

FOR THE
IB DIPLOMA

SECOND
EDITION

Theory of Knowledge

Skills for Success

John Sprague



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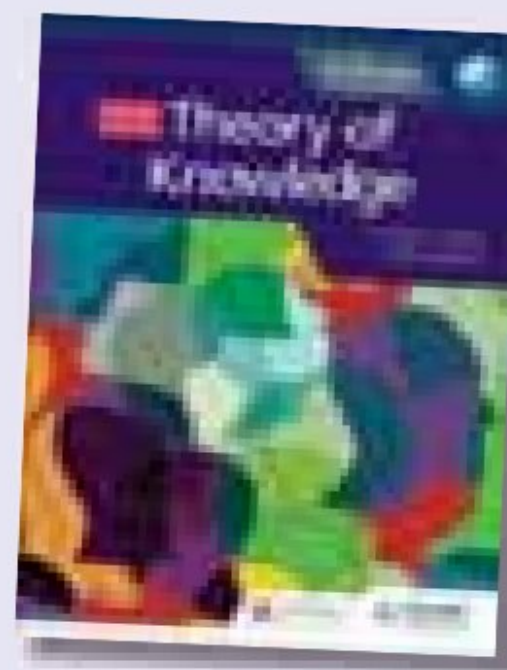
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FOR THE
IB DIPLOMA
PROGRAMME

SECOND
EDITION

Theory of Knowledge

Skills for Success

John Sprague

Author's acknowledgements:

I wrote this edition with my own two favourite IB students in mind, Cian and Finn. This will be the only TOK course you ever take; may it serve you well today and in all your tomorrows.

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Introduction

Speaking on behalf of TOK teachers around the world, I can tell you that being part of your Theory of Knowledge (TOK) course is a genuine pleasure! When you take your first steps on the TOK adventure, you are undergoing what might be the biggest journey in the IB Diploma Programme, and the development and transformation we TOK teachers see in our students is incredibly rewarding.

TOK will be a brand new subject to you, and the sort of approach needed to do well in it is one that you will not have encountered before. For example, even if you have never taken economics, geography or environmental systems and societies, you basically know what it means to study a subject, whether it is new or not: the material may be confusing and challenging at first, but you learn the concepts, you learn to approach the topics and you get on with it.

The TOK course is built around a fundamental distinction between subject-specific content and a higher order questioning about that content. In psychology, for example, you will learn about the ‘scientific method’ and how it has been used to construct biological, cognitive and socio-cultural perspectives about human behaviour; in chemistry you will also learn about the scientific method and how it has helped construct knowledge about elements and their relationships to one another. In history you will become adept at using the ‘historical method’ in investigations of past events. Philosophy will give you the tools to explore the meaning and significance of human concepts and behaviour, while in literature you will learn about texts in different literary genres and the analysis of them. Some of this will be new and all of it will be challenging, but it will not be significantly different from the methods of learning you were using before the Diploma Programme.

TOK, however, is fundamentally different, both in terms of content and approach. In fact, there is not really any ‘content’ that you have to learn throughout the course. The ‘content’ of TOK is really just the content from your other IB subjects. In TOK, rather than learning new things, you are learning ‘how to do something’ quite different. In TOK you don’t gain new knowledge, you learn about how to *think* about that knowledge.

In TOK, you must become comfortable asking questions about what makes someone’s approach to creating knowledge in their field different from how someone in another discipline constructs knowledge in theirs. You develop questions about what makes one ‘type’ of knowledge different from another, or questions about the reliability of various forms of knowledge.

The journey for the TOK student often starts off in obscurity, but nearly always ends in genuine ‘lightbulb’ moments of, ‘Ah! That’s what this is all about!’ I have never had a student return from university and say to me, ‘Thank goodness, I took that physics class (or economics, or philosophy ...),’ because, generally, universities will cover the material in the way that they want it covered, regardless of what students studied beforehand. But over and over again, throughout my teaching career I have heard from alumni, ‘Thank goodness I took TOK! It was the best preparation for university that the IB could have

provided', or 'I didn't really understand what TOK was about until I was at university and I was streets ahead of the other students who didn't take TOK'.

Because TOK is so different from their other subjects, students are often slow to come to understand it. Most of them ultimately do come to an understanding of the subject, but it is a challenging journey. This book is an attempt to help ease that process.

How to use this book

The point of this book is to explore the main elements of the course with an eye to applying these skills to your day-to-day learning in the classroom, and to provide a context which will help you to develop the skills required for success in the assessments.

First and foremost, we will be exploring the nature of the most fundamental aspect in the TOK course, the need to maintain a focus on issues and questions relating to knowledge. The breadth and scope of the course means that students can pretty much discuss *anything* they wish, provided they discuss it in a way that is focused on knowledge. But this approach is sometimes a challenge for students who are unfamiliar with it, so we will consider it closely.

Central to the success of a 'proper' TOK analysis is the notion of the '**knowledge question**', discussed in the subject guide beginning on page 11. For the assessment you will not have to develop your own knowledge question. The IA prompts and the prescribed titles are all themselves already knowledge questions, but knowing about them and how to construct them will help you develop *new* ones as part of your own responses to the IA prompt and the prescribed titles.

You should get your hands on a copy of the IB Theory of Knowledge guide from your teacher and use it as a guide throughout your reading of this book. The subject guide is the document from which your own teachers have to develop their course, but it is not any sort of secret document. There are no 'answers' there, only a lot of really interesting questions. Having the subject guide will help you better understand the course and it will also help you to better understand and prepare for the assessments.

Some of the key features of the book are shown below and on the next page.

TOK TRAP

There are many things that TOK students do again and again which can get them into trouble when it comes to assessment. The TOK trap sections in this book highlight possible pitfalls that students can too easily fall into. But, rather than just a 'don't do this!' list, they are full of 'proceed with caution' warnings. In many cases, where one student will fall into a trap,

another student, being aware of what they are doing and proceeding with caution can avoid the trap and make a really powerful point. Examiners are always impressed when a student is able to turn what looks like a TOK trap into something unique, compelling and sophisticated.

DEEPER THINKING

A key feature of a successful exhibition or essay is the shift from simply 'identifying' or 'explaining' good TOK ideas to offering a deeper analysis of them. This shift can be a real challenge for students, and these sections give some indication of how such an analysis might work.

IN PRACTICE

Very often, TOK students find themselves leaving a class thinking, 'What was that all about?!' Sometimes, the discussion is too abstract and when this happens, the practical application of the TOK skills is lost. TOK is meant to be a tool to help you uncover questions about knowledge in the real world (this practical aspect is essential to the exhibition). TOK should not be just a series of random and contentious ideas or debates. The 'In practice' sections offer guidance on how the topics being discussed might be practically applied in the TOK exhibition and essay, or in classroom discussions.

■ BUILDING KNOWLEDGE ANALYSES

Another real challenge for TOK students – one that is absolutely crucial to assessment success – is maintaining a knowledge-focused analysis throughout the assessment. These sections will help you think through issues, in terms of how you might explore the ideas in your assessments or in classroom discussions.

ACTIVITY

There are activities throughout the book that give you the opportunity to put important TOK skills into practice.

Extra reading materials and useful resources are linked to by QR codes throughout the book. They are placed in the margin alongside the text for quick scanning.

To use the QR codes to access the weblinks you will need a QR code reader for your smartphone/tablet. There are many free readers available, depending on the device that you use. We have supplied some suggestions below, but this is not an exhaustive list and you should only download software compatible with your device and operating system. We do not endorse any of the third-party products listed below and downloading them is done at your own risk.

For iPhone/iPad, Qrafter – <https://apple.co/2Lx9H5I>

For Android, QR Droid – <https://bit.ly/JKbRP0>

For Blackberry, QR Code Scanner – <https://blck.by/2DD51Jo>

For Windows/Symbian, UpCode – <https://bit.ly/2UJe7dt>

The final chapter of the book offers specific and detailed advice on how to approach the TOK assessments: the essay and the exhibition. Having been an examiner for many years, I can identify a number of mistakes that students make again and again, even though they are relatively easy to avoid. I will also identify certain elements and skills that the best students tend to offer. The TOK assessments present a genuine challenge, even to the best and the brightest TOK students, but there are a number of tools and skills which can make the process less painful, less confusing and which can ultimately lead to success.

TOK has been around for as long as the IB, and the TOK essay has been a part of the TOK assessment for nearly as long. However, the new subject guide has altered the structure of the prescribed title, so future prescribed titles might look a little different. From May 2020, they will all take the form of a knowledge question *and* they will likely specifically refer to one of the five **areas of knowledge (AOK)**. Sometimes, there will be

a reference to another AOK or a requirement that you choose another AOK to discuss in comparison with the one specified. In some cases, they might also refer to one of the elements of the **knowledge framework**.

Because the essay on a prescribed title has been around for many years, there are a huge number of *past* prescribed titles available. These might not be formulated in the same way as the new ones, but they nevertheless will still be useful to think about and to practise on during your years in the IB. At some points in this book, we reference old prescribed titles, but when we do, it will be to a title which has the elements that the new titles will also have.

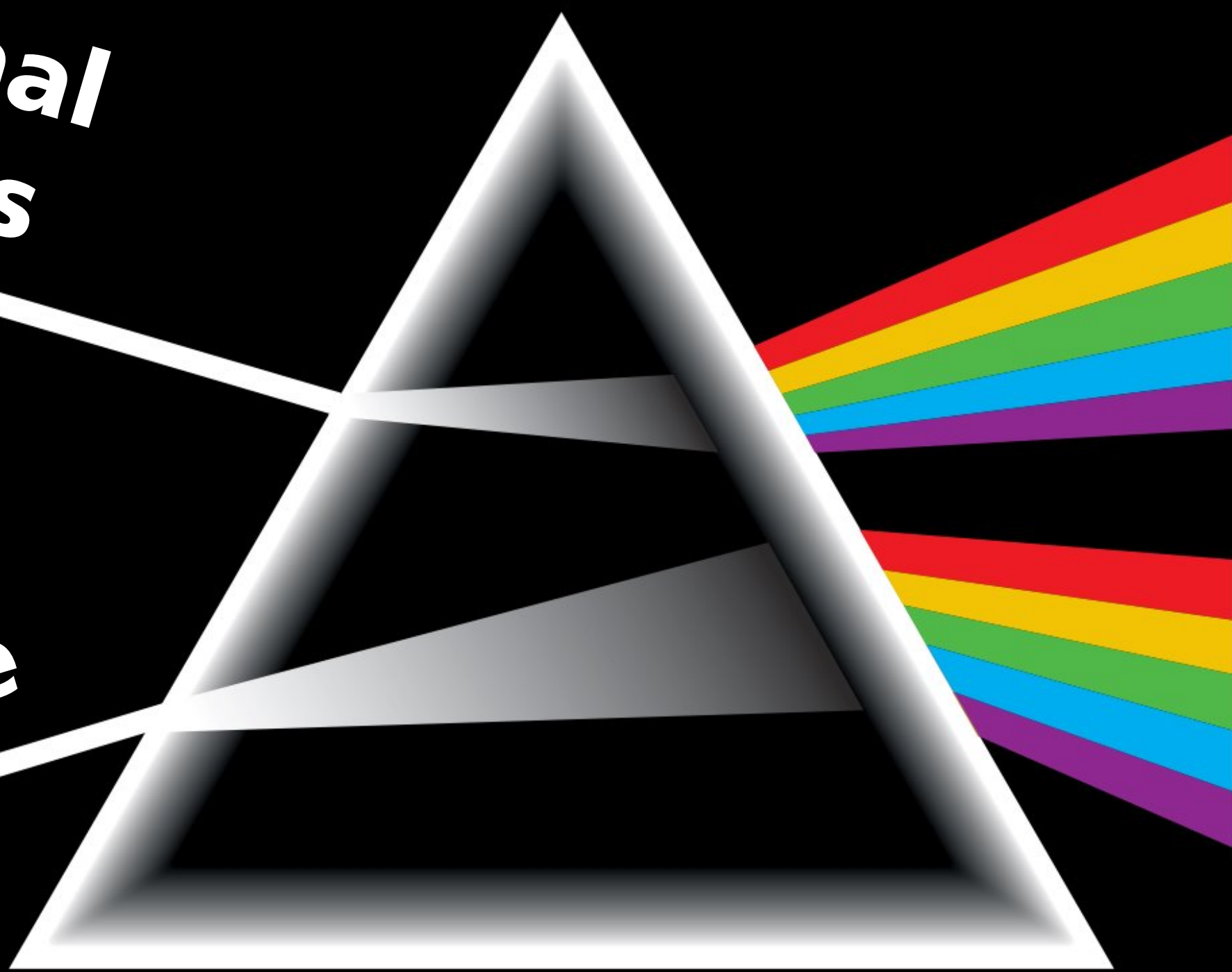
For more information on the essays, see Chapter 4.

You should not, however, think of this course as assessment driven – it is far too rich for that. A relatively short essay and a small exhibition are simply not adequate to ‘test’ the skills that TOK will help you develop. The point of the assessment is to give you an opportunity to demonstrate what you have learned and the new approaches you have developed. The genuine value of the course, therefore, is to be found in the day-to-day classroom activities. Ultimately, the true value of the TOK skills you develop come to fruition, not in the assessments, but in the extent to which they change the ways that you approach knowledge in the world. The TOK course, in other words, is not only about teaching you things, but also about you learning a new way to ‘be’ in relation to the knowledge that you are developing. I hope that this book can clarify and simplify a few of the tools and skills which will make the course more enjoyable for you, and ultimately lead you to greater success.

I wish you well in your studies, and in your TOK journey!

**Optional
themes**

**Areas of
knowledge**



**Core theme:
Knowledge and
the Knower**



Knowledge and Technology

Knowledge and Language

Knowledge and Indigenous Societies

Knowledge and Religion

Knowledge and Politics

Mathematics

The Natural Sciences

The Human Sciences

History

The Arts

1

Knowing about knowledge

TOK is not like any other IB course. Whereas students in other subjects are expected to focus on developing knowledge within a discipline, in TOK, students are asked to take a step back from the subject and think about what it is that they are ‘doing’ when they are studying history or maths, for example.

It is a little bit like sport: when playing football or cricket or baseball, you are actually engaged with the game while on the pitch or on the field; you are not consciously thinking about the rules (other than remembering to follow them). You are not reflecting on them, wondering about how they arose or whether they are the right rules; you are just getting on with playing the game. If you wish, you can later step back from playing the game and think about the rules themselves: Why are they the way they are? How might they have been different? How would the game change if the rules were changed? What other games follow similar rules?

This is similar to the relationship between TOK and subject questions. For example, as a historian you might ask:

What is the date of this castle wall?

As a TOK student you might ask:

How reliable are the dating techniques used to date this castle, or this castle wall?

As a biologist or medical researcher you might ask:

What is the effect of this drug on the growth of a tumour?

As a TOK student you might ask:

What is the best way to test the effect of this drug, knowing that sometimes personal bias might influence how researchers conduct their experiments?

We don’t mean to suggest that historians and biologists don’t also ask these questions. They certainly do! Being a ‘good’ historian or biologist means that you *have* asked these questions. Many times when we realize that a historian or a biologist has somehow broken the rules of developing knowledge in that discipline, we say that they are ‘irresponsible’.

Often, however, this type of reflecting on the methods of your subject doesn’t happen while you are learning the basics in school. This is why so many students return from college and say that they finally understand what TOK is all about and how much they appreciate having taken it during their IB.

This shift away from the rules of a subject to reflecting on and exploring the rules themselves is a tricky move, but success in TOK requires that you do your best to understand it.

Despite this approach being central to the course, it is often a genuine challenge for students to learn to identify it and understand how it is quite different from the other approaches they are using in their various subjects.

Knowledge questions

One way of maintaining a clear TOK approach is to make good use of **knowledge questions**.

IN PRACTICE

At no point in the formal assessment will you be asked to develop a knowledge question for yourself. The prescribed titles will *already* be formulated in the form of a knowledge question, and the 35 IA prompts are also knowledge questions. Your task in each of these assessments is to develop a response to these questions. However, being able to develop knowledge questions is an excellent way of developing your general TOK skills *and* being able to formulate knowledge questions relevant to your prescribed title will help you to answer it effectively.

The TOK subject guide lists dozens of knowledge questions under each of the optional themes and AOKs. In addition to this, each IB subject guide for all the other IB subjects has knowledge questions as well.

Many of the assessment objectives of the TOK course are focused around the concept of knowledge questions. Here are some examples of what TOK students should be able to do having completed the course from page 9 of the subject guide:

- demonstrate TOK thinking through the critical examination of knowledge questions
- identify and explore links between knowledge questions and the world around us
- identify and explore links between knowledge questions and areas of knowledge.

Understanding just what constitutes a knowledge question is therefore important for making sense of the Theory of Knowledge course, and for succeeding in the TOK assessment.

The subject guide offers a three-part definition of ‘knowledge questions’ on page 11. It says that good knowledge questions:

- are about knowledge
- are contestable
- draw on TOK concepts.

But what does each of these mean?

■ Knowledge questions are about knowledge

In contrast to the questions you will ask and be asked in your other subjects, most of which are directly aimed at constructing knowledge within a discipline, *knowledge questions* are aimed at asking about things like the processes involved in the construction of knowledge, or about how knowledge is transferred between individuals and communities, or about the nature of knowledge in a particular area of knowledge.



ACTIVITY

The table below shows some claims about the nature of knowledge in different disciplines. If you consider each knowledge claim to be an answer to a question, what do you think the question would be? The question you develop is likely going to be a 'knowledge question'.

Use the QR code to see some possible responses to this activity.

| AOK | Knowledge claim | Knowledge question |
|-------------------|--|--------------------|
| Arts – Literature | To be a reliable interpreter of art, one must have been trained at university | |
| Languages | Some concepts in a language cannot be fully understood unless you have grown up in that culture | |
| History | Historians sometimes use their own values as lenses to explore the past | |
| Economics | Different economic models suggest different outcomes in relation to policy changes | |
| Biology | Technology needs to produce data that is reliable | |
| Chemistry | The Periodic Table models how elements are related to one another in terms of atomic weight | |
| Mathematics | Mathematics makes extensive use of deductive argument | |
| Arts – Music | Being educated in music teaches you to search for and appreciate patterns and development in musical structure | |
| Politics | Some knowledge is inappropriate for certain people | |

TOK TRAP

Ethical questions are some of the most interesting and engaging questions in TOK, but they often are a pitfall. You must be careful not to fall into a straightforward ethical debate, but instead ask knowledge questions in *relation* to ethical debates.

In just the same way that solving a mathematical equation would not be 'doing TOK', neither is solving an ethical dilemma 'doing TOK'.

See more about this trap in the ethics section of Chapter 2 (The knowledge framework).

■ Knowledge questions are contestable

In addition to being about knowledge, a good knowledge question is an open question: one that is obviously debatable and cannot be answered simply with 'yes', 'no' or 'maybe'. The question should require an analysis that shows the complexity behind the knowledge issues involved. Some good knowledge questions do seem to call for yes/no/maybe answers, but when these are clearly contestable, then they are appropriate for TOK. So, a question like, 'Is an objective description of human behaviour possible?' calls for a definitive answer, but there is clearly a deep debate here.

A question like, ‘Does the scientific method use observation?’ is not contestable. It is about knowledge, but there is no debate. The answer is yes and if you don’t agree, then you simply have misunderstood facts about the scientific method.

Remember: an open question will help avoid descriptive analyses, and descriptive analyses are generally not successful in TOK assessment.

■ Knowledge questions should draw on TOK concepts

The TOK course is structured around a number of concepts: the AOKs, the core theme, the optional themes, the knowledge framework and the 12 key concepts. It is a good idea then to put those concepts to good use when framing your knowledge questions and your subsequent analysis.

Many good TOK analyses reference elements of the TOK specification and place them in relation to one another. The prescribed titles will be comparative in nature, and you can try to develop comparisons across topics in your exhibition too.

Maintaining a knowledge-focused approach

Following on from the final characteristic of knowledge questions outlined above, the remainder of this chapter explores a number of conceptual frameworks that you can use to structure your thinking and knowledge questions.

■ The knowledge framework

The TOK course offers four elements in what is called the knowledge framework (see Chapter 2 for a full description of these). I will be making reference to these elements throughout this book, and the corresponding student book uses them as the primary structure of each chapter. The elements are:

- Scope
- Methods and tools
- Perspectives
- Ethics.

■ Course concepts

The TOK course also offers a series of knowledge concepts that are meant to help students create and maintain a clearly knowledge-focused approach. The student coursebook offers a clear explanation and analysis of each. Use these concepts and ideas as often as you can throughout your work in TOK and you won’t go wrong.

The 12 course concepts are:

| | | |
|-------------|----------------|----------------|
| Certainty | Interpretation | Power |
| Culture | Justification | Responsibility |
| Evidence | Objectivity | Truth |
| Explanation | Perspective | Values |



ACTIVITY

Create a table like the one below and see if you can use the course concepts listed on the previous page to develop questions about the discipline-based knowledge presented in the second column.

Use the QR code to see some possible responses.

| AOK | Knowledge claim | Knowledge question using one of the 12 course concepts |
|-------------------|---|--|
| Arts – Literature | The 'Red Wheelbarrow' is about Williams' emotional state at a particular time | |
| Languages | Bullfighting is crucial to Spanish identity | |
| History | The Second World War was caused by the economic situation in Germany at the time | |
| Economics | A socialized health care system helps individuals avoid the financial burden of illness | |
| Biology | Photosynthesis slows down during the winter | |
| Chemistry | Tennessine was first discovered in 2010 | |
| Mathematics | The largest known prime number is over 17 million digits long | |
| Arts – Music | Beethoven's opening sketches in his Ninth Symphony foreshadow the development of the entire composition | |
| Politics | Even in liberal countries, some material is only available legally to adults | |

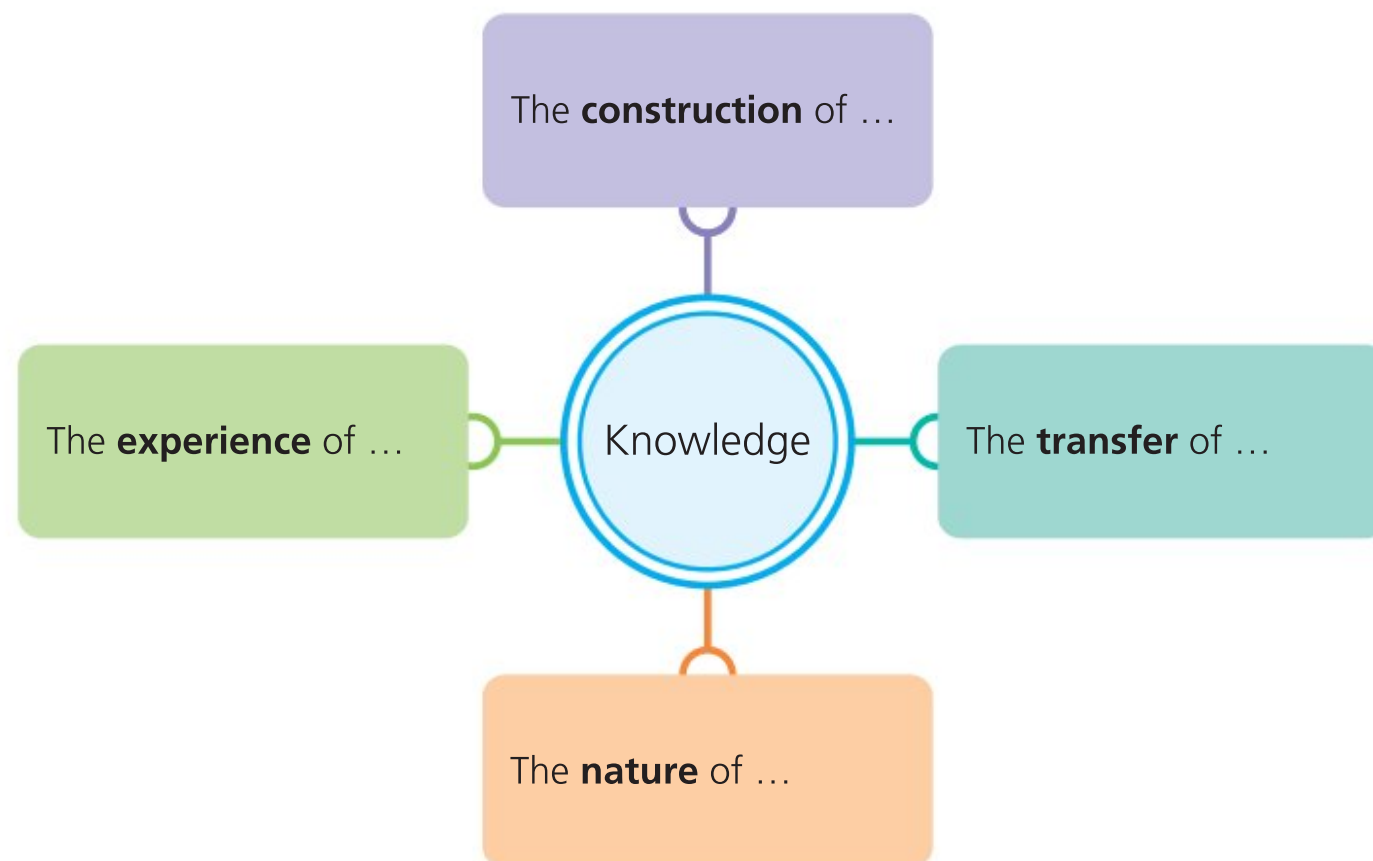
■ Further elements of knowledge

Another suggestion would be to continually remind yourself of the need to focus on the following elements of knowledge:

- the construction of knowledge
- the transfer of knowledge
- the nature of knowledge
- the experience of knowledge.

If you are genuinely exploring one of these four aspects of knowledge, then you are probably still developing a clearly knowledge-focused analysis. These are not thought of as being discrete aspects or distinct from one another; there is quite a bit of overlap as you will see.

These elements are not 'official IB concepts' but concepts which students have found helpful in helping them to think about what counts as being 'about knowledge'.



Elements of knowledge

■ The construction of knowledge

This refers to the generally accepted methods and standards of how knowledge is created by people working in the field. Think of this in relation to the ‘scope’ and ‘methods and tools’ elements of the knowledge framework.

Each AOK has its own understanding of what constitutes a genuine knowledge claim within a field. For example, when constructing knowledge in the sciences, the testimony of a single individual is not enough: the rules of knowledge construction mean that many people must have observed the event and it must, in principle, be observable again.

Another example would be to think about the constraints on ‘hunches’ or ‘intuition’ in the building of scientific knowledge. We might have a *hunch* that some fact is true, but our personal intuition cannot, by itself, justify the knowledge. So, in developing knowledge claims in science (construction of knowledge), we have to test our own intuition using accepted methods within the field.

■ The transfer of knowledge

This refers to the ways in which individuals come to know things which ‘the community’ already knows. This is different from the psychological phenomena of ‘learning’ something. Psychologists investigate how human beings learn things, and will discuss processes like memorizing, retaining and accessing facts.

The transfer of knowledge in the TOK sense has more to do with one’s own personal engagement with the traditions and methods of the wider community of knowers and an *acceptance* of that knowledge. As a personal knower, you have to, as it were, join a community and follow their rules as you construct knowledge according to their guidelines and procedures.

For example, you might want to learn a new language, but coming to understand the importance or emotive content of certain concepts within a language might require full immersion – perhaps involving living within a culture for a period of years – and some concepts might never be fully appreciated by a second-culture speaker. For example, the Danish *hygge*, the Portuguese *saudade* or the German *gemütlich*.

■ The nature of knowledge

This refers to elements most clearly explored by the scope element of the knowledge framework. Experts in various AOKs ask certain types of questions. The natural sciences, for example, are called ‘natural’ for a specific reason: they explore the workings of the natural world. Whereas the ‘human’ sciences will focus on developing knowledge about *human beings* and how they behave. (This is not to imply that human beings are not ‘natural’!)

The interplay between physics and mathematics is interesting because the nature of those two AOKs seem quite distinct – physics tries to describe forces and events in the world, while mathematics is the science of the logical relationships between numbers and quantities – but they are also intimately related.

Similarly, you might suggest that the nature of artistic knowledge or aesthetic judgment is to uncover subjective facts about the viewer, as opposed to facts about the object of the art itself.

■ The experience of knowledge

Finally, it is clear that some forms of knowledge might be called ‘ability’ knowledge, meaning that rather than suggesting that something is true or false, we also say that we know *how* to do things. You know how to tie your shoes in the morning, but would probably find it a genuine challenge to describe this to someone. You might know how to ride a bike, but knowing this is quite different from knowing a series of facts *about* bicycle riding. You might know how to juggle, but you only learned through the doing of it – the reading of a book was helpful, but it was not enough. This type of knowing does not necessarily fit well with the knowledge framework, but it is certainly a reasonable topic for investigation. You might, for example, explore what you have to know how to do if you want to be an anthropologist or an artist. Many resources devoted to TOK, however, neglect this form of knowledge, focusing instead on propositional knowledge.

While working in TOK, you must continually think to yourself, ‘Is my discussion genuinely about knowledge?’ Making sure that your discussion fits into one of these four categories is one helpful way of staying on track.

TOK TRAP

Often, students will want to explore a particular feature of how individuals come to acquire knowledge – the psychological processes or cognitive tools involved in accessing the world and in constructing knowledge about it. These might include processes like sense perception, memory, emotion, reason, intuition, imagination, language or faith.

These used to be a major feature of the TOK course, where they were called ‘ways of knowing’, so you might hear about them in the TOK world, but they are not specifically named in the current TOK course. There are many reasons for this, but the main one was that their use limited the discussions students were having.

They can still be useful to discuss, however, particularly in relation to the methods and tools element of the knowledge framework. Using them in your analysis, however, comes with some risks, so you must use them wisely.

In the context of some wider knowledge questions, these cognitive tools can be quite helpful. A perfectly good TOK investigation might explore things like how optical illusions will fool us (sense perception) or how our emotional drives and commitments might make it hard to develop rational analyses, or how various things will lower the reliability of our memory.

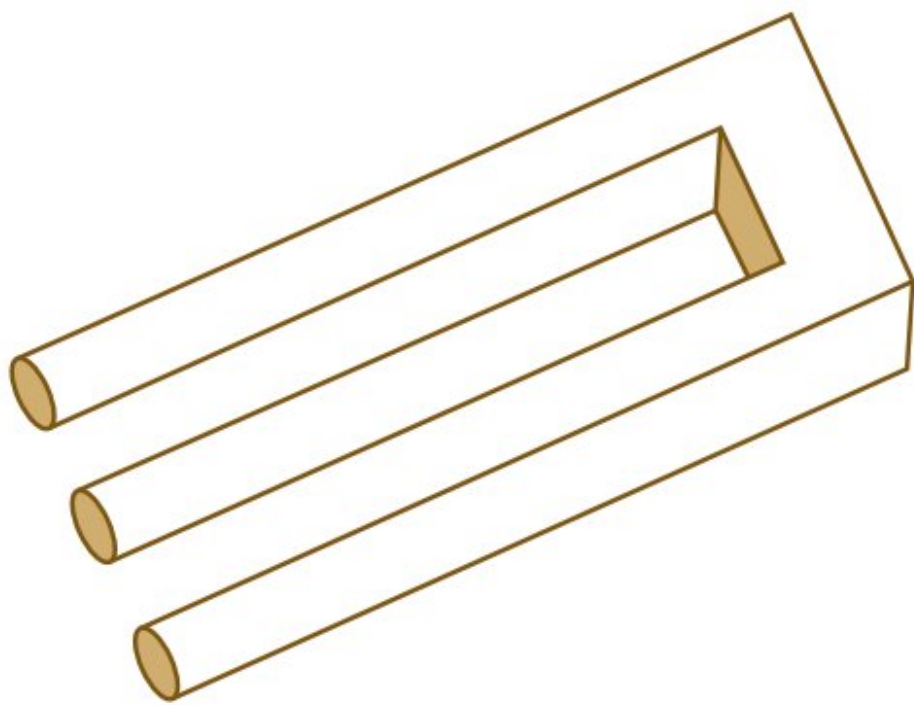
Often, however, students will focus their analysis on the cognitive tools, not the wider knowledge questions, and treat them in isolation. There are a number of problems with this approach:

- First, you must be careful not to suggest that the influence of one of these tools is as easily traceable as your question might suggest. ‘How does emotion affect memory?’, for example, might be a good start to a TOK investigation, but what often happens is that a student will simply ‘speculate’ that people remembering things will have been influenced by emotion in some way or another and give plausible instances of it happening. One common example is to describe a decision-making process of a person and *speculate* that they were influenced by their emotions. This is an extremely difficult claim to make *unless we have clear evidence that this was the case*. Our own speculation or guess that it probably happened is not enough to make our analysis credible.

In other words, the claim about the influence of emotions is an empirical hypothesis and unless the student has done the research, it will be mere speculation.

IN PRACTICE

Always avoid speculation in a TOK analysis. You must be credible for your analysis to be successful. This might mean having to do a bit of research to find evidence that someone *actually* did what you say they did.



How many prongs does this fork have?

- Second, working with these cognitive tools in this way often leads students to suggest that analysing the effect of any one of them is a *fait accompli*. Some students try to argue that reason will *always* lead to some particular conclusion, or emotion *always* leads you to do this or that. The effects of these cognitive tools are not like boarding a train, however; they do not always necessarily lead to some particular destination.
- Exploring optical illusions like the two- or three-pronged fork (shown below) in the context of sense perception should be part of a larger question about whether scientists, for example, can trust their observations, and the effect of the answer to this question on the reliability of scientific knowledge, or the safe guards built into the scientific method. An exploration of the effect of emotion on memory should be explored in the context of the reliability of eye-witness testimony in history. Whether or not faith dilutes our reason might be explored in the larger question of how religious knowledge systems use notions such as justification in their arguments. In other words, you should be looking at what ‘effects’ the limits of the cognitive tools you are working with have on the construction of knowledge in an AOK.

Lots of interesting things being said about the reliability of our cognitive tools ...

How do these help you understand claims made within AOKs?

Look, illusions! →

Emotions – boo! →
Reason – yay!

Eyewitnesses are rubbish →

Language, right? →

Rational faith! →

Can scientists trust their observations?

Does the scientific method guard effectively against prejudice?

Can historians rely on testimony?

Can language be used neutrally when describing human behaviour?

How is justification used in theological arguments?

Don't stop with cognitive tools

The knowledge

Scope

- What motivates the pursuit of knowledge in these themes/areas of knowledge?
- What practical problems can be solved through the application of knowledge from these themes/areas of knowledge?
- What are the key current open/unanswered questions in these themes/areas of knowledge?
- What makes this theme/area of knowledge important?

Perspective

- What is the significance of key historical developments within these themes/areas of knowledge?
- What do these themes/areas of knowledge identify about knowledge that is rooted in particular social and cultural groups?
- Are some types of knowledge less open to interpretation than others?
- Is an understanding of the perspective of other knowers essential in the pursuit of knowledge?

framework

Methods and tools

- What assumptions underlie the methods of inquiry used in these themes/areas of knowledge?
- Does what is seen to constitute 'good evidence' vary from discipline to discipline and culture to culture? How is knowledge produced and communicated in these themes/areas of knowledge?
- How important are material tools in the production and acquisition of knowledge?

Ethics

- Should the pursuit of knowledge in these themes/areas of knowledge be subject to ethical constraints?
- What responsibilities rest on the knower as a result of their knowledge in these themes/areas of knowledge?
- How can we know when we should act on what we know?
- Do established values change in the face of new knowledge?

2

The knowledge framework

Using the knowledge framework

The TOK course is about the investigation of the nature of knowledge or how people construct or acquire knowledge. This is quite an abstract challenge, one that baffles many students. The knowledge framework provides a structure to help students better understand the ideas central to the course. It is a collection of four elements which are used throughout the TOK subject guide to create links between all the main components of the course. The four elements are scope, perspectives, methods and tools and ethics. The subject guide offers a series of knowledge questions relating to each element in each of the main components, so the core theme, the optional themes and each of the areas of knowledge have knowledge questions relating to scope, perspectives, methods and tools and ethics. Hopefully, these will provide a nice way of unpacking interesting comparisons between all of the various elements of the course.

Using the elements of the framework to guide your thinking will also help you provide structure to your thinking about TOK, and help you maintain a clear focus on genuine knowledge issues.

You should learn to use the framework to structure your thinking throughout the course. Calling it a ‘framework’ means that when you are thinking about knowledge you have four convenient boxes in which to place your ideas, then, hopefully, break out of them later to make new connections.

Exploring the elements of the knowledge framework in your thinking about the optional themes and the AOKs is also *compulsory*, meaning that it is expected that you engage on some level with each element while you are learning about and reflecting on how knowledge is created. The prescribed titles for the TOK essay may reference them directly, so you will need to know what they are and how they can be used to reflect on the nature of knowledge. If you want to see how the IB has described the elements of the knowledge framework, you can check the subject guide (pages 12 & 13).

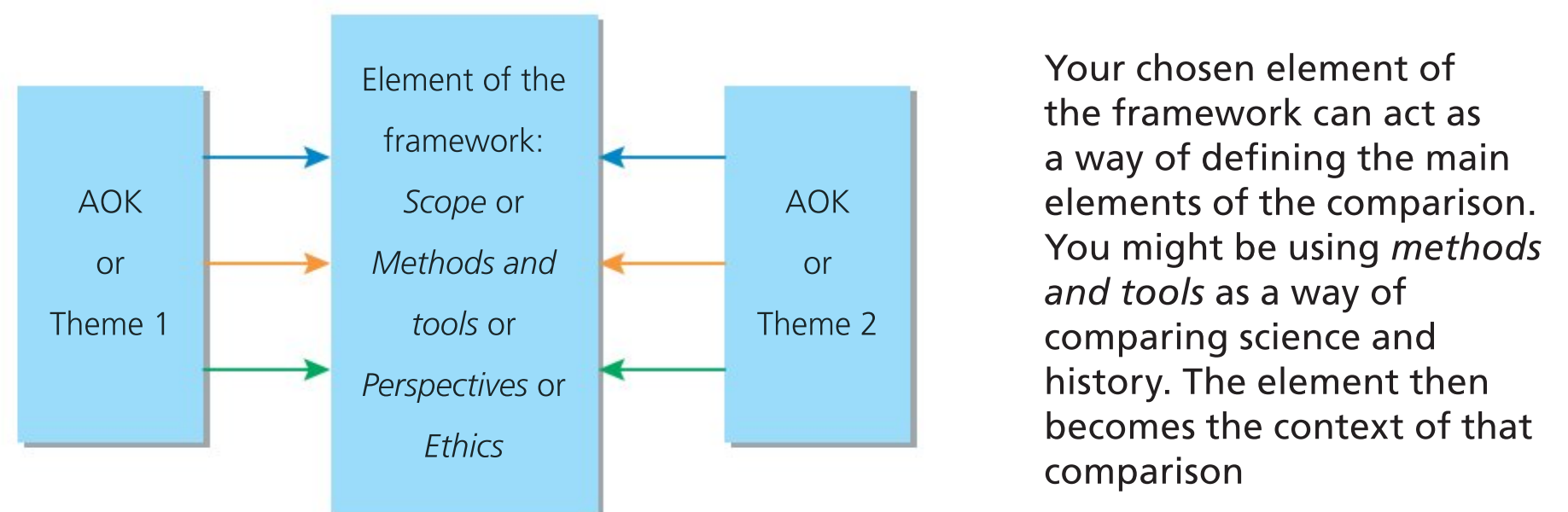
■ Why is the knowledge framework useful?

Using the knowledge framework will help you develop the way you think about knowledge, which, as you know after reading Chapter 1, is the most crucial part of the TOK course. When you open the subject guide for any of your IB subjects, you are, for the most part, reading about content within the subject relating to questions that practitioners of the subject would ask when ‘doing’ their subject.

However, by considering the elements of the knowledge framework in relation to these questions, you begin to shift into a series of questions ‘about’ the knowing of the answers to those questions, not the answers themselves.

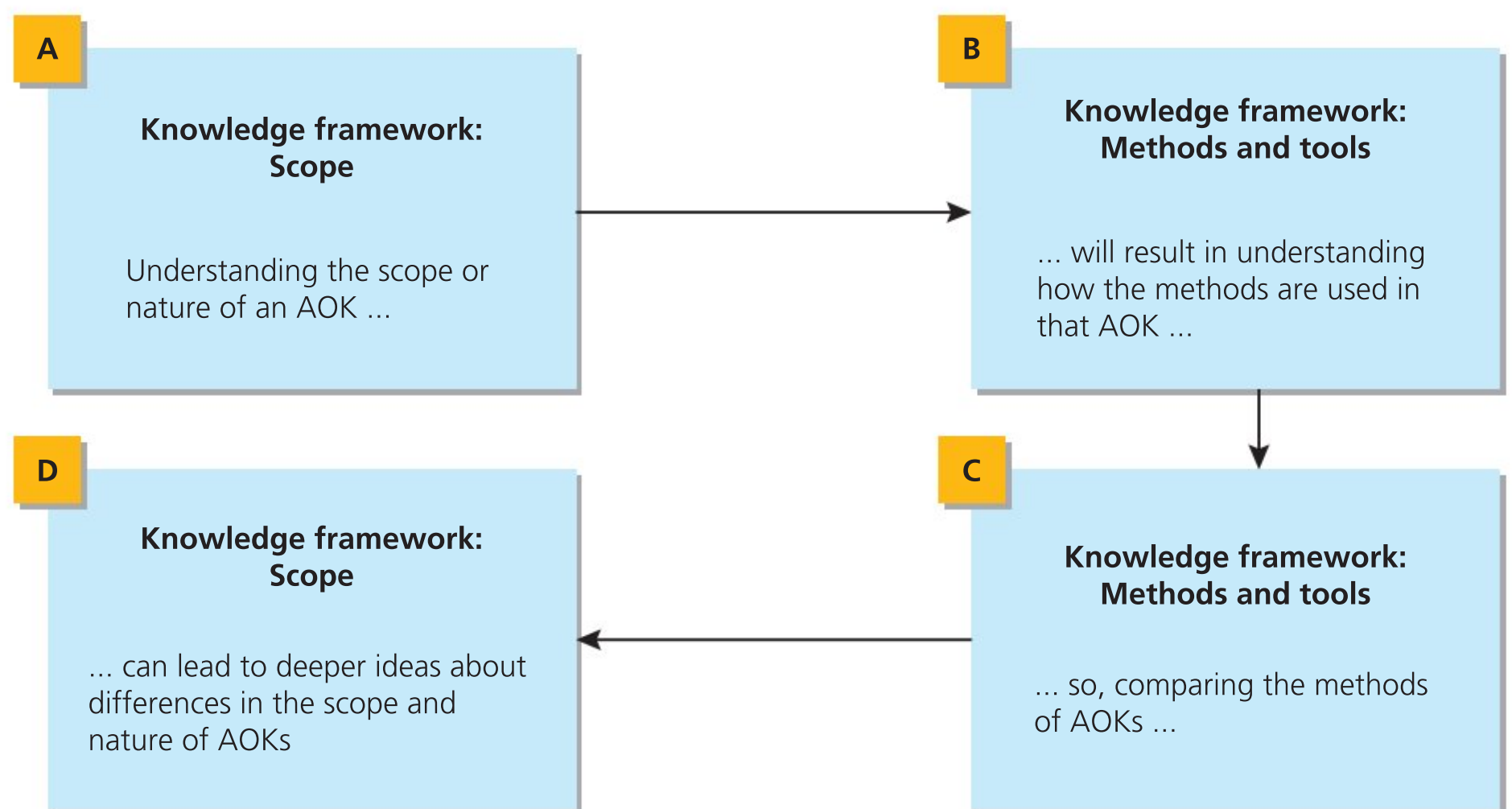
Identifying genuine knowledge questions is important to the TOK course, but the other crucial element to the course is the ability to compare and contrast the various themes and AOKs. In other words, asking questions about how the various themes and AOKs are similar in some respects and dissimilar in others.

