silent about, and to what extent can this be justified?

2 What qualities would you look for if you were appointing a new teacher to your school? How far would they vary according to the subject that was to be taught?

3 If you were asked to design a curriculum for students aged 14 to 18 living in a colony on the moon, what would you include in the curriculum and why?

4 How would you rate the International Baccalaureate as an educational programme? To what extent do you think it is genuinely international and to what extent do you think it is culturally biased?

The Internet

When you have school work to do, the first place you look for information is probably the Internet. The advantage of the Internet is its speed and accessibility. The disadvantage is that there is no quality control. Hence it can be a source not only of information, but also of disinformation. Here are three examples of **urban legends** which circulated widely on the Internet and have no basis in fact:

- American astronauts conducted sex experiments while orbiting the earth in the space shuttle in 1996.
- Nostradamus predicted the attack on the World Trade Center.
- Waterproof sun-screen can cause blindness in children.

In theory, we all know that we should not believe everything we read on the Internet, but in practice we sometimes judge the reliability of a website by its appearance and believe the information on a website if it looks good. There are clearly better ways of deciding what to believe!

1 Find two articles from the Internet, one that you believe and one that you do not believe. Give reasons.

2 What criteria would you use for distinguishing generally trustworthy websites from generally untrustworthy ones?

3 Do some research and try to determine which of the following commonly held beliefs is true.
   a The dinosaurs went extinct because they were slow-moving and stupid.
   b The Inuit have hundreds of different words for snow.
   c We use only 10 per cent of our brains.
   d Human beings are the only animals that kill their own kind.
   e Christopher Columbus' contemporaries believed that the earth was flat.

Expert opinion

One important consequence of the explosive growth of knowledge over the last hundred years is that it is no longer possible for even a very bright person to be a 'universal genius' and know everything. In an increasingly specialised world, we have to rely on expert opinion to justify many of our knowledge claims. For example, I am willing to say that I *know* that the sun is 93 million miles (150 million kilometres) from the earth even though I have only the vaguest idea of how to prove this myself. But I could, if necessary, refer you to an astronomer who could support this knowledge claim with a wealth of evidence. At a practical level, we show our confidence in other people's expertise every time we get on a plane, visit a doctor or call a plumber.

Despite the obvious value of relying on expert opinion, we should keep in mind two things about it:

a *Experts are fallible and sometimes get it wrong.* For example, from 1923 until 1955 it was widely agreed by experts that human beings had twenty-four pairs of chromosomes. This was known to be true because a Texan biologist called Theophilus Painter (1889–1969) had counted them under a microscope. Unfortunately, Painter miscounted and no one got round to checking his data for more than thirty years! (We in fact have twenty-three pairs of chromosomes.)

Another well-known example of the fallibility of experts concerns the 'Piltdown Man' hoax. When the skulls of 'Piltdown Man' were discovered in 1913, anthropologists thought they were the 'missing link' between human beings and apes; but in 1953 chemical tests proved that the fossils were frauds.

Experts are particularly fallible when it comes to predicting the future. In 1894, the eminent American physicist Albert Michelson said 'It seems probable that most of the grand underlying principles [of physical science] have been firmly established.' Eleven years later, Albert Einstein burst onto the scene and changed the nature of physics forever. In 1933 another famous physicist, Ernest Rutherford (1871–1937), said 'Anyone who expects a source of power from the transformation of... atoms is talking moonshine.' Twelve years later atomic bombs were dropped on

Hiroshima and Nagasaki. And while I am as worried about global warming as the next person, it is worth noting that as recently as the 1970s some climatologists were predicting a new ice age!

b *Experts have a limited range of competence.* There is no reason to believe that an expert has any privileged insight into things outside his own area of competence. The physicist Richard Feynman (1918–88) once said: 'I believe that a scientist looking at non-scientific problems is just as dumb as the next guy.' His point was that while you might take Albert Einstein as an authority in physics, he is not necessarily a competent guide in areas such as politics, ethics and religion.

1 Which of the following would you consider to be a reasonable appeal, and which an unreasonable appeal, to expert opinion? Give reasons.
   a My maths teacher said Fermat's Last Theorem has recently been proved by someone called Andrew Wiles.
   b *Gosh*, a popular men's magazine, quotes the pop star Hank Johnson as saying that for good dental hygiene you should floss your teeth three times a day.
   c The Oxford historian Dr Trevor Packard says that the newly discovered Hitler Diaries are genuine; but this is disputed by fellow historian Dr Suzanne Ferguson of Cambridge.
   d There is broad agreement among art critics that Pablo Picasso was one of the greatest painters of the twentieth century.
   e According to Dr Daniel Clarke, head of scientific research at Cigarettes R Us, the health hazards associated with tobacco have been greatly exaggerated.
   f Mona Jakes, a well-known astrologer, says that Derek and Jane will be happy together because they have compatible star signs.
2 Advertisers sometimes appeal to the authority of science in order to sell their products. Find and analyse two such examples.
3 Can we speak of expert opinion in all areas of knowledge, or only in some of them? Give reasons.

The news media

The news media play a key role in shaping our picture of the world. Despite the aura of objectivity surrounding a television news bulletin, we are all aware that there is some bias in both the selection and presentation of news stories. You will, for example, get a very different slant on a story presented by *Fox News* to one presented by *Aljazeera*!

