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Introduction to Theory of Knowledge

Perplexity is the beginning of knowledge.

Khalil Gibran

Ignorance is the curse of God; knowledge is the wing wherewith we fly to heaven.

William Shakespeare

When you know a thing, to hold that you know it, and when you do not know a thing, to allow that you do not know it – this is knowledge.

Confucius

The learning and knowledge that we have, is, at the most, but little compared with that of which we are ignorant.

Plato

When you know better you do better.

Maya Angelou

I mean, you could claim that *anything's* real if the only basis for believing in it is that nobody's proved it doesn't exist!

J.K. Rowling

The possession of knowledge does not kill the sense of wonder and mystery. There is always more mystery.

Anais Nin

For me, it is far better to grasp the Universe as it really is than to persist in delusion, however satisfying and reassuring.

Carl Sagan

Aims

By the end of this chapter you should:

- understand that, perhaps contrary to what you have so far found in your formal education, certainty and truth are not easily found
 - recognize that there are many dubious pieces of 'knowledge' available and that even the word of a world authority is no guarantee of truth
 - understand that 'certainty' is a matter of degree and that some opinions are better than others
 - be able to give at least an initial definition of 'knowledge' and distinguish between 'knowledge' and 'belief'
 - be able to list and give a simple critique of different reasons for saying that you 'know' something
 - be able to discuss how these different reasons relate to the standard academic subjects.
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Introduction

You have probably been in full-time education for a number of years, and in that time you have acquired a vast amount of knowledge. With the help of your teachers and your textbooks, the number of facts you know and the depth of your knowledge are probably amazing. What is more, you are learning more and more, and will probably go on to do so for several more years. In the sciences, for example, many of you will know about Einstein's theories. Einstein is widely regarded as one of the greatest geniuses of all time, and yet the physicists among you will be using his ideas in your exams. In English literature, many of you will be able to analyse and discuss the work of Shakespeare, possibly the greatest English playwright the world has ever seen – maybe even the greatest it will ever see. The same goes for any other subject: you will be studying ideas developed by thinkers of great genius.

When we scale up your experience to all the people alive today, we realize that the amount of knowledge out there is truly staggering. What is more, we have access to so much of it. You want to know what animals were walking the Earth 200 million years ago? Look it up in a book. You want to know what it's like in Antarctica in the middle of winter? Watch a documentary. And it's getting easier all the time – with newspapers, magazines, TV and the internet, you can find out all about the world without leaving the comfort of your own home. And what could be more reliable than journalism and the internet?

Well, recent headlines that have been seen in one, admittedly less than illustrious, newspaper include 'Alien Spaceships to Attack Earth in March 2013!' and 'How to Sell Your Soul to the Devil!' and 'Obama was Born – On Mars!' The internet, too, is hardly a totally trustworthy source of information – just look for the 'End of the World 2018' websites! So can we trust the information that we have?

We can imagine what you are thinking at this stage: that these are stupid examples. Only really gullible people would believe stories as ridiculous as these, and nobody with any sense would make errors as obvious. So now consider the following predictions. They are slightly different from the newspaper headlines in that they are all claims about the future, but they still tell us something about the possibility of error.

There is no likelihood that humans will ever tap the power of the atom.

Robert Millikan, Nobel Prize Winner in Physics (1923)

The atom bomb will never go off and I speak as an expert.

Admiral W. Leahy, advisor to the US President (1945)

I think there will be a world market for five computers.

Thomas Watson, founder of IBM (1958)

By 2000 women will wear pants, men will wear skirts, both sexes will go bare-chested (weather permitting) and clothes will be see-through.

Rudi Gernreich, American fashion expert (1970)

The internet will never take off.