For example, the prescribed titles for the essay will ask you to develop comparisons between the AOKs, and the knowledge framework is an excellent place to start with this sort of analysis (though it is incredibly helpful for other sorts of analysis as well). When comparing or contrasting two things, for example, it is absolutely crucial to have a ‘comparative key’, which is the focus of the comparison; you need a single element or focus in order to highlight the differences between positions, otherwise you will end up just listing a number of unrelated differences.



The knowledge framework can act as a key, allowing you to identify ways in which you can compare different AOKs. The four elements of the knowledge framework are concepts which all the themes and AOKs have some relation to. For example, the *scope* of each AOK can be explored and compared, as can their *methods* in constructing knowledge. Each AOK will provide a choice of *perspectives* within the field and each will have certain *ethical* considerations which relate to the AOK. Understanding and being able to discuss these abstract concepts in relation to AOKs will add an analytic and evaluative layer to your approach to TOK.

One thing to keep in mind, however, is that the elements of the knowledge framework will undoubtedly overlap and feed into one another. A discussion of one of the elements will more likely than not draw on other elements. Consider, for example, the relationship between the scope of a subject and the methods involved in its construction of knowledge. It is very likely that the nature of the subject will be the explanation of why certain methods are appropriate and others are not. The scope of the natural sciences, for instance, is an attempt to understand and explain the observable features of the world around us (Box A in the diagram shown on the following page). The methods to do that could never be entirely focused on just thinking about concepts and ideas, we would need to get into the world and see what is there. This means that the ‘scientific method’ requires observation and experiment in the real world (Box B). Conversely, considering which methods are generally enacted by experts in the field helps us to understand that nature of the subject. The use of axioms, deduction and logical inference in mathematics (Box C), help us understand the inherently conceptual nature of the subject (Box D).



IN PRACTICE

In summary:

- Use the various elements of the knowledge framework to make points about *other* elements of the knowledge framework.
- Use explorations of one AOK to make points about *other* AOKs.
- The ability to identify and utilize these similarities and differences across elements of the knowledge framework and across AOKs takes some time to develop, but leads to excellent ways of developing more sophisticated analyses.

ACTIVITY

Consider an AOK or optional theme you have studied. Brainstorm a list of bullet points for each of the elements of the knowledge framework, in which you describe how you think that AOK or theme relates to that element of the knowledge framework.

Look through these and compare across AOKs and themes to develop a larger picture of how they relate to one another.

Using the knowledge framework to create genuine comparisons and contrasts between AOKs will undoubtedly help when developing your exhibition and essay. However, also using them when just working through your course will offer you the precision needed to get the most out of the TOK course.

ACTIVITY

- 1 Look through some past TOK prescribed titles and identify those that explicitly ask you to consider two AOKs. For each, can you identify an element of the knowledge framework that would allow you to develop an effective comparison?

Note that the structure of the prescribed titles has changed slightly for May 2022 and beyond. See Chapter 4 on assessment to read more about how they have changed. The past prescribed titles may look slightly different to the new ones, but their focus on knowledge issues is still the same.

You might consider the following past prescribed titles:

- 'Knowledge gives us a sense of who we are.' To what extent is this true in the human sciences and one other AOK? (May 2013)
 - 'Knowledge is generated through the interaction of critical and creative thinking.' Evaluate this statement in two AOKs. (November 2011/May 2012)
 - 'When mathematicians, historians and scientists say that they have explained something, are they using the word 'explain' in the same way?' (November 2006/May 2007)
 - In areas of knowledge such as the arts and the sciences, do we learn more from work that follows or that breaks with accepted conventions? (November 2007/May 2008)
 - 'History is always on the move, slowly eroding today's orthodoxy and making space for yesterday's heresy.' Discuss the extent to which this claim applies to history and at least one other area of knowledge. (November 2007/May 2008)
- 2 Which elements of the knowledge framework do you think would be best suited to explore these questions and to develop a comparison between AOKs?
 - 3 Discuss your ideas with a partner, focusing on where you and your partner have identified *different* approaches. Can you see why your partner chose the elements they did?

No TOK essay should limit itself to a discussion of only one AOK, so knowing how to put the knowledge framework to use as a tool to identify knowledge-focused questions and to develop comparisons is an important skill.

IN PRACTICE

Periodically throughout the course, add to a knowledge framework form (see below) for each AOK. Use this form to capture a range of ideas about the AOK but structured into the various elements.

You could create a Google Doc for each of the AOKs or use a simple Word file or even Notebook.

Under each of the four elements, jot down ideas about that AOK in relation to that element. It might be

about what is distinctive about that AOK in this area, or even what interesting similarities there are between AOKs.

When it comes to writing essays or creating presentations, you can now use those notes and develop an interesting and focused comparison of two or more AOKs in relation to some particular aspect of knowledge.

| Knowledge framework | |
|---------------------|------------------|
| Scope | • • • • |
| Perspectives | • • • • |
| Methods and tools | • • • • |
| Ethics | • • • • |

The following sections will help you to understand the essence of each of the elements of the knowledge framework. This is not an exhaustive discussion of each, but will hopefully be enough to give you an understanding of what each is about so you can proceed to develop the ideas more. As the knowledge framework is a ‘frame’, it is there to help you structure and guide your own thinking; it is up to you to add the content. The discussion below is merely a model for how that thinking might go.

Scope

The scope of an AOK refers to what it is that AOK is doing. It describes how the AOK engages with the world in its particular way, distinct from other disciplines. What sorts of questions are being asked in the various AOKs and what sorts of answers are therefore going to be accepted as appropriate? ... are questions you will ask when asking about the *scope* of a discipline, an AOK or a community of knowers.

If you asked me a question about why the Europeans sailed to all corners of the world in the sixteenth and seventeenth centuries, and I answered, ‘Because the winds took them there’, you might rightly suggest that I have misunderstood the nature of your question. I told you how they moved about, but not *why*; in other words, I have not understood that the scope of historical knowledge includes the motives, beliefs and desires of individuals and groups of people, not just what they did and how they did it. The nature of historical methods is partly to identify facts about people doing things and moving about, but also constructing ideas about people’s thoughts as they were doing so.

In a number of cases, asking questions relevant to one AOK in the context of another is patently absurd: ‘What is the mass of the demand curve?’ is a meaningless question because the natural sciences (which are used to describe objective features (such as mass) of objects in the world) are not suited to describing economic phenomenon. In other words, the scope of the natural sciences (where you develop quantitative measurements of things) does not extend to the sorts of things you might explore in economics.

The subject guide (page 12) offers the following knowledge questions as examples of questions related to the scope of a subject:

- What motivates the pursuit of knowledge in these themes/areas of knowledge?
- What practical problems can be solved through the application of knowledge from these themes/areas of knowledge?
- What are the key current open/unanswered questions in these themes/areas of knowledge?
- What makes this theme/area of knowledge important?

DEEPER THINKING

While the question of whether or not the demand curve has mass is clearly meaningless, it is not clear in other cases just which disciplines are best suited to explaining some particular phenomenon. You will see that the idea that different AOKs are distinct in their scope and application (when they should be applied) is often a contentious claim. Many people might argue, for example, that the natural or human sciences are the best way to explore moral behaviour: you might choose to measure the happiness of human

- beings (using the methods of the natural and human sciences) in relation to some event in order to decide whether that action is ‘right’ or ‘wrong’.
- Alternatively, what one person might call a ‘religious experience of God’, others might describe as just a fact about brain activity – there is no God in the equation at all.
- Just asking, ‘Which AOK is best suited to exploring this phenomenon?’ is an excellent knowledge question.

For example, if you were interested in exactly how the Large Hadron Collider works and what it was meant to achieve, you would probably not ask your PE teacher (unless they were also the physics teacher). At the same time, however, if you were having trouble with shin splints, or wondering about how to optimize your training routine, you would not ask your physics teacher. This is not to suggest that the individual teachers don’t have a wide-ranging expertise or knowledge base; it is only to say that the disciplines of physics or sports science (though both within the realm of science) are simply exploring different sorts of questions, and authorities in those subjects might not have the expertise for answering questions in each other’s subject. This is just to say that the ‘scope’ of the AOKs are quite different.

Not all subjects, therefore, are intended to do the same sort of thing, or answer the same sorts of questions, and recognizing this is a huge step when it comes to comparing how reliable sources of knowledge are.

A real life illustration of an interesting discussion of these concepts is Stephen Jay Gould’s notion of ‘non-overlapping magisteria’ or NOMA. In a 1997 article called (appropriately) ‘non-overlapping magisteria’, Gould, a Harvard professor of Biology and a member of the National Academy of Sciences, addresses the question of the scope and application of science and religion. He argues that they are indeed not in conflict, precisely because they each are out to construct quite different types of knowledge. If they were trying to do the same thing they would be in conflict, but because they ask and answer different types of questions, they are not. Gould writes:



Stephen Jay Gould

The lack of conflict between science and religion arises from a lack of overlap between their respective domains of professional expertise – science in the empirical constitution of the universe, and religion in the search for proper ethical values and the spiritual meaning of our lives.

In other words, the ‘respective domains’, or what the knowledge framework would call the ‘scope’, of science and religion are quite different. The word *magisteria* comes from the Latin *magister*, meaning ‘to teach’, and the suggestion is that science and religion teach us different things about our experience in the world: science can teach us the answers to questions of empirical facts and theories about why these observable facts are the way they are, and religion offers answers when we ask about moral meaning and value. As Gould puts it, scientists ‘study how the heavens go, and [theologians] determine how to go to heaven’.

DEEPER THINKING

- Not all scientists or theologians would agree with Gould. Religious knowledge systems often do make empirical claims about the world and the things within it. Likewise, the human and natural sciences do make more and more claims about the natural basis of meaning and value in human life. However, the general point raised by Gould is important to keep in mind. In

trying to answer questions about how the world works, scientific enquiry follows a method rooted in observation (an overlap with another element of the knowledge framework). Too often, religious thinkers side-step this necessary element in the construction of scientific knowledge and attempt to justify claims about the observable world through reference to non-verifiable or unfalsifiable claims made in sacred texts, or based on personal revelation.

In other words, looking to the Bible for scientific knowledge about the world is not doing science in any traditional sense. Thinking about the scope of the natural sciences and religious knowledge systems gives us the opportunity to compare the two and suggest that when doing science or history, one cannot appeal to an ancient text as part of that 'scientific' or 'historical' process.

Similarly, but conversely, suggesting that religious claims are little more than poor attempts at finding scientific truth (as the 'New Atheists' are prone to do) ignores the far wider scope and application of religious knowledge systems, which includes the seeking of meaning and significance of living a human life. Characterizing all religious belief as bad science, then dismissing it for being bad science, is certainly a **straw man fallacy**, and is to wilfully misread the scope and application of what religious knowledge systems are generally trying to do.

A useful metaphor to describe the notion of the differences between the scope of AOKs, would be the differences between different types of map. The TOK subject guide, in fact, makes heavy use of this metaphor, and this concept is discussed in Chapter 2 of *Theory of Knowledge for the IB Diploma Fourth Edition* published by Hodder Education in 2020. Some maps, for example, include nothing but physical geography, and some include only borders, roads and cities. In other words, they are trying to answer different questions: 'What does the world physically look like?' on the one hand, and 'What and where are the places that humans have created?' on the other. Think of when you switch between views on online maps. Sometimes you want to see only streets, sometimes you want to see the Earth view, and sometimes you want to see the street view, depending on what exactly you want to know. Similarly, it makes sense to use a different sort of knowledge depending on what you want to know.

IN PRACTICE

AOKs are clearly distinct from one another in various respects, and as a TOK student you should be aware of these clear differences. There are also, however, many important overlapping features between AOKs, and in many cases you might suggest that this means that different AOKs *should* be used in the description and analysis of various phenomena in the world. In a complex and ever-changing world, it does make sense to use a number of AOKs to understand how we construct knowledge. We might, for example, temper our search for scientific knowledge with ethical beliefs about the value of life, or we might try to apply our current biological and physical knowledge to historical accounts of events in the past. We may want to develop both a psychological understanding and a biological approach to understanding the neurological facts of depression to identify appropriate treatment.

Even though the disciplines we study in schools and universities are indeed distinct in terms of how the courses are run, it takes no time at all to recognize that constructing knowledge within any AOK requires knowledge from other AOKs as well. Don't forget this exploration of similarities when developing your exhibition or responses to the prescribed titles. This is captured in a TOK Prescribed Title from May 2020: 'Given that every theory has its limitations, we need to retain a multiplicity of theories to understand the world.' Discuss this claim with reference to two areas of knowledge.'

Perspectives

The subject guide (page 13) offers the following knowledge questions as examples of questions related to the different perspectives within a subject:

- What is the significance of key historical developments within these themes/areas of knowledge?
- What do these themes/areas of knowledge identify about knowledge that is rooted in particular social and cultural groups?
- Are some types of knowledge less open to interpretation than others?
- Is an understanding of the perspective of other knowers essential in the pursuit of knowledge?

Think of the word ‘perspectives’. It comes from the Latin word for ‘seeing through’. This suggests that perspectives are what we see the world *through*. There are a number of ways you might see perspectives characterized. If you are working within an AOK unit then your teacher might focus on different approaches to topics from within the same discipline. If, however, you are looking at a topic and applying different AOKs to it, then you might think of the AOKs themselves as the perspectives.

Any time you are exploring different perspectives on a particular issue, then, you will need to guarantee that you are doing more than simply *juxtaposing* two AOKs and hoping that your reader will be able to make the connections themselves. You will need to identify a common idea, concept or theme which can act as the comparative tool, against which you evaluate each perspective. I discuss this more fully in relation to the essay in Chapter 4; in all the prescribed titles there will be a requirement to discuss two AOKs.

In most cases, when different viewpoints are called ‘perspectives’ it is usually because they are not *mutually exclusive*, meaning it is not a matter of objective fact which is *better*; each fits within its own web of personal interests and beliefs of the individual. This means that very often the perspective you choose to follow depends on the type of issues and concepts that you think are most important. In economics, for example, two traditional perspectives are ‘neoclassical’ and ‘Keynesian’. The neoclassicists will view ‘the market’ or ‘the economy’ as an amalgamation of individuals making their own choices in attempts at bettering their financial positions. The focus is on individuals making choices. The Keynesian approach, however, focuses on the role of regulation and government intervention in the financial choices of people. The decision to follow one or another of these perspectives is closely related to a person’s political beliefs (the neoclassicist argues that government should be limited so people can make their own decisions), whereas the Keynesians would feel more comfortable with governments taking on stronger roles in the day-to-day decisions of people.

This is different from some ‘perspectives’ which are actually competing theories. In physics, for instance, there might be *disagreement* about some of the fundamental theories about the nature of reality, but the general assumption in the natural sciences is that there is *more to know* and, ultimately, an answer to be found. In mathematics, this becomes even more pronounced – if I disagree with my mathematics teacher, this presents a genuine issue – *someone* is going to be right (and it is probably the teacher!). If, however, in my

literature class, I take a different perspective in relation to the meaning of a poem, there might be lots of room to engage in discussion and accept that there might be different ways of approaching the issue.

■ Areas of knowledge as perspectives

The AOKs themselves might be thought of as different *perspectives* in this definition: the biologist sees the world through the lens of the concepts and concerns of someone studying living organisms, while the historian might view their world through the concepts and concerns of someone studying the past. They might even be investigating the *same* phenomena and apply different perspectives to arrive at different descriptions.

If, for instance, you are exploring the concept of certainty (one of the core concepts in the TOK specification) in relation to two AOKs, you might be able to offer the AOKs as different perspectives on that single concept. You definitely need to make sure that you offer a full explanation of the status of certainty in each of the AOKs, but you also need to describe and explore the differences between the AOKs' own approaches to certainty. Rather than just juxtaposing the AOKs' approaches, you need to explore and explain why each has a different perspective: what differences in the AOKs lead to each having its own perspective on certainty?

■ Perspectives within areas of knowledge

The consideration of perspectives helps students think about the choices that experts in various communities of knowledge make when constructing knowledge. Many students treat the AOKs as if they were a unified body of knowledge, but even *within* the AOKs experts have choices about which approach is best. In the human sciences, for example, a psychologist must choose their approach from among a variety of perspectives:

- behavioural
- psychodynamic
- humanistic
- cognitive
- biological
- evolutionary.

Each of these perspectives carries with it its own scope, methods and tools and ethical considerations, even though they are within the same discipline. The evolutionary psychologist, for instance, will use an understanding of evolution as a way of describing and explaining human behaviours, like phobias or human mating practices. The cognitive psychologist, however, will explore the same phenomena but from the perspective of the brain processes that underpin all conscious activity.

In some AOKs or disciplines, these perspectives are sometimes referred to as 'schools of thought'. In history you might find yourself exploring the events of the past using different sorts of filters to select, analyse and interpret various facts in different ways. A Marxist historian will be most interested in identifying the role of socio-economic factors related to events in the past and will even argue that social development is on a one-way journey towards a communist society. Historians from the 'feminist' school of thought will start

from the recognition that women have traditionally been disadvantaged and will actively attempt to uncover the history of women through time as way of emphasizing and valuing the contribution of women in an attempt to redress the imbalance.

In a similar way, a ‘post-colonial’ historian will start with the recognition that many societies have suffered the consequences of colonial rule. The local or cultural history of the colonized area may have gone unrecognized in favour of the colonial power’s story being told, and historians might want to search out and tell these stories as a way of challenging the dominant narrative. That the United States celebrated its ‘bicentennial’ in 1976 or that Singapore celebrated its own bicentennial in 2019, suggests that, for many, the history of these places began when the colonial powers said it did, not recognizing the fact that there were cultures living in these locations long before any Europeans arrived. For further examples of the issues arising from these historical perspectives, you might research the ongoing debates about local historical curricula. Very often there are conflicts arising from different views on what sort of history should be taught. In all these cases the point is that the choice of perspective brings with it a method for identifying, selecting and interpreting evidence.

These are not necessarily ‘biases’. The term ‘bias’ refers to an improper or irresponsible application of a discipline’s methods and tools. The term ‘bias’ generally means that someone has already decided what the conclusion is going to be before they begin to interpret the data. Having a perspective is not the same as being biased; data do not interpret themselves any more than a person can see or be attentive to everything. We have to make choices about what sorts of things we want to see and we have to have some idea of what questions we want answered before we begin any knowledge construction process. Having this distinction in mind means that we can select relevant data and, provided that we follow the established methods in that AOK in as responsible a way as possible, then we can avoid being called ‘biased’.

■ Creator, critic and consumer

Another helpful way to think about the different perspectives involved in the knowledge provided by an AOK or theme is to break it up into considerations about three important aspects of it: the *creation* of the knowledge (usually by ‘experts’), the *consumption* of that knowledge, and the *critic* of that knowledge. Below are some questions you might ask in relation to each of these perspectives:

- **Creator:** What are the experts in a field attempting to achieve? What questions are they seeking to answer? What types of answers are appropriate to this field and what methods and tools are available to them?
- **Critic:** What makes knowledge reliable, and by what standards do people *judge* that the knowledge produced is ‘reliable’, or what makes someone more or less credible when making such judgments?
- **Consumer:** How do experts in the field ensure that their knowledge is transferred to individuals? What decisions might they make and how do these decisions affect whether others *accept* the knowledge? How important is specialist knowledge in order for non-experts to understand, appreciate or enjoy knowledge created by experts?

This approach is sometimes helpful when considering art as an AOK, as I have done below, but it could also work in any AOK with your own creative alterations and analyses.

■ Creator

The creator of a work of art has certain interests and skills related to their work, and certain beliefs that they are trying to explore in the creation of their work of art. Much of *learning* how to be a creator of art is about learning specific techniques, or learning about concepts and facts about artistic genres and movements. Creation of any product in any AOK is the result of a lot of reasoning, problem solving and decision making. Rarely is ‘being an artist’ *simply* about expressing emotion, as many stereotypes suggest.

■ Critic

The critic tries to judge the art, make claims about it, determine whether it is any ‘good’, and develop analyses of it. You are taking on the perspective of the critic when you are evaluating poems, literature or other forms of literary work in your IB group 1 subject (Language and literature, or Literature).

ACTIVITY

- 1 Make a list of things you need to have or need to know in order to be a good art critic. Rather than thinking of an art critic as a critic of only *visual* art, however, start with your own experience as a critic of literature in your group 1 course. What type of knowledge makes you a better critic? What types of skills? What types of experience?
- 2 Compare your list with the assessment criteria of the group 1 subjects. How does your list compare?

Considering yourself as an art critic, and thinking about this perspective from the viewpoint of your own group 1 class, should help you think through the issues surrounding whether there can be better or worse interpretations of art. *Of course*, there can be! This is *exactly* the sort of thing that your teachers are trying to teach you: how to be a *good* critic of literature.

ACTIVITY

- 1 Review the list of things you identified above as being the sorts of things that make you a ‘good’ critic of literature. Consider now whether those sorts of things would make you a more reliable judge of art in another genre. You may have identified ‘knowledge of historical context’ or ‘knowledge of relevant terminology’. Would these help you be a better critic in the visual or theatre arts, or dance, or sculpture?
- 2 What does this suggest about the common belief that any interpretation in the arts is as good as any other?

■ Consumer

You might now get around to considering the arts from the perspective of the consumer – the person who reads for pleasure, likes to view a painting, go to the theatre or listen to music. Here, you might now make a distinction about what makes ‘good’ art and what sorts of art people enjoy. Often students will argue that ‘art is *entirely* subjective’. It is not really clear what this might mean, but usually it is meant to suggest that there can be

no better or worse judgments about what ‘good’ art is, or even whether there can be any objective claims about whether something *is* art.

Looking at the differences between the perspectives of the consumer and the critic, however, shows that things are more complicated than the stereotype suggests. If by ‘good’ art, you mean ‘art you *like*’ then absolutely no one can tell you that you should or should not *like* something. You do or you don’t and sometimes you might even change your mind. But a *critic* of art will make certain judgments about art which can be more or less true. The critic in me might objectively claim that the technical musical skills demonstrated by the Bavarian Radio Symphony in their ‘Finale’ of Beethoven’s Symphony No. 9 in D Minor ‘Choral’ are *better* than those demonstrated by Pulp in their 1995 single ‘Common People’, and I could develop convincing arguments to develop this claim. However, the *consumer* in me might just *like* the Pulp song more. Additionally the *critic* in me might further suggest that the social critique embedded in ‘Common People’ makes the song more effective and in some ways ‘better’ than Symphony No. 9. Though, of course, Beethoven has the upperhand in other respects.

In other words, differentiating between the perspectives of the creator, the critic and the consumer helps me make differentiated claims about the nature of art. Thinking about music from the perspective of the *creator* allows me to talk about how it expresses the emotions of the creator, how the creator might be offering messages or have an intent behind the piece, and perhaps discuss how the context of the musicians influence their creation (or performance) of the pieces. Thinking about music from the perspective of the *critic* allows me to *evaluate* the music in terms of skills, perhaps, and context. I might also consider what it takes for me to have better and worse opinions as the critic; I might need a certain level of expertise and all that comes with it to make credible claims. Finally, thinking of it in terms of the *consumer* allows me to make claims about my enjoyment of the work, the value I place on it, and its significance in my life.

ACTIVITY

- 1 Consider these three perspectives in the context of other AOKs. How might you describe the creator, consumer and critic in terms of history, for example?
- 2 Does the claim that ‘history is based on historical reconstruction’, for instance, describe the creator more than the critic?
- 3 For each AOK or community of knowers, think about how different these three perspectives are. Can you link your analysis of the AOK or community of knowers to one or more of these perspectives?

■ The development of new perspectives in AOKs

The methods used by AOKs and the content of the ‘body of knowledge’ they produce often changes over time. For instance, we can trace the changes in our beliefs about the age of the planet, the nature of physical particles or the value of individual consent in medical ethics over time.

Another helpful way to identify perspectives in an AOK, therefore, would be to explore how it has *developed* over time. These changes can refer to the change in the content of knowledge claims but really should refer to more fundamental issues having to do with the construction of knowledge within the AOK: the scope of the subject or its methods.

DEEPER THINKING

While the things that people think are true have changed over time in many AOKs, the more interesting TOK questions have to do with ‘why’ the knowledge changed and what implications those changes have for our understanding of the AOK today. For example, just because our understanding of the structure of the atom has undergone a number of changes, what do you think that means for our current scientific knowledge? Is it possible that our fundamental ideas about the world will undergo significant changes? What about the nature of scientific knowledge allows for this possibility?



British socialist feminist theorist and writer, Sheila Rowbotham

A concrete example of how we examine the historical development of a field is within the field of history itself. Sheila Rowbotham’s 1973 book *Hidden from History* does not necessarily identify a shift in the way history is written, but it does draw attention to the extent to which current social values (in this case the growing feminist movement) drives the development of new historical knowledge.

Rowbotham’s work highlights the fact that until the mid-twentieth century, professional history was really a story about powerful white men and their behaviour and activity. Rowbotham rightly queried what was ‘missing’ from the established ‘histories’ and clearly stressed the link between current social values and the sort of histories that are written. It was because of a growing feminist movement in the 1960s and 1970s that Rowbotham’s history was written, and these are movements and events squarely grounded in an historical analysis of culture.

Rowbotham’s insights about the type of narratives being constructed by her colleagues was echoed by historians like Howard Zinn in his book *A People’s History of the United States* (1980) and Theodore Allen in his book *The Invention of the White Race* (1994). The social upheavals of the mid-twentieth century created a certain sensitivity to minority voices and the historians responded by creating new historical narratives about the role of minorities or their experience throughout history. Whereas in the professional circles of the sciences the number of minority voices began to be heard, the scientific knowledge they produced

might not have been remarkably different from what came before, because the method of the natural sciences has little to do with the individual doing the science. In history, however, entirely new histories were being constructed based on the choices and experiences of individuals.

The difference here in the historical development of both the sciences and history could be explored through an analysis of the scope of these AOKs: the individual’s role in the creation of scientific knowledge is significantly different than in the creation of historical knowledge.

Mathematics resides at the ‘objective’ end of the spectrum of knowledge (if there is such a spectrum), so one might think that, in mathematics, once true, always true. But even here, we can use the historical development of mathematics to uncover interesting questions about the nature of mathematics.

In May 1995, Andrew Wiles, while at Princeton University, announced that he had ‘solved’ the famous 400-year-old problem of ‘Fermat’s Last Theorem’.



Mathematician, Sir Andrew Wiles

In a text from 1637, Pierre Fermat wrote into the margin of a text that he had proven that the equation

$$a^n + b^n = c^n$$

has no integer solutions greater than 2, but that the margins of the book were not big enough to write it out. Whether or not Fermat actually developed a proof has never been established, but mathematicians have since tried to find a proof, and everyone expected it to be too large even for a wide margin. Wiles quietly worked on developing his own approach over the course of seven years until finally he reached a proof.

What is interesting in terms of the historical development of mathematics, however, is that the proof that Wiles finally developed contained mathematical thinking that would not have been available to Fermat. Wiles' own proof depended on the work of a whole line of great post-Fermat mathematicians. Whatever proof Fermat did have, Wiles did not discover *it*; Wiles discovered his own and there might be others. Does this mean that knowledge in mathematics is dependent on what sorts of things other mathematicians happen to be working on? A number of ideas here can challenge the stereotype that professional mathematics has nothing to do with emotion, society or chance:

- that an individual mathematician's proofs depend on what other mathematicians happen to be working on
- that seemingly irrelevant work done over the course of generations might, through a particular moment of insight or intuition, be woven together into a general relationship
- that the determination and intuition in the work of particular individuals (and the time and life circumstances affording enough free time) are crucial to the growth of mathematics (and any other AOK for that matter).

This places mathematics firmly in a social context which might yield interesting insights extending far beyond the plainly stereotypical view that mathematics is only about deductive reasoning, '2 + 2 = 4', or that emotion has nothing to do with the process of doing mathematics.

■ Paradigm shifts

A common and incredibly useful concept for investigating the changes of an AOK over time is to use the concept of the 'paradigm shift'. **Paradigms** are sets of beliefs which are used to understand the world around us. They do this by being both developed as an explanation of facts observed in the world but then are also used to make sense of further facts encountered. When you operate 'within a paradigm' you are operating within a set of beliefs that in some sense gives you a sort of script which will provide boundaries to further analysis and plausible explanations of the events observed in the world. Paradigms, therefore, not only provide explanatory power, but also direct the types of explanations available. They, therefore, are partly evidence-based, but are also 'seen through' and used to construct further knowledge. In this way, paradigms might be considered perspectives.

If our paradigm starts from the position that the Earth is at the centre of the universe, as Ptolemy's did, then every time we look into the night sky we will make sense of what we observe there by appealing to the basic starting point which says that the Earth is at the centre of it all. This is not to say that Ptolemy, or any other holder of a paradigm, was

making *unjustified assumptions*; indeed, Ptolemy's geocentric view of the cosmos where the planets and stars were fixed to great circular orbits, each with the Earth at the centre, was developed based on centuries of observations. Just look up at night and it appears as if the stars rotate around us. Any further observation of the lights in the sky, made sense of by the Ptolemaic view, only added to the observational strength of that paradigm. So, it was clearly *justified*, but, more than this, it was also '*reliable*' in that it helped make sense of other observations that astronomers had made. Indeed, the Egyptians were perfectly happy and accurate when using the geocentric paradigm to predict and explain solar and lunar eclipses, Moon phases and the movements of the planets, so there is more to claiming simply that these ancient astronomers were 'wrong'; their paradigm was incredibly useful and fit for their purpose.

In 1962, Thomas Kuhn published *The Structure of Scientific Revolutions* and offered a different way of understanding the way science works (its methodology), placing the concept of the paradigm at the fore. He suggested that rather than developing slowly over time, driven by more and more confirming evidence, scientific development sometimes makes quite drastic shifts or 'revolutions'.

Sometimes, Kuhn argued, established scientific explanations are found to be inadequate; they cannot make sense of new observations. In some cases, new additions to the theories can be developed which would then allow the theory to make sense of the new observations, while still maintaining the theory's main assumptions. For example, more and more observations of the night sky required many additions to be made to Ptolemy's view, including the addition of more and more mini orbits. While maintaining the basic idea of everything orbiting the Earth, there had to be lots of other instances of things orbiting each other in order to make sense of what was observed. Finally, however, the observations become more and more difficult to make sense of in relation to the established paradigm. Kuhn called this the 'crisis phase' – the point at which the established paradigm begins to lose its ability to describe *all* the observations easily. The established theory has encountered observations which are unable to be explained by the theory, or additions must be made to theory which are more and more implausible.

Finally, Kuhn argued, the paradigm breaks and a 'paradigm shift' occurs. This means that rather than just adding elements to the main theory to 'make it work', it simply crumbles and a new theory arises. Our understanding of the cosmos, based on a growing body of observations and analysis from people such as Copernicus, Kepler, Brahe and Galileo, required a shift from the basic premise that the Earth is at the centre of the universe, to a premise which posited that the Sun is at the centre of our solar system, and the planets revolve around it. This paradigm shift created a new way to understand our observations, one which was better justified in the sense that it was supported by more observations, but also more reliable in the sense that it was far better at making sense of later observations, leading to an understanding of how our solar system fits within a galaxy. These claims could not have been made using Ptolemy's paradigm.

This sort of perspective, however, is significantly different from the perspectives we explored earlier in psychology and economics. In the case of a genuine paradigm shift, the new view is said to be *incommensurate* with the previous paradigm, meaning that they

cannot really co-exist. Whereas taking a behavioural or a cognitive approach to psychological questions, or taking a neoclassical or Keynesian approach to economic questions, depends on our individual approach, we cannot *really* still hold that the Earth is at the centre of the whole universe. The facts and what we otherwise know about the world, simply doesn't fit with that view.

TOK TRAP

Paradigms and paradigm shifts are not an uncommon topic for TOK students, but often the notion of paradigm is mistakenly treated as synonymous for the broader notion of 'perspective'. Students will then treat 'taking a different perspective' as something akin to a paradigm shift. But one of Kuhn's main points with respect to paradigm shifts is 'incommensurability'. That is, two genuinely different paradigms (and when discussing paradigms, you will want to use the most genuine sense) cannot both be true 'depending on how you look at it'.

Ptolemy (had he been around) simply could not have justifiably claimed that his view of how our universe worked was just one perspective among many; his, it turns out, was mistaken. Astronomy,

physics and the natural sciences are aiming not for 'what things look like from your perspective', but what actually is the case, and this is determined by the strength of evidence. The evidence collected meant that the geocentric universe was not a justified view any longer.

You might compare this to different perspectives in psychology or economics, where there is less of an impulse to suggest that there is one fact of the matter. Your choice of a behavioural or cognitive approach in psychology, or a classical or Keynesian approach in economics, will have a significant impact on the knowledge you construct (a point you might explore in line with the acquisition of knowledge topic from Chapter 1).

IN PRACTICE

This exploration of the notion of paradigm shifts in the history of scientific knowledge uncovers some interesting knowledge questions which can be explored in the context of an essay:

- What does it take for a set of beliefs in an AOK to become accepted by the wider community of knowers?
- What role does *prediction* play in deciding whether or not a theory or paradigm is reliable? Does prediction play the same role in all the sciences?
- Under what circumstances can new observations be said to genuinely challenge accepted beliefs? How do the central assumptions and methods in AOKs control what counts as a relevant observation?
- How does history or the natural sciences (or any other AOK) manage the differences of opinion among authorities in the field?

Methods and tools

I have heard it said that the whole TOK course could focus only on questions about the methodology of various AOKs, so important and useful is the concept in the analysis of how we know what we claim to know.

Indeed, one of the best ways to distinguish one AOK from another (or to compare one AOK with another), is by exploring how each *constructs* knowledge claims within its scope. What are the general approaches that the various AOKs follow when creating reliable claims within that field? In other words, how do people construct knowledge in this AOK?

You might think of ‘methodology’ as something like a job description – if you want to work as an historian, for example, what sort of rules should you follow? What do you have to be doing? As an economist, if you want to explore how we decide whether we should tweak the interest rates, then what theories do you listen to, what sort of evidence is relevant? When thinking about knowledge and technology, you might wonder what ethical principles you should appeal to when thinking about whether the government has a right to unlock your mobile phone? Even within single AOKs, there might be different schools of thought (perspectives) on each of these questions, so rather than a single methodology in an AOK you might be dealing with several.

Since the Enlightenment, the creation of almost all knowledge has placed a high priority on observation in the construction of knowledge. The Enlightenment saw the birth of the natural sciences as we know them, based on observation, hypothesis and, ultimately, experiment.

Prior to this shift, appeal to established authorities (religious, philosophical and political) was a major element in constructing knowledge, or believing what was ‘true’. The Enlightenment saw the rise of technology, which created the opportunity to develop new observations, and much of this knowledge, demonstrable through empirical experiment, was shown to be far more reliable for certain types of questions than previously held beliefs developed in different ways. Because of the success of the observational sciences on certain types of questions, observations have become prioritized as the only, or most reliable of methods to gain knowledge in all AOKs. ‘Seeing is believing’ after all.

Again, however, the fact that this is undoubtedly true within the scope of some AOKs does not necessarily entail that this is the case in others. During the 1930s and 1940s, for instance, a group of philosophers called the Logical Positivists who were thinking about ethical claims, suggested that statements could only be meaningful if they could be scientifically verified. They then decided that because ethical claims are not based on observation (for example: ‘What does the “rightness” of charity “look” like? Can you set up a tool to measure it?’), or because there were no scientific empirical tests to determine the truth or falsity of claims such as ‘Capital punishment is wrong’, this meant that these claims literally have no meaning. The methods of science, therefore, were assumed to be the only method to create any knowledge, regardless of the type of question being asked. It is argued that the Logical Positivists mistakenly tried to apply one method of constructing knowledge onto a different type of knowledge. They used the wrong map to find their way through the territory of another land.

Very often, questions of methodology are closely related to other key issues in TOK. questions such as, ‘What makes knowledge in this AOK reliable?’, ‘How do people justify claims within these AOKs?’ or ‘What counts as evidence in this AOK?’ are related because if you don’t follow the right methods in an AOK, then the resulting claims are not said to be well-justified in the context of that AOK.

Very often, the scopes of AOKs can be said to have their roots in the different methodologies within the AOK. Taking the example above, for the Logical Positivists no claim could be justified unless some empirical observation could show it to be true. The only ‘evidence’ allowed in a discussion for the Logical Positivists would have been evidence that could be seen and touched and tested.

A good example of an exploration of the methodology of an AOK (natural sciences) can be found in Richard Dawkins' 'Letter to his 10-year-old daughter'. In the essay, pitched as if it were a genuine letter to his daughter, Dawkins outlines some basic rules as to how a scientist ought to create knowledge. His ideas have relevance to both the natural sciences and human sciences, though the method might have to be applied in different ways. Read the letter below.

To my dearest daughter

Now that you are ten, I want to write to you about something that is important to me. Have you ever wondered how we know the things that we know? How do we know, for instance, that the stars, which look like tiny pinpricks in the sky, are really huge balls of fire like the Sun and very far away? And how do we know that the Earth is a smaller ball whirling round one of those stars, the Sun?

The answer to these questions is 'evidence'. Sometimes evidence means actually seeing (or hearing, feeling, smelling ...) that something is true. Astronauts have travelled far enough from the Earth to see with their own eyes that it is round. Sometimes our eyes need help. The 'evening star' looks like a bright twinkle in the sky but with a telescope you can see that it is a beautiful ball – the planet we call Venus. Something that you learn by direct seeing (or hearing or feeling ...) is called an observation.

Often evidence isn't just observation on its own, but observation always lies at the back of it. If there's been a murder, often nobody (except the murderer and the victim!) actually observed it. But detectives can gather together lots of other observations which may all point towards a particular suspect. If a person's fingerprints match those found on a dagger, this is evidence that he touched it. It doesn't prove that he did the murder, but it can help when it's joined up with lots of other evidence. Sometimes a detective can think about a whole lot of observations and suddenly realize that they all fall into place and make sense if so-and-so did the murder.

Scientists – the specialists in discovering what is true about the world and the universe – often work like detectives. They make a guess (called a hypothesis) about what might be true. They then say to themselves: If that were really true, we ought to see so-and-so. This is called a prediction. For example, if the world is really round, we can predict that a traveller, going on and on in the same direction, should eventually find himself back where he started. When a doctor says that you have the measles, he doesn't take one look at you and see measles. His first look gives him a *hypothesis* that you *may* have measles. Then he says to himself: if she really has measles, I ought to see ... Then he runs through his list of predictions and tests them with his eyes (have you got spots?), his hands (is your forehead hot?), and ears (does your chest wheeze in a measly way?). Only then does he make his decision and say, 'I diagnose that the child has measles.' Sometimes doctors need to do other tests like blood tests or X-rays, which help their eyes, hands and ears to make observations.

The way scientists use evidence to learn about the world is much cleverer and more complicated than I can say in a short letter. But now I want to move on from evidence, which is a good reason for believing something, and warn you against three bad reasons for believing anything. They are called 'tradition', 'authority', and 'revelation'.

First, tradition. A few months ago, I went on television to have a discussion with about 50 children. These children were invited because they'd been brought up in lots of different religions. Some had been brought up as Christians, others as Jews, Muslims, Hindus, Sikhs. The man with the microphone went from child to child, asking them what they believed. What they said shows up exactly what I mean by 'tradition'. Their beliefs turned out to have no connection with evidence. They just trotted out the beliefs of their parents and grandparents, which, in turn, were not based upon evidence either. They said things like, 'We Hindus believe so and so', 'We Muslims believe such and such', 'We Christians believe something else.'

Of course, since they all believed different things, they couldn't all be right. The man with the microphone seemed to think this quite right and proper, and he didn't even try to get them to argue out their differences with each other. But that isn't the point I want to make for the moment. I simply want to ask where their beliefs came from. They came from tradition. Tradition means beliefs handed down from grandparent to parent to child, and so on. Or from books handed down through the centuries. Traditional beliefs often start from almost nothing; perhaps somebody just makes them up originally, like the stories about Thor and Zeus. But after they've been handed down over some centuries, the mere fact that they are so old makes them seem special. People believe things simply because people have believed the same thing over centuries. That's tradition.

The trouble with tradition is that, no matter how long ago a story was made up, it is still exactly as true or untrue as the original story was. If you make up a story that isn't true, handing it down over any number of centuries doesn't make it any truer!

Most people in England have been baptized into the Church of England, but this is only one of many branches of the Christian religion. There are other branches such as the Russian Orthodox, the Roman Catholic and the Methodist churches. They all believe different things. The Jewish religion and the Muslim religion are a bit more different still; and there are different kinds of Jews and of Muslims. People who believe even slightly different things from each other often go to war over their disagreements. So you might think that they must have some pretty good reasons – evidence – for believing what they believe. But actually, their different beliefs are entirely due to different traditions.