There seem to be three common criteria for deciding what to put into a news bulletin.

a *Bad news.* Most news bulletins focus on bad news and usually consist of a long catalogue of crimes, wars and natural disasters. Some people have argued that this creates a **bad news bias**, which gives people an unduly pessimistic view of the state of the planet, and helps to create and sustain a climate of fear.

b *Extraordinary news.* Someone once said that if a dog bites a man then it isn't news, but if a man bites a dog – that's news. News broadcasts tend to focus far more on extraordinary rather than ordinary events. One consequence of this is that gradual changes that may have a significant effect on people's lives tend to get little coverage. For such stories cannot be squeezed into the short time-slot available and packaged in the dramatic way favoured by TV news.

c *It's Relevant news.* A news story is usually considered to be relevant if it concerns domestic citizens. If a plane crashes in dense fog in a distant country killing everyone on board, the coverage it gets on British news will probably depend on how many British people are on the flight.

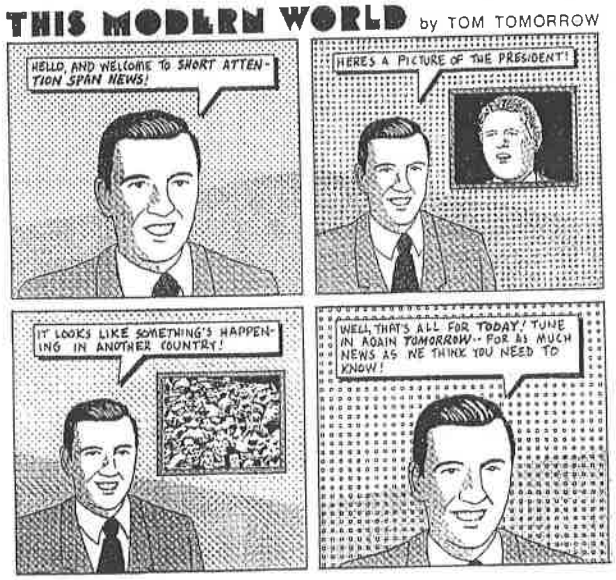

Figure 2.5

Some years ago a radio station had as its slogan, 'Don't trust anyone – not even us!' This was doubtless designed to encourage listeners to think critically about the news. But if you are going to find out what is going on in the world then you have to trust *someone*. The question is 'whom?' Despite the existence of bias, some news outlets are surely more objective than others. The trouble is that most people who follow current affairs choose outlets that reflect their pre-existing prejudices. If people on the left buy left-wing newspapers and people on the right buy right-wing newspapers, it is hardly surprising that both sides find their beliefs confirmed by reports of what is happening in the world. Perhaps we should occasionally select a news outlet that reflects a political view that is the opposite of our own. At least, this would encourage us to question our assumptions and not take our own way of looking at things for granted.

1. On a day when a major news story breaks, compare and contrast the way that different newspapers cover the story. To what extent is it possible to establish the underlying facts of the matter?
2. How objective do you think television news is in your country? How could it be improved?
3. There are various other sources of second-hand knowledge in addition to those we have mentioned. Discuss the reliability of two other sources.

The limitations of second-hand knowledge

Despite its importance, second-hand knowledge – whether it comes from your cultural tradition, school, the Internet, expert opinion, or the news media – can never be an *original* source of knowledge. For example, I may claim to know that Napoleon was defeated at the battle of Waterloo on 18 June 1815 because I read it in a textbook; and the writer of the textbook may claim to know it because he read it in some other book. But sooner or later this chain must terminate in the account of an eye-witness who was at Waterloo on that fateful day.

Since authority is not an original source of knowledge, our knowledge claims must ultimately be justified by such things as perception, reason and intuition. Nevertheless, problems can arise if you rely exclusively on your own judgement in trying to determine the truth. For if you do not test your beliefs and opinions against those of other people you may end up simply believing what you want to believe rather than believing what is true. This is particularly apparent in the case of our beliefs about ourselves; for most of us tend to overestimate our strengths and underestimate our weaknesses. Talking to people with different opinions may help us to improve our self-knowledge and develop a more balanced picture of the world.

1. When, if ever, would you be willing to trust the authority of other people rather than the evidence of your own senses?
2. Have you ever done a science experiment and got a result that differed from the textbook? If so, which did you trust – your own result, or the textbook? Why?

Conclusion

We began this chapter by defining knowledge as justified true belief, and then suggested that the difference between knowledge and belief is one of degree rather than kind. We then saw that knowledge consists of more than a jumble of isolated facts, and that its various parts are related to one another in a systematic way. You only have to think of the way in which a textbook is organised to see that this is the case. This suggests that, in order to gain a deeper understanding of an area of knowledge, you need a mixture of *detail* and *context*. (If the mind is like a camera, we could say that you need both a zoom and a wide-angle function.) Finally, we have seen that a great deal of knowledge comes to us second-hand on the authority of other people. While such a division of intellectual labour makes obvious sense, it raises the problem of which sources of knowledge to trust and which not to trust. As usual, there is no easy answer to the question, and we need to find the right balance between taking knowledge on authority and relying on our own resources. If you lack the courage, resources or confidence to think things out for yourself, then you are condemned to take all your beliefs second-hand from other people. But, if you are never willing to test your ideas against those of other people in dialogue and debate, you may end up with a distorted and fantasy-ridden picture of the world.

The task in Part 2 of this book is first to take a closer look at language, which is the medium through which we acquire knowledge from other people, and then to consider the three personal ways of knowing – perception, reason and emotion.