Bill Gates, founder of Microsoft (1988)

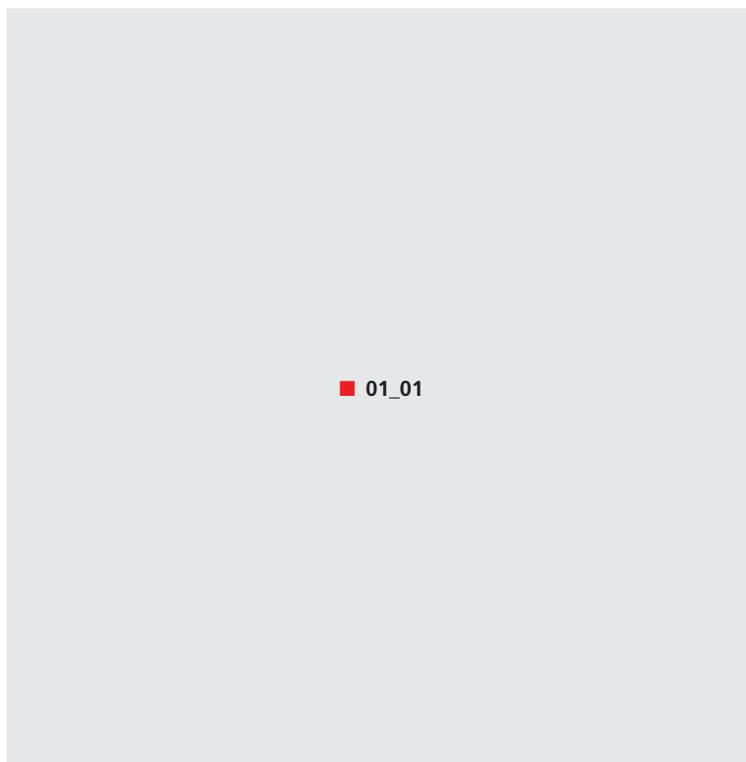
So it is not just stupid people who get things wrong. Perhaps there are errors in what you are told every day, even in what you are reading now. It could be that what you learn in school isn't totally correct. So when we said that you have a lot of knowledge, maybe we should have been more careful. How much of what you know is true?

Answering this question is the central theme of this book, and sometimes the answers can be quite surprising; they can force us to look at the world in a different way. As a brief example, let's consider how much we know in light of how long we have been around. Geographers often comment how the impact of humans can be felt all over the world, even in the remotest places. We humans dominate the Earth. In many ways, we are the supremely powerful species on Earth at the moment – there is no doubt about that. However, astronomer Carl Sagan used an analogy of a calendar year to show how brief a time humans have existed, and this idea may call into question our certainties and our claims to knowledge. Certainly, it alerts us to the fact that our point of view is just one, perhaps very recent and very modest, perspective and it gives us good reason to approach grand claims to knowledge with some humility.

Sagan, in his series *Cosmos*, suggested that if we took the whole history of the universe and compressed it into one year, starting 1 January, then current theory would suggest our galaxy formed on 1 May. Earth was formed around 14 September. After life begins on 25 September, it may seem like things are speeding up, but it then takes until 12 November for the oldest photosynthetic plants to develop, and it isn't until 1 December that there is a significant quantity of oxygen in the atmosphere. So for the first eight-and-a-half months there was no Earth, and even then for another two-and-a-half months there was no conceivable way for humans, had they been around, to survive. But at least now we are beginning to approach human history – humans appeared on 31 December. The University of Victoria, in Victoria, Canada, presents Sagan's 'cosmic year' metaphor on its website at <http://tinyurl.com/amg4c>. Here, the physicists make the point that an average human life takes up only about 16/100ths of a second, in these cosmic terms.



On the cosmic scale, therefore, it is only in the last fraction of a second, on the last day in the entire year, that anyone alive today has existed, that you were born. Most people feel this to be profoundly humbling. And where does it leave humans' feelings of grandeur, sense of power and sense of certainty?



■ Carl Sagan's cosmic calendar

- 1 What is the human's place in the universe? How likely is it that humans have found out any profound truths about the universe?
- 2 What are humankind's greatest successes?
- 3 Does it really matter how long we have been around?

Certainly, Sagan's concept alerts us to the fact that our point of view is just one, perhaps very recent and very modest, perspective and it gives us good reason to approach grand claims to knowledge with some humility. We'll examine this important question of perspective in Chapter 15, but for now we have skirted around the subject of knowledge itself for long enough. We need to find out what knowledge actually is before we begin properly to question it.