Let's talk about one particular tradition. Roman Catholics believe that Mary, the mother of Jesus, was so special that she didn't die but was lifted bodily into Heaven. Other Christian traditions disagree, saying that Mary did die like anybody else. These other religions don't talk about her much and, unlike Roman Catholics, they don't call her the 'Queen of Heaven'. The tradition that Mary's body was lifted into Heaven is not a very old one. The Bible says nothing about how or when she died; in fact, the poor woman is scarcely mentioned in the Bible at all. The belief that her body was lifted into Heaven wasn't invented until about six centuries after Jesus's time. At first it was just made up, in the same way as any story like 'Snow White' was made up. But, over the centuries, it grew into a tradition and people started to take it seriously simply *because* the story had been handed down over so many generations. The older the tradition became, the more people took it seriously. It finally was written down as an official Roman Catholic belief only very recently, in 1950, when I was the age you are now. But the story was no more true in 1950 than it was when it was first invented 600 years after Mary's death.

I'll come back to tradition at the end of my letter, and look at it in another way. But first I must deal with the two other bad reasons for believing in anything: authority and revelation.

Authority, as a reason for believing something, means believing it because you are told to believe it by somebody important. In the Roman Catholic Church, the Pope is the most important person, and people believe he must be right just because he is the Pope. In one branch of the Muslim religion, the important people are old men with beards called Ayatollahs. Lots of young Muslims are prepared to commit murder, purely because the Ayatollahs in a faraway country tell them to.

When I say that it was only in 1950 that Roman Catholics were finally told that they had to believe that Mary's body shot off to Heaven, what I mean is that in 1950 the Pope told people that they had to believe it. That was it. The Pope said it was true, so it had to be true! Now, probably some of the things that that Pope said in his life were true and some were not true. There is no good reason why, just because he was the Pope, you should believe everything he said, any more than you believe everything that lots of other people say. The present Pope [1995] has ordered his followers not to limit the number of babies they have. If people follow his authority as slavishly as he would wish, the results could be terrible famines, diseases and wars, caused by overcrowding.

Of course, even in science, sometimes we haven't seen the evidence ourselves and we have to take somebody else's word for it. I haven't, with my own eyes, seen the evidence that light travels at a speed of 186,000 miles per second. Instead, I believe books that tell me the speed of light. This looks like 'authority'. But actually, it is much better than authority because the people who wrote the books have seen the evidence and anyone is free to look carefully at the evidence whenever they want. That is very comforting. But not even the priests claim that there is any evidence for their story about Mary's body zooming off to Heaven.

The third kind of bad reason for believing anything is called 'revelation'. If you had asked the Pope in 1950 how he knew that Mary's body disappeared into Heaven, he would probably have said that it had been 'revealed' to him. He shut himself in his room and prayed for guidance. He thought and thought, all by himself, and he became more and more sure inside himself. When religious people just have a feeling inside themselves that something must be true, even though there is no evidence that it is true, they call their feeling 'revelation'. It isn't only popes who claim to have revelations. Lots of religious people do. It is one of their main reasons for believing the things that they do believe. But is it a good reason?

Suppose I told you that your dog was dead. You'd be very upset, and you'd probably say, 'Are you sure? How do you know? How did it happen?' Now suppose I answered: 'I don't actually know that Pepe is dead. I have no evidence. I just have this funny feeling deep inside me that he is dead.' You'd be pretty cross with me for scaring you, because you'd know that an inside 'feeling' on its own is not a good reason for believing that a whippet is dead. You need evidence. We all have inside feelings from time to time, and sometimes they turn out to be right and sometimes they don't. Anyway, different people have opposite feelings, so how are we to decide whose feeling is right? The only way to be sure that a dog is dead is to see him dead, or hear that his heart has stopped; or be told by somebody who has seen or heard some real evidence that he is dead.

People sometimes say that you must believe in feelings deep inside, otherwise you'd never be confident of things like 'My wife loves me'. But this is a bad argument. There can be plenty of evidence that somebody loves you. All through the day when you are with somebody who loves you, you see and hear lots of little tidbits of evidence, and they all add up. It isn't purely inside feeling, like the feeling that priests call revelation. There are outside things to back up the inside feeling: looks in the eye, tender notes in the voice, little favors and kindnesses; this is all real evidence.

Sometimes people have a strong inside feeling that somebody loves them when it is not based upon any evidence, and then they are likely to be completely wrong. There are people with a strong inside feeling that a famous film star loves them, when really the film star hasn't even met them. People like that are ill in their minds. Inside feelings must be backed up by evidence, otherwise you just can't trust them.

Inside feelings are valuable in science too, but only for giving you ideas that you later test by looking for evidence. A scientist can have a 'hunch' about an idea that just 'feels' right. In itself, this is not a good reason for believing something. But it can be a good reason for spending some time doing a particular experiment, or looking in a particular way for evidence. Scientists use inside feelings all the time to get ideas. But they are not worth anything until they are supported by evidence.

I promised that I'd come back to tradition, and look at it in another way. I want to try to explain why tradition is so important to us. All animals are built (by the process called evolution) to survive in the normal place in which their kind live. Lions are built to be good at surviving on the plains of Africa. Crayfish are built to be good at surviving in fresh water, while lobsters are built to be good at surviving in the salt sea. People are animals too, and we are built to be good at surviving in a world full of other people. Most of us don't hunt for our own food like lions or lobsters, we buy it from other people who have bought it from yet other people. We 'swim' through a 'sea of people'. Just as a fish needs gills to survive in water, people need brains

that make them able to deal with other people. Just as the sea is full of salt water, the sea of people is full of difficult things to learn. Like language.

You speak English but your friend speaks German. You each speak the language that fits you to 'swim about' in your own separate 'people sea'. Language is passed down by tradition. There is no other way. In England, Pepe is a dog. In Germany he is *ein Hund*. Neither of these words is more correct or more true than the other. Both are simply handed down. In order to be good at 'swimming about in their people sea', children have to learn the language of their own country, and lots of other things about their own people; and this means that they have to absorb, like blotting paper, an enormous amount of traditional information. (Remember that traditional information just means things that are handed down from grandparents to parents to children.) The child's brain has to be a sucker for traditional information. And the child can't be expected to sort out good and useful traditional information, like the words of a language, from bad or silly traditional information, like believing in witches and devils and ever-living virgins.

It's a pity, but it can't help being the case, that because children have to be suckers for traditional information, they are likely to believe anything the grown-ups tell them, whether true or false, right or wrong. Lots of what grown-ups tell them is true and based on evidence or at least sensible. But if some of it is false, silly or even wicked, there is nothing to stop the children believing that too. Now, when the children grow up, what do they do? Well, of course, they tell it to the next generation of children. So, once something gets itself strongly believed – even if it is completely untrue and there never was any reason to believe it in the first place – it can go on forever. Could this be what happened with religions? Belief that there is a god or gods, belief in Heaven, belief that Mary never died, belief that Jesus never had a human father, belief that prayers are answered, belief that wine turns into blood – not one of these beliefs is backed up by any good evidence. Yet millions of people believe them. Perhaps this is because they were told to believe them when they were young enough to believe anything.

Millions of other people believe quite different things, because they were told different things when they were children. Muslim children are told different things from Christian children, and both grow up utterly convinced that they are right and the others are wrong. Even within Christians, Roman Catholics believe different things from Church of England people or Episcopalians, Shakers or Quakers, Mormons or Holy Rollers, and all are utterly convinced that they are right and the others are wrong. They believe different things for exactly the same kind of reason as you speak English and someone speaks German. Both languages are, in their own country, the right language to speak. But it can't be true that different religions are right in their own countries, because different religions claim that opposite things are true. Mary can't be alive in the Catholic Republic but dead in Protestant Northern Ireland.

What can we do about all this? It is not easy for you to do anything, because you are only ten. But you could try this. Next time somebody tells you something that sounds important, think to yourself: 'Is this the kind of thing that people probably know because of evidence? Or is it the kind of thing that people only believe because of tradition, authority or revelation?' And, next time somebody tells you that something is true, why not say to them: 'What kind of evidence is there for that?' And if they can't give you a good answer, I hope you'll think very carefully before you believe a word they say.

Your loving

Daddy

Source: 'Good and Bad Reasons for Believing' from *A Devil's Chaplain: Reflections on Hope, Lies, Science and Love* by Richard Dawkins (2003)



Richard Dawkins

ACTIVITY

- 1 Read Richard Dawkins' 'Good and Bad Reasons for Believing'. Using your ideas about the scope of the human sciences, describe and explore how the points Dawkins makes might be used to describe the methods of what is *allowed* and *not allowed* in scientific methodology.
- 2 How well do you think these methods apply to the human sciences?

Dawkins initially identifies evidence based on 'observation' as the basis upon which all reliable scientific knowledge must be founded. He points out that we need not necessarily observe everything for ourselves, but that whatever we do accept as scientists, there must be some observation at the root of it, which has been seen, or could be seen by someone.

So just because you have not performed all the experiments mentioned in your science textbooks, you can still reliably accept them because those facts in the textbooks are themselves, at some point in the past, based on direct observation. (This raises an interesting appeal to trust or 'faith' as a way of knowing in addition to sense perception.)

ACTIVITY

- 1 While Dawkins is clearly only talking about the methods appropriate to constructing scientific knowledge, he does appeal to ideas which will have wide-ranging implications in other AOKs. What do you think those implications might be?
- 2 Do some wider research on Professor Dawkins. Do your thoughts about those implications match what you have learned about him?

Dawkins later goes on to outline three things that the method used by a scientist must not include when creating reliable scientific knowledge.

First, *tradition*, or believing something to be true simply because you belong to a group that believes it, does not make that belief any truer. Passing a false belief down from generation to generation does not somehow make that belief any more true. Therefore, appealing to 'just the way it has always been' is not part of the method of the sciences. Rather, the inverse is true: scientists do things or 'know' things not because they were passed down, but they are passed down because they are rooted in evidence and observation.

Second, believing a claim simply because someone in *authority* tells you to believe it is another method which should be avoided. The idea here is that the simple fact that someone (for example, a teacher, a religious leader or a boss) has authority over you, or someone who is in authority (has a particular status higher than you) does not necessarily make that person a reliable source of knowledge. Their job does not necessarily mean that what they say is reliable. Having that status does not magically make them a reliable source of knowledge.

DEEPER THINKING

There is, however, another sense of authority that would help a scientist develop credible knowledge, one that Dawkins does not explicitly address.

Suppose someone was 'in' authority (ie, had a certain job, such as a teacher) but the 'reason' the person was in authority was because that person was 'qualified' to be in that role. They are, in other words, 'an' authority in a particular subject and thus they are qualified to pass down reliable knowledge to you. Dawkins' point is just this: having a certain job (being in authority) does not necessarily mean you are a reliable source of knowledge.

We can all think of examples when someone has a job that perhaps they should not, but being qualified enough to hold a position might actually make a person a reliable source of knowledge. In other words, the work your science teacher has put into learning science is what makes them qualified to be your teacher *and* to be an authority on the subject. So 'authority', despite Dawkins' unsubtle way of expressing it, might be a good avenue towards knowledge; it just has to be the right sort of authority.

A connection to the scope element of the knowledge framework can be made here. Just because you are an authority in one field does not, of course, qualify you as an authority in another. This, I think, is Dawkins' central point: just because a religious leader is an authority on religious matters, the scope of religious knowledge systems should not extend into questions which are in the realm of science.

Finally, Dawkins argues that revelation should not be used as part of the method of creating scientific knowledge. He loosely defines 'revelation' as an internal feeling that something is true. In the religious sense it would be some knowledge about something given to a person from God, through perhaps a prophecy or vision. Instead, Dawkins argues, all scientific knowledge must have its roots in publicly observable evidence. Internal feelings might have some role to play as hunches or intuitions, but for these to be reliable they must be tested and observed to be true.

In summary, in his letter, Dawkins explores the correct ways (the methods) in which scientific claims are justified, namely through appealing to observable events in the world. It is no use who tells you, how many people have believed it in the past or whether someone has a 'hunch' or 'intuition' that something is true: if there is no observable event which can be appealed to as the 'source' of that knowledge, then it is not 'reliable'.

ACTIVITY

While Dawkins' letter is not a comprehensive explanation of how scientific knowledge should be constructed, he does prioritize observation. What do you think about this claim? Is it possible to observe the world without also observing it *from a perspective*? In what ways does Dawkins' own perspective shape what he thinks *can* count as knowledge?

TOK TRAP

In this discussion of Dawkins, I have tried to give his position the best possible reading, even though I then offered some critical arguments against it. This is the opposite of the straw man fallacy. Here I am trying to 'steel man' the argument, that is, put it in its strongest light so that my challenges are based on a full and

proper understanding of it. Many students fail to do this, and instead don't take the positions they are going to argue against seriously enough. Critiquing a purposely weak argument is not something to be proud of!

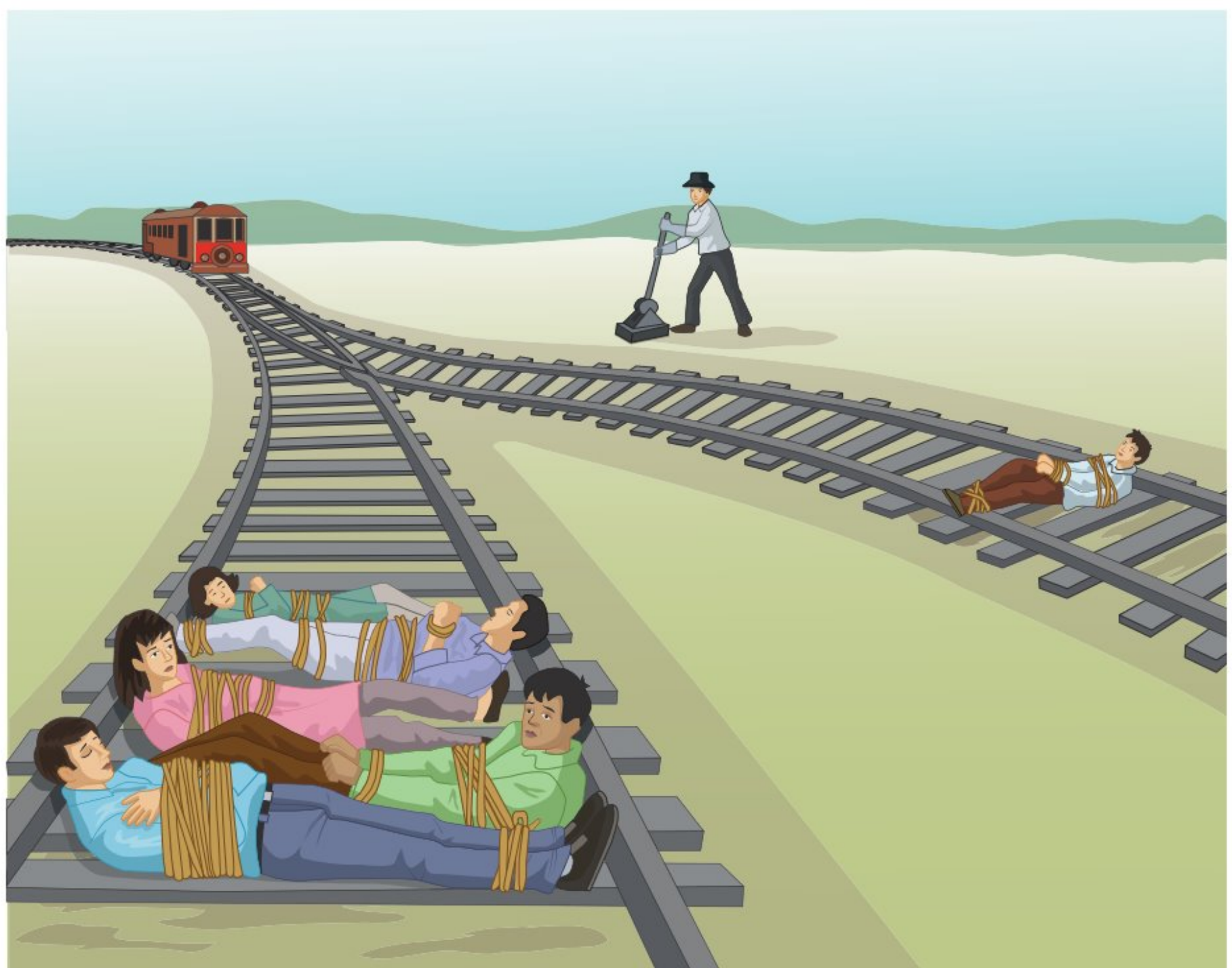
DEEPER THINKING

This appeal to observation might not fit well when considering the methodology of knowledge construction in other AOKs, however. Even in physics, for example, the role of mathematics in testing and justifying knowledge seems to push observation slightly to the side in favour of mathematical consistency. Often in the historical development of physics the mathematical models have suggested that something is true, but there has not been empirical evidence to demonstrate it. The recent discovery of gravitational waves is a good example: in 1916, Einstein's mathematical calculations said they must exist but it was not until 2016 that they were accepted as true because of observational evidence.

String theory is another example of a description that is believed to be plausible, but only on the strength of mathematics, not through direct observation. Even string theory gives rise to M-theory, an idea implied by the mathematical requirements of string theory. Neither of these is observable, but the scope of physics is wide enough to accept certain ideas as 'reliable' even when they are beyond empirical observation.

The elements of the knowledge framework need not be used only to demonstrate differences between AOKs, however. It is possible to use them to explore unexpected similarities between AOKs and through those similarities, students have the tools to identify more precisely where differences actually are.

For example, natural sciences and ethics are often pitched as if they were opposites in all sorts of ways: one is rational while one is emotional; one is objective while one is subjective; one seeks to find truth while the other is only exploring matters of taste. I am sure that none of these is true, but there is one specific similarity between them that is to do with a question under the 'methodology' aspect of the knowledge framework which is worth discussing.



The trolley problem – would you kill one person in order to save the lives of five?

All TOK students come across the ‘scientific method’ at some point and learn that it is a description of a general scientific process of knowledge creation which incorporates observation, hypothesis and experimentation. Is there a similar method of constructing ethical knowledge? Can there be experimentation in ethics (of the sort that won’t land you in prison)?

The ‘trolley problem’ (originally posed by Philippa Foot in 1967) is as familiar in a TOK classroom as is a discussion of the scientific method. In my experience, this trolley problem, with all of its various permutations and alterations, acts a bit like a scientific experiment. That is, the experimenter begins with a central question concerning the role of our intuitions about maximizing happiness or minimizing unhappiness. They then create a scenario where various elements can be isolated so the (thought) experiment can be run again in order to observe any new outcomes.

For example, the original scenario can be altered to isolate our intuitions about actively killing one person as the means to save five others, or we may isolate our intuition about how our physical presence impacts our ethical beliefs by imagining a scenario where we are operating the trolley via remote control. Each of these alterations is like isolating new variables in a series of experiments: *What happens when we tweak this element of the experiment? What new ethical intuitions or ideas do we uncover?*

Once we have uncovered a common ground, we can then comment more interestingly on exactly where they do differ: exactly what is being ‘observed’ in ethics and science? Can any of those observations exist without pre-existing theories? How can we find ways to measure the effect of our ethical intuitions? In what ways can we collect objective data regarding people’s intuitions? For example, the majority of people are happy to turn the trolley towards the single person, but far fewer are willing to push a bystander from a bridge to effect the same outcome.

■ Concepts and language

Another way to explore the differences and similarities between AOKs is by examining the particular use of certain concepts and language within the methods used by AOKs. Concepts and language might be thought of as *tools* that experts in AOKs can use to build new knowledge. It is important to remember that words relating to knowledge might have quite different (though related) meanings in different AOKs. For example, be careful when responding to a prescribed title with the word ‘truth’ in it. Far too often, the word ‘truth’ is treated as if it means precisely the same thing in different AOK contexts. Generally, some understanding of ‘truth’ having to do with ‘absolute truth’ or ‘objective truth’ is assumed to be what the scientific method and mathematics is seeking to achieve. The methods of other AOKs are largely inadequate when it comes to discovering this sort of truth, yet truth might still be an important concept within them.

TOK TRAP

Never assume that words and concepts mean the same thing in different AOKs. The 12 core concepts of certainty, culture, evidence, explanation, interpretation, justification, objectivity, perspective,

power, responsibility, truth and values and others like fact, reliable, theory, belief and law, all might have slightly different meanings in the context of the different AOKs.

A careful student of TOK will recognize that what constitutes a ‘true’ statement is quite different in the context of different AOKs.

‘Truth’, if it means anything in science, generally is thought to mean that a claim is ‘tentatively’ true. Given that the scientific method is based on induction, then scientific claims and hypotheses must be, at best, approximations or descriptions of what has not yet been shown to be false. This does *not*, however, provide sceptics a reason to think some claim might be false.

Claims about basic *facts* in the world are generally thought to be true because they ‘capture’ a fact about the world. For instance, the claim ‘the Earth is *not* flat’ is true because it properly represents the way the world actually is. Some students pretending to be overly sceptical will suggest that because people once thought that the world *was* flat that ‘it used to be true that the Earth was flat’, but this is to mistake a claim about the world for a fact *in* the world. The Earth was *never* flat, and no amount of people believing that it is could ever make the Earth any shape other than what it is. The *fact* is that the world is not flat. We have the evidence which *establishes* this as being how things really are. Our claim ‘the Earth is not flat’ *captures* that fact, in that it says that the world is some particular way and it turns out that this is the way that it is.

‘Truth’ in mathematics, however, might have a far stronger sense of being deductively valid given a set of premises or axioms. This means that when we start with a basic axiom, then we can know for certain what is true, given that axiom. When we deductively prove that a triangle will have an area which is half of its length multiplied by its height, then we know that this is true for *all* triangles, not just the one we used in the discovery. Mathematics ‘proves’ (another concept to be wary of) it. But the inductive methods of science mean that any claim which we ‘might’ claim is true, is true in the sense that it has yet to be demonstrated to be false.

In the natural sciences, a collection of these tentative, but extremely well justified claims might be shown to have extremely good observational evidence *and* then provide excellent explanations as to *why* things are as we observe them to be. The best of these explanations earn the title ‘theory’, which is an honour indeed. When people say the theory of evolution by natural selection is ‘just a theory’, they do not realize that ‘theory’ in the sciences means that there is virtually no reliable evidence that the claims are mistaken. All the available evidence is consistent with it. A ‘theory’ in science certainly is not meant in the same way that we may otherwise commonly use ‘theory’ – to mean ‘an educated best guess’. Another example of this weaker use of the term from the AOK of history would be the ‘theory’ that early humans crossed a land bridge over what is now the Bering Strait and entered North America. There is a competing theory that suggests the first humans in the Americas arrived by sea from the South Pacific Islands. These historical claims are called ‘theories’, in that they do account for a fair bit of the evidence, but there has yet to be definitive observable data which settles the issue.

‘Theory’ might also mean some general claims or a set of claims which allow us to understand some set of evidence, but for which there may be no definitive ‘right’ way; like a ‘perspective’, various economic, ethical or historical theories might fall into this category. Utilitarianism, for example, is a theory that suggests our ethical intuitions can be accounted for and described through a set of beliefs about the nature of pain and pleasure, and the amount of each.

But back to 'truth'. Even if students do avoid the trap of assuming 'truth' in science means 'objective truth about the way the world really is', and understand 'truth' in terms of 'confirmed and not yet falsified claims about the world', they will sometimes shift to another AOK and claim that 'this sort of truth' cannot be obtained in the AOK, so claims within that AOK cannot be true.

This often happens when comparing history and science. Because historical claims cannot have the same sort of repeatable, predictive and observable claims as science, then history is considered to be a poorer cousin of science, and can never be 'true'. But, assuming only one model of 'truth', and suggesting no others can really be true, both disregards implications of the differences in the scope and methods between history and science, and makes it difficult for students to develop an interesting analysis of what 'truth' actually will mean in history. 'Truth' is still a valuable concept in history, but the differences need to be appreciated and explored.

Therefore, when exploring certain concepts that are important in all the AOKs (concepts such as truth, justification, evidence, reason, certainty and so on), do remember that just because the concept means one thing in one area, it might not mean the same thing in another.

DEEPER THINKING

There is no doubt that language is essential to the passing on or 'communication' of knowledge in all AOKs. In TOK, however, students should push themselves into exploring a deeper analysis of what impact language has on knowledge.

More than just verbalizing ideas, the 'choice' and the 'use' of language might impact, colour or shape the knowledge. The classic example (and thus one you should not use) is the difference between 'terrorist' and 'freedom fighter'. In the abortion debate, you can sometimes tell what side of the line the speaker stands by whether they use 'unborn child' or 'fetus'.

The choice of words might also influence what constitutes knowledge (scope) and how that knowledge is created (methods and tools). When thinking of language as a source of knowledge, or thinking about the concepts and language used in an AOK, do not think of language as simply 'words'.

ACTIVITY

- 1 What does 'truth' mean relative to different AOKs? Identify a number of claims within an AOK which you think are good candidates for truth and explore what 'true' means for them in the context of that AOK.
- 2 Here are some claims which are good candidates for truth in various AOKs as a starting point. What others would you nominate?
 - 'Vaccines do not cause Autism.' (The Natural Sciences)
 - 'Parallel lines will never meet.' (Mathematics)
 - 'No government has the absolute right to rule without the people's consent.' (Politics)
 - 'People are sometimes motivated by the need of others, not by benefits to themselves.' (The Human Sciences)
- 3 In your analysis of the claims, what can you learn about the scope and applications or the methodology of those AOKs?

Another use of the concepts and language to discuss the methods of knowledge construction is to explore which concepts are required for a thorough understanding of that AOK and how the understanding of the particular use of those concepts is required to genuinely understand that AOK.

In religious knowledge systems, for example, one might argue that without a genuine understanding and fluent use of certain concepts, one cannot genuinely understand a religion. Concepts such as faith, revelation, scripture, God, divine mystery, analogy and metaphor are all crucial to at least understanding (not accepting) how religious knowledge systems construct their understanding of the world. Not being sensitive to the ways in which these concepts function within religious belief makes it impossible to understand them. Another example would be from a discipline called *psycholinguistics*: without concepts such as ‘lexical access’, ‘anaphor resolution’, ‘commissurotomy’ or ‘decentration’, I cannot really understand the field or participate in it as a knower. In order to earn the right to be part of the psycholinguist knowledge community, I would need a lot of training and experience, starting with learning the basic key concepts of the field.

If training is needed to learn these concepts, then might it also be true that I would need a certain level of education and understanding before I participate in constructing knowledge of other AOKs? Were I to start spouting off today about psycholinguistics, you could legitimately ignore me and tell me to let the experts do their work. But some of us hold the assumption that in other fields, such as the arts or ethics, any one of us, adequately trained or not, can wade into the discussion and say all sorts of things that others should listen to and respect. But why should this be true? If being an authority (through education and experience) in psycholinguistics qualifies me to be taken seriously in the field, why doesn’t education and experience play a similar role in artistic claims, such as: ‘Sting’s version of “Little Wing” is just better than Justin Bieber’s “Baby”’; or ethical claims, such as: ‘Making claims about others, based on irrelevant racial facts is wrong.

IN PRACTICE

This line of exploration opens up another implication of the role of concepts and language in understanding the methods and tools of an AOK, namely the role of education or training in constraining or *limiting* the development and transmission of knowledge. One exercise I use with my students is to take any one of their IB subject’s subject guides and ask them to identify the concepts and language that the IB has decided to include in the curriculum. Why are these concepts crucial to understanding the field? What other concepts are important in the field, or what other ways can they be presented?

You might, for example, wonder why war is a concept so central to the history subject guide or why medicine, wealth and the environment are so central to the ethics option in the IB philosophy guide? You might even go so far as to question why an exploration of how knowledge is constructed is so central to the IB Diploma as a whole. Why these concepts and not others?

ACTIVITY

Take the list of prescribed titles you are considering. Identify the key terms and concepts in the titles and develop a mind map exploring what those concepts mean in different AOKs. You can use a dictionary, but often they won’t link a concept to a particular discipline so try to think about that word in the context of other AOKs.

Ethics

One of the richest and most engaging elements of the TOK course is its emphasis on *ethics*. Ethics is a broad term referring to the study of how people *should* behave. When you question whether an action is good or bad, or right or wrong, you are asking questions in the field of ‘ethics’.

Ethics used to be considered an AOK on its own, but is now a core element of the knowledge framework. However, you can actually apply the elements of the knowledge framework that we have looked at already in terms of ethical knowledge:

- What is the *scope* of ethical knowledge? What problems does it seek to answer?
- What *perspectives* are available in ethical knowledge?
- How does one arrive at and what are the consequences of taking one perspective over another?
- What *methods* do ‘ethicists’ use when developing ethical knowledge? What concepts do they use?
- What technological tools are available to help develop ethical knowledge?
- How might ethical knowledge change over time given new technology in the world?



Now that ethics has become part of the knowledge framework, and each element of the knowledge framework is compulsory, you must spend time thinking about ethical knowledge in your TOK course. An online supplement to the student book, linked to by the QR code in the margin, is devoted to exploring ethical knowledge, including various ethical theories and how they are developed.

TOK TRAP

Because ethical questions are often very engaging, they are the focus of a lot of discussions in the TOK classroom. You must be careful, however. Students often mistake debating and answering an ethical dilemma with TOK.

Suppose you were interested in the debate around capital punishment. Some countries use it, some don’t. The argument about *whether* capital punishment should or should not be used might take place in a number of different domains. As human scientists, we might wonder if it is effective in lowering crime rates. As lawyers, we might ask whether or not it is consistent with the legal statutes of a country’s constitution. As economists, we might ask whether life in prison is more or less of a drain on the resources of a prison system than capital punishment. You might conjure up questions like these in all the AOKs.

But many people think capital punishment is *ethically* wrong and they would offer moral reasons – that is reasons having to do with ‘good’ and ‘bad’ and ‘right’ or ‘wrong’ (notice that the discipline of ethics has its

own *concepts and language* (see the section above!). People might argue that even if it is legal, or cost effective or an effective crime deterrent, no one (or no country) should allow it.

So, just like you can explore capital punishment from the perspective of other AOKs, asking whether it is *ethically* right or wrong is asking from the perspective of philosophy (the discipline that handles ethical dilemmas). This is a philosophical or ethical question, meaning you would need to use the methods and tools of philosophy.

To apply a genuine TOK approach means you would have to develop some good knowledge questions *about* ethics. You would want to shift the question to focus on knowing – something like (but not limited to!), ‘What effect does theory in the human sciences have when we make ethical judgments?’ The *target* of this question is ethical judgments, not the rightness or wrongness of some ethical dilemma. In TOK, we are asking about judgments and how they get developed, not about whether some action is right or wrong.

This is not to say that you cannot explore genuine ethical dilemmas, you just have to focus your exploration on the right thing. For instance, while thinking about the question above, you might have concluded that capital punishment is *not* ethically right, and after reflection you realize that one of the reasons was because it is not really an effective deterrent. This reflection about the reasons why you arrive at an answer, and what sort of data is relevant in order to arrive at the conclusion is essentially a second-order question: *how have I arrived at the knowledge or beliefs that I have and is this a reliable process?*

If you are hoping to explore ethical questions in your exhibition or essay, you must be very careful to avoid this trap.

One way of testing your question or approach is to review the question you are investigating – if it is formulated along the lines of whether something ‘should be allowed’ and if your answer has anything to do with whether it is right or wrong, then you have probably not asked a genuine knowledge question.

The role of ethics in the knowledge framework opens the door to a number of discussions about how knowledge in the various AOKs is used and developed. We have included a few of these questions from the subject guide here to give you an idea of what these are like:

■ Knowledge and Technology

- How might technology exacerbate or mitigate unequal access, and divide in our access to knowledge?
- Should we hold people responsible for the applications of technologies they develop/create?

■ Knowledge and Language

- Does ethical language differ in any significant way from other types of language?
- How can we know if language is intended to deceive or manipulate us?

■ Knowledge and Politics

- On what criteria could we judge whether an action should be regarded as justifiable civil disobedience?
- On what grounds might an individual believe that they know what is right for others?

■ Knowledge and Religion

- Do we have an ethical responsibility to gain knowledge of different religions to help us better understand the world and those around us?
- Does religion provide a way to systematize concepts of right and wrong?

■ Knowledge and Indigenous Societies

- To what extent does deliberate disinformation by education and governments threaten Indigenous knowledge?
- Is there is a difference between moral values and cultural customs?

■ History

- Should terms such as ‘atrocious’ or ‘hero’ be used when writing about history, or should value judgments be avoided?
- Do historians have an ethical obligation not to ignore contradictory evidence?

■ The Human Sciences

- What are the moral implications of possessing knowledge about human behaviour?
- Should key events in the historical development of the human sciences always be judged by the standards of their time?

■ The Natural Sciences

- Is science, or should it be, value-free?
- In what ways have developments in science challenged long-held ethical values?

■ The Arts

- In what ways are moral judgments similar to, or different from, aesthetic judgments?
- How important is the study of literature in our individual ethical development?

■ Mathematics

- How are unethical practices, such as ‘data dredging’, used by statisticians to deliberately manipulate and mislead people?
- Do mathematical judgments and ethical judgments face similar challenges in terms of the evidence available to support them?

From this list, hopefully you can see that there are many different types of knowledge questions you can ask in relation to ethics. Some of these are about the ethical *application* of knowledge from a particular AOK. Some are about the *nature* of ethical knowledge itself. Some are about the inter-relationships between ethical knowledge and one of the AOKs.



ACTIVITY

- 1 As a way of embedding a genuinely TOK approach you might spend some time thinking about the above questions in relation to the categories in the table below. Can you place them under the headings provided?
Use the QR code to see a possible response.

Questions that are about the ethical construction or application of knowledge from the AOKs:

Questions about the nature of ethical knowledge (from the perspective of an AOK):

Questions about the *inter-relationships* between knowledge in the AOKs and ethical knowledge:

- 2 Were any questions able to be placed in more than one category?
- 3 What have you learned about knowledge questions that you might not have understood or thought about before?

Hopefully you can see that you can ask all sorts of interesting TOK questions related to ethics. Always remember, however, to ‘take a step back’ from the specifics of the solution to the problem and think about the process of coming to a conclusion. That is where you will find the best TOK.

In terms of the strict use of ethics as an element of *another* community of knowers, the framework provides two broad questions, which you can see in the list of questions on the previous pages.

First, you can explore the *responsibilities* of those in the knowledge community to *construct* their knowledge well. Second, you can explore the importance of *applying* that knowledge responsibly.

■ The responsible *construction* of knowledge

Ethics is about what a person *should* do, and in the case of knowledge construction we find that there are certain methods in place – methods which have been designed or developed in order that the knowledge created is *reliable*. This suggests that experts in a community of knowers have a responsibility to create knowledge in certain ways and using certain established processes. If these processes are not used, then the claims they offer as ‘knowledge’ do not need to be accepted as such.

The advantages of this approach are that the community has relatively clear guidelines about what knowledge to accept and what knowledge *not* to accept. A very famous example, one that you are probably familiar with, will serve as a powerful example. Dr Andrew Wakefield, a doctor at the Royal Free Hospital in London, published a scientific paper in the scientific journal *The Lancet* which claimed that there was a link between children having the MMR vaccine (measles, mumps and rubella) and the onset of autism. So far so good, this is exactly what you would expect for new knowledge construction. The community of scientists, however, were having difficulty with another stage in the construction of knowledge: *repeatability*; they could not manage to conduct the experiments that Wakefield had and could not achieve the same results. This might not have been Wakefield’s fault. The trouble came with a report in 2004 which suggested that Wakefield’s research might have been influenced by undisclosed financial benefits, including being paid for his research by parents who felt that the vaccine had caused their children’s learning difficulties. In other words, he may have let his research be guided by the people who were funding that research – and he hadn’t disclosed these connections. This is one violation of the responsibility of a researcher. The British General Medical Council then started a full investigation of Wakefield’s research and found that in addition to not releasing possible conflicts of interest, he also deliberately falsified data in his research – an absolute cardinal sin in the natural sciences – finding that, ‘In the circumstances, Dr Wakefield had a clear and compelling duty to ensure that the factual information contained in the paper was true and accurate and he failed in this duty’ (General Medical Council).

This amounts to a serious violation of the scientific method and shows Wakefield’s *irresponsible* application of it. So serious was the violation, *The Lancet* retracted Wakefield’s article (*The Lancet*). *The Lancet*’s editor underscored the importance of

responsible processes when saying, ‘The entire system depends upon trust. Most of the time we think it works well, but there will be a few instances – and when they happen they are huge instances – where the whole thing falls apart’ (Boseley).

So irresponsible were Wakefield’s deceptive practices, including the fact that he did not have the relevant qualifications to work with children or research children’s diseases, that he was disqualified as a practising physician in the UK. In other words, his violation of the established methods of medical research and his irresponsibility in relation to them, meant that he was removed from that community of knowers.

Some vaccine sceptics might claim that Wakefield’s irresponsibility does not necessarily mean that vaccinations *do not* cause autism after all. They might say that the ethical violations Wakefield committed do not have any bearing on the facts of the world. But for any claim or knowledge about the world to be established in the sciences there must be clear, direct and reliable evidence that *it is true*. That it *might be true* however, is not evidence that *it is true*. In the case of ‘vaccinations cause autism’, there is *no* evidence to suggest that they do, and every reliable scientific study suggests that the opposite is the case: all the clear, direct and reliable evidence says that they do not. So, while it *might* be true that vaccinations cause autism, there is *no scientific reason to believe it*. Any responsible application of the scientific method points in the direction that says that there is no link.

ACTIVITY

- 1 Research the ‘anti-vax’ debate (the debate that tries to argue that the MMR vaccine (or vaccines in general) cause autism). Review how expert scientists reliably apply the scientific method and then consider the ways that the method has been applied in the case of the anti-vax arguments. You might focus on things like the reliable use of expert knowledge in the field, the use of scientific experiment (and not anecdote) and the influence of beliefs and knowledge from other AOKs (particularly religion and politics).
- 2 How *reliable* do you find these arguments? Consider, as well, how *convincing* you find the arguments? Is it possible for arguments to be convincing but unreliable? What does this say about the *consumption* of scientific data by non-specialists? Do scientists have a duty to avoid exploiting emotional arguments when disseminating knowledge?

Remember, you will have to move beyond the first sources you find. True research means delving deeper than some website or report – you have to consider the sources for that website or report. Like peeling off the layers of an onion, you might find that below the surface of a convincing argument are far less convincing assumptions. As in the case of Wakefield, looking at the research more closely might uncover political biases, violations in the method and personal biases which show the knowledge to be completely unreliable.

■ Cognitive bias

Cognitive bias is another obstacle that makes the construction of reliable knowledge a challenge. Psychology teaches us that we are prone to all sorts of ‘biases’ that affect the way we take in information, process data and draw conclusions. Realizing that these are genuine issues in the construction of knowledge means that knowledge producers must do their best to ensure that these biases do not affect their work. Peer review, the process by which scientists check the design of each other’s experiments, for example, is one way in which the scientific community double check each other’s work. This might not be enough, (as in the case of Wakefield) because peer reviews don’t actually repeat the experiments, they simply check that the design is reliable and check that the data produced by the experiment says what the researchers claim it says.

ACTIVITY

Research cognitive biases or other ways in which researchers’ own psychological processes impact the creation of knowledge. Then identify ways in which the ‘rules’ of the community of knowers might help manage or lessen the impact of those biases and processes. How might the community of historians, for instance, manage the known fact that human beings’ memories are quite poor and easily influenced? How do data collectors overcome the fact that we often tend to give more weight to knowledge which fits with what we *already* think?



ACTIVITY

Watch UK epidemiologist Ben Goldacre’s TED talk ‘Battling bad science’ by using the QR code.

With a partner, try to map out all the different ways in which scientific data can be manipulated and how the responsible use of the scientific method might manage these worries.

■ Data collection

Another type of ethical concern which you might encounter in relation to the construction of knowledge is the way in which data is *collected*. In many cases, people have suffered as a result of the process of data collection, very often as part of experiments which were designed to answer legitimate questions. In the student book (page 352), we discuss the Milgram experiments where unsuspecting and unwitting subjects were put through what could have been quite damaging experiments, which involved them being led to believe they had administered fatal electrical shocks. Other examples are identified in the student text as well. Many ethical ‘codes’ of conduct are now in place to protect the subjects of experiments, and the notion of ‘informed consent’ is heavily emphasized in research, particularly in the medical sciences.

Animal experimentation is another issue that gets a lot of discussion in this topic. Many products and medical treatments are first tested on animals in order to gather data on whether or not the products or treatments are successful and whether or not they will work on humans. The TOK discussion should focus on the relative importance of the knowledge produced in relation to the treatment and possible suffering of the animals.

■ The responsible *application* of knowledge

Another sort of ethical issue arising in the discussions of knowledge can be categorized around the responsibilities that come with *using* the knowledge. We might ask, for instance, whether the knowledge of how to use poisonous chemical gases to kill other human beings was really something that we *needed* to know. There is no doubt that knowing about chemistry and how various chemicals interact is valuable knowledge; they are interesting facts about the world in which we live, but very often these interesting facts, once discovered, are then used in questionable ways.

Another example might be nuclear fission – it is worth investigating the physics behind the energy contained in the core of the atoms, especially when we can then harness that energy to create alternative (but dangerously wasteful) energy sources. But is it worth knowing this information if it ends up being used to vaporize whole cities in an act of war? We might also think that developing technology that gathers information about us as we use the internet to then create a more efficient and streamlined experience as we use the internet is beneficial. But *should* the knowledge about us be collected if it means that that data is used in ways that we have no knowledge of or control over?

What these questions about the application of knowledge suggest is that we as knowledge producers and knowledge *holders* have a responsibility to use it appropriately. Doing so, however, requires some awareness of how to construct the ethical principles that will determine just how we should be using it, meaning we have returned full circle to the idea of investigating just how to construct ethical knowledge more generally.

ACTIVITY

- 1 For each optional theme and/or AOK, think about situations in which the knowledge produced might raise ethical concerns when that knowledge is applied. You might, for example, identify the ways in which a clever use of statistics (mathematics) might shape people's beliefs or create biases in their reasoning. Or you might consider how a historian searching archives for facts might uncover facts about individuals or institutions that are judged harshly according to current social values. Similarly, you might identify the way in which our use of technology creates a 'digital footprint' which might be used to violate our individual privacy.
- 2 For these ethical concerns, consider whether the producers of that knowledge have a *responsibility* to those affected.

Conclusion

The knowledge framework is a tremendously useful tool in TOK. In summary, you might say that a careful use of the framework provides two major opportunities.

First, the framework provides you with a way to develop an analysis of knowledge clearly focused on a particular element of the framework. You might, for instance, just focus on the scope of an AOK and explore the types of questions asked within that theme or AOK, or explore how the *methods* used by that AOK maintain reliability and act to manage the challenges of bias.

Second, if you are developing a comparison between themes or AOKs (and it is likely that you are going to have to do this in response to any prescribed title) you can use one particular element of the framework as a way of developing a context in which to make these comparisons.

In both cases, the framework provides a way of maintaining relevance in your analysis (you know that each point is related to core aspects of the course) and they help you develop an *integrated* approach by creating opportunities to link each point you make by referencing the wider context provided by the element of the framework.

Whenever you are in doubt about how to develop a good analysis or essay, try to remember the framework, asking yourself, ‘What can I say about the scope of my AOK or theme?’ ‘What do I know about the methods and tools of my AOK or theme?’ ‘What sorts of perspectives are available in the AOK or theme?’ ‘What ethical issues arise through the development or application of the AOK or theme?’

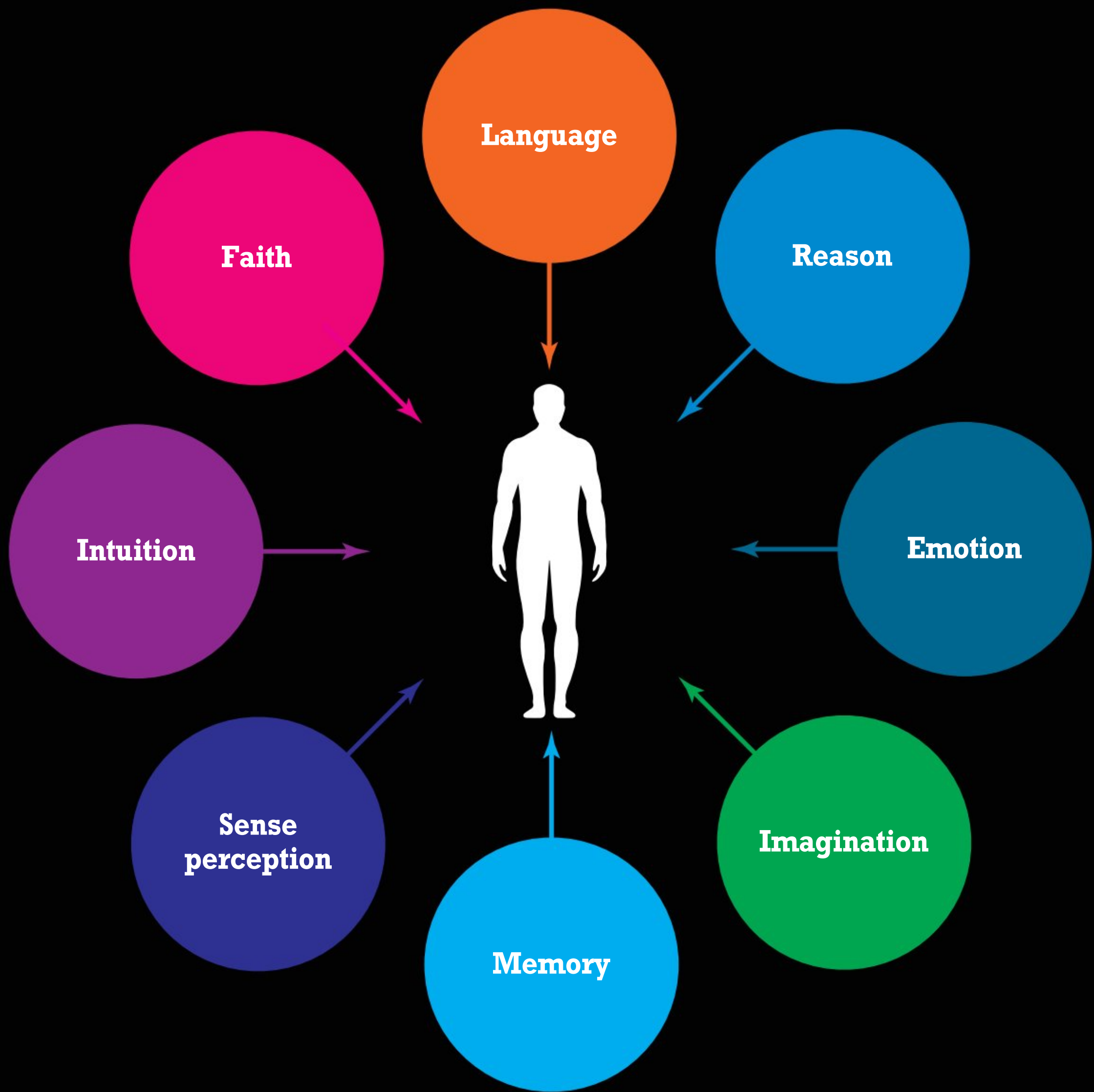
Works cited

Boseley, Sarah. 2010. ‘Lancet Retracts “Utterly False” MMR Paper.’ *The Guardian*. Guardian News and Media. Web. 23 Nov. 2019. www.theguardian.com/society/2010/feb/02/lancet-retracts-mmr-paper.

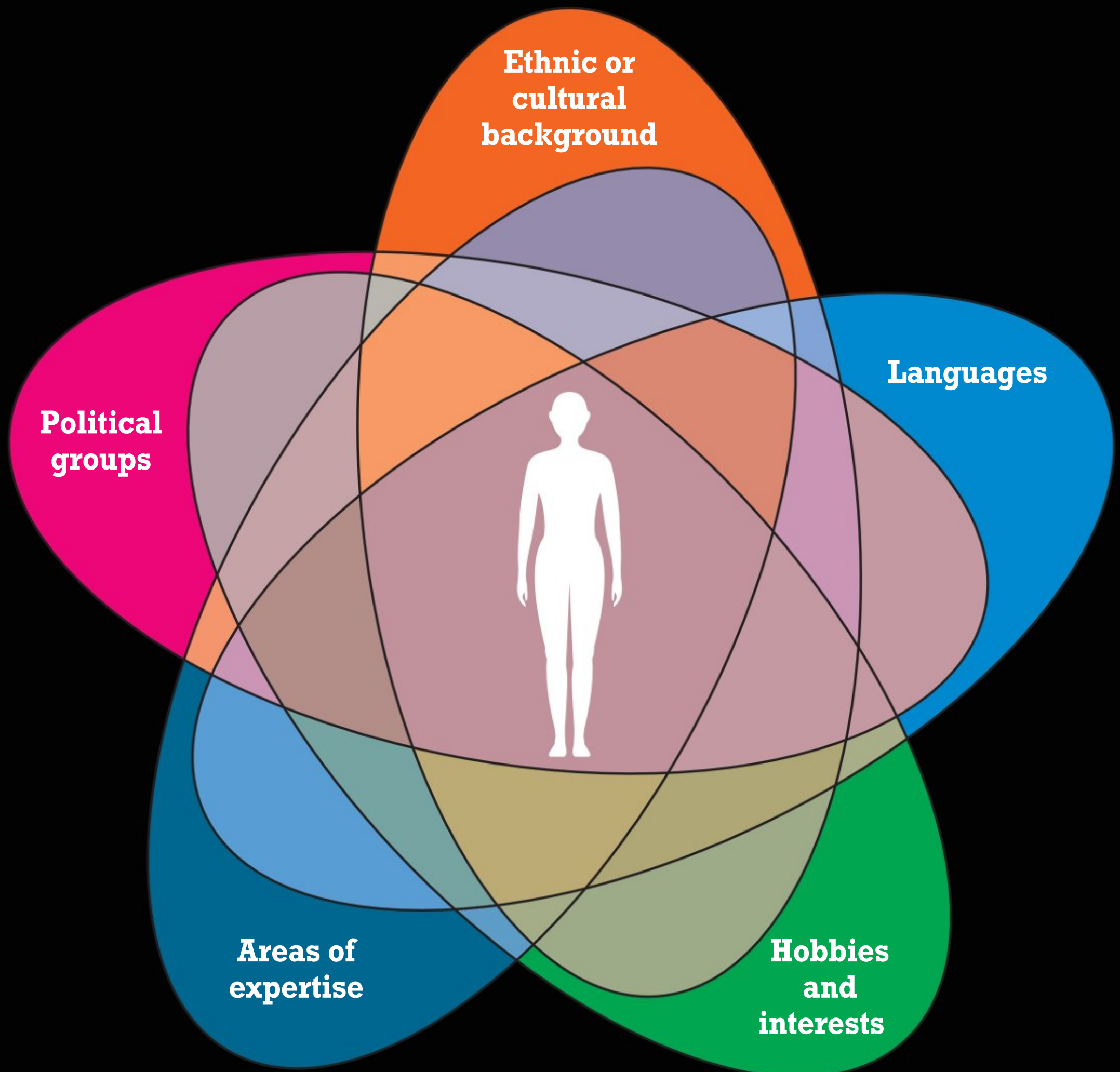
General Medical Council. 2010. *Determination on Serious Professional Misconduct (SPM) and Sanction*. General Medical Council. Web. 23 Nov. 2019. https://web.archive.org/web/20110809092833/http://www.gmc-uk.org/Wakefield_SPM_and_SANCTION.pdf_32595267.pdf.

The Lancet. 2010. Web. 22 Nov. 2019. [www.thelancet.com/journals/lancet/article/PIIS0140-6736\(97\)11096-0/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(97)11096-0/fulltext).

Cognitive tools



Communities of knowers



3

Knowledge and the knower

At the ‘core’ of the TOK course is the ‘core theme’, Knowledge and the knower. This topic highlights the expectation that you as an individual should take centre stage in many of the explorations of knowledge into which you enter. This means that you should be thinking of your own personal relationship to the communities of knowers that you are studying throughout the course. In this section, we will be first exploring some of the ways in which you are an individual knower and what that knowledge may be like, then we’ll explore your individual knowledge within the context of a wider community of knowers.

The individual knower

Much of the knowledge that we develop is knowledge of *ourselves*, knowledge that does not seem tied to anyone but ourselves and nothing but our own experience. Your own tastes and likes, for instance, are only about *you*. Your own beliefs about issues and debates belong to you and no one else (though of course others may share your ideas and beliefs). Examples of this sort of individual knowledge include, ‘I am tired right now’ – this would be known through some sort of measure of an internal mental state or feeling; no one else has access to this experience. Although others may see your behaviour or your expressions, these are not the same as the experience you are having – they are consequences or signs of that experience.

Similarly, you might claim that ‘utilitarianism is a lousy ethical theory’ – which would be known again through an analysis of your own attitudes towards utilitarianism, but also presumably after a rational process of analysis and evaluation. While you might share your understanding of utilitarianism with others, your own attitude towards it belongs to you and you alone. When it comes to deciding whether you like utilitarianism or whether it is true that you are tired, you are the one authority on that knowledge. These types of knowledge claims are deeply individual then, both in the sense that they are about you, but also that *their justification depends on an appeal to facts that only you have access to*.

The individual research you conduct (for instance in your extended essay (EE) or your IB internal assessments (IA)) is thought to be your own. This sort of personal or **individual knowledge** might be what you identify when you say ‘I know ...’ and may be knowledge *about* the world (eg, ‘I know that Paris is the capital of France’, or ‘I know that the “Mona Lisa” was painted by Da Vinci’), or knowledge of *how* to do something (eg, ‘I know how to juggle’, or ‘I know how to navigate my local public transport system’, or ‘I know how to do a frontside 180 on a skateboard’).

However, these types of individual knowledge start drawing on *others* for their justification. This knowledge outside of you is thought to be knowledge of a community of knowers. These knowers, for instance, might have developed the initial ideas that your EE or IA is about, or they might have developed the institutions and cities which

make certain cities *capitals* of countries. So while you may have developed your own personal conclusion in your EE, you will have been drawing on the subject-based knowledge of the experts in that discipline. Even your own knowledge that Paris is the capital of France depends on *others* who have developed the institutions and concepts required to know that particular fact. For claims like this to be *justified* you need to appeal to these ideas, concepts and facts that are independent of you. Even the sorts of things you *like* and *believe*, for instance, are impacted by your friends and family (a sort of community of cultural knowers).

The knowledge of a community might be characterized in the form ‘We know ...’. This knowledge held by communities (and possibly held by some individuals within the community) might be about facts and abilities, just like the example of personal knowledge offered earlier. *We* know how to send probes to Mars for instance, and *we* also know that cognitive behavioural therapy is an effective psychological treatment for certain mental illnesses, and *we* now know that the ‘bubbles’ or ‘filters’ we surround ourselves with on social media will have a deep impact on our political beliefs.

ACTIVITY

- 1 Choose some knowledge that you have which you think is a good candidate for individual or personal knowledge, knowledge that can be characterized as ‘I know ...’ rather than ‘we know ...’.
- 2 Now consider how that knowledge draws on or is impacted by the knowledge of a community of knowers.
- 3 What do you think the significance of these connections has for the distinction between personal knowledge and the knowledge of a community?

Hopefully, what this exercise has underscored is that there is a deep relationship between the knowledge that we personally hold as individuals and the knowledge we gain from our communities. Even in the most personal of knowledge, we find that very often the concepts and terms used to identify it and describe it are supplied by some community of knowers or shared by that community. In Chapter 6 of the student coursebook we explored how even our experience of *colour* is heavily influenced by the types of colour terms available to us through our culture – the Berinmo culture in Papua New Guinea and the Himba of northern Namibia, for instance, have different terms for different colours, which results in speakers of these languages being able to make distinctions between colours that the other cannot. English speakers, for instance, cannot distinguish between certain blues and greens, whereas in those same cases the Berinmo speaker sees such a difference that they use an entirely different term!

For the TOK student this relationship between the knowledge of the individual and the knowledge of the community is a crucially important distinction. It is important because *not recognizing* the relationship between what ‘you know’ and what ‘your community knows’ might mean that you are not exploring your own knowledge deeply enough, showing a lack of sophistication. By recognizing it and exploring that relationship you

can show your teachers and examiners a better understanding of how knowledge is constructed.

DEEPER THINKING

Many students might raise the story of Professor Andrew Wiles solving Fermat's Last Theorem and claim that it was his individual knowledge that made all the difference. (There are a number of video documentaries about this story, one particularly good one was by BBC's *Horizon* in 1996.) However, few students will go into any amount of detail about the previous knowledge that Wiles had to make use of to do it. You might discuss this within the methods and tools element of the mathematics knowledge framework, for example: 'What sorts of mathematical knowledge had to be constructed before Wiles' particular proof was even imaginable?' Another worthwhile point to explore is the role of peer review in Wiles' initial proof and how that peer review was necessary for his personal knowledge to become 'shared', that is, for it to become a genuine addition to the mathematical canon.

One approach to individual knowledge taken by many students is to claim that whatever they happen to know counts as individual knowledge, but this is far too limiting. Take, for example, the claim 'I know that the GNP of Canada is 1.5 trillion'. By saying this, I might be pointing out that this is my own personal knowledge. I can list the things I know and if 'the GNP of Canada is 1.5 trillion' happens to be one of them, then I can say, 'Yes, this is on the list of the things I claim to know'. However, the notion of personal or individual knowledge needs to be more sophisticated than this. The key to all of these is to recognize a distinction between the claim that you know and the truth of the claim itself. That you know something is one thing, but whether what you claim to know is actually true is another.

Rather than pointing out that you know something, it is more interesting to ask, 'How is it that I have come to this knowledge? What is it that makes this claim the sort of thing that I want to say is knowledge (rather than opinion or a guess?)' or 'How reliable is this knowledge that I happen to have?' There is an element of personal to it, in that you are pointing out that you happen to believe it, but the 'content' is shared. The claims themselves are the result of a series of methods and concepts that have been developed by a community.

The claim's justification and the concepts and ideas used in that justification are the result of an agreed upon series of ideas that have to do with the nature of knowledge, or the ideas in the AOK (scope) and the definition of key terms (methods and tools), or the rules surrounding what counts as 'justified' (methods and tools). You cannot be that sort of knower (an economist or a mathematician or a historian) unless you agree on those basic starting points. In these cases, therefore, your own individual knowledge still has deep relationships with knowledge formed by a community, what we might call '**shared knowledge**'. You might develop an interesting analysis focusing on the interplay between coming to know something as an individual and how this relates to the community. This, and the point about acquiring knowledge, was discussed in Chapter 1.

It might also be helpful to distinguish between propositional and non-propositional knowledge in relation to the individual knowledge and that knowledge which is shared in a community. Propositional knowledge will take the form of ‘I know that such and such is the case’, while non-propositional knowledge can be thought of as knowing how to do something.

For example, it is propositional knowledge to say, ‘The square of the hypotenuse of a right-angled triangle is equal to the sum of the squares of the other two sides’ or that ‘The rules of rugby state that you cannot pass the ball forward with your hands’. These are examples of knowledge shared by a community, as outlined above.

But I might also say, ‘I know how to find the length of a side of a right-angled triangle given the lengths of the other two sides’ or ‘I know how to play rugby’. These would be non-propositional forms of knowledge. But are these also examples of ‘personal knowledge’? They certainly relate directly to ‘me’ and describe a personal skill or attribute, but how do I know that I know how to do these? I might claim that I know how, but doesn’t the justification of that claim require me to demonstrate that I know it by *doing* it? Despite my promises to know how to apply Pythagoras’ theorem, doesn’t a community of mathematicians (often in the form of my mathematics teacher) have to judge whether or not I do indeed know? They can only do this by my performing the equations for them? Same with my knowing how to play rugby. If I am unable or unwilling to actually *play* rugby, I might find it hard to justify my claim to know how to.

Not all non-propositional knowledge requires this level of public justification (whether or not I know how to tie my shoelace or get to Rome seem to be justifiable even in the absence of others – my shoelace either gets tied or not; I either get to Rome or not), but some instances of ‘knowing how’ to do something certainly do seem to need this public verification. Might these then also have an element of ‘shared knowledge’ to them? What I’m suggesting here is that the concepts of an individual’s and a community’s knowledge are deeply related.

Communities of knowers

One way of characterizing the knowledge of a community is to suggest that it is *shared* by the community – it is something which the community accepts. An individual’s knowledge then becomes the personal knowledge of the individual in relation to that of the community.

You can frame this sort of understanding of your own role in the construction and transfer of knowledge by thinking of yourself as something like an *apprentice*. The student book discusses this concept at length. An apprentice (or an intern) is a person new to a field, who learns to become a member of that community through joining the experts in that field and learning the ropes by *doing*.

The idea is that in your classroom studies of the AOKs you are acting like an apprentice. To become an expert historian, you begin by taking little steps, learning facts and

crafting historical knowledge bit by bit, a little at a time. This is what you are doing in your IB class – you are learning how to *be* a historian, how to think like a historian, how to search for and evaluate sources like a historian, and how to write essays like a historian. Hopefully, having learned how to act a bit like a historian in your IB class, you will be able to learn even more when studying history in a university. Staying in education long enough and learning from expert historians means you can join their ranks and begin acting alongside of them, producing reliable historical knowledge, instead of merely learning from them.

Throughout your TOK course, then, you have a ready-made TOK analytical point. When in doubt, you can always explore just what it is that is needed to become an expert in a field. There is always an element of *content knowledge* that you need, but there are also a whole host of skills and attitudes you will need to develop in order for that community of experts to accept you into their ranks. These might be called ‘membership criteria’ and will be slightly different for each AOK, but the common criteria are likely to be related to the three following ideas. The more you have of each of these elements, the more likely you are to be accepted by that community as one of their own.

- **Background knowledge:** there is a lot of background knowledge that you need to know or to memorize in order to effectively employ the type of analysis provided by that AOK. This sort of knowledge would certainly incorporate understanding the technical language (key concepts) in a field.
- **Knowledge of how to *behave* in that field:** meaning that you know how to do the things that an expert in that field must know how to do – how to draw perspective in the visual arts, how to play a C-minor chord in music, how to access an online journal database, how to set up a meaningful questionnaire or how to design an effective experiment.
- **Experience:** learning by doing a lot of the subject and showing some success at doing it. You might show this experience by earning degrees or publishing articles, or by holding down a job related to that knowledge.

The shared knowledge of a community relates to claims which are the result of the work of others or in conjunction with others and me. “Gross National Product” refers to the market value of the products and services of a nation’, and other definitions have very little to do with my own experience or reflection – the community of economists has defined it this way. I might even claim to know that, ‘The GNP of Canada is about 1.5 trillion’, but again, this knowledge (in my case) relies entirely on the work of others – both the community of economists who have defined the key terms but also the researchers who have actually measured the GNP of Canada. This knowledge can be called ‘shared’ knowledge, in the sense that the knowledge was developed by experts in the field of economics in a public forum; it relies on the work of others for any one of us to claim to know it, and it requires verification by others before it can be considered reliable. The eleventh-century monk Bernard of Chartres perhaps said it best when he suggested we were like those standing on the shoulders of giants and

that we see further not because of our ‘keener vision’ but because of the knowledge of our predecessors.

Ability knowledge (knowing how to do something) can also be said to belong to communities, even though it is individuals actually doing the work. We might suggest that knowing how to build a smartphone is something ‘we’ know as a group. Very few people, if any, would know how to build a smartphone from scratch (from mining the ore for metallic components through to turning out a finished handheld device), not even the people assembling the devices themselves. Together, however, we, as a community of smartphone-builders has somehow managed it. The ‘we’ then, in ‘we know’, refers to a wide community with a number of specific skills and specific knowledge.

How, then, does the knowledge developed by individuals become something that a community knows? The sharing of results might be a necessary part of turning a knowledge claim developed personally into an established or a reliable claim. This is the case in the sciences, where the sharing of results is required so that others can replicate the results or review the data and then verify that it is ‘true’ or correct. While giving out the information is certainly sharing, it is what happens next (replication of results and peer review) that makes something genuinely ‘shared’ in the sense we are talking about here.



A good example of this would be the Fleischmann–Pons cold fusion claims made in 1989. Martin Fleischmann and Stanley Pons claimed to have run experiments, the results of which they claimed could only be explained by hypothesizing that nuclear fusion occurred at room temperature rather than at millions of degrees, as it does in the hearts of stars. If true, this ‘cold fusion’ would have opened up a new form of nearly limitless clean energy. But after other scientists reviewed the findings and experiments and failed in their attempt to replicate the results, the claims were dismissed. Cold fusion might still be possible, but it just has not yet become something that ‘we’ know how to do. In other words, simply claiming that they had personally achieved their amazing results was not enough to make Fleischmann’s and Pons’ knowledge reliable or justified. The scope and methods and tools of physics require that its type of knowledge be shared by the community. If only one person holds physics’ knowledge and bases its justification on only one person’s (or group’s) experiments, then it cannot be called genuine knowledge in the field. Use the QR code on the left, above, to find out more about the Fleischmann–Pons cold fusion claims.



In history, this need to share evidence is similar (though, of course, the notion of ‘experiment’ is quite different). For example, The International Group for Historic Aircraft Recovery (TIGHAR) claims to have amassed a ‘preponderance’ of evidence which together suggests that they have found the wreckage of US pilot Amelia Earhart’s final flight, a mystery unsolved since 1937. There are others, however, who question the reliability of the evidence and the logical steps TIGHAR has used to explain the evidence. With such strong disagreement in the community of Earhart experts, it is difficult to say that the claims made by TIGHAR can be thought of as genuinely ‘shared’ in the sense that this knowledge has become part of what the ‘historical community knows’ implies. Use the three final QR codes on the left for more information on the final resting place of Amelia Earhart.



■ BUILDING KNOWLEDGE ANALYSES

You might explore the Amelia Earhart theory, or other scientific or historical controversies or 'conspiracy theories' to look into the relationship between personal and shared knowledge, specifically by exploring the methodology of the AOK, and the role of bias, pre-judging or personal commitment in forming judgments.

■ What communities of knowers are you part of?

We might extend the idea of a community of knowers beyond just the AOKs. One of the exciting opportunities that the core theme provides is the chance for you to identify any number of communities of knowers that you belong to. So far, we have been treating communities of knowers in a relatively traditional way – as knowers in areas of knowledge, like the community of historians or economists. With a little reflection you might find that you belong to a whole range of communities of knowers beyond just those associated with the subjects you are learning about through your studies.

ACTIVITY

- 1 Make a list of the activities you engage in and the ways that you spend your 'free time' (outside of the classroom).
- 2 From this list, identify the activities which *you* are good at, or at least, *better* than others at, or in which you *could* be better than others (ie, those activities in which it makes sense to say that you are 'more of an expert' than others). This might be because of the things we mentioned earlier – more background knowledge, more experience and a better understanding of how to *act* in relation to others who have 'less expertise' than you.

It is likely that many, if not most (or all) of your activities can be thought of as activities in which you are more of an 'expert' than others. This means that the participants in these communities can be thought of as 'communities of knowers'.

You might have selected sporting activities, and these are definitely communities of knowers; knowers who know the methods, rules, techniques and values of these sports. Even simply jogging can be considered a community of knowers, in that dedicated joggers might know *how* to manage their runs, know about shoe technology, know *about* the right techniques and diet, or might even know about the subjective experiences of euphoria provided by long runs.

You may have identified all sorts of other activities: reading certain kinds of books (perhaps you are a Harry Potter fan or a Stephen King fan), juggling, taking part in charity projects, video gaming, skateboarding or scuba diving. All these activities can be considered more than just activities that you *like*; they can be seen as communities of knowers when you consider the knowledge (knowledge of facts and knowledge of skills) that are required to do well in them.

Some of these might not be as *rich* a community of knowers as others, granted. They might not have the established methods of more 'formal' communities of knowers

represented by experts in the AOKs who often have to follow strict rules to join and be a part of the community (scientific methods, peer review, expectations governing how to justify arguments, etc), but with a little reflection and creativity you might find that your love of chess, Dungeons and Dragons, coding, Ariana Grande or dance all place you in a community of like-minded knowers. These communities and the type of knowledge, practices and values embedded within them can serve as opportunities to apply the knowledge framework and develop a genuine TOK analysis around them. They might even be part of your assessment, especially as part of the exhibition.

ACTIVITY

- 1 Identify *objects* that are part of your non-academic communities of knowers.
- 2 For each object, identify a number of the internal assessment prompts for which the object might be used as an illustration.
You might choose your scuba goggles from your scuba kit and IA prompt number 20 ('What is the relationship between personal experience and knowledge?') to explore how being taught how to clear your goggles of water in the boat is one thing, but having undergone the experience of *needing* to clear water from your goggles while under water is quite another. Can you assure yourself that you do know how to do this, if you've never actually *had* to?
- 3 Begin collecting some of these objects and possible IA prompts early in the TOK course so you can later make the most interesting choices when it comes to creating your exhibition.

ACTIVITY

Consider again the community of knowers you identified. Can you describe that community in terms of the knowledge framework?

- What is the *scope* of that community? What sorts of knowledge does that community build?
- What are the various *perspectives* within that community? Are there different versions of what it is to be in that community? Are there different values or 'schools of thought'?
- What are *methods and tools* that you would need to know how to use in order to be part of this community? How does this community develop *new* knowledge?
- What are the codes of conduct in this community? What does it mean to be a responsible user of the knowledge that this community provides? Are there values about why this knowledge *should* be developed and used?

Objective/subjective knowledge

Another way of approaching an individual's knowledge and the knowledge of a community is to look at it in terms of objective or **subjective knowledge** – a distinction that you might explore in relation to scientific knowledge. Many might claim that

the knowledge of a community is more objective than the subjective knowledge of an individual but this is not to suggest that the terms ‘objective’ and ‘shared’ knowledge in a community are synonymous, nor that ‘subjective’ and ‘individual’ knowledge are either. ‘I am feeling hunger’, or ‘I think it’s true that muesli is delicious’ are objective facts about me right now, but the experience of hunger or my love of muesli are clearly subjective feelings and attitudes. The point here is that objective and subjective knowledge have some elements in common with that of the shared knowledge of a community and an individual’s personal knowledge.

■ Objective knowledge

Scientific thinking is often held as being the most ‘objective’ approach to the world that we have. This is often tied to two elements of the creation of scientific knowledge: the ‘scientific method’, and peer review. **‘Objective knowledge’** is knowledge that does not appeal to any individual’s opinion or private experience as part of the justification of it.

When a scientist is testing a claim’s truth, they will only appeal to evidence that can be used by others; they will interpret that data through appeal to theories which have themselves been justified through others’ empirical data and tested by the community, and they will share their own experiments in the hopes that others will run the experiments and interpret the data for themselves. The point of all this is to weed out personal bias that is known to plague the interpretation of results, and distribute the responsibility for the knowledge across the community. In this sense, the knowledge resulting from this process is ‘objective’ in that it has nothing to do (hopefully) with the scientist’s own personal biases, prejudices or circumstance, and it is ‘shared’ in that the process is about a community taking responsibility for the justification and reliability of that knowledge.

Our scientist might be from anywhere in the world, have any range of personal beliefs about religion, ethics or about how to live one’s life, but when it comes to the construction of ‘scientific’ knowledge, the scientific method is a guard against any of these beliefs affecting the ‘objective reliability’ of the claims. Our scientist might even end up disagreeing with some well-established scientific theory, but their disagreement is irrelevant unless they can appeal to shareable empirical data to justify it. Any preconceived ideas remain ‘hunches’ until they can be supported through the scientific method. To suggest that the knowledge is ‘objectively reliable’, however, does not imply that the knowledge is not going to shift and change over time and with new evidence. What is deemed ‘reliable’ or ‘justified’ by a community of knowers is certainly relevant to the evidence available, and the available concepts or theories to explain them.

ACTIVITY

- 1 Imagine you are a scientist, exploring the natural sciences. Develop a chart which identifies the various types of knowledge. Where does the scientist rely on their *community* for knowledge? Where do they rely on their own *individual* knowledge? In what ways do both types of knowledge add or detract from the reliability of the scientific knowledge being constructed?
- 2 Now try the same exercise with knowledge from another AOK. Where does, for example, a historian rely on a community for knowledge? How does an artist draw on the knowledge of the community? What effect does their personal knowledge have on the construction of their knowledge?
- 3 Now compare the two charts. What conclusions can you reach about the scope of those AOKs or the methods and tools of them in relation to personal and shared knowledge?

This is, perhaps, the perfect exemplar of what a community's shared knowledge amounts to. The publicly agreed upon method, the importance of peer review and the reliance on data which, in principle, can be experienced by all, means that the construction of scientific knowledge occurs in a public realm and relies upon the community's own processes and collective experience.

■ Subjective knowledge



Subjective knowledge, on the other hand, is knowledge about, or is knowledge justified through, facts pertaining to the individual. If I claim, for example, that T.S. Eliot's 'The Lovesong of J. Alfred Prufrock' is a beautiful poem, I am partly relying on certain shared knowledge developed by the artistic community about Eliot, his technique and skill, but I am also referencing personal taste. It is a matter of personal taste that I like it. (Use the QR code to hear Eliot's poem.)

This does not mean, however, that these sorts of claims cannot be debated. I think it is beautiful, but I might try to convince you as well. To do this, I would probably highlight the sorts of things we can agree make poems beautiful or 'good', like the use of imagery and metaphor, the use of irony and surprise, historical context, technique, skill. These are characteristics that the community of critics have agreed are relevant. I could then try to convince you that *you* should think of the poem as beautiful too, by appealing to these characteristics.

This second stage, whether or not you like it, however, is not something I can point to; it is only something which you either agree or disagree with me about. In other words, I would try to 'calibrate' your artistic sensibilities to mine. Given that it is shared knowledge that the sorts of attributes mentioned above make a poem beautiful, I would argue that the *particular* use of them by Eliot in this particular poem means that you should also experience beauty when reading it. This, of course, is quite a different challenge.

Many people argue that ethical knowledge is similar to this: we can debate, for example, whether passive euthanasia should be morally accepted, but to carry on the debate we would have to explore objective facts (the ‘shared knowledge’), what the terms mean, for example, what the procedures actually are, and hope that this analysis will uncover shared ethical values.

■ Subjective and personal, but *important!*

Far from being ‘unreliable’ or less important than objective, subjective knowledge is perhaps the most important in terms of the meaning and significance that knowledge plays in our life.

When I claim to know that ‘The Love Song of J. Alfred Prufrock’ is ‘beautiful’, I am less describing some observable fact about it – rather, I am pointing out the meaning or significance to me, or my own response to the poem. Ethical claims might also have a large element of this. I don’t particularly care, for example, what happens to the pressure of a gas when its volume is halved, as described by Boyle’s Law, and my disinterest certainly doesn’t have any effect on the behaviour of gas. Of course, if I am working with gases, knowing this fact is important, but it would be odd to say that I have an opinion on the behaviour of gases, nor would I ‘judge’ the gas for behaving a certain way. Gas does what it does regardless of what I think about it. I might even disagree that Boyle’s Law is true, and nothing will change! But I certainly do care about your personal views on things like violence or fairness when playing football with you, and I will judge you accordingly. My own ethical views about fairness are very important to you if I am marking your TOK essays; you will have an opinion about my behaviour when I’m marking your essays in a way that you would not have an opinion about a gas’ behaviour as you work with it.

So personal knowledge, though quite subjective, might be far more significant or meaningful in certain circumstances, because these subjective elements are important guides in how we relate to one another and to the world.

IN PRACTICE

So, how might breaking up knowledge into personal or individual knowledge and the shared knowledge of a community help you as a TOK student?

When thinking about ethics or politics for example, the distinction is useful to explain how different background experiences and beliefs might result in the construction of different ethical or political conclusions of a situation. One of the biggest mistakes students make in essays is claiming that there is a large element of individual knowledge in ethics without making any attempt to explore how that might work or what that might mean. It is taken as fact and left without any justification or analysis – in other words, students merely describe a claim without offering analysis.

The following is one way that a deeper analysis might be carried out using the tools which can be developed in the context of the core theme.

In 2003, after American forces invaded Iraq to end the Hussein regime, it was discovered that American soldiers running the Abu Ghraib prison had been abusing

Iraqi soldiers. Treating prisoners this way went against international law and many felt it also violated basic standards of human decency. Eleven soldiers were charged with a range of offences and were dishonourably discharged; of these, two were sentenced to prison.

I was exploring this event with a group of students in a TOK class, discussing our attitudes of disgust and horror at the treatment of the prisoners and how we construct our ethical judgments in situations like these. One student then questioned my assumption that the soldiers' treatment of the prisoners was wrong. 'Perhaps the atrocities they committed before this meant that this sort of treatment against them was justified', he said. In other words, 'Perhaps they deserved it'. I had not anticipated this response and was certainly challenged by it, but I think the tools of the core theme can help unpack the ideas.

Proponents on both sides of this debate can certainly identify and agree upon certain facts of the matter. Regardless of our final ethical or political stance, this student and I could, or at least could 'in principle' agree on certain facts about the situation. Using objective facts, we could agree on, for example, exactly what, physically, the soldiers had done to the prisoners. We could agree on certain facts about the soldiers: where they were trained, where they had grown up, what schools they had gone to and what sort of career they had had in the armed forces up to that point. We could also agree on certain facts about the prisoners: again facts about how they grew up, their backgrounds, what they had done prior to becoming prisoners.

A historian would approach the case by looking for what actually happened in terms of what historian RG Collingwood would call the 'outside' of an event: a description of objects and their movements. These facts could be publicly verified and agreed upon. Some of these facts, of course, could only be verified in principle, in the sense that we might not be able to account for every second of the soldiers' or the prisoners' lives, but reasonable guesses about the facts of their lives and what happened to them are the sorts of things that are open to being known by the wider community. The facts, to be established as 'facts', would be established in a public arena; in other words they would be 'shared'.

RG Collingwood in *The Idea of History* (1946) (particularly in Part V: Epilegomena, section 1 and 2) argues that genuine history is the study of human actions, and this requires two elements: what he calls the 'inside' and 'outside' of events. Historians must both explore the 'outside' of events, that is, they must incorporate and use as evidence in their analysis the movement of people and objects (for example, armies, individuals, natural occurrences). This, however, doesn't make an analysis a 'historical' analysis. What is needed is the 'inside' of an event which Collingwood describes as the ideas and thoughts of those involved in the events, and would include their beliefs, their motives, their desires and their aims. This, however, requires imagination on the part of the historian in recreating those thoughts and requires the historian to 're-think' the thoughts for him- or herself. Collingwood's ideas in this section of *The Idea of History* are full of interesting opportunities to explore History's scope, methods and tools and other links to the core theme.

So far so good. But the fact that the student and I agreed on a number of facts about the situation still doesn't account for why we came to different judgments about the ethical justifiability of the soldiers' actions. This is where an individual's knowledge as a tool of analysis might be helpful.

The situation calls for a judgment on how human beings should treat each other and in what circumstances, but what I have experienced as an individual might have a lot

of relevance to the case. For example, perhaps I have experienced being humiliated in the past and that experience has taught me something about the nature of being intimidated or humiliated. That judgment (that it is very unpleasant) will, in a sense, be added to my knowledge of the facts of the case to conclude that those actions would have been unpleasant for the prisoners. In other words, my personal knowledge about the experience of being intimidated will be relevant when constructing knowledge about the ethical value of a situation where intimidation is occurring.

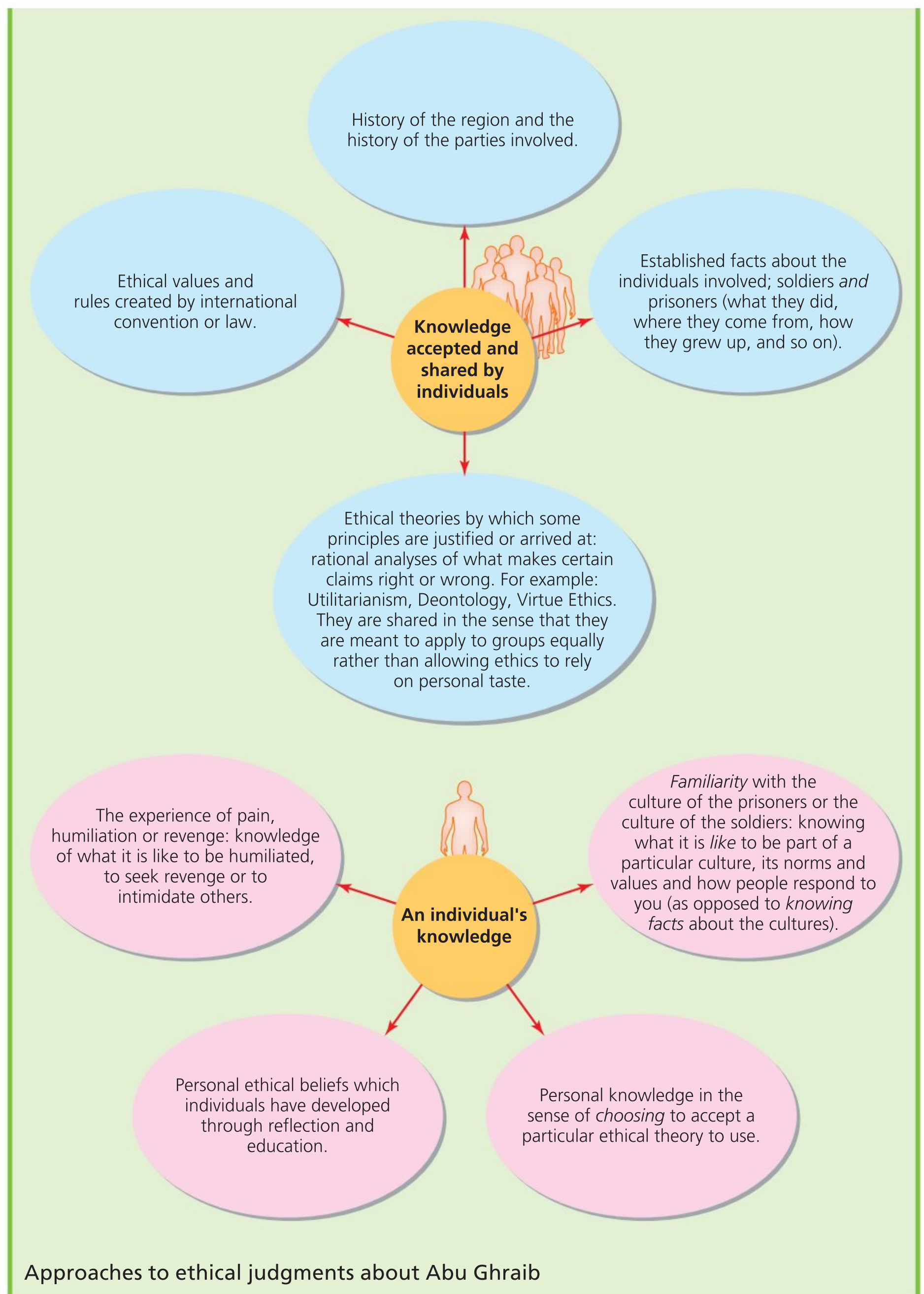
I might have other forms of personal knowledge, such as familiarity with living in the Middle East, or familiarity with living in the USA, or some familiarity with individuals from those cultures. In some cases, the media might have heavily influenced my knowledge: often even 'hard-facts' news coverage could in some sense 'calibrate' my attitudes by reporting or highlighting some facts rather than others, or by emphasizing certain views in various editorial segments, both of which might in turn persuade me that I ought to feel a particular way. These experiences, depending on a whole number of things, might be positive or negative. The personal knowledge (in the form of my attitudes or individual experiences) will undoubtedly become part of my judgment of the situation. Familiarity with the cultures involved might strengthen your allegiance to one side or the other: I might be very familiar with a foreign culture but still feel a stronger allegiance and desire to 'protect' my own, an argument made by both sides of any conflict. These elements of personal knowledge, of course, inform all sides of the ethical debate. The experience of war, for example, whatever 'side' you are on, might raise feelings of compassion for those involved, or further embed the desire for revenge against the 'other side'. These sorts of individual experiences or personal perspectives might have been at the root of the disagreement, rather than any understanding of the *facts*.

DEEPER THINKING

Consider the ways that I am suggesting your ethical principles might have been affected by things (the media, personal history and experience, familiarity with facts, and so on). What cognitive tools do you think are relevant here? In what ways might your intuition be influenced by these factors? How does emotion function in interpreting facts and how are those emotions initially calibrated? In what ways will your reason (in terms of what you think of as being 'reasonable') be impacted by the experiences you have?

So, without getting drawn into any debate about whether or not the actions of the soldiers were 'right or wrong', TOK students can unpack the situation and explore the reasons why different ethical judgments have been made.