What is knowledge?

This may seem like a ridiculous question. We all know what knowledge is, don't we? Well, maybe, but explaining it may prove to be a little tricky. One definition of knowledge that is commonly cited is one developed by Plato many centuries ago: Knowledge is something that we believe, that is true, and that we have justification for – or, more simply, *knowledge is justified, true belief*. Despite its popularity, this definition of knowledge is not very helpful – and for a very simple reason. If we claim to know something then we believe it, and we believe it to be justified and to be true. But how do we *know* if it is justified and/or true?

There is, in fact, no way to determine whether something is true or not independent of our justification. Suppose, for example, you ask me how I know that the chemical composition of water is H_2O . I will tell you that I know it because I studied chemistry in high school, that I learnt about the periodic table of elements,

and that I learnt about how the elements on that table combine to create different substances. I might even tell you that I trust my father, who is a scientist, and who has confirmed for me that he has extensive experience with chemical bonds. These experiences are my evidence – my justification – for my claim. I can tell you that because this evidence is true, my claim is also true. I have, therefore, justified, true belief, or knowledge. The problem is that I have no way of establishing the truth of my assertion about the chemical formula for water other than that I believe that my justifications are true. Even if I could directly see the hydrogen atoms and the oxygen atom, I would point to my sensory perception as my justification for the truth of my claim. Any justification that we offer – and truly believe – necessarily convinces us that what we believe is true and thus allows us to say that we have ‘knowledge’. You should see the problem here – we are trying to define knowledge in terms of justification and truth, but we are using the concept of knowledge in doing so! Our definition is circular and, therefore, unhelpful.

- 4 Plato’s definition suggests that you can believe something without knowing it. Is it possible to know something without believing it?
- 5 Is knowledge the same as true belief? Can you imagine a case where someone believes something which is true, but where we would not say that she knows it?
- 6 One night my watch broke at 11.51, but I didn’t realize. I was asleep at the time, and when I woke up I just put the watch on without looking at it. The next time I looked at it, it was, by chance, 11.51. I believed it was 11.51, and it was, in fact, 11.51. So did I know it? If not, why not?

A problem arises when we think someone has an incorrect claim; the problem is that we only decide if the claim is indeed incorrect once we agree on what makes a good justification. There is no way to verify which one of us has the ‘truth’ except by using our processes of justification. Consider, for example, some suspicious ‘knowledge’ claims. What do you make of the person who claims that she knows that the world is going to end on a particular date (as happened in October 2010 and again in December 2012)? Or what of the person who claims that he knows he was abducted by aliens, experimented upon, and then returned to Earth? Can we really say we ‘know’ such things? People who make these claims say that they do indeed ‘know’ them, but most people would say that these claims are not knowledge because they are not true. Such claims do not cause us much of a problem in terms of defining knowledge, because they are extremely difficult to justify. If we ask people who make these claims for the evidence, they may offer some, but we will (perhaps) respond that what they take as evidence is so tenuous and open to interpretation that the degree of certainty is very low, and so, we would suggest, most people would not wish to accept these claims as knowledge. The people who make these claims, however, would say that they are convinced by their own justifications, and that they therefore believe that their claims are true. They would say that, according to Plato, they have knowledge.

- 7 Does the ‘justified, true belief’ definition fit our understanding of the term ‘knowledge’, or does it wrongly include or exclude anything? That is, can you think of a situation where:
 - someone might have justified, true belief but we wouldn’t say that they knew something
 - someone did not have justified, true belief but we would say they knew something?