The distinction between individual and communal knowledge is an important one here, as it will help you identify some of the reasons why people have the knowledge they do. If the distinction is used properly to explore the judgments that people have made, then it might help me identify and make sense of the beliefs and knowledge that I have as well.



Top ten tips for yo

1 Curate your ideas

The fact that this is an 'exhibition' suggests that, like exhibitions at museums and art galleries, we should be thinking about how elements of the final product (the choice of object, the choice of theme and the choice of IA prompt) all fit together into a coherent whole. This means you need to ...

2 Make choices

When planning, investigate more than one IA prompt, investigate more than three objects, and investigate more than one theme.

In each of these cases, you should be developing a wide range of ideas so that you can then make decisions about what you want to exhibit. Good museum and gallery curators don't simply put *everything* on display. They consider their collection, they identify a theme or idea they want to explore then they *choose* the pieces which they think best explore those ideas. To do this *you* must develop ideas about more than just the final requirements, then you must make decisions and then develop an exhibition in which you've chosen the best combination of IA Prompt, theme and objects to explain those decisions.

3 Three objects, one set?

The best objects to consider are those that you have been directly involved with – that could be objects that you have physical access to, or objects that have been important in your learning (eg, the Periodic Table of the Elements, or the Magna Carta). The objects should not be a general type of object (like 'buildings'); these wouldn't have a *specific* real-world context to discuss in the commentary. The main question, though, is, 'What are you hoping to say with the choice of those particular objects?' The objects themselves should each provide a unique perspective on the IA prompt. They should not cover the same point and, as a set, they should show an understanding of a range of ideas in relation to the prompt.



ur TOK exhibition

4 Avoid too much description

When you are offering your commentary on the object, don't use any more words than necessary on a description of the object. The image will show the object, so your examiner (your teacher) will see it. Offer only enough description of the object that is needed to make sense of its specific real-world context.

5 Get on to the commentary ASAP

In your write up, you'll want *most* of the 300 or so words to be about the object's context and the IA prompt. You will want to shift quickly into a discussion of the knowledge question and into a commentary *about* knowledge – not just the object.

6 Choose a theme

The specification 'strongly recommends' that you base your exhibition in the context of one of the optional themes or the core theme. Don't treat this as an actual 'recommendation', just consider it an instruction. The context offered by your chosen theme will help focus your discussion and will help you develop links between the objects so that your exhibition forms a coherent whole, rather than just three disconnected sets of thoughts.

7 Link the specific real-world context to the theme

The specific real-world context of the object refers to the 'knowledge-context' of the object, that is, why the object relates to, or is a manifestation of, some knowledge question. You should focus your description not on what the object *looks* like or is *made* of, but how it relates to the world of knowledge.

8 Keep track of objects

Throughout the course, your teacher will be providing ideas about objects which are manifestations of knowledge questions. Pay attention to these and note them down. Nearly anything can be an object, so long as you can link it directly to an IA prompt. Keep a notebook or a list where you write down objects you've been thinking about. During the early stages of developing the exhibition you'll be glad to have a lot of objects to choose from.

9 Keep track of IA prompts

You may not see every one of the 35 IA prompts discussed in class, but some will be. Take note of them and how they're discussed. You might then develop your own brainstorm regarding other IA prompts that capture your imagination. Again, when it comes to actually develop your exhibition, you'll be glad to have started the process!

10 Keep it simple: a three sheet document – title, image, commentary

The final product is a simple document which simply has the title (the IA prompt and theme), an image of your object and a commentary. Try to keep each object to one page.

Top ten tips for

1 Start early

While the TOK essay is a relatively short piece of work, don't let this lull you into thinking that it is easy. Your first ideas are rarely the best — let them develop over time.

2 Writing to think ...

Know the difference between *writing to think* and *writing to communicate*. All too often students assume that thinking and communicating are the same process. When developing a presentation, do you open up PowerPoint before you even know what you are going to say? When writing an essay, do you start with a blank page and think, 'What is my introduction going to be?'

The effort that goes into developing your ideas is different from the subsequent effort that goes into shaping the essay that will be assessed. Both require writing, but that doesn't mean they are the same activity.

Have you ever got to the end of an essay and suddenly thought, 'There's a good idea, why didn't I think of that three pages ago?' If you're anything like me, jotting down your ideas will help you clarify them while writing. You can't present your ideas until you know what they are, but sometimes you don't know what they are when it is time to start working. To develop ideas, I usually need to start writing about a topic on which I am knowledgeable, saving the things I'm not sure about until later. I just need to break through the 'writers' block' and start putting words on paper. I don't have to decide where it will go in the final essay, or how it fits into the larger picture, until I have the other ideas ready to go.

3 ... or writing to communicate?

Keeping this division is crucial. Once you have written your ideas down and reached that 'aha!' moment, you can go back and shift ideas around. You can easily answer the question, 'What needs to go into my introduction?' because you should have the answer among the ideas in front of you.

Try using your word processor's 'Outline' function (which you can usually find under the 'View' menu) to organize your notes. It allows you to break up ideas into easy headings and text paragraphs, hide them when you're done with that part, and expand them later when you need to. It also allows you to move ideas around when you need to start thinking about the most effective order for things.

When it comes to communicating, you can start to link the ideas together, perhaps cutting out the headings and offering fluid transitions between ideas (though headings can still be appropriate).

your TOK essay

4 Brainstorm each title

Don't commit yourself to any one title until you have had a chance to explore them all. Use a mind map to dig into the title, thinking about what examples to use, what the command terms are asking you to do, and what areas of knowledge and cognitive tools might be helpful. The title you thought was going to be easy might turn out to be difficult, or vice versa.

7 Develop a clear argument

The single biggest drawback of most of the hundreds of essays I examine each year is that they don't have a clear argument. They are more accounts of everything the student knows about the topic than essays. Your essay needs to take a position that is a clear response to the title, not just a list of ideas that occurred to you during the process of writing.

5 Remember the examiner

Your examiner is a real, living, breathing human being, and a happy examiner is a charitable examiner:

- Examiners read the essays on a computer, so format your essay so it is easier to read on screen. Use 12-point font, normal-sized margins and double spacing.
- Don't be afraid to tell the examiner what you are doing in the essay. Phrases like, 'A counter claim that I will now examine is ...' or, 'Having established this point, I can now use it to develop my argument by ...' might be clunky in terms of style but they help the examiner follow the process clearly.
- Since you don't know what your examiner's academic specialty is, think about whether your argument and examples will be convincing to someone who teaches that subject. Talk to another teacher about your ideas to see if they think they are rigorous enough (though only your TOK teacher can read your draft essay).

8 Reference properly

The TOK essay is not a research project, so you don't need to spend hours in the library, but it is still a piece of academic writing. An effective argument is presented responsibly and this includes full, properly formatted referencing. If the examiner thinks you have referenced something incorrectly (or not at all), they can just open up a web browser and look for themselves. Good referencing shows them that you are paying attention to detail, and essays that pay attention to detail are generally good essays.

9 Show your teacher

Teachers can only look through an essay once, and they are not allowed to edit it line by line, but they can give you a sense of whether you are on the right track and have a discussion with you about the ideas you have presented.

6 Use examples well

Examples are the real driving force of a good TOK essay. Without them your essay will just float around in the world of abstraction. Your ideas might be true, but you need to prove that they are through analysis of real-life, concrete examples.

Never use hypothetical examples — TOK is about knowledge in the real world. Make sure that you analyse the examples well — don't just *identify* an example, tell the examiner *why* it's a good example, what it shows and how it shows it. Your examiner might know a lot about your topic (or nothing at all), so you need to make the examples convincing.

Avoid obvious examples. People have known that the Earth was round since the sixth century BCE. Galileo certainly had his troubles with the Church, but this will be pointed out by thousands of other students. Search for examples that others might not have thought of.

10 Remember the assessment criteria

Read through the assessment criteria for the essay and keep them to hand while you are writing. Remember points 2 and 3 above: present your ideas in a way that meets the requirements of the criteria.

4

Assessment

TOK is not an assessment-driven course. The assessment model that is used in TOK (a fairly short essay and a small exhibition) is simply not up to the task of assessing fully the myriad of skills and concepts that are important to the course. This means that the genuine learning of the course is developed and honed within the context of the course.

That being said, however, the assessment element and its importance should not be minimized. Having taught for many years, I know how the determination, commitment and the earnestness that students bring to their assessment make for genuine and deep TOK learning. The TOK assessment is an excellent opportunity for you to show the best of your TOK skills.

So, what does it take to be successful? What skills and practices will help you avoid traps and easy mistakes, and give you the opportunity to flourish as a TOK thinker?

I have divided what follows into three sections: general advice relevant to both assessments; advice focused on the essay; and advice for the exhibition. The type of thinking you need to demonstrate in both assessments is quite similar, but the ways in which you demonstrate that thinking are very different.

General advice

While the assessments are quite different in their final outcomes, the sorts of skills and content you are exploring in both of your TOK assessments are quite similar. Below are a number of pieces of advice (common to both the essay and exhibition) that you will want to take into consideration when working on your submissions.

■ Understand how your work will be assessed

It is important to understand just how your work will be assessed. Never go into *any* assessment without understanding the standards and expectations you are being judged against. The IB's assessment criteria for subjects are not a closely guarded secret; you can simply ask your teacher for all the assessment information.

TOK Assessment checklist

- Obtain the assessment criteria for both the essay and the exhibition.
- Make sure you understand the various elements of the Level 5 descriptors.
- Ask your teachers any questions you may have.
- Make sure you have the criteria to refer to as you are writing your essay or developing your exhibition.
- When you have completed your essay or exhibition, go through it with these criteria to do your best to meet the Level 5 descriptors.

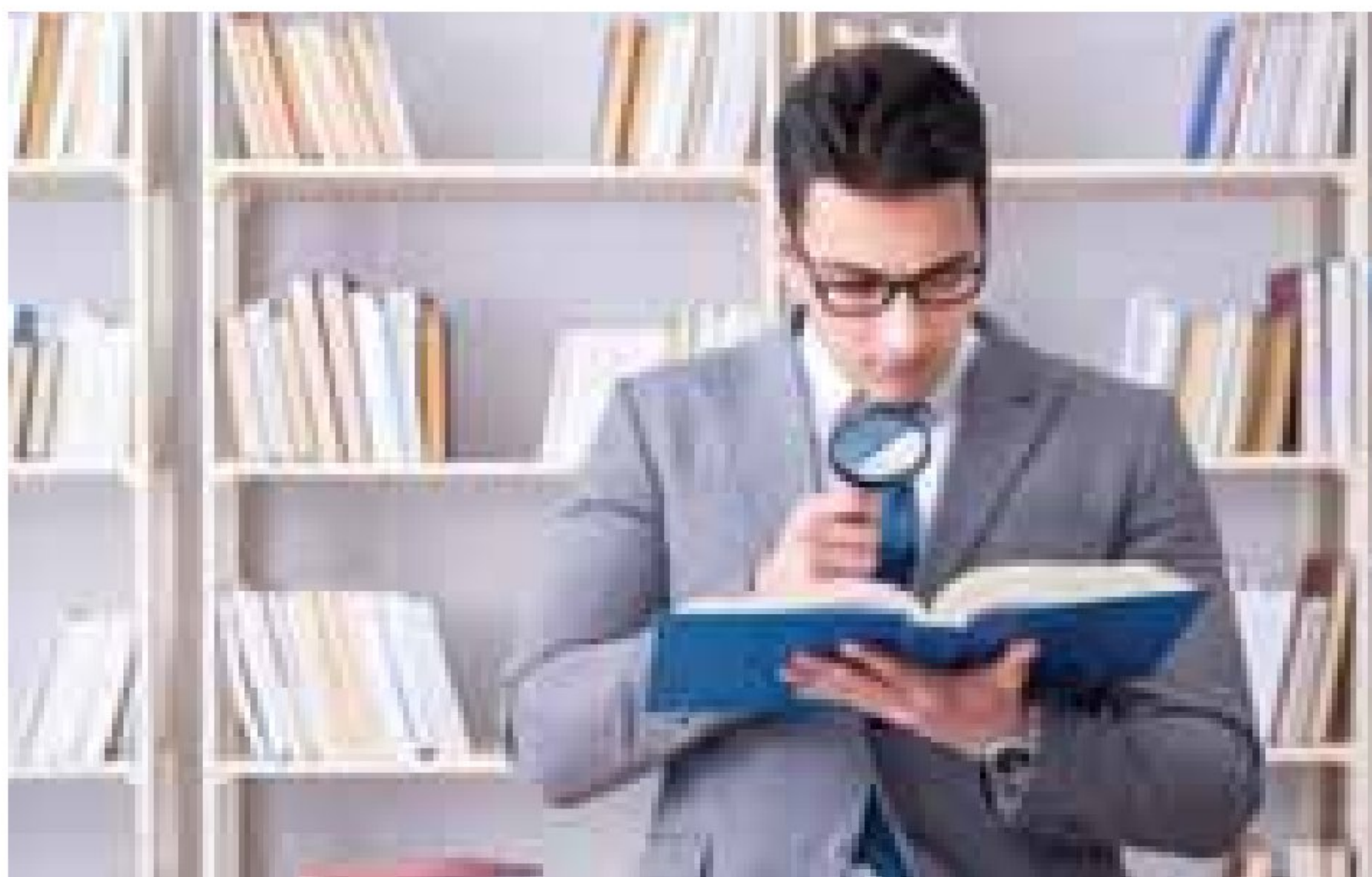
Both the essay and the exhibition are marked against ‘global impression’ marking. The assessment criteria for both can be found in the TOK subject guide on page 48 for the essay and page 47 for the exhibition.

Global impression marking is the name given to the sort of marking that is based on the examiner’s *overall* view of the work. In some of your IB subjects there will be a number of different criteria in the assessment, each worth a few points here and a few points there, and added up they give you the total marks for a single piece of work. The marking for the extended essay is like this. In these cases, the different criteria might be trying to evaluate different learning skills, meaning that the overall points will be divided up: some points will be given to how well you understand the content; some to your evaluative skills; some to your ability to construct an overall coherent argument; and so on.

TOK is different, in that all these skills are woven together into a series of ‘level descriptors’. The idea is that once the examiner has read an essay, or once your teacher has read your exhibition write-up, they will be able to judge, in general terms, whether that piece of work is of a really high quality, in the medium range or in the low range. Both the essay and the exhibition in TOK use 5 levels, with 5 being best. To earn the top level, the work should demonstrate competence in a range of skills. The examiner will draw on what they know to be good skills and look for them in your work. Note that this means that your work does not have to be perfect in every way!

I have read many essays that were overall very good, and for which I have awarded top marks, despite them having had weak paragraphs, or other elements which were far from perfect. To fit best in the top level, the work should demonstrate genuine ability in a range of skills. More excellence across a range raises the level, less excellence across the range dampens the mark. There probably is not any such thing as a perfect essay or exhibition, but the global impression marking tool allows your examiner to weigh minor problems against an otherwise very strong piece of work, and still award you high marks. Your job is to give examiners every reason to see that overall excellence and award you the top marks.

Examiners do their best to find reasons to give you the best grade possible



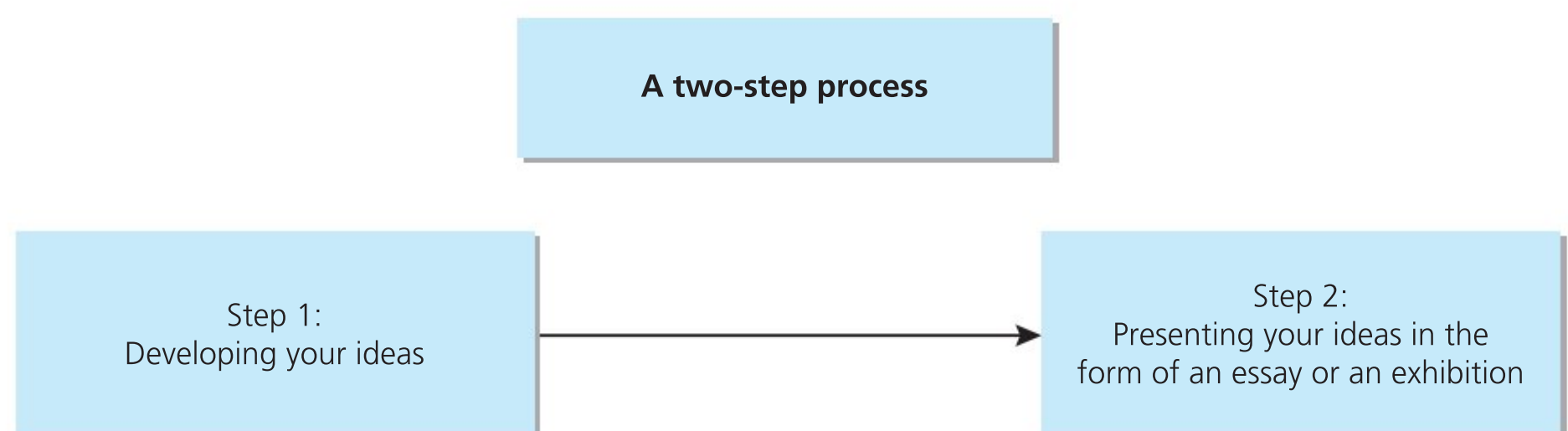
ACTIVITY

- 1 What will it take to meet the assessment descriptors? Look at the Level 5 descriptor of the assessment criteria on page 47 and 48 of the TOK subject guide. With a partner, make a list of the types of things that you think an essay or an exhibition would have to contain in order to earn that description.
 - a For the exhibition:
 - i What would constitute a 'clear identification' of three objects?
 - ii How can you describe the specific real-world links effectively?
 - iii How can you best explain a link between the object and the IA prompt?
 - iv Are you aware of that object's 'particular contribution' to the overall exhibition?
 - v What will you do to show that each object is well-supported by evidence?
 - vi How can you maintain a clear link to the IA prompt throughout?
 - b For the essay:
 - i What will guarantee that you have maintained a clear focus on the title?
 - ii How can you guarantee that you have linked effectively to the AOKs?
 - iii What questions about knowledge are relevant for your title?
 - iv What do 'clear' and 'coherent' mean in relation to arguments? How can you best show this?
 - v What role will arguments play in your essay and how can you most effectively use them?
 - vi How can you best show the 'implications' of your argument?
 - vii What can you do to show awareness *and* evaluation of different points of view?
- 2 Compare and contrast your answers with another group or your teacher's answers. Add what you have learned to your own list.

The assessment criteria do not make any reference to the way the exhibition is presented. This is because the exhibition offers a number of opportunities for schools to highlight the good work that their IB students do, so schools are free to manage the exhibition element of it as best they see fit.

■ Assessment is a two-step process

For both the essay and the exhibition, the best advice I can give a student has got to be to 'consider the assessments as a two-step process'.



First, you have to make decisions about what you think about the topic, and second, you have to make decisions about how you would like to present those ideas. The essay and exhibition do not write themselves, but too often students think of the process as being a single focused effort which results in an essay or an exhibition. Students who take the time to first plan their work and then develop their ideas before showing them to their teacher are on the right track: they understand that the process needs a step which first brainstorms ideas, plays with alternatives and explores a variety of approaches, before settling on the set of ideas that they genuinely want to explore. Your first ideas are not usually your best.

After you've made decisions about what you think, then consider how best to *present* your work. Ask yourself:

What does a good essay look like and how can I present my ideas in this form?

or

What is the best way to demonstrate my thinking within the confines of the exhibition write-up?

TOK TRAP

The key thing to remember is that your first attempts at articulating your ideas should not be thought of as part of the final essay or exhibition.

Students are busy people with a lot on their plates, so the temptation to sit down and think, 'I am now going to write my essay' or 'I am now going to write my exhibition' is a strong one.

However, you should remember that generally, the first ideas are not the best ideas. When movie



You may have to run through a lot of ideas before you find one worth writing about

directors finish filming, for example, they then have to craft and mould what they have filmed into a final product, changing the order of scenes, and perhaps cutting up shots and placing other shots in between. They never simply link all the film together in the order in which it was shot.

The same can be said for your essays or exhibitions: you might spend a lot of time writing as you think, but don't confuse the work you have done while thinking with the final product. You must craft your ideas into a final product. So, if you are firing up the word processor and hope to get to your word limit and then hit 'print', you are going to end up giving your examiner your first ideas – which is never a good plan!

Consider your submission as the culmination or final product of your thinking, not as a sort of 'stream of consciousness' captured in 950 or 1600 words. You want the essay that you finally submit to the IB, or the exhibition you give to your teachers, to be a sculpted product, not a chronological list of whatever ideas you happen to have in the order that you had them.

Curate your ideas, don't stream them.

Some of the first discussions I have when students begin the process of developing their assessments sound something like the following:

Student: What should I put in my introduction?

Teacher: Well, it depends on what you want to say. What is it that you're going to say?

Student: I don't know yet.

Teacher: Then how can you introduce it?

In other words, they are trying to present their ideas before they have even had the ideas! The key to success, then, is to break those processes apart. There is more advice on how to do this below.

IN PRACTICE

Target questions

Questions you can ask yourself to help you *decide what you think* about a topic:

- What is the title actually asking me to do? (What are the command prompts?)
- What key terms do I not understand?
- What ideas do I have initially? (Brainstorming/mind mapping)
- What might my conclusion, thesis or answer be? What are my initial intuitions about what my response will be?
- What could my argument for this be? What will I have to establish in order for my argument to be well supported? (Argument plan)
- What real, concrete examples can I use to illustrate my points?
- What are the questions about knowledge that I can address to help answer the title?

Questions you can ask yourself to *decide how you should present what you think*:

- What are the command prompts and how best can I show that I have done this?
- In what order will I present my ideas? Which ideas need to be discussed early, so later ideas will make sense? (Essay or exhibition plan)
- How should I present my counter-claims and counter-arguments?
- How can I construct my introductory paragraph (for the essay)?
- What needs to go in to my concluding paragraph (for the essay)?
- Which definitions do I need to include?
- How can I make the presentation of my ideas (in the essay or the exhibition) engaging? How will my listener or my reader respond to the way I am presenting the ideas?

■ Description, analysis, evaluation

The TOK essay and exhibition not only rely on good content (interesting TOK points and examples) but also on good skills in putting forward an argument. The global impression marking descriptors for the top band in the essay in particular ask the examiners to think about the quality of the argument.

Students, however, too often fall into the trap of not fully understanding the elements that go into developing a convincing ‘argument’ and the types of thinking that are relevant. These elements are most easily drawn out in the longer essay, but your teachers should be able to see good evidence of these in the exhibition as well.

At the most basic level there are three ‘levels’ of thinking, each of which demonstrates different thinking skills:

- description
- analysis
- evaluation.

These are key in all elements of the IB Diploma, and you often see them in the exam questions. In general, however, TOK examiners (both external and your own teachers) are most interested in seeing good analysis and evaluation. They want to give you the highest marks possible, but without these higher-order skills clearly demonstrated, they simply can’t. One of the biggest problems faced by essay examiners is to wade through the pages and pages of *description*, trying to uncover the *analysis* and even the *evaluation*. Similarly, for the exhibition – there is not a lot of space, so the higher-level thinking needs to be obvious very quickly!

But what are the differences between these? What do they mean?

TOK TRAP

Students often spend too much time describing examples or objects. My advice is to only describe what is needed for the examiner to understand your point. This means you need to understand your point first, then choose what description is needed.

■ Description

Description is an identification and definition of key ideas. To describe is to point out what is there and it does not necessarily take any higher-order thinking or understanding. A submission which contains too much description but then doesn’t adequately show further thinking skills will not earn top marks, since it won’t show an individual approach or highlight the thinking of the student.

For example, imagine a classroom full of TOK students being asked to describe what ‘propaganda’ is. They might say something like ‘images or speeches designed to get people to develop certain beliefs’, and point me in the direction of certain Second World War posters in the history department corridor. This shows that they know what the word ‘propaganda’ means and that they can identify examples of it. This would be an example of the shared knowledge of a community; it is the accepted definition, identified as such by a community. The description might even be incredibly detailed and show a very good understanding of what propaganda is.

However, there is no critical thinking by the individual in it and it does not show a full *understanding* of the concept of ‘propaganda’. This will come out in the higher-level thinking skills of analysis and evaluation. Description in both the examination and essay are an essential part of a well-structured response, but too often, students fill up their time or word count with too much description.

■ Analysis

Analysis is far more interesting and will allow your examiner to push their assessment into the higher levels of the criteria. Analysis is about uncovering the relationships beneath the surface of ideas, showing where the complexities of the ideas are and how the ideas relate to other concepts and ideas.

Analysis is a description of *how ideas work* (rather than just what they are) and being able to explore this shows a better understanding of the material. For example, in an analysis of propaganda I would have to make decisions about how to present what I know about propaganda and which elements I’m going to explore, and how I am going to link them together. I might choose, for example, to focus on the use of language and link this to how the emotive language of propaganda influences people in sometimes non-conscious ways into constructing certain attitudes or beliefs. Or, I might explore how visual imagery draws on certain cultural motifs in order to influence a viewpoint’s intuitive or emotional response. This is where an individual’s own perspective and approach starts to come into play. While two students could conceivably give me the same definition of propaganda, it is unlikely that they would choose the same sorts of facets to explore in an analysis, and even if they did, they would probably end up developing their responses in quite different ways. This individuality is what the examiners and your teachers will want to see.

■ Evaluation

Finally, the highest level of exploring ideas is evaluation. In an evaluation of the material you would, from your own perspective, offer a comment on the material or offer a judgment on it. It is not evaluation simply to describe a theory or an idea’s strengths and weaknesses; this would be description or analysis, because the strengths and weaknesses belong to the theory or idea, not to the individual exploring them. Evaluation goes beyond this and might discuss whether that idea is a good one or whether it is in some way better than some others, or it might be to take a stand on some debatable issue, or in the context of TOK, to take a stand on some knowledge question. Of course, things such as the strengths and weaknesses are crucial for this.

Evaluation might also (especially in a discursive essay) simply be an argument that a particular issue might be seen in a particular light. An evaluation is an example of personal knowledge which needs a clear argument – evaluation is not obviously true but requires an argument and support for the idea; the essay or exhibition serves as that argument. Just what a discursive essay is, is fully discussed in the essay section of this chapter.

For example, it is not an evaluative claim that propaganda often makes use of emotive imagery or uses historical beliefs for their effectiveness; that is just what propaganda does (among other things). However, it is an evaluative claim to suggest that the use of one or other of them is what makes them *most effective* or which makes it dangerous. The idea of *most effective* is the bit that needs an argument to support it.

This evaluative stance is a challenge for many TOK students. Students often get caught in the trap of offering too much description of ideas or examples, and not getting under the ideas and into the analysis of them. Even more difficult is a sustained and explicit commentary on the material. A good analytical essay (generally in the form of a discursive essay) can show all the TOK skills needed to do well, but in the best essays, the student is in full command of the material, using the analysis of the material to make their own comment on the material. In the exhibition you only have about 300 words to move through description and into evaluation. This is the level students should really be aiming for. The examiners are most interested in your commentary on the material; they don't just need the ideas explained to them. They are TOK teachers and already understand it well enough. They want to know your ideas about the material.

■ BUILDING KNOWLEDGE ANALYSES

When evaluating anything in the context of TOK, try to remember that the whole point of the course is to get you thinking about knowledge. So your comment on propaganda, for example, should focus on how the things you claim to know are influenced by the propaganda, not about how you behave or about your decisions. Your 'comment on the material' should be about how you think the event, process or **real-life situation** impacts your knowledge about the world.

The TOK essay

The points above are meant to be general advice for the construction of your ideas, regardless of whether those ideas are presented in the TOK essay or the TOK exhibition. This general advice might be applied to the essay and exhibition equally, but there are some differences that should not be ignored.

This section is about how to apply this advice to the specifics of the TOK essay.

■ The prescribed titles

Because the essay on a prescribed title has been central to the assessment of the TOK course for many years, there are hundreds of past prescribed titles out there and your teachers may have collected some over the years. You will certainly be able to find them on the internet.

Previously, the prescribed titles have taken all sorts of different formats and, in the most recent version of the course, the prescribed titles did not make specific reference to any AOKs at all, often asking students to *choose* which of the AOKs to use in their answers.

In the current course (first being assessed in May 2022), however, the new prescribed titles will:

- be formulated in the form of a knowledge question, or already reference a knowledge issue
- usually reference one or more of the AOKs
- allow some choice of a second AOK, if only one is specified
- perhaps also mention an element of the knowledge framework.

Because the subject guide requires *all* the AOKs to be discussed in the course along with each of the different elements of the knowledge framework, then all the students should be prepared to answer titles on any of the AOKs.

In a few places in this text, I reference past titles, but I have chosen titles that keep largely to the new structure. Please be aware, however, that the new prescribed titles may look slightly different, even if they are essentially the same sorts of things.

■ Deciding what to think

TOK essays are difficult to write. Every year I have students tell me that the TOK is by far the most challenging essay they have had to write, in some ways even more challenging than the extended essay. However, I find that the reason many students find the TOK essay so challenging is because they have not considered it as a two-step process: they have soldiered ahead, churning out words and ideas in an attempt to reach the magical goal of 1600 words. They often find while they write, however, that the issue they are exploring are far more challenging than they thought they were.

They are then faced with a choice:

Do I go back and change my ideas based on my new thinking, or do I carry on towards the finish and make the most of what I have written so far?

Going back is always the best idea because your essay will be far more coherent and directed if you have established what you think *before* you begin presenting your ideas. If you just carry on, the end of the essay will likely not match up with the beginning.

A more structured approach, which divides the thinking up of the ideas from the presenting of them in an essay, is meant to alleviate much of the suffering that comes with this sudden realization that all your ideas have changed and you are half-way through writing! I don't suggest that this will necessarily make the process easier (although I think it does), but it will probably make it more of an enjoyable journey.

IN PRACTICE

For me the idea is simple: first work out what it is that you want to say, then work out how best to say it. In the case of TOK, you must first put in the hard work of crafting your ideas and determining what it is that you think about the knowledge questions in your exhibition, or the issues pertaining to the prescribed title. Work out your answer and the various elements of that answer, then make decisions about what is the best way to present it.

These two phases are equally important, but they are quite different in the types of questions you are answering in them (see 'Target questions', page 74).

That first phase (deciding what to think) will require you to try to articulate ideas, then test them, cross them out, modify them and sometimes start again, until you develop a series of ideas which together provide a clear answer to the prescribed title. During this 'thinking phase', you can write, use sticky notes, mind maps, spider diagrams or anything that helps you to develop your response.

So, how best do you proceed in a way that ends in an essay you can be proud of?

The steps which follow can be used as a guide. However, keep in mind that the steps will likely overlap in places. You might be making choices about the sequencing of ideas while you are simply articulating the key ideas of the essay – this is fine, it is all part of the process. The other key point to remember is that this is time-consuming and so represents the ideal situation. In reality, you will be subject to deadlines for your writing as well as having a whole wealth of other pressures on your time.

In addition to this, you will probably have other homework, other IAs, sports training and fixtures, plays to learn lines for, rehearsals for music events, concerts to go to, movies to see and friends to hang out with. Some of you might take time to sleep as well.

The best advice is to start early, do your best and don't wait until the last minute (but really, you know this already). The prescribed titles come out in September for May examination students and in March for November students: you don't have to wait for your teachers to put a process into place to begin thinking about how you will answer the titles.

I suggest that deciding what you think can be broken down into roughly four steps:

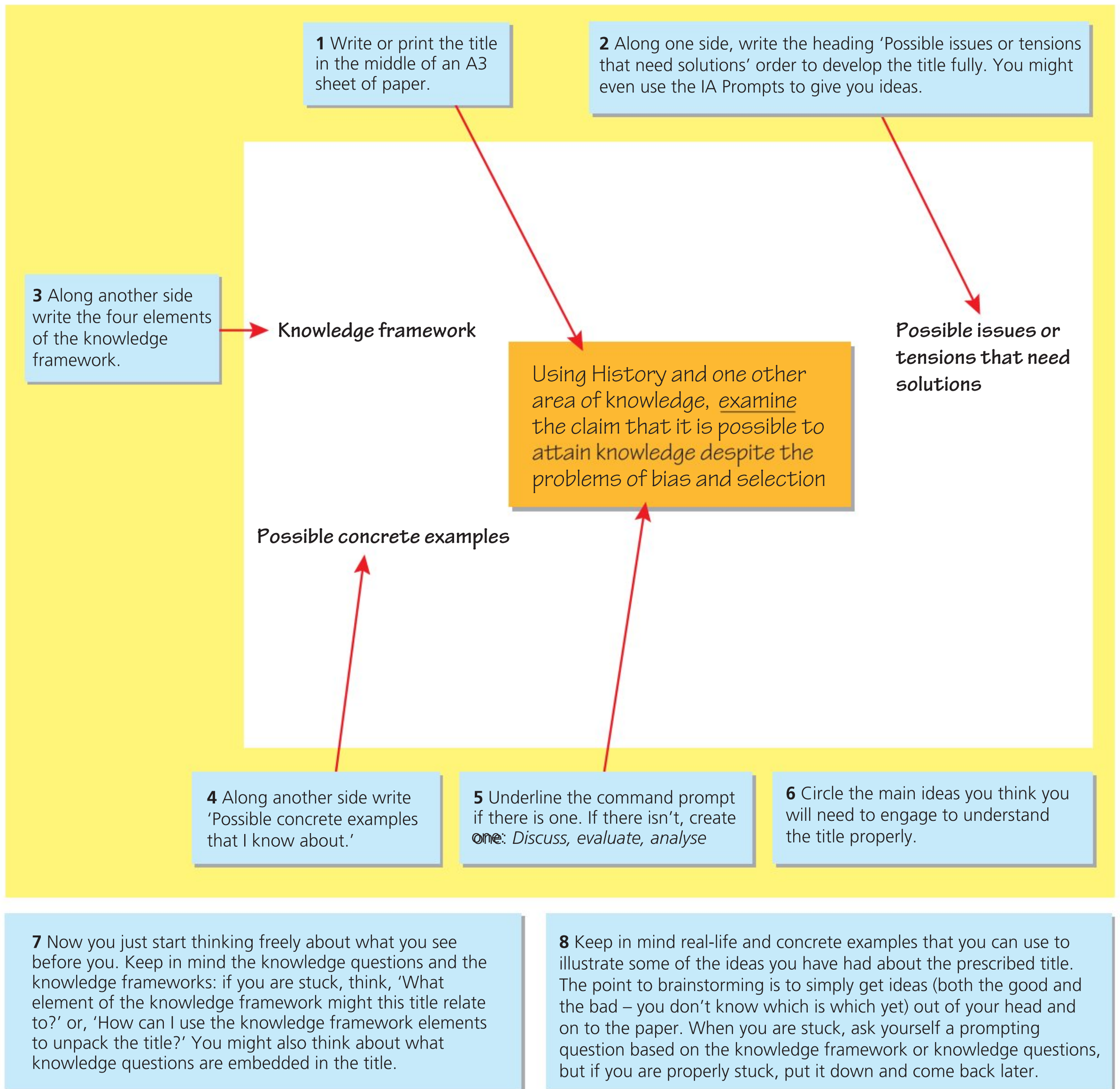
- 1 Brainstorming
- 2 Write in order to find out what you think
- 3 Making decisions
- 4 Making an argument plan

■ Step 1: Brainstorming

In the first part of this stage, you don't want to judge or toss out any ideas, just get them out of your head. 'The more and the messier are the merrier' is my mantra. Ideally, you want more ideas, so you can start making decisions about what to include later. Otherwise you are stuck with whatever you first thought and we all know our first ideas are not very often the best ideas. Brainstorming and mind-mapping are ideal for this sort of free thinking.

I try to think about the prescribed title as a mystery box and the 'unpacking' of it as literally breaking open parts of it and seeing what is there (concepts, AOKs, command prompts, key words, and so on). In some cases, if the prescribed title addresses a certain concept (perhaps one of the 12 core concepts, or some element of the knowledge framework) 'bias' then this gives you the opportunity to apply a whole range of ideas, if relevant. Simply writing a short paragraph about these ideas might be a way to start writing if you are stuck.

Generally, however, before you start any writing, I would suggest the following:



TOK TRAP

There is no reason why, at this stage (and really, at this stage only), you cannot identify ideas in collaboration with a friend – you are only throwing ideas around without any judgment of them. When you start to notice that certain ideas of those you have identified mean that other ideas are not going to be relevant, this means that you have begun to establish a direction, you are now making choices and building your own individual response to the title. This is when

you should *stop collaborating* as you will run the risk of either giving others your ideas or too-heavily drawing on the ideas of others and falling foul of the academic honesty requirements.

The IB has very strict rules about academic dishonesty and if they feel that you have colluded or taken others' ideas as your own, you run the risk of losing your diploma!

TOK TRAP

Even though you might have created your own knowledge questions or used the IA Prompts to unpack the issues contained in the title ***you must only answer the title as set***. You should not let the other questions you've developed distract your attention. Use the others as *waypoints* on the way to an answer for the title. If your answer answers any question other than the prescribed title you chose, then you run the risk of getting zero points!

You have finished brainstorming when you start to formulate hypotheses about how you will actually construct a response. At this point you might use different coloured pens and highlighters to identify which ideas you like, which examples you think might be fruitful or which elements of the knowledge framework you would like to focus on. Make sure that you are thinking about genuine TOK ideas about knowledge at this stage too! When considering the ideas you have identified, you must be able to explain clearly and explicitly why that idea is going to help you answer the title. Do not engage with ideas unless they are clear 'stepping-stones' to developing a response to the title.

■ Step 2: Writing to find out what you think

IN PRACTICE**Most important tip ever!**

Back up your material or make sure that *all* your writing is 'in the cloud'.

Many schools provide backup services through the software they use (Google Docs, Google Classroom, OneNote, OneDrive, etc). Computers crash, they get dropped, they run out of battery, they get coffee spilled on them and when that happens, they often lose whatever was being done. Don't be *that* student who loses everything because their computer died – back it up!

Often you can begin the next stage by writing, although not by 'writing the introduction'. Write that last. Here you just want to start developing your ideas using sentences and words. If you don't know what to write initially, don't worry. Try to identify the ideas that you know that you will have to *describe* or discuss no matter what your final evaluation of them will be. Just begin by writing them out.

Consider the recent prescribed title:

Areas of knowledge have methods for testing and supporting knowledge claims.

How can we know that these methods themselves are reliable? Develop your answer with reference to two areas of knowledge.

No matter what your evaluation, you would have to discuss and explain the methods involved in knowledge construction in two AOKs. Perhaps you have already decided that you're going to explore history as an AOK, so you might begin by describing what you think of as 'the historical method'. Maybe you don't know what to say *about* it, or where it will go in the final essay, but you know you will have to describe it at some point in the essay, so just start there. The secret, then, is after you have done it, you put it away and come back to it later, and do not think of it as anything like a final product.

ACTIVITY

Look at the prescribed titles from which you must choose. For each, make a list of the ideas that you think you will *have* to engage with. Before you make your final choice, you might compare your lists and even practise writing a paragraph for some of the key ideas you have identified. Do you feel comfortable writing about those ideas? Do you have things to say about those concepts? If not, then that title might not be for you.

This phase of writing prompts unique questions which are different from the questions you encounter in the ‘presenting phase’. In this second phase you will make decisions about the order of the ideas; which ideas will go in which paragraph, and so on.

The following sections offer some advice about how to use these two processes in relation to the essay.

- **Tip 1:** Some word-processing software have what is called ‘outline view’ which makes developing and sequencing ideas very easy. I use it when I have to produce large and complex pieces of writing, like a textbook.

I use the headings to organize ideas, and the subheadings and ‘body text’ to begin the process of articulating the ideas. When I am done with one section (or have run out of things to say), I just close it so I cannot see it anymore and move on to work on some other section. Collapsing various levels lets you see the headings at a glance, which then lets you see how the main ideas are fitting together.

As I write in this view, I begin to uncover ideas I didn’t know I had, and I can easily move them about. When the time comes for the second half of the process – writing to present the ideas – I can easily switch the view to ‘print layout’ and voila, much of my essay is written already!

- **Tip 2:** As you identify particular ideas and concepts you will begin finding relationships between them. Here again you should try to write out how you see those relationships working. As you do this you will now start thinking about (or looking for) genuine examples that will be helpful in illustrating your ideas. Rather than worrying about when to present the examples, just practise writing them out – take up as many words as you need to make it a good example.

The best ideas you will have during this stage are the ideas about what sorts of knowledge issues you come across while thinking about the title. Remember not to let these draw you away from staying focused on the prescribed title. One section in your drafting of ideas at this point should be a careful articulation of why the new ideas you have uncovered are relevant to the title: just a sentence or two will suffice.

As you continue this process, you will soon find that you are building a general approach to the title, or a strategy to deal with the ideas and issues contained in the title. If you are lucky, you will have a number of different approaches or ideas to choose from. Work through some of the details for each of the approaches to see which are more fruitful, or which you have the most ideas for. Your challenge in the latter stages of this thinking phase is to make decisions about which ideas you would prefer to explore.

■ Step 3: Making decisions – thinking about what you have written and what you *now* think about the title

Now that you have written a few words, you can start reflecting on just what you have decided about what you think. You can think strategically about this by asking the following questions (but not necessarily in this order):

- Which of your ideas do you actually think are correct? It is far easier to justify a position which you believe to be the correct position.
- Which ideas do you think are best justified? You might find that you are not sure what you think, but that you have a couple of good arguments for one idea or another.
- Which ideas do you think you have enough words to fill an essay with? You don't want to choose a topic then spend a lot of time on it only to find that you really don't have a lot to say about it.
- Which ideas do you think are most surprising or interesting? Often you can capture the imagination (and approval) of the examiners if you can develop an idea that challenges the status quo or explores something in a unique and surprising way.
- Which of your ideas are a genuine response to the prescribed title as set? Scratch out the ideas that are tangents or that take you further away from the title. You must make sure that *all* of your ideas are relevant to the prescribed title. I always have a copy of the main essay title to hand when working on essays – keep going back to the title and ask: 'Is what I'm writing directly relevant to a response to that title?'