So does this mean that, since we all believe what we say is true, that there is no real distinction between what we believe and what we know? We all make

many knowledge claims every day. You might say, for example, that you know that 9×4 is 36 or that Australia was colonized by British prisoners who were sent to Botany Bay, or that today is Tuesday. If asked how certain you are of these knowledge claims, you can justify them by offering evidence or an explanation in their support. You might, for example, justify your claim that 9×4 is 36 by explaining how the multiplication tables work, or, more simply, by lining up four rows of nine pebbles and then having someone count them. You might justify your claim that Australia was colonized by British prisoners by referring the listener to a well-documented book on Australian history, such as Robert Hughes' *Fatal Shore*. You could justify your claim that today is Tuesday by pointing to a calendar. There are many knowledge claims which can similarly be justified with facts well enough established and easily enough understood that they cannot be disputed except by someone wilfully disregarding reality; such claims are often easy to recognize and we can comfortably say that they do, indeed, constitute knowledge. So the strength of justification is crucial; in simple terms, we can say that the better justified a belief, the more likely we are to say that the belief is knowledge. We'll explore this in the 'Good reasons' section of this chapter, and indeed throughout the whole TOK course.

There is another common problem that we must deal with in terms of trying to define knowledge. Sometimes we say we know something, but despite our strong justification it turns out, much later, that our interpretation of the evidence was wrong, or that we didn't have all the evidence needed to make a good judgement. That is, we were wrong, and we realize that what was once claimed to be knowledge was not. We wouldn't now, for example, say that people once knew the Sun revolved around the Earth; we would say that they thought that they knew it, or that they believed it, but that they were proven wrong. Similarly, we would not say that children *know*, but rather that they only *believe*, that Santa Claus is coming to town. Some 'knowledge' turns out to be wrong, and we sometimes have to alter what we think we know once more facts become available to us, as they did to Galileo and others after he invented the telescope and as they do to children who, as they grow older, come to understand that their parents are the ones who eat the cookies left out for Santa.

- 8 Identify something that you have been told, which you believed at the time but which you now recognize is false. How did you find out the truth?
- 9 It has been claimed that this problem is not really a problem for defining knowledge; but that it is simply just that humans are not perfect and can make errors. To what extent do you agree?
- 10 What is the difference between 'I am certain that ...' and 'It is certain that ...?'

You can see that in the two cases above, we use the word 'believe' to describe wrong knowledge. That is a common usage, but it can be misleading because it tends to suggest that all beliefs are necessarily false (and that cannot be right – I believe $1 + 1 = 2$ and that humans exist and that I am a TOK teacher and all sorts of things that you would likely concede really are knowledge). To take a negative view of belief is to diminish the very concept of belief, and we will want to develop a more nuanced understanding of when it is appropriate to say that we believe something as opposed to when we should say that we know something. Consider, for example, the claim that the Canadian curling team led by Kevin Martin will win the next Olympic trial. You cannot call this knowledge, because you quite obviously cannot predict the future, however much you might admire Mr Martin's team and however much confidence you have in its superior curling

skills. You would have to say that you *believe* that Kevin Martin's team will win the Olympic trial. Your belief may, in the end, turn out to be perfectly true. You call it a belief now because the evidence that is available is open to a wide variety of interpretations and cannot, therefore, be used to substantiate a single, incontrovertible point of view.

- 11 How is the Kevin Martin example similar to the examples above in which great thinkers such as Galileo made assertions that later turned out to be wrong?
- 12 List five things you believe and five things you know. Why did you include the items in one list but not the other?
- 13 What is something that you once believed to be true but which you later found out was not? What was your justification for believing it? Why do you no longer believe it? Would you now say that you know it is not true?

So we see that belief is not just a word that means something that someone used to 'know' but was proved wrong; it is a word that expresses a particular kind of claim about our understanding of the world, which may, in fact, turn out to be true, once the facts are available (in the case of the curling team, after the Olympic trial). Similarly, religious claims about the existence of a god or gods, for example, are not universally accepted as knowledge, because there are multiple contradictory interpretations of the evidence which provides for their justification. Such claims are properly called beliefs; and in this case it is possible that we may never gather the kind of irrefutable facts that will decide the matter one way or the other. Belief, therefore, is, in its own right, an important concept for the TOK course.

This illustrates one more problem with Plato's definition of knowledge as justified, true belief; it does not offer a clear distinction between knowledge and belief; rather, it classifies belief as a subset of knowledge.

- 14 Molière once wrote that a sleeping potion worked by virtue of its 'dormitive faculty'. How is this related to what was said in the previous paragraph?
- 15 Can you find a solution to the problem that defining knowledge as 'justified, true belief' may be a circular definition? (See Chapter 7 for more on this.)

Having thus found several important problems with a popular definition of knowledge, we must try to find another one that will better fit our conception of what we mean when we say we know something.

We have explored the influential 'justified, true belief' conception of knowledge, and found it problematic. So what alternatives are there? Let's look at what we are trying to *do* with knowledge. One possibility is that we are trying to describe reality in some way. We can think of knowledge simply as a description of how things are; and once we do that, some of the problems melt away. To see why, think of a map – that is, a model of a city or state. It is a simplified version of the thing itself (and it is useful precisely for that reason). A map allows us to understand certain features of a vast and complex system, the whole of which we cannot deal with all at once. Different types of maps tell us different things about the territory: a street map tells us where the roads are, which roads are one way, which roads are dead end, and so on. We know, from such a map, various different routes we can take to get from place to place. This type of map leaves out features of the city that we do not need to know for our purpose: elevation, population density, socio-economic distribution, and so on. Other maps might give us exactly this or different types of knowledge about the same territory: we can use rainfall maps to determine possible areas of flooding, population maps to tell us where we need to provide energy

and water, and so on. The map gives us knowledge so long as it continues to be functional, and we can rely on it until the region changes. If new roads are built or global warming alters the rainfall patterns significantly, then we need to update our maps in order to accommodate the new facts. So, in this way of thinking, *knowledge is a map of some aspect of reality*; it's a specific model, for a specific purpose, and so it is imperfect (or at least incomplete) by definition. It can be revised and updated as we have access to more facts or our ability to interpret them changes. Truth, in this conception of knowledge, is determined by the functionality of the model. We can believe what the model tells us so long as it works, and we can consider our model to have given us an accurate picture of reality so long as the model is logically consistent and accounts for all the known facts.

- 16 There are many different types of map. If knowledge is a type of map, what different types of knowledge are there?
- 17 If knowledge is a map, what counts as a good justification for that knowledge? If it is simply 'what works', are there any kinds of knowledge for which this definition does not really 'work', such as ethical knowledge or artistic knowledge?
- 18 To what extent does this map-like idea of knowledge solve the problem that arises when we learn that our 'knowledge' is actually wrong?

Thinking of knowledge in this way allows us to avoid the trap of the circular definition of knowledge as justified, true belief. It allows us to say that we can know something based on grounds other than personal belief. It also releases us from the all or nothing thinking that something must be 'true' to be knowledge, and, if not 'true', then it is not knowledge (we shall see that this word 'truth' causes a lot of problems, not least because it can mean different things in different contexts). Thinking of *knowledge as a model of reality* allows us to adapt, refine and correct our knowledge as better information comes along. The model of the atom, for example, has been updated several times over the centuries to reflect the new understanding that results from each new technological advance or documented experimental result. Our knowledge about what happened aboard the *Titanic* in April 1912 was revised significantly when the wreckage was found by Robert Ballard and his team in 1985; it has subsequently been further revised as updated technology has provided us with precise images and data documenting where the pieces of the ship actually landed, and as mathematical modelling has determined what sequence of events was possible, according to the laws of physics. Our ethical models change over time as well; slavery was once accepted in many places around the world as part of a model that represented knowledge of economic and social structures. Now it is no longer accepted, because the values by which the institution was justified have changed. We don't have to be worried that having been 'wrong' about the atom, the *Titanic* or slavery means that we can't know anything; if knowledge is a model, then to know something is to have accounted for many or all of the pertinent available facts. So long as that model is carefully made and rigorously tested, then it is satisfactory.

Considering knowledge as a model of reality allows us to use the knowledge that we have based on current facts, beliefs and understanding, but it also allows for growth and learning. We must still justify our claims, but there is more range for testing the rigour of our justifications. Rather than saying 'this is justified' or 'this is not justified', maybe we should talk about the **validity** of the justification – for example, 'poor justification', 'strong justification' or 'excellent justification' – leading to greater or lesser degrees of certainty of our knowledge claims.