TOK TRAP

While you are producing ideas in this way, and at this stage, you must not think of the words you are writing as the final words, in their final form. Once you have decided on your approach, you might wish to use much of what you have written but you will

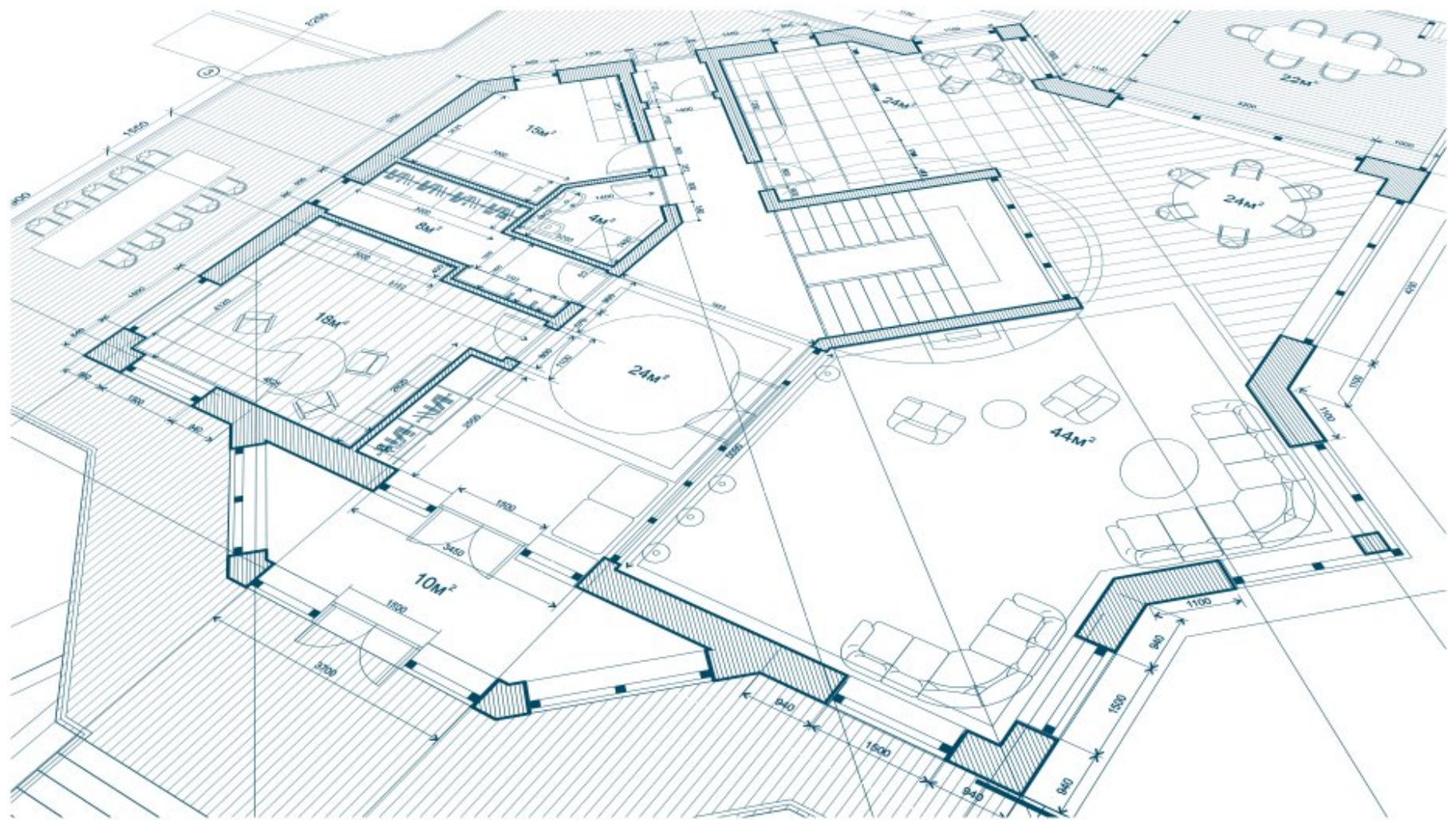
still have to work through the ideas and develop your writing.

You will have to add signposts linking the sections together and introductory and concluding passages to help elucidate the points you are trying to make.

■ Step 4: Making an argument plan

The final outcome of this process should be a clear understanding of what your response to the prescribed title is going to be. After you have made your decisions about which of your ideas you are going to develop and which you think best answer the title, you should try to organize them into an argument.

One way of capturing this argument is with an 'argument plan'. *This is not an essay plan.* The essay plan will be an outline of the main ideas in their proper order; in other words, the culmination of the second stage of the process. We are still in the first stage.



The argument plan is a bit like a blueprint; it is not an essay plan but it tells your teacher how the ideas are fitting together

The argument plan is an overview of what your ideas are and how they relate to one another, but they need not be in anything like a final or polished form. The elements of your argument plan should include:

- your overall thesis, or a general statement which is the most direct response to the prescribed title
- a list of the various premises or claims that you will use to support the final claim, with a clear explanation of them
- a discussion of examples that you will use to illustrate those points.

As you will need to consider counter-claims and counter-arguments in your final work, you should identify these elements at this point in your argument plan and have an idea of what you are going to say in reply to them; you don't want to leave objections to your argument unanswered!

The first stage of the process is complete when you can answer the following:

| | |
|---|---|
| ○ | 1 What is my answer to the title? What is my <i>thesis</i> (a sentence or two which clearly identifies what I want to tell the reader)? If you are writing a <i>discursive</i> essay you should still be able to consolidate your ideas into an easily managed general claim you want the reader to come away with. |
| ○ | _____ |
| ○ | _____ |
| ○ | 2 What do I have to establish in order for my thesis to be well justified? |
| ○ | _____ |
| ○ | _____ |
| ○ | 3 What would someone who disagrees with me say and how would I respond to them? |
| ○ | _____ |
| ○ | _____ |
| ○ | 4 What concrete, real-life examples am I prepared to offer as illustrations of my points? |
| ○ | _____ |
| ○ | _____ |
| ○ | 5 What are the implications of what I am saying? |
| ○ | _____ |
| ○ | _____ |
| ○ | 6 Why should anyone who thinks about the nature of knowledge care about what I'm saying? |
| ○ | _____ |
| ○ | _____ |
| ○ | 7 What knowledge questions do I engage with as part of my response to the title? |
| ○ | _____ |
| ○ | _____ |

If you know these things, then you have already done all the hard work. You might now ask your teacher to have a look. This is not an essay *draft*, so they can offer advice here, but still offer advice on your formal draft later. Congratulations! Now get some sleep.

■ Writing to present

After you have decided what you think, you now have to think about how to sculpt it into the form of a 1600-word essay. You might have already written quite a few words, so much of that work is done. Now you just need to ask yourself questions about what makes a good essay, take your material and apply those ideas.

I do not intend to offer specific advice on how to write the perfect essay. Your TOK teacher and other teachers you are working with will have the time and expertise to help you with this. Crafting an essay is another process altogether and will require moulding and rewriting throughout. Your teachers will be able to put a process into place to help and give you advice. The comments which follow, therefore, are less a 'how-to' but more a 'pay attention to'. If you've completed a thorough *argument plan*, then developing the ideas into a good essay should be no problem.

■ The essay is an 'argument'

- A good argument will start with how it means to end. This means that you must know your 'thesis' or conclusion. Can you state it in a brief sentence or two? Does the thesis offer a direct response to the prescribed title? You should include this thesis in the introductory paragraph so that your reader knows how you mean to progress.

- A good argument will also have a number of ‘premises’ which give weight to the thesis and justify it. You also need to be able to state your premises in a few brief sentences. When you write them out separately, and in order, do they amount to a clear answer to the title?
- Each premise will itself need justification. Solid examples are crucial for this element; don’t make examples up— find real and concrete examples from the real world. Real examples are best when trying to illustrate and justify the premises.
- A good argument will also be aware of what someone who disagrees with the thesis or the premises would say. Can you articulate the position of someone who disagrees? What would they say in response to you? What examples would they use as evidence against you? Try to make these counter-arguments as strong as possible or else you might be committing ‘the straw man fallacy’.
- A good argument will also reply to the counter-arguments. It shows good thinking skills to be aware of how people might disagree with you, but even better thinking to then reply to those counter-claims and show why, despite these worries, your position is still better.

In summary, any good argument will clearly state the thesis being supported, make explicit the premises and evidence for that thesis, show what counter or alternative positions are available, and why you still hold to your own thesis. If you can do this, you have developed a very strong argument.

■ **Avoid dictionary definitions**

Many of the TOK essays I read while examining make a point of taking the time (and spending the words) to offer an explicit definition of key words in the title. Often this is prefaced ‘The Oxford English Dictionary defines X as ...’. To me, this is a clear case of mixing up ‘writing to think’ with ‘writing to present’. The student has been told that ‘you should define key words’, and while this is probably true, it is not true that the definition actually has to be in the essay! You might not need to include it.

Reasons to include a definition in a TOK essay include:

- if the word is so uncommon or technical to an AOK that it is unlikely the examiner will know it
- if a proper technical definition is required
- if the common-place definition from the dictionary will actually be tested or challenged.

TOK is a course that should create a sceptical approach to dictionaries and their definitions in the first place – as you will have learned from TOK, the meaning of the words we use are malleable and historically contextualized: in other words, the definition of a word will change over time. While dictionaries are useful to identify how words are used at the moment, they are not the sorts of things which necessarily dictate the meaning of those words. We decide how words are used when we use them, and dictionaries just capture this common usage of the moment. The word ‘gay’ is a classic example: once meaning happy or joyful, it has come to be used as synonymous with homosexual.

Dictionary definitions are almost never effective in TOK essays



Therefore, by offering dictionary definitions and then doing nothing with them suggests that you are accepting dictionaries as genuine authorities of the meanings of words, and this might make a TOK examiner sceptical: have you really understood the nature of language in the construction of knowledge if you uncritically accept that dictionaries are somehow ‘true’?

So, by all means, keep the dictionary close to hand when working on your TOK assessments; they might be very helpful as you think through the various approaches you can take, but it is likely the examiner doesn’t need you to write out a definition for them. You might include the dictionary definition if you are making a point about the limits of dictionaries as authorities when it comes to how words are used, but all too often students randomly define ‘key words’ in the title then completely ignore those definitions or never use them again.

■ Types of essay

There are two main types of TOK essay:

- Discursive: the essay that seeks to discuss.
- Persuasive: the essay that seeks to persuade.

Both can be successful responses to the TOK prescribed titles. In many cases, the prescribed title in fact seems to lean towards the discursive approach, but even in those cases students can choose to write in either style.

■ Discursive essays

Essays which try to ‘discuss’ are said to be discursive. This means that their primary objective is to outline and explain any number of primary issues having to do with a topic. Success in a discursive essay requires you to identify key issues, then explain them and analyse them fully. At the end of reading a discursive essay, your reader should have a good sense of the importance and significance of the key elements in the area you are focusing on.

Don't, however, underestimate the critical nature of 'discuss' in the TOK prescribed titles. It is not the same type of 'discuss' as 'Let's meet up for coffee and discuss that movie' – this sense of 'discuss' means merely the idea of talking around an issue, and there is very little at stake, or not much by way of significance, in a discussion of this type.

The 'discuss' in the prescribed titles are more like an interrogation than a friendly chat



When prescribed titles use the command word 'discuss' you should understand it more like when your parents say, 'We need to discuss your behaviour last weekend', or your school principal calls you into their office saying, 'We need to discuss your academic record'. Here 'discuss' signifies that something is at stake and that it needs to be sorted out. You might think of it as a *tension* in the title or a challenge.

Your job in a *discursive* essay is to identify that issue and explore it with an eye to illuminating or clarifying the significant issues and seeking a position on those issues. After reading a good discursive essay, your examiner should clearly understand not just what the issues might be, but also what you think the important issues are, what questions and problems exist, why those issues are significant and possibly how those issues can be resolved.

ACTIVITY

Choose past prescribed titles that ask you to 'discuss'. First, make a list of ideas or content that you think you need to discuss (in the way you might 'discuss' a movie). Next, make a list of *issues (or tensions) that need sorting out* relating to that content. If you write an essay on the title, it should be on these *issues*.

Things to consider in a discursive essay:

- **Identify key issues:** The key to success in this first element is to make good choices. The choice of ideas you wish to 'discuss' is an important decision and one which will tell the examiner the level of sophistication with which you are approaching the title. For example, a recent title asked students to explore the extent to which the knower's perspective was *essential* to the pursuit of knowledge in relation to an AOK. One of the

major pitfalls of this title was that students elected to focus on the notion of how the knower's perspective impacted on the pursuit of knowledge without investigating why that was (or was not) *essential*. So, an essay which discussed the impact of the knower's perspective certainly would not have been wrong, but it would not have discussed all the important elements.

- **Explain and analyse these issues:** The success of a discursive essay then builds on a good choice of what issue gets discussed. The major pitfall in this area is that the explanation and analysis of the material ends up being disjointed, meaning that the various issues identified, explained and analysed appear as if they have little relation to each other. In other words, the essay appears to be more of a 'stream of consciousness' than a genuine discussion.

When students write 'Another issue is ...' or, 'This links up to what I have said before in that ...' examiners wonder just what that link is meant to be, or just how the student thinks the next issue is related to those that came before it. 'Moreover' and 'furthermore' are often also simply suggesting that another vaguely related idea is coming, but don't themselves explain what the relationship is between the ideas.

TOK TRAP

Essays need signposts: connective phrases which tell the reader how each paragraph relates to the main context of the essay and the specific ideas that surround it. You want to choose connective phrases that actually tell your reader what the connections are. Phrases like 'Another point is ...' just tells the examiner that you are making a list, and not explaining how the ideas relate.

Look at the following 'signposts' and rate them according to how much they actually tell the reader about how the ideas relate to one another:

- 'Moreover ...'
- 'A counter-claim would be ...'
- 'This leads on to ...'
- 'But things are more complicated than this ...'
- 'Applying this idea to the following situation, however ...'
- 'One implication of this idea is ...'
- 'However, it is not clear that this is entirely true ...'
- 'While there may be strengths to this position, further analysis indicates that ...'
- 'Another point is ...'
- 'In contrast to this point ...'

- **Develop a common theme:** The point then, is that even in a discursive essay there must be a common thread to the essay which creates clear links between ideas.

I use a variety of metaphors to illustrate this point. I ask students, 'What is the main issue on which you will hang your various ideas, like coat hangers hanging on a clothes rail?' or, 'What is the trunk from which your ideas will grow, like branches from a tree?' or, 'What is the main idea that your ideas will contribute to, like streams feeding into a larger river?'

This thread that your ideas are feeding into or hanging from is the main issue I mentioned earlier when defining the various types of 'discuss'. It is the behaviour at the weekend or the academic record that will serve to guide and focus the rest of the discussion.

As a non-TOK example, were you to discuss the differences between two universities, you wouldn't just list a whole series of facts about each. You would identify key issues

which would act as the comparative context. You might compare admission rates or course choices or financial aid; these would be the clothes rails off which you could hang the individual points. Having a common thread like this *creates* the comparison – otherwise they are just random facts sitting next to one another. In the context of TOK, this common thread will likely be explicitly stated by the title, or closely related to it. Make sure it is clear and make sure it is clearly knowledge-focused.

Also make sure your examiner knows what that main point is. This really should be offered in the introductory paragraph. Having this main context tells them that you have chosen consciously the ideas you are discussing – you are not simply writing ideas down as they pop into your head: you know how they relate to one another and how, together, they create a single sophisticated discussion of the topic at hand.

The explanation and analysis of your essay will then build on common ideas being discussed throughout, thereby giving the essay a coherent and unified vision. Explanation and analysis go far beyond description, and knowing why you are introducing an idea into the discussion helps you extend beyond simple description. Similarly, you might have all sorts of really good ideas, but without a clear structure, they will just rattle around like ping pong balls dropped on the floor. Examiners call these ‘stream of consciousness’ essays and can spot them a mile away.

ACTIVITY

Choose either past titles, or the prescribed titles you will be using and ‘discuss’ them with your group as part of the brainstorming step. See if you can identify the main idea or ideas that the prescribed title is trying to get at. There might be more than one. If you were to write a full essay, you might use that main idea/problem/issue to create the context in which the rest of your ideas would fit and be related to one another.

■ Persuasive essays

A persuasive essay is an essay which seeks to convince or persuade its reader of something. It will make a point and try to offer reasons to believe it: it puts forward an argument. And by argument I don’t mean ‘two conflicting viewpoints’. In the words of Monty Python’s famous ‘Argument Clinic’ sketch, an argument is ‘an intellectual process’ or ‘a connected series of statements intended to establish a definite proposition’ (John Cleese and Graham Chapman, 1972). It is *not* simply a series of contradicting statements.

A genuine ‘argument’ seeks to establish the truth of some position or some claim, which is generally called the thesis, or the conclusion. I prefer ‘thesis’ over ‘conclusion’ as students often confuse the ‘conclusion’ (that which an argument is seeking to establish) with ‘the concluding paragraph’ (the final paragraph of the essay). In terms of the TOK essay, if you are writing a persuasive essay, you want to seek to establish a thesis which is a direct response to the prescribed title. You should be able to say the prescribed title out loud, then say your thesis and the two together should make perfect sense (though, of course, your thesis will need support!)



ACTIVITY

For a good example of what an argument is not, use the QR code to view the Monty Python ‘Argument Clinic’ sketch online. Try to identify exactly what the customer says an argument *is* and what he says it *is not*.

ACTIVITY

These thesis statements could be thought of as direct responses to the various prescribed titles. Can you match the title to the thesis? (Some of these titles have been amended slightly to fit with the new style of questions.)

| | Prescribed title | | Thesis statement |
|---|---|---|--|
| A | 'There is no such thing as a neutral question.' Evaluate this statement with reference to two areas of knowledge. (May 2015) | 1 | The nature of the evidence and the role of testability of claims means that contrasting views have different effects on the overall reliability of the knowledge produced in the AOKs. |
| B | 'Knowledge is nothing more than the systematic organization of facts.' Discuss this statement in relation to two areas of knowledge. (May 2014) | 2 | While both the sciences and the arts might tell us about our own nature, they use significantly different concepts and methods to do so. Ultimately, the knowledge gained in the arts is far more significant. |
| C | In what ways may disagreement aid the pursuit of knowledge in the natural and human sciences? (May 2013) | 3 | While questions in mathematics often rely on certain axiomatic assumptions, they don't necessarily make that knowledge less reliable. How questions are posed in the human sciences, however, do directly relate to the validity of the knowledge gained from the answers. |
| D | 'Knowledge gives us a sense of who we are.' To what extent is this true in the human sciences and one other area of knowledge? (November 2013) | 4 | No knowledge is genuinely useful unless it is aimed at solving real-world problems. |
| E | 'Without the group to verify it, knowledge is not possible.' Discuss with reference to two areas of knowledge. (November 2015) | 5 | In all forms of knowledge, the knowledge of the community plays an important role, particularly in the methods and concepts used. However, that role is significantly different in measuring the reliability and importance of that knowledge for the individual. |
| F | 'Some areas of knowledge seek to describe the world, whereas others seek to transform it.' (November 2014) | 6 | The concept of 'fact' varies among AOKs, which suggests that the methods and scopes of the AOK impose a structure on the raw material of knowledge which may or may not be the way the world really is. |

How do you build support for your thesis? In an argument, there needs to be a collection of claims, which, if true, will make your thesis more convincing. These are called 'premises'. The premises should be related to one another and build on one another in a way that leads naturally to the conclusion.

Arguments are made up of *premises* which work together to give strength to the overall thesis. If some premises are weak, the argument will collapse



Each premise will need its own support, and this is where you get into the detailed explanation of real, concrete examples and their analysis, showing both that you understand the nature of the TOK course and that you can create a ‘clear, coherent and critical exploration’ of the title. Your essay might have all the structure and clearly identified theses in the world, but if you don’t offer strong evidence for the premises, the arguments amount to nothing. Many students offer clear, convincing, but far too abstract points without showing how these ideas work in reality or testing them through appeal to illustrative examples. This suggests that the students are struggling to find real-world application of the concepts of the title, something the examiners want to see. These sorts of mistakes will weaken the argument and lower the examiner’s marks.

There is no requirement that your reader *must* agree with you after reading the essay, but your handling should be *convincing*, meaning an argument which is well justified and has clear evidence to support it.

The thing to remember, however, is that you might not know your thesis when you begin the process. Which is why, if you are hoping to create a well-polished essay, you should not assume that your first attempt at writing will be the final product. If you have broken your process into the two stages I am suggesting, then this won’t be a problem. Whatever work it takes to identify the thesis and how to support it is the first stage, the second stage, then, is how to present it.

The best essays are generally those which have a clear and sustained *purpose* to them; in other words, the essay is very clearly aiming at some goal, not just randomly explaining or discussing ideas. These can be either discursive or persuasive. However, in my experience, if a student is opting for the discursive essay, they will too often fall into the trap of not weaving a coherent narrative out of the various discussion points: the essay ends up simply being a list of barely connected ideas. For this reason, I encourage my students to aim for persuasive essays because doing so means they will (hopefully) keep that main thesis in mind as they write, and each section of the essay will be directly linked.

Even if the essay is a discussion, students can take the main comparative point that I suggested earlier as being essential to a discursive essay, and turn that into the thesis of a persuasive essay. Alternatively, the main thesis might be descriptive, simply identifying the main comparative claim that is going to serve as the organizing feature of the essay. For example, ‘The essay title raises challenging questions having to do with reliability in the science, and I will be exploring the variety of issues pertaining to this’ would serve as a thesis of sorts for a discursive essay.

■ What makes a good essay?

■ What to put in the introductory paragraph

Students are often trained to include certain elements in an introductory paragraph: the thesis, some key definitions and a general idea of how the essay will unfold. This is good advice.

Remember, as a rule of thumb, the introduction should serve the same function as a movie trailer: it gives you a hint of the main characters, some indication of the central dilemma and maybe an explosion or two to catch your interest. In your TOK essay introduction, instead of explosions, make sure you indicate what you are taking to be the main issues contained in the title and indicate clearly the approach you are going to take in answering those issues. *You are not writing a mystery novel*, so don’t save all the exciting twists for the end: tell your reader what you are planning to say, what you are going to conclude and give some indication of how you are planning to get there.

The introduction should be the last section you finalize before you submit the essay to your teacher. Go ahead and write one to begin with, as this will help you keep on track, but always go back and edit it to make sure it reflects what you actually ended up saying. I have read many essays with really interesting and intriguing introductions which bear no relation to what the student actually ends up writing. The introduction must introduce what you have actually written, not what you had hoped to write.

■ What to include in the concluding paragraph

The assessment criteria expect you to identify and consider the implications of your argument. This is probably done later in the essay since you will need to outline what the argument is before you consider its implications. It is best to not put this in the *final* essay however, since you want to be developing and explaining these implications. Implications are discussed below.

The final conclusion must relate to what you have *actually* written. This means that the introduction and the conclusion should be handled in direct relation to one another. You might read them both together to make sure that they align in terms of their main themes and style.

The concluding paragraph should remind the reader of what you have just argued or discussed but then also indicate (if you have not done so already) what subsequent questions might arise or what unanswered issues might still be pending. This will demonstrate to the examiner that you have something to say about how the ideas you have presented will fit into a wider context, both of which will help show ‘critical exploration’ and give the examiner more reasons to push your grade into the higher levels.

Don't try to craft your concluding paragraph into some grand summation or spend too many words on it. Your main effort should be spent in the body of the essay. The key is to remind the reader of the main purpose of the essay and wrap up the ideas neatly.

| A good introductory paragraph will likely include ... | A good concluding paragraph will likely include ... |
|--|---|
| <ul style="list-style-type: none"> • An indication of why the title is important (a motive for the title). <input type="checkbox"/> | <ul style="list-style-type: none"> • A summary of the main points and the thesis. <input type="checkbox"/> |
| <ul style="list-style-type: none"> • An indication of how the writer is interpreting the title. <input type="checkbox"/> | <ul style="list-style-type: none"> • Some indication of why the analysis you have offered is <i>important</i> to the title (if you have not done so in the body). <input type="checkbox"/> |
| <ul style="list-style-type: none"> • The primary thesis or point of discussion which will be the essay's outcome. <input type="checkbox"/> | <ul style="list-style-type: none"> • Some indication (when appropriate) of unanswered questions, or where the argument might go from here. <input type="checkbox"/> |
| <ul style="list-style-type: none"> • A <i>brief</i> summary of main reasons to accept the final outcome (a <i>brief</i> summary of your premises or main premise). <input type="checkbox"/> | <ul style="list-style-type: none"> • Only things directly relevant to what you have actually written. <input type="checkbox"/> |
| <ul style="list-style-type: none"> • An indication of how the essay will go about answering the title. <input type="checkbox"/> | |
| <ul style="list-style-type: none"> • Only things directly relevant to what you have actually written in the body of the essay. <input type="checkbox"/> | |

■ Use of counter-arguments to support your own

A well-argued or 'convincing' position is one that takes into consideration alternate positions. Taking a position on an issue means *making choices*, and the argument is an attempt to justify one position over another.

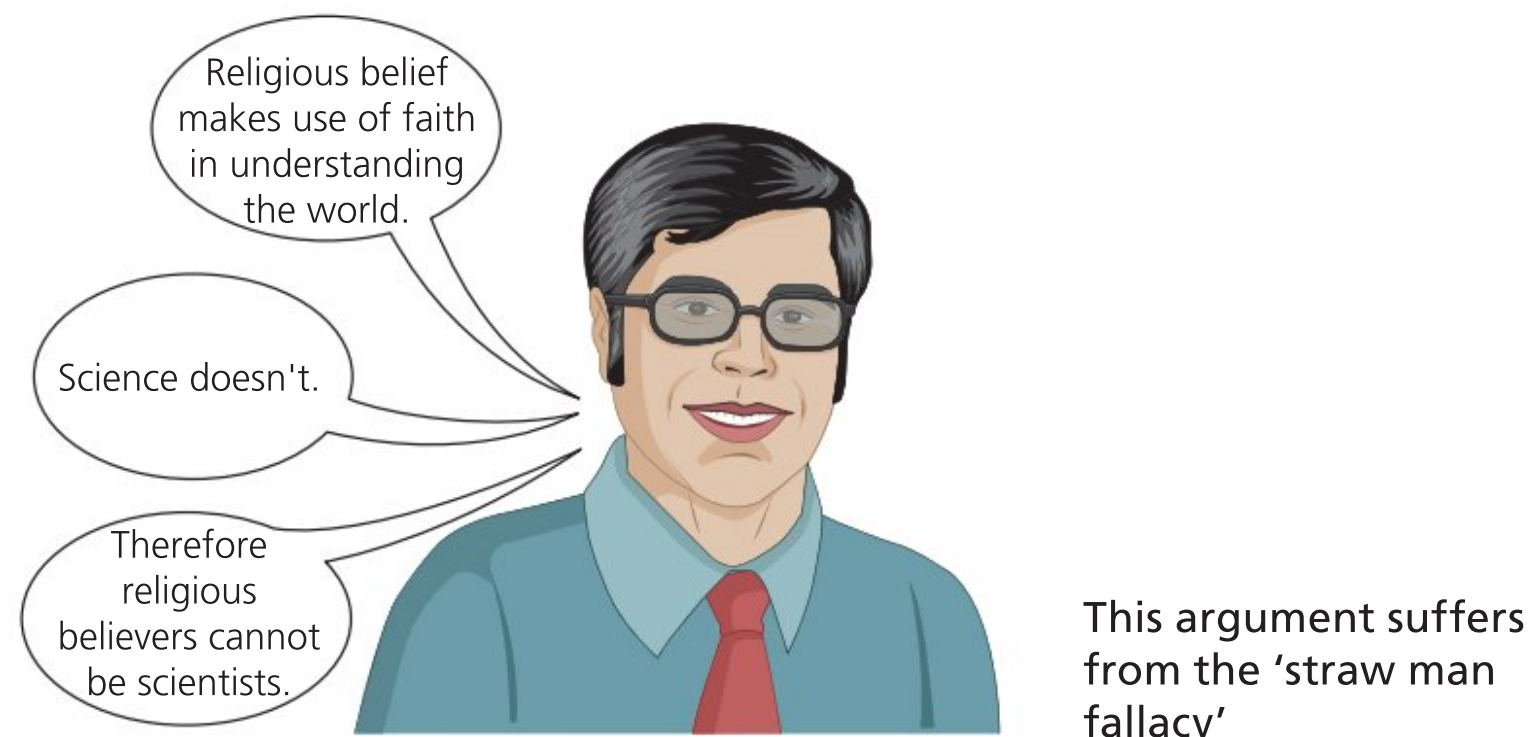
To strengthen your own position, you can *indicate what other options were available to you and why you didn't choose them*. This shows your examiner both that you understand other positions and that you understand your own position's strengths over those other positions. One way of exploring these counter-claims is by asking, 'If someone disagreed with me, what would they say?'

There are two important points regarding the effective use of counter-arguments to strengthen your own position:

- 1 You must offer the counter-argument in the strongest light possible. To do otherwise is to commit the 'straw man fallacy' where you offer a weak and obviously false position and say that your position is better.

Suppose, for example, you are arguing that knowledge about the origins of the universe are best explained using something like the scientific method. If you offer a counter-

argument by saying that ‘religious people never believe this’, then suggest that this is the case because they *only* use religious scriptures to tell them about the physical origins of the universe, then you are not offering the strongest position because it is simply not true. There are a huge variety of religious perspectives on the origins of the universe and many of them are perfectly happy with the explanations provided by the scientific method. If you characterize the religious perspective in this weak light, the examiner will know immediately that you are not actually strengthening your own argument and will start thinking that your own understanding of the key issues and your abilities to develop a good argument around them are seriously flawed.



- 2** Once you have developed a strong version of a position counter to your own, you should *engage* with it. You don't want the counter-position to be left unchallenged.

If you have a choice between, say, a Keynesian approach to economics and a neoclassical approach, and you choose the neoclassical approach, then you should explain why you have *not* chosen the Keynesian. Yes, you get praise from the examiner for pointing out that there are alternatives, but you will get *more* praise (and more points) for genuine critical *evaluation* of that alternative.

This is precisely why identifying strengths and weaknesses of a position is not genuine evaluation. Describing a position might include describing strengths and weaknesses of it: 'here are two perspectives on this view'. Genuine evaluation, however, would say, 'This is an alternative position to mine that I might have chosen, and it is a position which offers good reasons for believing in it, but I'm sticking with my position because mine is better for the following reasons.' An examiner might not ultimately agree with you in this choice, but explaining why you like your position and why you think it is better than others is good evaluation and adds to your argument's convincingness.

This is really the point at which analysis becomes evaluation. Every position has strengths and weaknesses, and pointing them out and discussing them is good analysis. But once you engage with those strengths and weaknesses and use them to explore your own position, or to explain why the strengths of the counter-position still are not enough to make you change your mind, this is when your analysis becomes evaluation.

These counter-positions can be presented one by one, in a point-counter-point process, or you can present the counter-argument in its own section. The danger with the first method is that the essay tends to read like a tennis match. With all the positions being swatted back and forth, it can become a challenge for the student to maintain a clear

narrative throughout the essay. The second method, however, requires a sophisticated understanding of the main point and means that the counter-position has to be a counter to this main position: 'Overall my position is this ...', so a counter-position also would be a larger, more general counter-claim and this can be a challenge to students.

■ Counter-claim vs counter-argument

Whatever method you choose, it is worth keeping in mind the difference between 'counter-claims' and 'counter-arguments'. Counter-claims are individual claims that challenge the claims you are making. An example would be:

Claim: The human sciences can create questions that are neutral.

Counter-claim: The human sciences cannot create questions that are neutral.

Counter-arguments, however, are far more complex and require a much better understanding of the material and ideas. They are far more interesting to examiners as well, precisely because they use more sophisticated thinking. The counter-argument will not be formulated in a simple for/against structure but will require a genuine exploration of an issue in a way that results in a final, well-supported position which runs counter to your primary position.

So, to develop the counter-claims above, the counter-argument would require a fuller analysis of the nature of the human sciences; the methods they use, their objects and aims. Proper handling of a counter-argument, therefore, might require a separate section of the essay and will need to be properly crafted and understood prior to committing it finally to paper. These sorts of responses where the counter-argument is presented convincingly and is replied to well tend to be the types of things that the best essays can do well.

■ General ideas and suggestions for the essay

When things go well for students in relation to their TOK essays they generally go well in similar directions. While the individual student's own ideas and unique perspectives count for a lot, there are a number of things that good essays have in common. I would recommend reading the 'TOK subject reports' available from your teachers as a source of ideas and suggestions for what to do and what to avoid. These reports are written after the examinations and they are the examiners' opportunity to feed back their thoughts to the TOK world. They are an excellent source of information. What follows is partly a summary of suggestions often found in the reports.

■ Use of AOKs

No TOK essay is complete without the explicit use of AOKs. The prescribed titles will require you to discuss particular AOKs, sometimes with choices about which others you use. 'Knowledge' of the community as an abstract concept is simply too broad to meaningfully discuss without it being contextualized, so the use of AOKs in your discussion will create a *context* for your ideas and provide a helpful framework for your discussion.

You might say, for example, that 'your own individual knowledge is essential to the construction of the knowledge of the community' (similar to one of the May 2016 titles). This sounds plausible, but how essential the idea of personal knowledge is might depend in quite a significant way on the AOK you are exploring. For example, you might want to argue that your own personal knowledge in religious knowledge systems matters far less than

in the arts, or indeed vice versa. Whatever you decide to argue, the point is that treating ‘knowledge’ as if it were a thing all on its own is a mistake. You want to be thinking explicitly in terms of ‘mathematical knowledge’, ‘historical knowledge’ or ‘scientific knowledge’.

ACTIVITY

For any TOK essay that you are writing, identify when you make a claim about knowledge and see if you are making a *general* claim (something that could be translated as ‘all knowledge is ...’) or making a contextualized knowledge claim (‘knowledge in *this* area of knowledge is like this ...’). You should be contextualizing your knowledge claims more often than not. For any general knowledge claim, ask yourself:

- Is this actually true about all types of knowledge?
- Can I show better thinking skills by exploring this claim in the context of a particular AOK?

■ Use of the knowledge framework

The elements of the knowledge framework are a valuable tool when it comes to making sense of how knowledge works within a particular AOK and are useful in developing *comparisons* between AOKs. Many of the prescribed titles will ask you to develop a response in relation to a particular element of the knowledge framework as well as an AOK. Even when only one is mentioned, however, don’t think that you cannot draw on other elements of the framework as well. None of them operate in isolation. For instance, the scope of the natural sciences has to do with describing the natural world around us, so the *methods* have to be appropriate for that task: the focus on *observation* and *experiment* in the ‘scientific method’ makes perfect sense.

You might, as another example, be exploring the objectivity of mathematical and scientific knowledge. Using the knowledge framework elements of scope and methods and tools will give you the opportunity to ask different sorts of questions and uncover different answers. For example, you might explore how the scientific method is an attempt to build an objective stance in the sciences, whereas the objectivity of pure mathematics might come more from its scope as a discipline about universal rational principles. Saying, ‘Mathematics and sciences are objective’ is true on a superficial and far too general level, but you can use the knowledge frameworks to explore much more sophisticated ideas and approaches.

■ Good examples and their proper analysis

Examples are a crucial element to a good TOK analysis. They help *illustrate* the points you are trying to make and have the overall effect of creating stronger and more convincing evaluations. Examples, properly analysed, are an essential aspect of the assessment criteria and will help convince your examiner to raise your mark into the higher levels.

TOK TRAP

Many students offer examples when trying to *explain a point*. They might want to say, for instance, that in the natural sciences, experimentation is essential to a well-justified scientific claim. They then might offer an *example* of an experiment, perhaps Young’s double-slit experiment to test whether light was a wave or a particle. Offering only this example, however, is not an explanation of the point being made!

Examples are opportunities to *illustrate* a point, but they are not, by themselves, *explanations* of a point. Every example needs to be explained in terms of the point being made: ‘Why does Young’s double-slit experiment show that experimentation is essential to a well-justified claim?’

Examples which are ‘too easy’ or ‘too common’ or those which are not well-analysed demonstrate very little analytical skill, and examiners see the same examples used again and again. The reason students (and their teachers) are using them is because they, in fact, are good examples for the TOK points they are trying to make, but the problem comes when they don’t use them properly in the essay as a support for a larger claim about knowledge. Often students use certain examples as shorthand for larger points. Rather than offering a proper analysis, they will just throw out a reference to something and hope that the examiner understands the allusion and makes the links for themselves.

■ Proper use of examples

What does it mean to use an example well? When students use examples well:

- **There is a very clear knowledge claim that the example is meant to illustrate.** Examples are only examples if they illustrate some abstract point – in this case the point needs to be *about knowledge*. The example is both to *illustrate* the claim and also to *offer support* for the claim (this is why it needs to be real and not made up).
- **The examples are well explained.** This means taking the time to explain the details of the example, but not spending too much time. It is not necessary to detail every small element of the situation or example. The only parts that need detail are the parts that are needed to help make the point about knowledge that you are working to support.
- **The examples use genuine events or concrete things in the world and are not speculative or hypothetical.** The problem with made-up examples is that they are generally made up in such a way to support whatever point the writer is making. No one ever makes up an example which runs counter to their point.

The most common examples of this are when students conjure up some knower from a culture about which they know very little and claim that *that knower would say this or that or would have an entirely different perspective on some point about knowledge*. This is generally pure speculation, no matter how plausible-sounding. The go-to favourite is some knower with a different perspective on history: ‘If someone from <some other culture> wrote a history about <some event> they would have an entirely different perspective.’

While this sounds plausible (and indeed, might even be true to an extent) it does not constitute genuine evidence: *to be evidence, a claim has to be genuine*, otherwise it only uncovers intuitions and guesses. A far more effective approach would be to actually find two accounts of a historical event and explore how the approaches are related to that historian’s culture.

- **The example is well linked to the TOK point.** Examples work best when it is clear why the writer thinks that it is an example of the point. In other words, the student has offered a clear answer to the question, ‘Why is this an example?’

A student might claim that paradigms shift in the natural sciences, then add: ‘For example, Einstein.’ Examiners are all experienced TOK teachers and will certainly understand what the student is alluding to, but the idea is for the *student to do the work*, not the examiner. We know why Einstein offers a plausible example, but do you? A better approach would be to explain the notion of paradigm shifts within the context of a sophisticated explanation of how new evidence and mathematical

modelling was making it difficult to use traditional Newtonian physics to explain new phenomena.

- **The examples are not repetitive.** Too often the same abstract point (see previous page) is given too many examples. It is a waste of words and time to over-illustrate a point, and if you want to use more than one example for any point, you might want to vary your examples so that you are highlighting a different aspect of the same knowledge claim. If you don't need more than one example, don't waste your time adding multiples.

ACTIVITY

Before you submit your essay to your teacher, go through a printed version of it and use a highlighter to indicate all the examples you use and analyse them along the following lines:

- Are there enough of them? Are there too many of them?
- Are you clear what general point about knowledge you are trying to make?
- Is the example a real-life concrete event in the world?
- Is the example speculative or hypothetical?
- Have you described it well?
- Have you then explained why you think it is an example of the point about knowledge you are trying to make?
- Are you using too many examples for the same point?

■ An analysis of common examples

There are a number of common examples that are often very poorly used in essays. Sometimes they are appropriate and well-used, but too often it is the opposite. I offer a quick discussion of three favourites below, both to suggest that you might do well to avoid them altogether and to give you a sense of how one might meaningfully use them.

IN PRACTICE – BOX 1

Galileo and the Church

It is certainly true that there was some tension between Galileo's claim that the Sun stood at the centre of the solar system and the Church's official stance that it was the Earth at the centre of the universe. In reality, however, the main battle lines are more blurred. Hannah Arendt in *The Human Condition* (1958) points out that the theoretical belief of heliocentrism was not new to the Church, which was happy to accept different interpretations of the cosmos: there were many of them at the time. According to Arendt, it was the empirical methods that Galileo proposed (that is, using the newly developed telescope) to find out which theories were real that was the larger threat, as this promoted sense perception as the primary authority in the creation of knowledge.

Whatever the case, the story is far more complicated than that of an authoritarian and conservative Church versus a radical free thinker. 'The Galileo Affair' is an excellent vehicle through which to explore the flourishing use of empirical observation in science, and the role of tradition, culture and technology in the construction of knowledge. But, if you are tempted to simply mention it in support of a claim such as, 'Science and faith are in conflict', then you are mistaken. First, it is simply too broad to be correct, and second, you are making far too naive an assumption – neither one of which will convince an examiner that you are doing TOK well.

For further discussion, use the QR code.



IN PRACTICE – BOX 2

People used to believe the Earth was flat

This is the go-to example for a number of plausible TOK points, ranging from the ways our scientific understanding of the world evolves over time, to the role of sense perception in our knowledge. The basic premise, however, that people actually did think the Earth was flat is, again, too broadly stated to have genuine critical bite.

As a matter of fact, most educated people have accepted a spherical Earth since Eratosthenes of Cyrene measured it in the third century BCE, though Plato taught this in his *Phaedo* a hundred or so years earlier. The various ways in which the circumference of the Earth has been calculated is itself a fascinating study of the historical development of geometry. Far from thinking the Earth was flat, Christopher Columbus some 1600 years later wanted to get to India in the east – and he did so by sailing west; this only works on a sphere. Indeed, Magellan in the sixteenth century actually sailed around the whole thing!

So, yes, while it is true that some people during the last 2400 years might have thought the Earth was flat, they certainly do not represent the accepted scientific view of the world. This interplay between scientific and ‘colloquial’ understandings of the world might be an interesting avenue for discussion on its own!

For further information, use the QR codes on the left.



IN PRACTICE – BOX 3

Yes, the Nazis were unkind

In a 2003 article for *Wired* magazine, Mike Godwin offered what he called *Godwin’s Law of Nazi Analogies*: ‘As an online discussion grows longer, the probability of a comparison involving Nazis or Hitler approaches one.’ Meaning that at some point any ethical debate results in the mention of the Nazis.

My suggestion is that if Godwin’s Law is true (that all internet debates result in a Nazi analogy), then TOK students would do well to avoid using the example because they are all too common. From propaganda, medical experiments and poor military strategy, all the way to disgusting racial theories, the Nazis are held up as history’s bad guys. Granted, the Nazis had all sorts of offensive beliefs and engaged in a number of immoral activities, but just identifying this is not critical thought because we already know it.

If you are going to discuss propaganda, why not check the nightly news and see what the political parties near you are up to? What about certain medical experiments? Perhaps it would be more surprising and interesting to explore how the United States’ Department of Public Health’s Tuskegee Study/Experiment, 1932–1972, in Alabama treated its test subjects in the name of science? Are you exploring questionable scientific beliefs about racial inferiority? Do some reading on the growth of the early Eugenics movement at Cold Harbor Springs in New York State, USA, or explore the role of cultural beliefs in modern stem cell research.