- 19 What sort of justifications would lead to 'strong' knowledge or 'weak' knowledge?
- 20 Revisit the examples in this section and describe the validity of the justifications. Is the 'knowledge' 'strong' or 'weak'?
- 21 Which of your school subjects give you 'strong knowledge'? Which give you 'weak knowledge'?

How do we proceed from here? We have been arguing about the meaning of words for long enough (this is something that, rightly or wrongly, philosophers are often accused of doing!). Perhaps we need to start looking in greater depth at examples of what we consider to be knowledge, and see how we justify these claims.

What types of knowledge are there?

It is very easy to read, often in reputable newspapers, that news is about facts, and opinions on those facts. **Facts** are disputable (for example, we can argue about the number of computers sold in India in 2012) but there is a right answer to a factual question. Answers which deviate from the facts are wrong. **Opinions** are rather different – you may hear it said that an opinion can never be wrong because everybody is entitled to their own opinion. The notion of freedom is sometimes interpreted as meaning that anyone's opinion is as good as anyone else's.

This is actually pure nonsense. Suppose you are a keen runner, but you break your leg in an accident. Your leg is put in plaster for a month, and when the plaster is removed you are keen to start training straight away. In your opinion, you should start training immediately, and push yourself really hard, ignoring any pain, until you are as fit as you were before the accident. In your doctor's opinion, you should take things very slowly, and stop as soon as you feel any pain.

Which opinion is better? Although it can be argued that this is a matter of belief, because we are trying to predict the future, clearly the belief that is based on reason and experience is a better one; that is, it has a greater chance of being right. This is the kind of opinion most important to educated people, and the kind we will concentrate on in this book. Most people would agree that some opinions are better than others – the difficult thing is to decide how to tell a good opinion from a bad one. In the case of the injured runner, it seems reasonable to trust a doctor, as she will have better reasons for her judgement than a layperson.

Another way to think of this question of reason and experience is to consider that there is personal knowledge and there is shared knowledge. Each of us has our own personal knowledge, some of which is the result of our own highly individual combination of experience and personality. Much of that experience, however, is second-hand. I know, from work done by other people, that the Earth is round. I have seen physical models of the solar system, I have seen photos of the Earth taken from outer space on NASA missions, and I have read about Greek conclusions about the shape of the Earth deduced from shadows and the gradually growing masts of tall sailing ships approaching from the horizon. I do not have personal, direct knowledge of the shape of the Earth, as I have never been in a position to observe or calculate the fact for myself. I know that Beethoven wrote the famed *Moonlight Sonata* because I have heard about it in a class on music history, I have read it on album covers, and I have seen his name on programmes for concerts at which the *Moonlight Sonata* was being played. Beethoven has been dead for 400 years, so I never had a chance to witness his writing for myself. For this and much other knowledge which I personally have, I rely on shared knowledge – knowledge amassed by learning communities

around the world. If I am to rely, for so much of my knowledge, on the work of others, then it behoves me to ensure, as much as possible, that the opinion which I accept is the best-informed opinion available to me. It is better, in other words, to rely on the expertise of the doctor than on the fly-by-night wishful-thinking opinion of the layperson when it comes to treating a broken leg!

This means that we might plausibly argue that there are three types of questions.

- Questions that have one correct answer. Example: how many atoms of hydrogen are there in a water molecule?
- Questions that have multiple possible answers but which require justification and reasoned judgements. Example: what is the best way to tackle the developing world's debt problem?
- Questions that have no correct answer but depend totally on the person answering the question. Example: which type of chocolate tastes best?

Sometimes it is possible to argue about which category a question falls into – for example, ‘Is this painting good art?’ If in doubt, it is worth assuming that it is a question worthy of debate and exploring how a discussion develops. If it turns out to be pure personal choice, with nothing to be said for one side more than the other, then it will probably turn out to be a short and boring discussion! If you find yourself coming up with reasons that appeal to ‘universal’ intellectual standards, such as clarity, consistency, honesty, factual accuracy and so on, then the question is certainly a ‘Type 2’ question.