For further information, search for Godwin’s law.

Again, I offer these three examples, not as a general prohibition against using them; each of these can be a fantastic example of TOK principles. I only suggest that using them without making them into good examples will, because they are so common, only highlight any of their inadequacies.

■ Implications

In the level descriptor of the essay ‘implications’ are mentioned. To achieve Level 5 in the essay you must in some way engage with the ‘implications’ of your ideas about the material or the knowledge questions involved and their ‘significance’. Many times, examiners will complain that students don’t adequately identify and critically explore implications. But what do these terms mean?

One way to explore the implications of what you are saying in your TOK assessments is to ask the question, ‘Now what?’

Of course, this question doesn’t need to be explicitly included in your essay, but you might think about starting the section in which you discuss implications with, ‘One implication of this point is ...’.

Identifying implications and critically evaluating them helps widen the scope of your analysis and push what you are saying into a broader context. These are things which are often successfully presented towards the end of the essay.

Implications in this sense would be about what the ‘next step’ of the argument might be, or what the extension of the main ideas of the argument would be. The ideas you have, if extended into new contexts, would have various consequences, and one way of evaluating an idea or a position is to explore these implications.

If, for example, you wish to argue that the seemingly random behaviour of human beings means that no human science can ‘be’ a *real* science, then one implication of this would be that various ‘laws’ created in psychology, economics or geography are not reliable. However, we see that these fields do, in fact, develop laws which for the most part are useful ways of describing general trends in human behaviours. In other words, they do produce laws which seem to describe how people generally act and have some predictive power.

Students often try to argue (unsuccessfully, in my view) that because historians often have a perspective, this means that ‘all history is biased’. As ‘bias’ generally suggests that a claim is unreliable, there seem to be a couple of implications for this. First, that all historical claims are unreliable, since ‘bias’ is a *pejorative* or a term of disapproval. But there are some *genuine* cases of bias in history. Holocaust deniers and conspiracy theorists, for example, are easily accused of *bias* based on the very poor treatment of evidence in their claims which seem to go against what all the experts in the historical communities say. But if ‘all history is biased’, then it seems that all historical claims are unreliable in the same way as all others. The implication, then, is that we lose the ability to pick out historians who are *actually* manipulating evidence and others who are being responsible in their use of evidence. We cannot accept an analysis of the historical method which results in the claim that *no one* can use it correctly! A second implication of the claim that all history is biased has to do with truth. If all history is biased, then the very notion of ‘truth’ seems to be jeopardized, and while this might be a genuinely sophisticated point, students often don’t engage with this implication.

Suppose a student tries to argue that ‘*all* truth is relative’. The implications for this are pretty serious for the student’s own essay: see if you can work out why.

Your argument will be stronger if you are aware of and able to engage with these implications, perhaps exploring this in terms of the differences between the human and natural sciences and showing how this actually helps you understand more deeply the scope of the human and natural sciences. In some cases, finding an implication that you believe to be unacceptable, means you have to go back and change your thesis and find one that avoids any unacceptable implications.

ACTIVITY

Once you have decided on the thesis you wish to develop, consider the following question: 'If my thesis is true, how might this affect other claims, either in the same AOK or another AOK?' Reflect on those other claims: are the effects of your thesis acceptable? Do they lead to contradictions elsewhere? Do they help support or help answer other issues relevant to TOK?

Considering the implications is a good way of reflecting on the strength of your own position – if it leads to unacceptable consequences (that all knowledge is false, for example), then maybe you should reconsider. If it helps support or engage with other issues, then perhaps it is a good thesis.

One of the traditional elements of a strong concluding paragraph is pointing out what unanswered questions remain. This 'now what?' question is another way of getting at that and is another form of 'implication'. You might explore what other topics your main point will help answer or what new context you could apply it to. This sort of 'implication' cannot be developed until you have already started writing or nearly completed the essay, as the 'what next' is 'what next after your own analysis'.

IN PRACTICE

There is another sense of the word 'implication', however, that can be explored before you begin developing your response.

In 'unpacking' titles, students should be thinking *what is implied by the title*, meaning what does the title assume?

The best essays will have pointed this out and explored this problem.

ACTIVITY

Take the list of prescribed titles that you will have to choose from for your final TOK essay.

1 Make a list of all the *assumptions* you think are being made by the title (another form of 'implications').

2 For each one, construct a *knowledge question*, which will help engage with that assumption in the title.

For example, earlier, where we saw that it was assumed that bias and selection are problems, we might ask, 'How do the methods used in the construction of historical knowledge regulate the effect of bias and selection?' or 'Why might the role of intuition and imagination lead to bias or unreliable knowledge in the sciences and history?' or 'What constitutes the proper selection of evidence in the construction of knowledge in history or ethics?'

The importance of using knowledge questions such as these in the investigation of the prescribed titles is described in Chapter 1.

■ Significance: ‘So what? Who cares?’

Another key element of the best essays is the way in which they treat the significance of an issue. This is what I call the ‘So what? Who cares?’ element. Pointing out the significance of an issue means explaining why this is an important question to ask in the first place and why your conclusion is helpful in answering it. The best analyses are of debatable knowledge issues which have genuine consequences for our understanding and approach to knowledge. I am not suggesting that the questions you are exploring will have life and death consequences, but it might be important to understand how knowledge works for various reasons. It might be important in the political realm, for example, to understand the effect of certain types of language or the subtle techniques that academics and scientists might use to make their arguments more convincing than they should be. Whatever the knowledge issues you are exploring through the essay are, try to keep in mind why it is *important* to explore them and use that in your analysis.

■ Evidence of personal approach

Showing a personal approach is integral to a good TOK essay, particularly since the core theme is all about the individual knower. The general dynamic between ‘your knowledge and the knowledge of the community of experts’ should never be far from your thinking and your essay will definitely benefit from finding ways of weaving those ideas into your discussion.

You are encouraged to draw on your own experience as knowers as much as possible and wherever it is relevant, and this will certainly give your essay a personal tone. When using your own experience, you will want to make sure that your anecdotes don’t become the *focus* of the essay, however. Any personal examples used in your essay should be developed in terms of the more general or ‘decontextualized’ questions about the relevant AOKs. Any failed experiments in chemistry, or individual research for your history extended essay, or explorations that you conducted in your mathematics class must point to some ‘decontextualized’ knowledge question that you are exploring. An essay full of anecdotes is unlikely to do well.

■ Be very wary of ‘help’ websites

Every year there are more and more online TOK ‘help’ websites which promise advice on how to proceed with the particular essay titles. It is not at all certain, however, that these sites give out consistently good advice. The IB takes plagiarism very seriously and is well aware of the sites and the type of advice they give. If they identify an essay which is clearly not the work of the student, that student runs the risk of breaking academic honesty rules and might lose their entire diploma. *This is not a risk worth taking.*

Examiners are trained to identify where students are succeeding and to award points accordingly, so even when a student is genuinely struggling, but nevertheless making an honest effort in the essay, that student can do well against the criteria. If, however, the student struggles and uses information inappropriately, this may constitute malpractice and could be punished with a loss of the entire diploma. In other words, it’s better to try than to buy.

Your best source of advice and guidance are your *teachers*. They have the experience, can identify useful resources and will help you to negotiate the troublesome issue of using sources appropriately. They are also professionally obligated to help you develop your own ideas and they take this obligation seriously, but they won't write your essay for you!

Help websites come in a variety of types. Some are general TOK sites whose content is designed to help you develop as TOK students, not to give you answers to specific titles or tell you the 'right' ideas. These sites are less harmful and pose no more or less of a worry than any TOK textbook. If you use ideas from these sites, just be sure to reference them and use them wisely.

Some sites, however, promise to 'unpack' the titles for you or even work on your essays or ideas with you for a fee. These can be more problematic as they might have their own commercial desires at heart, rather than your own learning or success.

My advice is simply to make the best use of your own teachers, or whenever in doubt to ask your teachers about advice from a website. Follow your teacher's lead when it comes to unpacking ideas and exploring strategies and go to your own teacher if you are struggling. They know you and they have the experience you can trust. Think of faith as a way of knowing ... in whom should you be placing your trust?

While there is a lot to consider in this chapter, paying attention to some of the main ideas will not only help you both deal with the stress of writing such a challenging piece of work, but also lead you away from some common problems and hopefully lead you towards a stronger essay. While it might sound rather sad, the time spent with students as they work on their essays is the most rewarding part of my time as a TOK teacher. These essays are difficult things to write and genuinely stretch all students. Invariably, students think thoughts, develop arguments, take positions and uncover complexity in their world in a way that, in my view, no other aspect of the IB encourages. Students of all abilities will have their best thoughts when working towards this essay. (Unless they do it the night before the deadline. Then it's only a matter of luck. Don't be *that* student.)

■ Breakdown of the assessment instrument

The 'assessment instrument' is used by the examiners to judge your essay. They identify different types of skills and characteristics which we will summarize and briefly discuss below, with some advice on how the top level can be achieved.

You might find it useful to review the work you did on the activity earlier, under the section where we first introduced you to global impression marking.

What can you do to help show that you are meeting each of the elements of the assessment instrument?

■ The discussion has a sustained focus on the title

- Be able to explain how every element of your analysis can be directly related to the prescribed title.
- Maintain clear relevance to the prescribed title throughout the essay.

■ The discussion is linked effectively to areas of knowledge

- When you have the choice, explore a well-chosen range of AOKs in relation to the prescribed title.
- Use effective signposting to develop clear and explicit links to AOKs.

■ Arguments are clear and coherent

- Use effective signposting to remind your reader just where you are in the argument.
- Use the argument plan well so that you can see how the various ideas fit together before you spend too much time worrying about how to articulate them in an essay. (See page 92 for more discussion about what ‘clear and coherent’ mean in the context of the essay.)

■ Arguments are effectively supported by specific examples

- Examples are crucial to turning an argument that *makes sense* into an argument which is *convincing*.
- See pages 97–100 about how to develop effective examples.

■ The implications of arguments are considered

- Implications are only mentioned at Level 5 of the assessment criteria, so including them is necessary to achieve Level 5.
- See pages 101–2 for more advice about how to develop effective implications.

■ There is a clear awareness and evaluation of different points of view

- If the argument plan was done fully, this shouldn’t be a problem.
- Sometimes a different perspective might be a perspective based on another AOK’s perspective or focusing on another element of the knowledge framework.
- Whatever the case, remember to move beyond *identifying* or *describing* other perspectives and *evaluate* them – analyse their strengths and weaknesses – and then develop criteria to *choose* among them.

■ The planning and progress form

The paperwork associated with the essay is called the ‘planning and progress form’ (PPF). The PPF asks you to record the three ‘interactions’ with your teacher that the TOK subject guide requires. It serves two purposes:

- 1 **To provide evidence that the work is your own.** Your ideas will shift and develop over the course of thinking about and writing your essay. The three interactions are meant to chronicle these stages so that, in the event of a concern about plagiarism or an academic honesty issue, the PPF can show how your ideas developed over a long period of time. The PPF includes a teacher section where your teacher will comment on the process to add evidence that the final work is your own.

- 2 To provide a framework to promote the independence of the student.** In other words, there are three formal interactions so that there are not four or five or a dozen. It also means that teachers know that they *should* provide advice during the process and then on one written draft. This means the teacher cannot develop your ideas for you, but they can intervene to help you make your ideas better. You must take responsibility and show genuine independence so the work that is produced and assessed is genuinely your own.

The TOK subject guide offers guidelines on the nature of these interactions, but they generally follow this structure:

- 1** Initial discussions and choice of prescribed title.
- 2** Some sort of essay plan.
- 3** A lightly commented upon draft.

If you follow the two-step process and have a clear argument, then your middle interaction can be your teacher's comments on the argument plan. They can offer quite substantial feedback there, which is important because they cannot comment on more than *one* draft. Remember, therefore, that the argument plan cannot be a full essay! This is partly why the distinction between an argument plan (abstract identification of key elements of the overall argument) and the essay draft (a presentation of that argument using the traditions and conventions of essay writing) is so crucial. If you arrive with the 'argument plan' and it really is just a draft essay, you have lost out on one of the allowed interactions.

Similarly, if you have already had two of the three interactions and suddenly take it upon yourself to change the title when it comes to write the draft, you don't necessarily get another three interactions. In most school situations there simply is not enough time (and it is not in your best interests for the school to give you the time) to take more and more runs at the essay. If you have changed the title and written a draft, then your teacher has not seen the ideas develop over time and cannot fully vouch that the final product is your own.

Filling in the PPF is not onerous. Your school will identify how the three interactions will proceed and after each of them simply chronicle:

- what happened during that interaction
- how things were going
- what ideas were discussed
- how you plan to proceed.

Your teacher will then offer a comment as to the overall process and the independence and authenticity of your ideas. No examiner ever sees the PPF.

The TOK exhibition

The TOK exhibition is a new addition to the course from 2020 first assessment 2022, and it promises to be a very exciting one which will provide students the opportunity to explore TOK in very clear and 'real-world contexts'.

First, here are some basic facts about the exhibition:

- The TOK exhibition is meant to provide you with an opportunity to explore ideas and issues related to knowledge that have arisen through your investigations into the core theme (Knowledge and the Knower) and whichever optional themes you have explored in class. This doesn't mean that you cannot also consider ideas related to the AOKs, but you should focus your exhibition on the themes. You might use material related to AOKs, but you should do so in a way that then makes a point about the themes, for instance. There is also a general expectation that the exhibition will be completed in the first year of your IB, but this will be up to your school to schedule.
- The IA prompts are the clear focus of the exercise. You must choose *one* (not two, not three, not seven) of the IA prompts to investigate.
- You must choose *three objects*, each of which allows you to develop a unique point in relation to the IA prompt that you have chosen. Again, each of the three objects you write about must be 'aimed' at responding to the *same* IA prompt.
- However you actually exhibit the TOK exhibition in your school, when you submit your exhibition to your teacher (who will then send it off to the IB), you will need to create a single electronic document (preferably a PDF) in which you show an image of your three objects, along with the discussion of each. You must make very clear which of the IA prompts you have chosen. You might make it a header or title on each page.
- The PDF must have three images and no more than 950 words in *total* (so about 315 words per object).
- The exhibition is marked out of 10, and these points will contribute towards the overall 30 possible points for TOK. The essay, although marked out of 10, is weighted twice as heavily and amounts to two-thirds of your total score.

The subject guide offers a three-step process to help guide schools through the exhibition experience. The important elements for you are explained below.

■ Summary of the TOK exhibition process

Below is a summary of the process by which you should create your exhibition, taken from the TOK subject guide:

| | |
|---------------|---|
| Step 1 | Students begin their exhibition by selecting one IA prompt and three objects, or images of objects, that show how this question manifests in the world around us. Students must select one IA prompt as the basis for their exhibition. All three objects must be linked to the same prompt. |
| Step 2 | Students should produce a single file containing their TOK exhibition. This must include: <ul style="list-style-type: none"> ■ a title clearly indicating their selected IA prompt ■ images of their three objects ■ a typed commentary on each object in which students identify each object and its specific real-world context, justify each object's inclusion in the exhibition and links to the IA prompt (maximum 950 words) ■ appropriate citations and references. |
| Step 3 | Teachers are required to provide all students with an opportunity for their completed exhibitions to be showcased and exhibited to an audience. As this does not form part of the formal assessment task, teachers have a great deal of flexibility as to how they choose to hold these exhibitions. |

We won't be covering step 3 in this book, as this will be something that your school manages. As you can see, there are many different forms that the actual exhibition stage take, but the exhibitions will need to fit into the local school's structures and are NOT part of the official IB assessment. The exhibition element will give you a valuable opportunity to share your thoughts and ideas to a wider audience and will certainly provide inspiration to younger students moving into the IB.

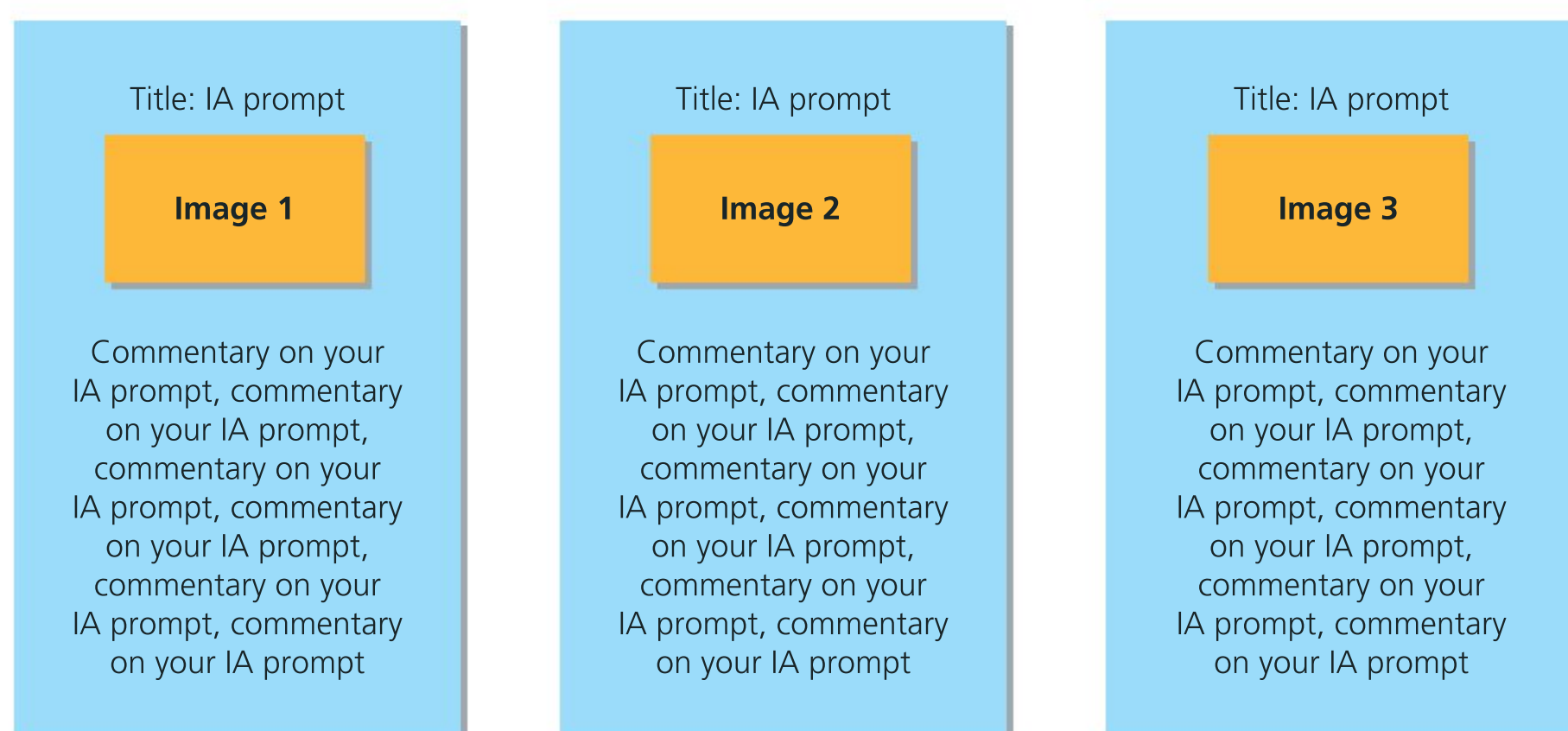
Please note, however, that the exhibition element from step 3 might be part of your school's assessment. A proper exhibition might form part of your semester or termly grade. Make sure you understand your teacher's expectations when it comes to the exhibition!

■ What is your objective?

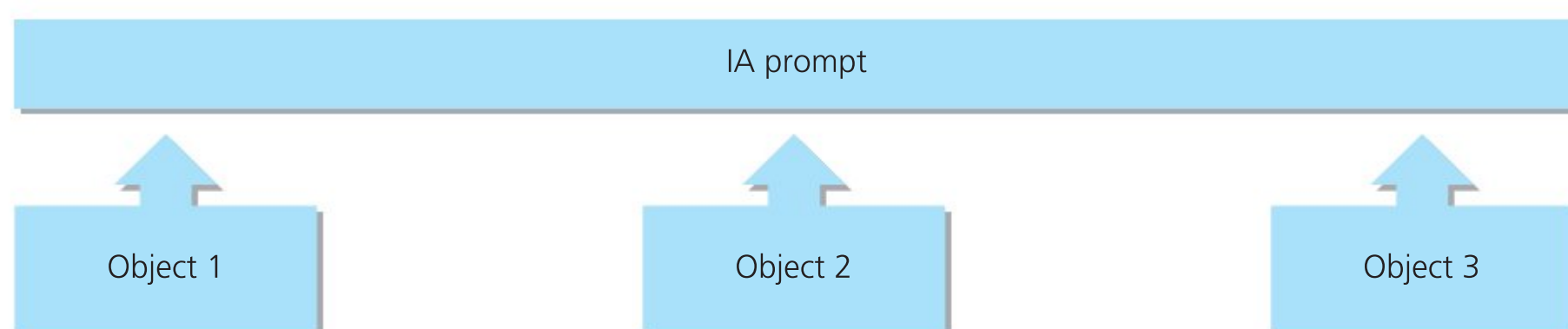
What you are aiming for is a three-part response to a single IA prompt of your choosing. Each part will take the form of a commentary on a single object; the three commentaries on your three objects must total no more than 950 words. Your final product for the IB will be a single PDF file that will have three pages (though your commentary might be longer than a single page). Each page will have an image of an object and a TOK commentary on that object. On each page, you should use the IA prompt as a header, followed by an image of your object and then a commentary. You do not need an introduction or a conclusion.

Title, image, commentary. Title, image, commentary. Title, image, commentary.

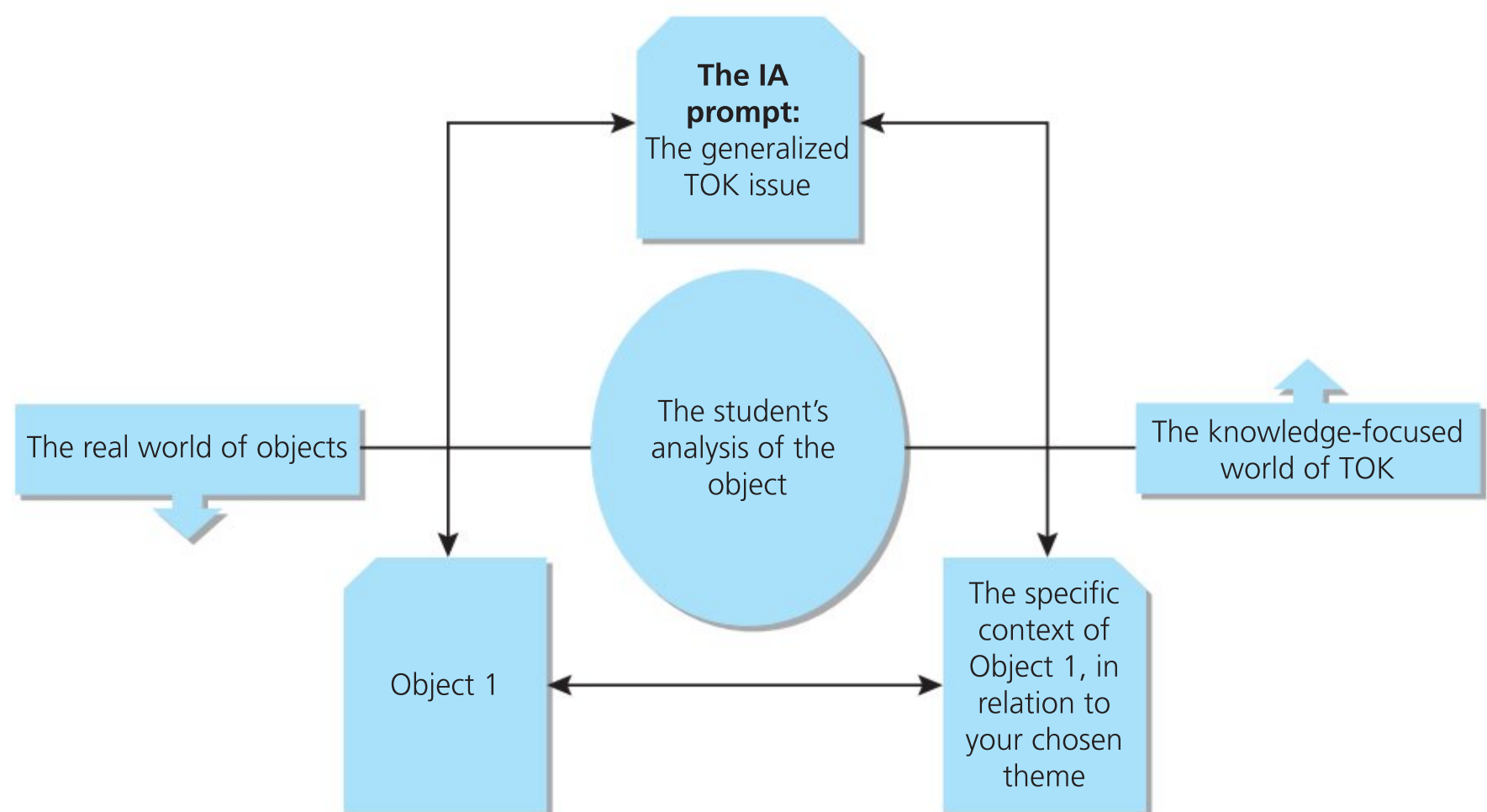
Keep it simple.



The overall exhibition project requires you to identify *one* IA prompt and *three* objects. The assessment criteria do not require you to make any sort of connections *between* the objects and the IA prompt – they can stand relatively independent of one another. This means that you might consider the overall exhibition as having three relatively distinct parts.



Each individual commentary will comprise its own independent analysis of an object. Here is a diagram that brings the elements of a successful commentary together:



There are four main components for *each* object's commentary:

- 1 The IA prompt
- 2 The actual *object*
- 3 The specific real-world context of that object
- 4 The final analysis of the object and IA prompt.

Number 4 is what you are aiming for, for each of the objects you choose. But the other three elements are vitally important as well. The idea is that your analysis (number 4 in the list) is what you will actually produce, but the analysis you write needs to engage with the other elements. You will need to be aware of the important element of the specific object itself, you will need to understand the theme you've chosen in order to explain the specific context of the object, and you will need to understand the TOK elements of that object and its context. Your focus certainly needs to be above the line dividing the real world and the TOK world, but you will need to be able to use facts from the real world to make the TOK points about knowledge that the IA prompt is asking about.

DEEPER THINKING

We will discuss this later, but there are real opportunities to differentiate your exhibition and move toward the higher mark bands. While there is no explicit requirement to develop links *between* the individual objects, doing so in a way that creates a genuine *narrative* in relation to the IA prompt will show your examiner that you have a deep understanding of the knowledge issues at stake in the IA prompt. This is something called *curation*, and museums do it all the time when choosing which objects to display. This will be discussed later when we discuss the choice of objects.

The remainder of this section on the exhibition is an attempt to make these various elements clearer and to give you advice on how to approach them so you can create a top-band exhibition.

■ A two-step process

Because the nature of the essay and exhibition activities are significantly different, the process you will use will also be different. However, the general idea that you should be taking a broadly two-step process still counts. First, you need to decide what you think, then you need to present, or write up, what you think. As with the section earlier about the essay, we will break the exhibition process up into these distinct categories as well.

- Deciding what to think:
 - Brainstorm
 - Choice of IA prompt
 - Choosing objects
 - Making decisions
- Presenting what you think:
 - The response to the IA prompt

■ Deciding what to think

Whereas in relation to the essay I suggested four *consecutive* steps, starting with a brainstorm and working through the various stages until an essay is produced, that process won't work as well here, because the activity requires you to keep a few things in mind at the same time. This is a good thing, because it gives you a real opportunity to use the exhibition to explore important TOK points in your own life, drawing on your personal circumstances.

In the initial stages, before you have made many decisions, you have to think about which theme you are going to use in your investigation (the core theme or one of the optional themes), which IA prompt you are going to answer and you then have to think of three objects which you are going to link to that prompt. You might find at various stages that you have some good TOK things to say about a couple of objects but that what you can say about those objects does not necessarily answer the same IA prompt. Alternatively, you might have a couple of good IA prompts that interest you, but you are struggling to find the right objects for them.

Unfortunately, there is no easy solution to these problems other than hard work. The best piece of advice then, is to *start early*. Even if your teacher hasn't officially begun their process to prepare you and the students in your class, you now know about the task so can start off on your own.

Some advice on how to start early:

- **Keep a TOK 'object journal'**. From the beginning of the course, remain on the lookout for *objects* that are discussed or used in your TOK classroom. You will likely find all sorts of things lying around your school which are part of the world of knowledge – computers, lab equipment, sports equipment and even mathematical equations. *Outside* of school you will also be in contact with a world of objects which can be used: objects related to your musical tastes, hobbies, political or religious beliefs – these all can serve as good TOK objects. Any time you have a 'TOK moment', when something happens to you in class, or when you suddenly have a TOK-related thought, take note of what objects you were engaged with when that happened. You might use your smartphone camera to snap a photo and save it to an album, or you might upload it to a document where you can write about it.

According to the diagram on page 109, the object and the object's real-world context are important. We'll discuss what this means in more detail later, but make sure in your journal that you are not just naming an object, or sketching or inserting a photo of it. You should be writing a short description of that object's context. You might, for instance, take a photo of your sport's 'rules and regulations' booklet and upload it to your electronic journal. There you might jot down what sport it is for and whether you've actually read the rules or been tested on them. Maybe you could describe a time when you *broke* the rules, or a time when they had to be consulted to see if some rule had been broken during a match or a game. There is nothing crucial here, other than some sense of the specific context in which *that* object had impacted your life. The more detail you provide, the more ideas you are providing your future self when you have to start making choices.

- **Keep an IA prompt journal.** You already have access to the IA prompts (either by buying this book or by looking through the TOK subject guide). Throughout the course, your teachers will be offering lessons on a whole range of interesting TOK-related points. During these times, start thinking about how the material you are working on in class might relate to one of the 35 IA prompts. The IA prompts are not a secret, so there is no reason why you shouldn't start thinking about them immediately. The same rules apply here as to the essay – there are none – just note down whatever you are thinking. Again, the more you note down now, the happier your future self will be.

Just what you will write in these journals need not be clear at this moment – as you learn more about the nature of TOK and as you read more of this section about the exhibition, you will get a better sense of what to look out for and what sorts of objects are suitable.

■ Brainstorm

What these journals amount to are a form of brainstorming: gathering and articulating early ideas with the goal of *making choices* later. If you have been keeping a list of interesting objects and IA prompts for a while, when the time comes to actually start developing the exhibition, you'll have a great list of things from which to choose. This is when your future self will thank you!

The process of choosing objects and IA prompts, however, isn't a matter of picking them out of a hat and hammering away. You will need to start by developing ideas through a brainstorming process. For each object–IA prompt connection, you'll need to play with the ideas to see if you can actually link them, to see if the object is one that will help you make sense of the IA prompt. During this process you will chase after ideas, see where they lead, and if they are good, start working on them more earnestly.

As you brainstorm the object–IA prompt connections, you might have a number of IA prompts on the go at one time. This is okay since you are only testing out ideas to see if they work. Remember though, your exhibition must use only *one* IA prompt!

■ Choosing an IA prompt

We really cannot overestimate the importance of the IA prompt. Precisely which one you choose doesn't matter, but what is *absolutely crucial* is that you let the IA prompt guide you throughout the writing and thinking about the exhibition.

The number one TOK trap that TOK students fall into is not actually *doing* TOK, meaning that when they fall into basic description (whether it be in the essay or in the exhibition), they have stopped giving a knowledge-focused analysis and the wheels have come off the cart.

A TOK exhibition that forgot about the need for maintaining a clearly knowledge-focused analysis



This is why the IA prompt is so important. So long as you are *answering* the IA prompt, you will be maintaining a good TOK analysis of knowledge.

Every word you write in your final exhibition write-up *must be as part of a direct response to the IA prompt*. The diagram on page 109 suggests that you should offer some discussion of the object and its real-world context, but you will only need to describe the context very briefly. Whatever you *do* say about the object, however, must be said in relation to a clear response to the IA prompt.

So now that you know how important it is to maintain a direct response to the IA prompt, how should you choose it in the first place?

IN PRACTICE

Advice for choosing an IA prompt

- Make a mind map of all the topics you have found interesting in your classes. Compare these to the knowledge framework for that theme or AOK. Compare this with the list of 35 IA prompts. Are there any which you think best capture what you found interesting in class?
- If you have already chosen your extended essay topic, take some time to develop a TOK analysis of that topic and your research so far. How do you know your work is reliable? How credible or reliable are the sources you are using? What are the reasons behind any varying perspectives by scholars on your topic?
- This exercise can be beneficial in two ways: first, it helps you understand your material better and write a better extended essay (even if this new material doesn't appear in the final version). Second, it might help you uncover a good IA prompt – did you encounter any of them during your EE research?
- Ask your subject teachers (including your TOK teacher). They might have advice about the sorts of things that have interested you most in class. Perhaps you forgot about a particular discussion or topic, but your teacher might remember a point you made or a conversation you had which lends itself to a TOK analysis. Show your teachers the IA prompts and ask if they think any of these ideas came up in class.

- Look through old essays or work (not just for TOK – consider your work in other subjects as well). Reading through your old work will not only help you revise, but it might also uncover a point that you made that would work well for a TOK exhibition.
- Consider the work you have done in your subject internal assessments. In a similar way to

the extended essays, the work you do in your internal assessments needs to be rigorous and credible, so an analysis of the way you are using research and constructing your own knowledge is worth an exploration. This might uncover a topic or an issue you would like to discuss as part of a response to an IA prompt.

By the time you are ready to start working on the exhibition you should really be familiar with the IA prompts. Here they are:

Students are required to create an exhibition of three objects that connect to *one* of the following IA prompts:

- 1 What counts as knowledge?
- 2 Are some types of knowledge more useful than others?
- 3 What features of knowledge have an impact on its reliability?
- 4 On what grounds might we doubt a claim?
- 5 What counts as good evidence for a claim?
- 6 How does the way that we organize or classify knowledge affect what we know?
- 7 What are the implications of having, or not having, knowledge?
- 8 To what extent is certainty attainable?
- 9 Are some types of knowledge less open to interpretation than others?
- 10 What challenges are raised by the dissemination and/or communication of knowledge?
- 11 Can new knowledge change established values or beliefs?
- 12 Is bias inevitable in the production of knowledge?
- 13 How can we know that current knowledge is an improvement upon past knowledge?
- 14 Does some knowledge belong only to particular communities of knowers?
- 15 What constraints are there on the pursuit of knowledge?
- 16 Should some knowledge not be sought on ethical grounds?
- 17 Why do we seek knowledge?
- 18 Are some things unknowable?
- 19 What counts as a good justification for a claim?
- 20 What is the relationship between personal experience and knowledge?
- 21 What is the relationship between knowledge and culture?
- 22 What role do experts play in influencing our consumption or acquisition of knowledge?
- 23 How important are material tools in the production or acquisition of knowledge?
- 24 How might the context in which knowledge is presented influence whether it is accepted or rejected?
- 25 How can we distinguish between knowledge, belief and opinion?
- 26 Does our knowledge depend on our interactions with other knowers?
- 27 Does all knowledge impose ethical obligations on those who know it?
- 28 To what extent is objectivity possible in the production or acquisition of knowledge?

- 29 Who owns knowledge?
- 30 What role does imagination play in producing knowledge about the world?
- 31 How can we judge when evidence is adequate?
- 32 What makes a good explanation?
- 33 How is current knowledge shaped by its historical development?
- 34 In what ways do our values affect our acquisition of knowledge?
- 35 In what ways do values affect the production of knowledge?

The chosen IA prompt must be used exactly as given; it must not be altered in any way.

ACTIVITY

- 1 Take each of the 35 IA prompts and place them under the categories of the knowledge framework: scope, perspectives, methods and tools and ethics.
- 2 Compare with a partner and discuss the similarities and differences in your respective categorizations, using specific examples from AOKs and the optional themes as evidence and examples. In what ways do your understandings of the prompts and knowledge framework elements differ? Where are your ideas similar?



Use the QR code to see a possible response to the activity above. Keep in mind, however, that this is only one way of breaking up the IA prompts. This might be a helpful way of deciding what sort of approach you wish to take in response to the title: while the IA prompt might fit in with different elements of the knowledge framework, you might choose to focus on one element. Or perhaps you want to suggest that an IA prompt might fit in more than one element for the framework: you might then choose objects which show different approaches, one from scope, one from methods and tools and one from ethics, for example.

TOK TRAP

The good thing about all these IA prompts is that they are good higher-level knowledge questions. The challenging thing is that they are ‘decontextualized’ or abstract. They make few references to anything in the real world, or themes or AOKs.

This will almost certainly create challenges for students, and it will be very easy to deliver a too-general response, one that is too abstract and doesn’t have any real application to the real world. *This is what the object is for.* The object and its real-world context will provide the context in which you can meaningfully investigate the IA prompt.

For example, you might be exploring IA prompt 8: ‘To what extent is certainty attainable?’ This is a wildly general claim and entirely depends on the context. Were you to try to answer this without reference to a specific context you would only succeed in saying

something that *might* be true. So, consider now our sports rule book from before. You might now develop an analysis investigating how the established rules and regulations of an organized sport are like *laws*, and there are definite and certain answers to whether some rule is *actually* a rule. But then you might develop this point by pointing out that in the application of those rules there might be *uncertainty*. You might develop the point that being part of some sporting community of knowers (people who know the rules and how to play some sport), means knowing both the rules and how to break them (in a sportsman-like way) while appearing not to.

This is why the objects are crucial to the task as well, although too much focus on the object is probably going to be more damaging to your mark than too much focus on the IA prompt.

■ Choosing objects

In some ways I might suggest that the point of the exhibition is not really the object, it is the response to the IA prompt. As long as you are offering an interesting and relatively sophisticated response to the prompt, and as long as you make a reasonable effort to link the object to the prompt, you won't go far wrong.

Some things are important to remember, however:

- **'Objects' are human made.** The whole idea in the exhibition is that you are exploring *knowledge*. Knowledge is something we (humans) construct during our engagements in the world. The exhibition is not about how we know things *about objects* in the world, but about the knowledge we construct. So, the objects we use should be *manifestations* or *products* of people knowing things or searching for or constructing knowledge.

Nearly everything around you right now, from the book in your hands to the chair upon which you sit, or the light fixture illuminating your desk are all *manifestations* of knowledge: it took knowledge and purpose to create them. These might all be considered objects for the purpose of the exhibition, provided you can find the right IA prompt to explore with them.

Suppose, though, I wanted to choose a 'melting iceberg' as an object and found a photo of one. This would not be a good choice because it is a natural phenomenon in the world and has nothing to do with knowledge, on its own. However, put that photo on the front page of a newspaper and now that image does become an exhibition object because it is being presented as *evidence* for some claim, or as a way of swaying your emotions or to shape your thinking. You might remember the distinction we made in the student coursebook in the chapter on knowledge and technology. In this case the image of the glacier melting might be data (the recording of a fact), but it becomes information or knowledge when it is used to *support* a point.

An actual melting iceberg would not make a good object for the exhibition. A newspaper front page with a picture of a melting iceberg would



- **The objects you choose should NOT be 'symbolic' or a metaphor.** Objects should not *represent* or be *symbolic* of or stand as a *metaphor* for anything else. They should be clear products of, or the results of, knowledge. You might, for instance, try to suggest that a blank piece of paper represents the freedom and creativity in the arts. Yes, it might, but the piece of paper itself has nothing to do with that, *you* have merely

interpreted it that way. Suppose, however, you choose a blank canvas that you entered into your local art competition. That piece isn't only *representative* of an idea but is the *manifestation* of an idea. You had an idea about the nature of art, you *chose* a blank canvas to represent it, and there you have your object.

Another example might be your morning cup of fair-trade coffee. You might want to talk about how political movements influence trade but worry that the coffee only *represents* political values, so isn't a good object. But actually the coffee doesn't only represent the values inherent in fair-trade, *it is a product* of that movement. It is actually fair-trade coffee. Try to make sure that the objects you choose are directly related to the knowledge that you are investigating.

- **Objects might be virtual.** Some objects might be conceptual or virtual objects. Euler's Identity, for example, is a 'virtual object' in the sense that it is human made (by Leonhard Euler in the eighteenth century) and is the product of human knowledge at work.

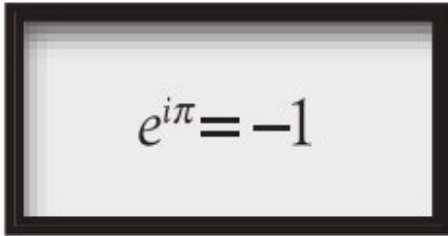
You might also choose a virtual object: a particular tweet or Instagram post or maybe a text or an email. So long as you can convincingly make sense of these in relation to an IA prompt, you can use them.

- **The objects you choose should be *personal* and *specific*.** One of the central ideas of the exhibition is that the objects you choose should be *personal* to you. This is an opportunity for you to develop your TOK ideas in *your own context* and make it about you. So, the objects you choose should really be specific objects that have a particular significance to you. You might have chosen Euler's Identity, rather than any general 'mathematical equation', because you have done research on that in your mathematics IA. Perhaps you want to investigate the role of the media in covering climate change, so you identify as your object a *particular* headline and analyse it, rather than just some general headline.

Ideally, the objects you choose are objects that you might have direct relationships to and can even physically use. This of course is not a requirement, but objects that have a clear link to you, your interests or your life, will be far more compelling than those that don't. Your skateboard, your guitar, your physics textbook, your own piece of art or your own *performance*. All of these would provide compelling TOK conversation starters given the right IA prompt.

- **You should be *familiar* with the context of your objects.** Given that you need to link the specific context of the objects you choose to the IA prompt, you will want to choose objects from a context with which you are familiar. If you are *not* religious for instance, but nevertheless have strong beliefs about religion, you might want to choose a religious artefact and investigate it. However, not being familiar with religious knowledge communities might be a disadvantage here, and may keep you from speaking about it convincingly. Of course, this could be a call to do a bit of research and *learn* about it. Perhaps during that research, you develop a more sophisticated and nuanced view of the object and its context. The best advice, however, would be to draw from what you know and what you are familiar with. An informed and knowledgeable response will be far more convincing.

You will also need to have clear ideas about how this object relates to the theme you've chosen. The 'specific real-world context' of the object will contain the link to the theme.



$$e^{i\pi} = -1$$

Euler's Identity

If your object is a tweet, for instance, the specific context *might* be as an example of technology (Knowledge and Technology), but it may also be an example of how language is used (Knowledge and Language). In your commentary you'll need to make the link you've chosen clear.



IN PRACTICE

Good or bad object? Fill out this checklist of questions to ask about your object. If you have more ticks under 'yes' than 'no', then you might have a good object. A downloadable version of this checklist is available via the QR code on the left.

| Questions to ask about your object | Yes | No |
|---|-----|----|
| Would it exist if there were no humans in the world? | | |
| Can you identify knowledge that is required for the object to have been constructed, either propositional knowledge ('knowledge that ...') or ability knowledge ('knowing how to ...')? | | |
| Does the object come out of a discernable community of knowers? | | |
| Can one be an <i>expert</i> in the use or application of the object? | | |
| Are <i>you</i> an expert (or learning to be an expert) in the use of the object? | | |
| Does the object create, communicate or store information? | | |
| Does the information communicated or stored belong to a certain community? | | |
| Does it take some level of knowledge to understand the knowledge communicated or stored by the object? | | |
| Does the object have really clear links to one or more of the IA prompts? | | |

This list is certainly *not* exhaustive (there are lots of questions you might ask like this) and just because you get a handful of 'nos' does not necessarily mean that the object will not work. Hopefully by thinking about these questions, you will start to uncover the links to knowledge issues that the object provides.

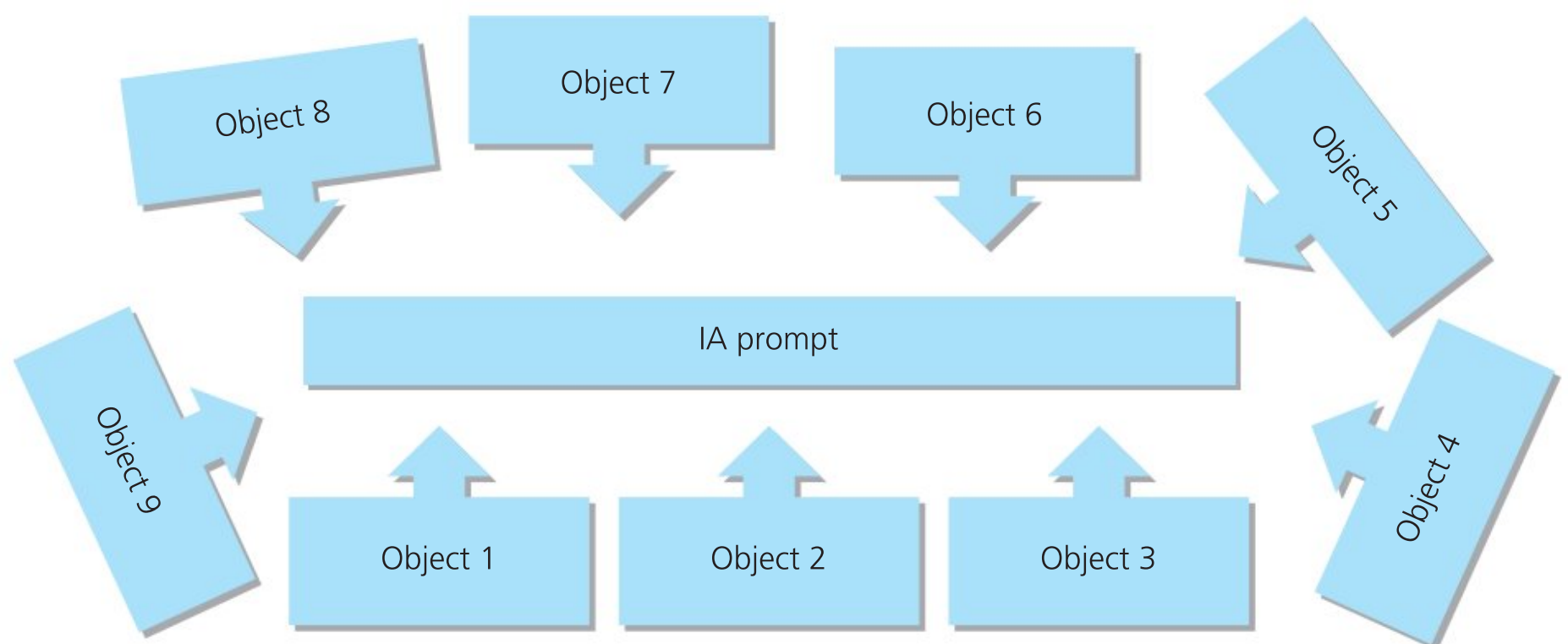
■ Making decisions

That students must choose three objects raises new opportunities and challenges. Strictly speaking, the assessment only requires that students develop links between each individual object and the one prompt under consideration. The prompt provides the unifying theme, but there need be no connections developed between the objects. This is highlighted by the element of the top-level assessment descriptor: 'links between each of the three objects and the selected IA prompt are clearly made and well-explained.' Many students will choose this approach and can still access the top levels of the assessment instrument if they do so.

In the planning and designing stages of your exhibition, the ideal situation would be for you to have chosen more than one IA prompt and to have identified more than three objects for each IA prompt. Maybe you have not written up each object or maybe you have just developed a quick outline of how the object might relate to the IA prompt.

The idea now is to *make decisions* about which of the objects to choose. This is something quite similar to what is called curation. It is what the professionals do in museums when they make decisions about what to display to the public. Museums always have far more objects

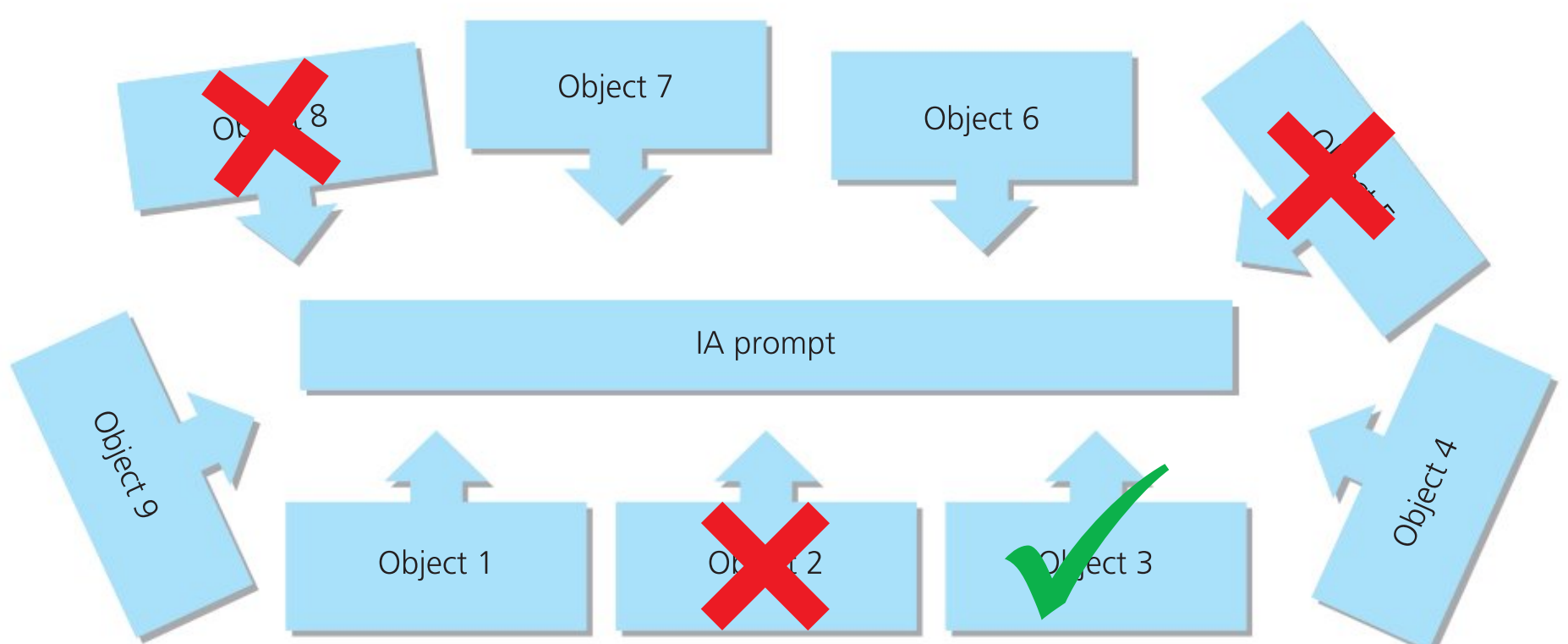
in storage than on display: the British Museum claims to have over 8 million objects from which to choose, but only ever has about 80 000 on display at one time. That means that literally 99 per cent of the objects that the British Museum *could* have displayed, got a big ‘no’. It therefore seems to be good practice to say ‘no’ to some objects, which is why you will want more than three from which to choose. Remember the graphic from earlier, that illustrated the exhibition write-up as being one IA prompt with three objects. Hopefully, at the end of the ‘deciding what to think’ stage you will be in a position like this:



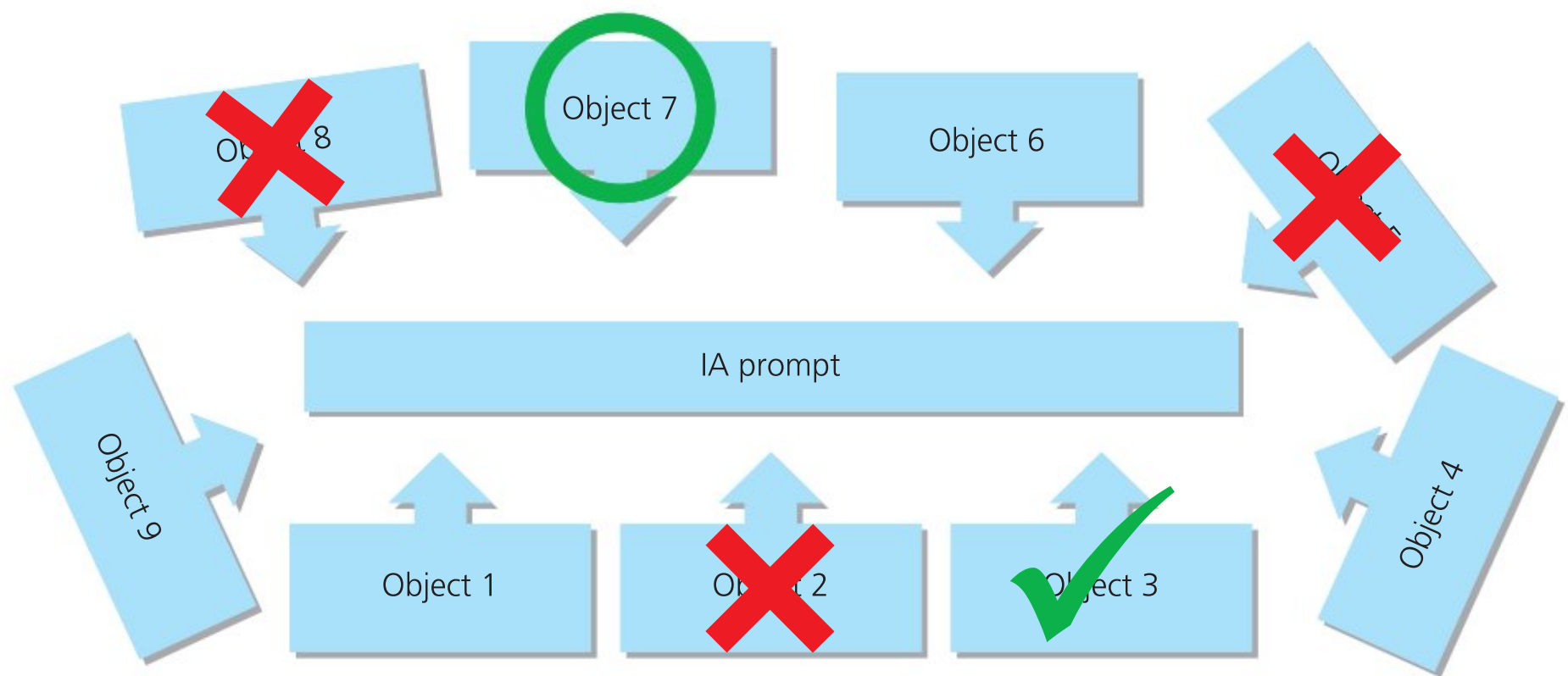
You are now in a position to develop *more convincing* and *more effective* analyses in your commentaries. By making effective choices you will be able to bring out more nuance and show a deeper understanding of the knowledge issues raised by the IA prompt. What you will definitely want to avoid is *using the different objects to say the same thing* or make the same point. Whatever you do, you will need to develop *different ideas* in relation to the prompt.

The top-level assessment descriptor says, ‘there is a strong justification of the particular contribution that each individual object makes to the exhibition.’ The important phrase here is ‘particular contribution’, because it means that you should show an awareness of how each object brings something *unique* to the discussion; it provides a unique contribution that the other two do not.

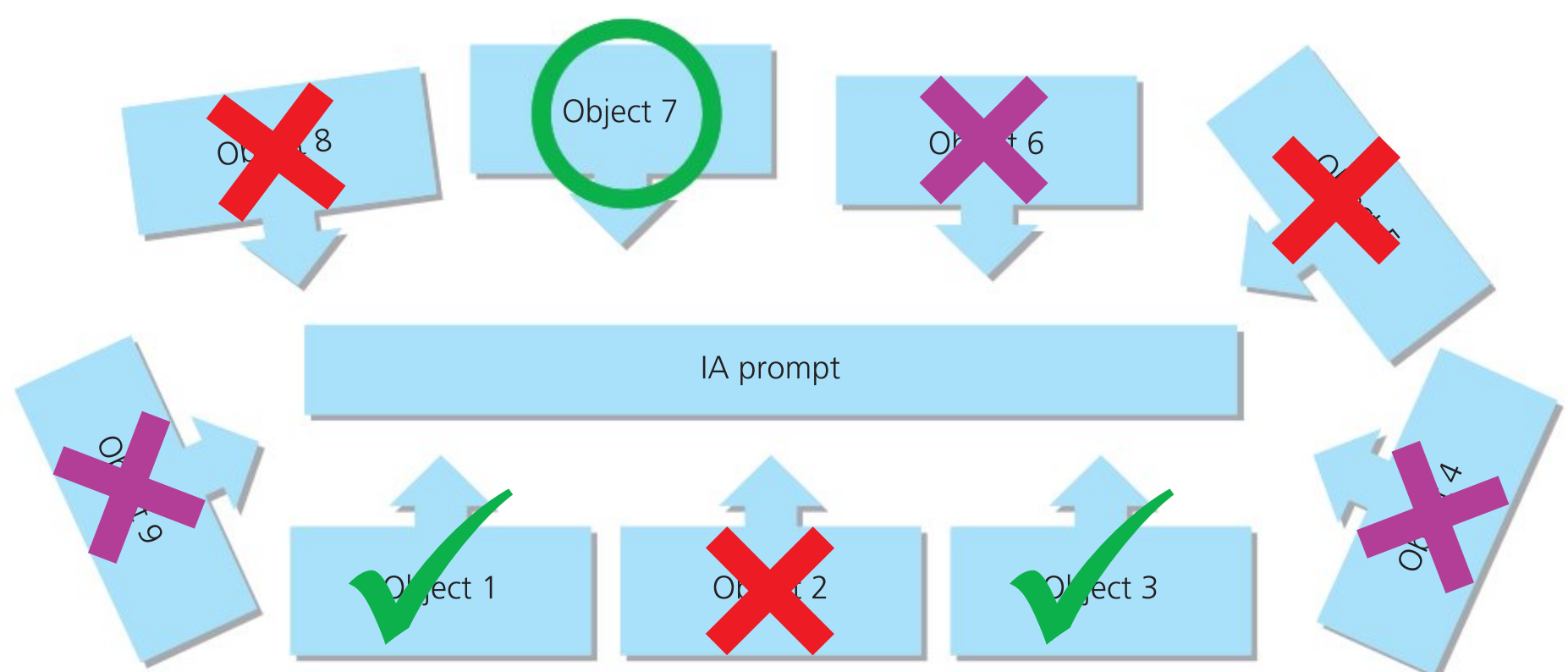
You might, for example, realize that four of the objects essentially illustrate the same point, so you consider the four and choose the one you think you can say the most about in relation to the IA prompt.



You then realize that having chosen one object, another object offers quite a new idea in relation to the title. Perhaps the first object you have chosen (the green tick) illustrates a point in relation to the scope of one theme you are discussing, and you see that another object illustrates a consequence of the scope of the theme in terms of the *methods* involved. You therefore select it.



Now looking over the last four objects you realize that the first two, while providing unique perspectives to the IA prompt, both come from the same *perspective* on the prompt – the same side of the argument. You then look at the other objects and you realize that two of them provide an opposing viewpoint, one that could be added to the exhibition to show a deeper understanding of the material. You brainstorm these two and finally choose the one that is tied to a community of knowers that you are something of an expert in, so will show a deep personal connection.



So now you have made your decisions and you have a pretty good idea of how each object relates to the other two. The first two present different elements of the knowledge framework and the last provides an opposing viewpoint. Essentially, therefore, you have acted like a curator in your own mini exhibition.

Curators (professional curators working at a museum, or web-based ‘content curators’) *choose* objects and present them in new contexts in order to create something new. They don’t just randomly show off objects. Instead, they create connections by placing objects near

other objects, so when you see one, you turn and immediately see the other, highlighting their differences and similarities. A good exhibition curator, therefore, won't simply provide *different* points with each contribution to the exhibition. Rather they will offer a *narrative* in relation to the context provided. They will *tell a story* by placing one object near another.

As a TOK student, then, you have the opportunity to tell a unique story in relation to the IA prompt, one that can be deeply personal to you, and which cannot have been offered by any other IB student in the world.

You will want to take this wider approach when thinking about your objects and what you wish to say with them. The need to be able to explain the 'particular contribution' of an object to your overall project suggests a number of things:

- You must make choices, meaning that you need to identify *more than three* objects from which to choose. Hopefully, your teachers are using objects throughout their teaching, so you should keep track of objects that *they* bring to class, reflect on how they are used in relation to developing your TOK understanding and then use this as a model for your own choice of objects.
- You need to be able to articulate how each object provides a unique and new voice to the conversation you are having with the IA prompt.
- You should consider choosing different *types* of objects. Your objects might be virtual, they could be documents, electronic objects, objects from distinct time periods or conceptual objects like models or formulae. Just try to make them personal in some way. You don't need to own them, but they should be part of your experience somehow.
- You might try to identify *surprising* objects by taking objects out of their familiar context and placing them in a context the examiner might not have expected.

■ Presenting what you think

So, you have chosen your IA prompt, made choices among your objects and settled on a final three. Now you have to write up the commentaries for each object.

In producing the three commentaries you will face the real challenge of the exercise. You will have to provide a 'lucid', 'convincing' and 'precise' commentary (terms from the assessment instrument) for *each* of your objects – in about 315 words each (950 total words). This means you cannot spend too much time describing the object or its specific, real-world context. You must remember that your examiner (ie, your teacher) will *see* the object in the image – so any description should be description about the *context* in which the object exists. If it was a cup of fair-trade coffee, for instance, you would not describe it as warm and tasty, but rather as a product of a whole range of economic and social *values*. However, you should very quickly move into discussing and answering the IA prompt. In the 315 words, you will need to do the following things for top band success, but not necessarily in this order:

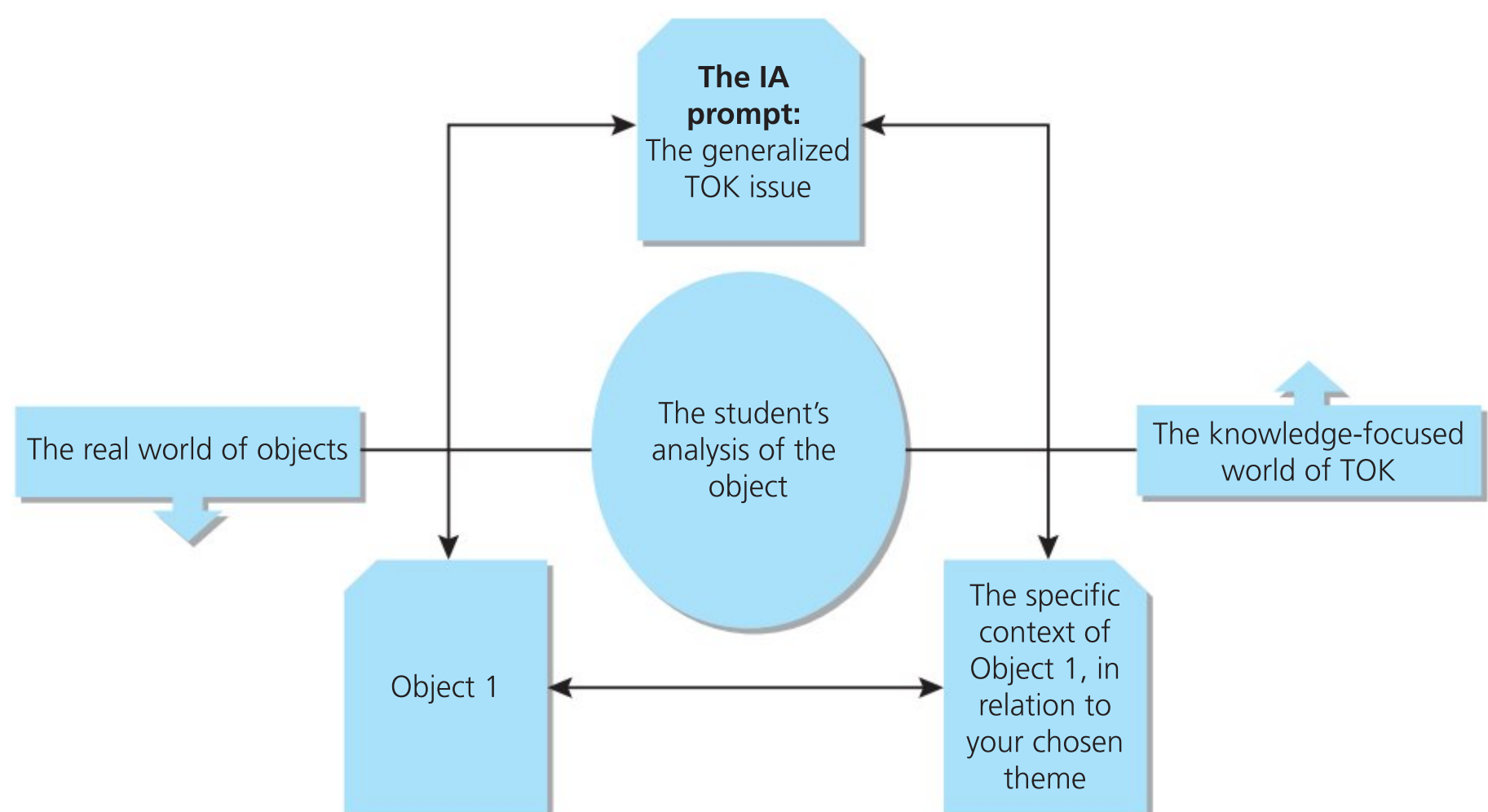
- Describe the *relevant* bits of the object (mostly the real-world context).
- Show how the real-world context links to the IA prompt and your chosen theme.
- *Identify* the *issue* or *tension* related to the theme that is raised by the IA prompt.
- Provide a discussion of that issue or tension through the knowledge that is manifested in the prompt.

This is a lot to do in 315 words! Think of that list as a recipe ... you don't need to move from one to the next, the elements are all mixed together. If you need the structure, you *might* move through bit by bit, as this would be acceptable too, but be aware it might appear formulaic and could end up being not very *convincing*.

Remember the earlier discussion of the difference between *description*, *analysis* and *evaluation* in terms of the essay. Here, too, you will want to keep these three types of thinking in mind, making sure that your commentary doesn't have too much description and is more weighted towards the analysis and evaluation of the IA prompt.

On page 109 we offered the diagram below as a way of thinking about the interplay between the three important elements of any single object's commentary:

- The IA prompt
- The object itself
- The object's specific, real-world context.



We now offer a short example of how that might work in reality.

Suppose I've chosen IA prompt number 14: 'Does some knowledge belong only to particular communities of knowers?' and I have chosen the core theme (Knowledge and the Knower) in order to explore my own knowledge and experience in relation to the knowledge of various communities. I have chosen my three objects: my grandmother's rosary beads, a YouTube skateboarding video that I made and pin badges reading 'I Gave Blood!'

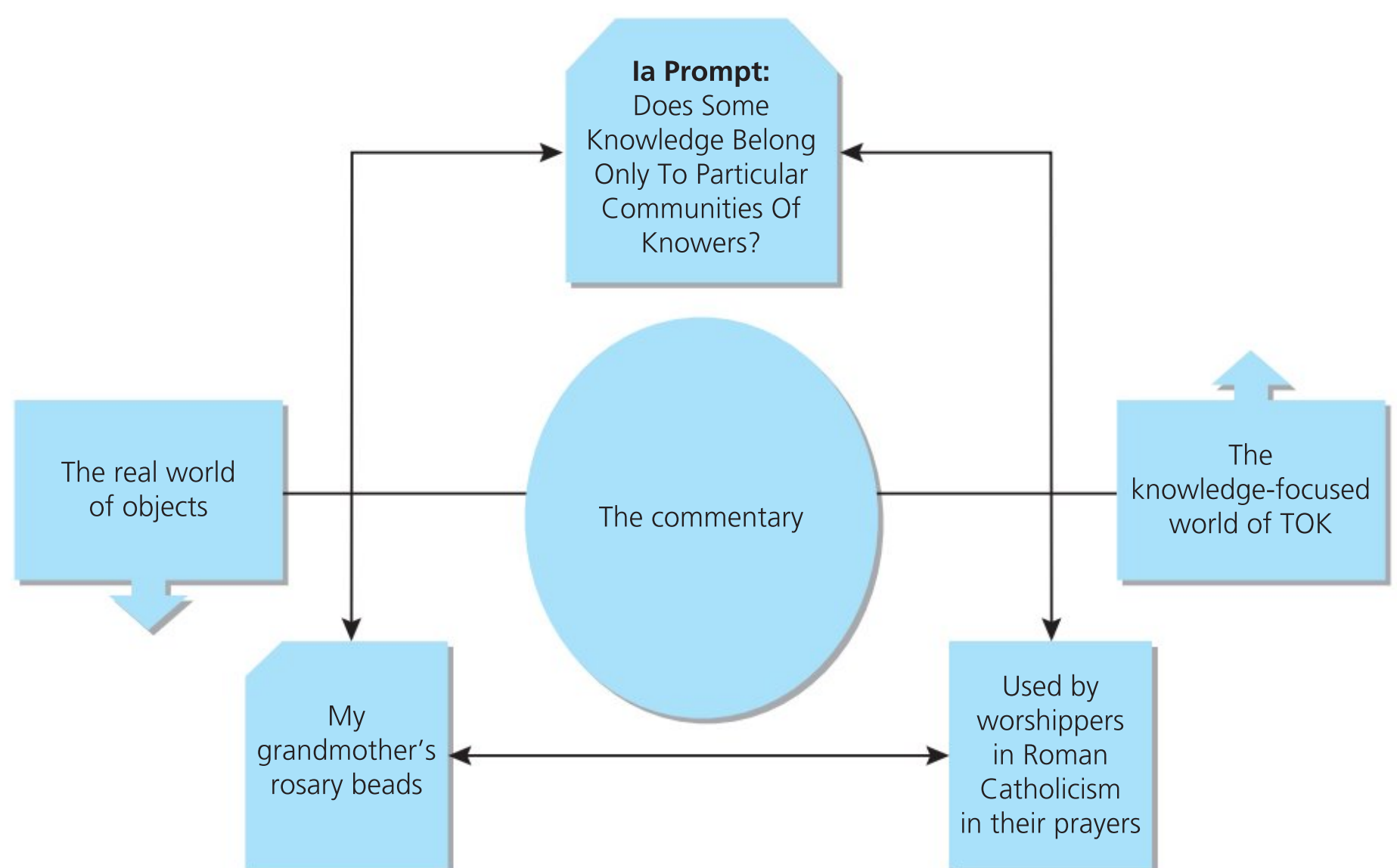


I chose these three objects as a way of bringing out different types of responses to the IA prompt:

- **My grandmother’s rosary beads:** Some knowledge does belong directly to a community and being part of it is required to understand it. In this case, since I am not part of my grandmother’s religious community of knowers I don’t share the knowledge she gains from them.
- **Skateboarding video:** Showing how an individual’s knowledge can be transmitted to others in the community.
- **‘I Gave Blood’ pin badge from my school’s blood drive:** Showing how some ethical beliefs in a community are shared by individuals and can help them make decisions.

I chose these objects with each of the others in mind, hoping that they each make a *different* point and that each contributes to a clear range of possible responses to a title.

Below, I have modelled a commentary of *one* of my objects, my grandmother’s rosary beads. I’ve identified the object and now must consider the specific, real-world context of those beads, which is her use of them as prayer beads in her daily worship as a Roman Catholic. Therefore, for this commentary, Roman Catholics are the community of knowers referenced in the IA prompt. A possible commentary follows the diagram below.



IA prompt 14: Does some knowledge belong only to particular communities of knowers?



My grandmother’s rosary beads are an example of *prayer beads*. These are used in different religions and are an example of how some knowledge *does* belong only to particular communities. If you are not in that community of knowers, then some of their knowledge is unavailable. To those outside the religion, the beads are a simple necklace or piece of jewelry, but to my grandmother and other Roman Catholics, these beads are used in the ritual of their prayers: they will hold each bead individually and say a prayer that is appropriate for that bead. Using this *method*, my grandmother builds and strengthens her religious

knowledge and participates in the community of Roman Catholics. Prayer beads are not a teaching tool for the community, unlike the skateboarding instructional video, so they are not designed to bring individuals into the Catholic community; they are designed to strengthen the faith of those who already believe.

I am not a Catholic, so the knowledge that my grandmother gains or re-affirms when saying her prayers and the experiences she gets from undergoing that ritual are not known to me. The prayers provide a sense of belonging to a particular community and she shows her commitment to that community by 'saying her rosary'. I know the words because I grew up Catholic, but the importance and significance of those prayers are no longer *felt* or deeply known to me, a point made clear when I consider the Muslim *mas'baha* (prayer beads): each of the *mas'baha* beads represent one of the 99 names of God and without this knowledge I cannot use these beads. This shows how important the role of background knowledge is. But even with background knowledge, there is another type of *personal knowledge* gained by participating in the ritual, one that is accessible and 'belongs' only to those in that community of knowers for whom the ritual has meaning.

Reference:

Hassani, Zaineb Al. 20 Aug. 2015. 'Muslim prayer beads: what they are and what they are used for.' *The National*. The National. Web. 1 Dec. 2019. www.thenational.ae/arts-culture/muslim-prayer-beads-what-they-are-and-what-they-are-used-for-1.67166

Analysis of the commentary:

- **Word count:** This commentary comes in at exactly 315 words, which is about what you would want to aim for, for each of the commentaries. This is a very small number of words, really, given the skills that you need to show within the commentary.
- **Description, analysis and evaluation:** In the commentary you'll notice *there is very little description of rosary beads*, certainly nothing about what they look like, what they are made of, or a long description of how they are used. The point of the exercise is not to show understanding of those aspects of the beads, so including it would provide nothing in terms of assessment.

After a quick and direct response to the IA prompt, the commentary shifts immediately to the beads' use in the ritual of 'saying the rosary', followed quickly by how that ritual relates to knowledge. The third paragraph then analyses that further, this time linking it to the *issue* or *tension* in the IA prompt, that of whether the knowledge manifested by the rosary can be known by individuals outside the religious community. The commentary doesn't just raise this question though, it *answers it* (evaluation) by arguing that in this specific instance, the knowledge provided by the ritual *cannot* be known outside that community – this is the direct and explicit response to the IA prompt. Had this answer not been offered, had the commentary only *raised* the issue without a clear answer, the examiner would likely keep the marks out of the top band. The commentary also provides another context to quickly re-emphasize that point from a slightly different perspective.

- **Relation to other objects:** In the response, you will notice that the rosary has been linked to religious *ritual* and has been described as part of the *method* by which the knowledge of a community is developed and strengthened and transmitted to individuals. This was done on purpose, because it opens the door to choosing other elements of the knowledge framework when commenting on the other objects. I might, for example, choose an object which discusses the knowledge of a community, but highlight how individuals within those communities of knowers build their own *perspectives*, while using shared *methods*. Or I might explore how belonging to different communities of knowers might bring with it particular *ethical* obligations which individuals outside the community don't have.

Also, here I have identified an object (the Catholic Rosary) which is in support of one response to the claim (that communities of knowers *do* have knowledge which belongs only to them). I might offer a different approach with my next object, perhaps by choosing one which is designed as a *teaching* object, one designed to share the knowledge of a community with others. I've hinted at this with my *single* reference to one of the other objects I have chosen in my exhibition, the skateboarding instructional video that I used to learn a new trick. *Do not describe other objects in your commentary*; here you can see I merely mentioned it and mentioned it in the context of a point about how the rosary (the main object in *this* commentary) offers a particular contribution to the discussion of the IA prompt.

The idea here is that I have indicated within this commentary what this object *uniquely* brings to the discussion and I have highlighted that contribution here, but will emphasize that contribution through the choices I make with the other objects.

ACTIVITY

Drafting your commentary will be an important step. Once you have a first draft that you are happy with, print it out and colour code it in the following manner:

- Highlight or underscore in red those points or comments which describe the object itself. These are generally just *facts* about the object.
- Highlight or underscore in blue those points or comments where you discuss the object's specific, real-world *context*. These are generally facts about what the object does or how people use it.
- Highlight or underscore in green when you are focused on linking to the IA prompt, applying your points about the object to it, or are otherwise focused on the knowledge issues related to the IA prompt.

Your draft should be weighted more towards the green and blue; the only red bits should be those bits *necessary* to make sense of the blue. The only blue bits should be necessary to make sense of the green. The green bits should be a direct response to the title.

Here's what the commentary above might look like coded. As you can see, *most* of the response is dedicated to actually answering the IA prompt. You might read the green elements only and see if what is said there ultimately is aimed directly at the IA prompt. There is no right or wrong here; the idea is simply that you are thinking carefully and *curating* your own words – making choices and decisions about what to include.

My grandmother's rosary beads are an example of *prayer beads*. These are used in different religions and are an example of how some knowledge *does* belong only to particular communities. If you are not in that community of knowers, then some of their knowledge is unavailable.

To those outside the religion, the beads are a simple necklace or piece of jewelry, but to my grandmother and other Roman Catholics, these beads are used in the ritual of their prayers: they will hold each bead individually and say a prayer that is appropriate for that bead. Using this *method*, my grandmother builds and strengthens her religious knowledge and participates in the community of Roman Catholics. Prayer beads are not a teaching tool for the community, unlike the skateboarding instructional video, so they are not designed to bring individuals into the Catholic community; they are designed to strengthen the faith of those who already believe.

I am not a Catholic, so the knowledge that my grandmother gains or re-affirms when saying her prayers and the experiences she gets from undergoing that ritual are not known to me. The prayers provide a sense of belonging to a particular community and she shows her commitment to that community by 'saying her rosary'. I know the words because I grew up Catholic, but the importance and significance of those prayers are no longer *felt* or deeply known to me, a point made clear when I consider the Muslim *mas'baha* (prayer beads): each of the *mas'baha* beads represent one of the 99 names of God and without this knowledge I cannot use these beads (Hassani). This shows how important the role of background knowledge is. But even with the background knowledge, there is another type of *personal knowledge* gained by participating in the ritual one that is accessible and 'belongs' only to those in that community of knowers for whom the ritual has meaning.

■ The exhibition

The final step in the whole process is the actual exhibition where you show the objects and your commentary to a wider community. This is a required step, but it will be managed by your school. It is not assessed so we cannot really give much advice here, as the assessment aims (if any) will be decided by your school. A list of possible activities is offered by the IB, but your school will make its own decision. Whatever the case, your own contribution to the exhibition stage of the whole process will have greater impact the more specific, personal and meaningful to *you* your objects are.

The TOK subject guide gives several suggestions of the form the actual exhibition might take:

- A class of TOK students could hold an exhibition within one of their regular TOK classes.
- Two classes of TOK students in the same school, or different schools, could host exhibitions for each other.
- A class of TOK students could host an exhibition for younger students in the school.
- A school could host a TOK exhibition for parents and other members of the school community.
- Students could display their TOK exhibitions in a ‘virtual exhibition’ (by using an online virtual gallery space).
- A school could host a combined event celebrating the PYP exhibition, MYP personal project and the TOK exhibition.

■ Breakdown of the assessment instrument

As a way of weaving all of these ideas and pieces of advice together, we will now have a close look at the elements of the assessment criteria, just as we did in relation to the essay.

The top band of the assessment criteria says this:

The exhibition clearly identifies three objects and their specific real-world contexts. Links between each of the three objects and the selected IA prompt are clearly made and well-explained.

There is a strong justification of the particular contribution that each individual object makes to the exhibition. All, or nearly all, of the points are well-supported by appropriate evidence and explicit references to the selected IA prompt.

What does each element mean?

■ The exhibition clearly identifies three objects and their specific real-world contexts

- This should be pretty obvious. If you somehow manage not to identify three objects you will find it very difficult to get any marks at all.
- The real point here is to show an ability to identify the ‘*specific* real-world context’ of the objects. This is why the blue elements in the model response on the previous page are important. The more personal to *you* the object is, the better you will understand and be able to discuss this real-world context. You will also want to make sure that your analysis makes it clear what theme you’re exploring.

- **Links between each of the three objects and the selected IA prompt are clearly made and well-explained**
 - This means that each object, individually, needs to be ‘linked’ to the IA prompt. This is shown in the blue and green elements of the model response on page 124. If you do not specifically attempt to answer the IA prompt, your teacher won’t be able to give you more than 2 points for your work.
- **There is a strong justification of the particular contribution that each individual object makes to the exhibition**
 - While there is no need to discuss the objects *in relation to one another*, you should show that you understand how this object’s contribution presents a particular approach to the IA prompt.
 - You can then highlight this unique contribution by choosing other objects and discussing their link to the IA prompt in a way that brings out another approach to that prompt. This might be a contrary position, or an approach coming from a different element of the knowledge framework.
 - Make these particular contributions explicit by *naming* and *identifying* them in the commentary. You might make the cross-object connections really clear by saying something like, ‘While my first object emphasized the *methods* ... this object highlights the *ethical* element ...’
- **All, or nearly all, of the points are well-supported by appropriate evidence and explicit references to the selected IA prompt**
 - As TOK is a *critical* discipline, you must offer evidence for the points that you raise. You don’t get to simply speculate that things are true, nor do you get to speak for others. You have to give some support for the comments you make. In my commentary beginning on page 122, I used the experience of my grandmother to support the points I was making. Importantly, I was not speculating about *any* or *all* Catholics, I was referring to *one specific real-life example*, which makes for better evidence.
 - Throughout the commentary you should reference the key terms and ideas contained in the IA prompt. These were highlighted in green in the coded model response. Notice that you don’t have to wait until the end before you start applying your ideas to the IA prompt – you can *begin* with direct references too. This shows that you are crafting and curating your ideas, presenting them consciously. Otherwise your commentary might read like you just started typing whatever ideas came into your head.

Conclusion

The final IB assessment, and your worries about it, should only form a limited aspect of the work that you do in TOK. TOK is not about ‘getting more points’ in the IB, although many students, parents, teachers and schools think this. Treating TOK as just another way of earning points is to miss out on all the real benefits that the TOK course offers. No matter what your teachers and parents say, try to remember a few things about TOK.

Thinking critically about how knowledge is produced will help you *be smarter* as you engage with the 'real world'. Out there, there will be all sorts of individual people, institutions, social media sites, politicians and maybe more teachers and professors who are trying to transmit their own knowledge and understanding to you. You are not just a puppet waiting for people to fill your head with *their* knowledge. Sometimes you would be wise to accept their knowledge, sometimes you would be unwise to do so. The whole point of the TOK course is to be able to identify when you should and when you shouldn't.

The tools of TOK will also help you better *learn* the material you are hoping to learn. As you are undoubtedly aware, it is one thing to be able to regurgitate facts, but another thing entirely to *understand* them and to be able to apply them effectively. Having a deep awareness of how knowledge is created and transmitted from communities to individuals will help you understand that knowledge better.

Most importantly, however, TOK also provides you with frameworks for you to understand how knowledge is created so that you can join in the process of creating your own reliable and credible knowledge and your own well-justified perspectives on the topics that are important to you and that interest you. You are part of, and will join, many different communities of knowers in your lifetime, and you have a responsibility to engage with those knowledge communities responsibly. Producing knowledge is a communal effort, and the world is watching. Many of the problems the world faces have a clear link to people not knowing the right things, not having properly justified positions on things and irresponsibly applying that knowledge. The tools of TOK should help you navigate that knowledge landscape fully and responsibly, and will help you to make real-world changes for the better.

Enjoy your knowledge journey.

Glossary

areas of knowledge (AOK): these are the general categories into which the traditional disciplines of knowledge are placed in the TOK course. The TOK course identifies five: mathematics, the natural sciences, the human sciences, history and the arts, but there is no reason to assume that there are only five, or even to assume that the major disciplines must fit into the categories they are placed within

individual knowledge: knowledge that is held or constructed by an individual, as opposed to 'shared knowledge'. Often characterized by 'I know ...'

knowledge framework: a framework comprising four elements, which facilitates a close analysis of a discipline and comparisons between the AOKs

knowledge question: a question about the nature, construction or application of knowledge

objective knowledge: claims whose truth depends on evidence or 'facts' publicly available to a community, or claims about such publicly available facts

paradigm: sets of related beliefs which are used to understand the world around us

real-life situation: in TOK, a concrete situation which raises a knowledge question

shared knowledge: facts and claims that are shared by a community of knowers. Often characterized by 'We know ...'. Not just knowledge that has been communicated, but knowledge which is the product of methods or concepts agreed upon by a community

straw man fallacy: to construct a weak and trivialized opposing position then argue against it, thereby implying that your position is stronger. Literally originating from the straw practice dummies used in martial arts that cannot fight back

subjective knowledge: knowledge or claims whose truth depends on an individual's taste or opinion

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