22 Do you think three categories of question are enough? Are there any others you could add?

23 For each of the following questions, decide which of the three categories the answer fits into.

- a** How many planets are there in the solar system?
- b** Who is the Singaporean minister with responsibility for education?
- c** When was the French Revolution?
- d** Is it wrong to kill?
- e** What is the colour of the nearest wall?
- f** Does God exist?
- g** Are you happy?
- h** Is your teacher happy?
- i** Is one plus one always two?
- j** Does violence on television contribute to violence in the community?
- k** Was Hitler a good leader?
- l** Can a male doctor know more about childbirth than a mother of ten children?
- m** Is it possible to know something but be unable to say what it is that you know?
- n** Will science eventually tell us how and why the universe started?

24 Three categories may not really seem to do the variety of questions justice. If we want to analyse different types of knowledge, it might be helpful to be more specific. What categories might you divide knowledge up into?

It is the appeal to ‘universal’ intellectual standards which is important, and it is these standards which we shall be looking at in some detail. (Of course, we might argue about ‘universal’ but to argue at all requires some agreement.) The standards mean that we can at least try to make coherent intellectual progress towards a well-reasoned and justified answer with even the hardest questions.

Good reasons

In answering the questions above, you have begun to justify your thinking. In one sense, this whole book is about justifying our thoughts on various topics; about arguing for what we believe in. We naturally do this all the time – when we explain

why we want to see a particular film, how we solved a maths problem, or the nature of our religious beliefs. For such an important topic, it is surprising that we usually spend so little time examining whether or not our reasons are actually good reasons, or if some types of reasons are better than others. In fact, most of us probably don't even know the different types of reasons that we have, so this must be our starting point.

25 Below is a rather dubious list of things that we might claim to know, and another list of reasons that we might give to support these pieces of knowledge. Match the reasons to the claims.

Claims

- a** I know that the sky is blue.
- b** I know that $1 + 1 = 2$.
- c** I know that it is wicked to murder a person.
- d** I know that I have a fear of spiders.
- e** I know that I went out for a run yesterday.
- f** I know that what the doctor said is true.
- g** I know that women are more emotional than men.
- h** I know exactly what God wants of me.
- i** I know that I am going to Heaven.
- j** I know that a lake is more beautiful than a sewage works.
- k** I know that I love my brother.

Justification

- i** Value judgement
 - ii** Faith
 - iii** Memory
 - iv** Authority
 - v** Intuition
 - vi** Revelation
 - vii** Sense perception
 - viii** Logic
 - ix** Self-awareness
 - x** Common knowledge
 - xi** Instinct
- 26** Are there any other ways to justify things that we know?
27 Are any of these ways of knowing really the same thing?
28 Which of these do you think are the most reliable ways of finding the truth? Justify your answer.

We can argue about the distinctions, differences and overlaps between the categories given here as there are several possible ways to categorize knowledge. For our purposes, we will suggest that **sense perception** and **logic** form two vital categories of justifying our knowledge claims; later on we shall see how they arise naturally from an examination of everyday, personal knowledge and academic, shared knowledge.

Where do we go from here?

We have seen that there may be good reasons to think carefully about what we claim to know; that knowledge is a multifaceted and complex concept; and that humans are only recent additions to the universe. What hope do we have for certainty and truth when we are so limited? And yet, we seem to have made so much progress, even in the short time we have been around. Our societies are radically different to those of any animals; we know how the stars shine, and we have the power to destroy the Earth. So far we have even had the wisdom not to! Have we overplayed the weaknesses of humankind?

We can begin with the idea that in considering the nature of knowledge and knowledge acquisition, there are two angles from which to proceed: there are things that we already know, and there are the processes by which we gain more knowledge. Perhaps we can begin with a positive approach and start with existing knowledge. Where is that knowledge contained? In our individual and collective memories.

Further study

★ We suggest the rest of this book!