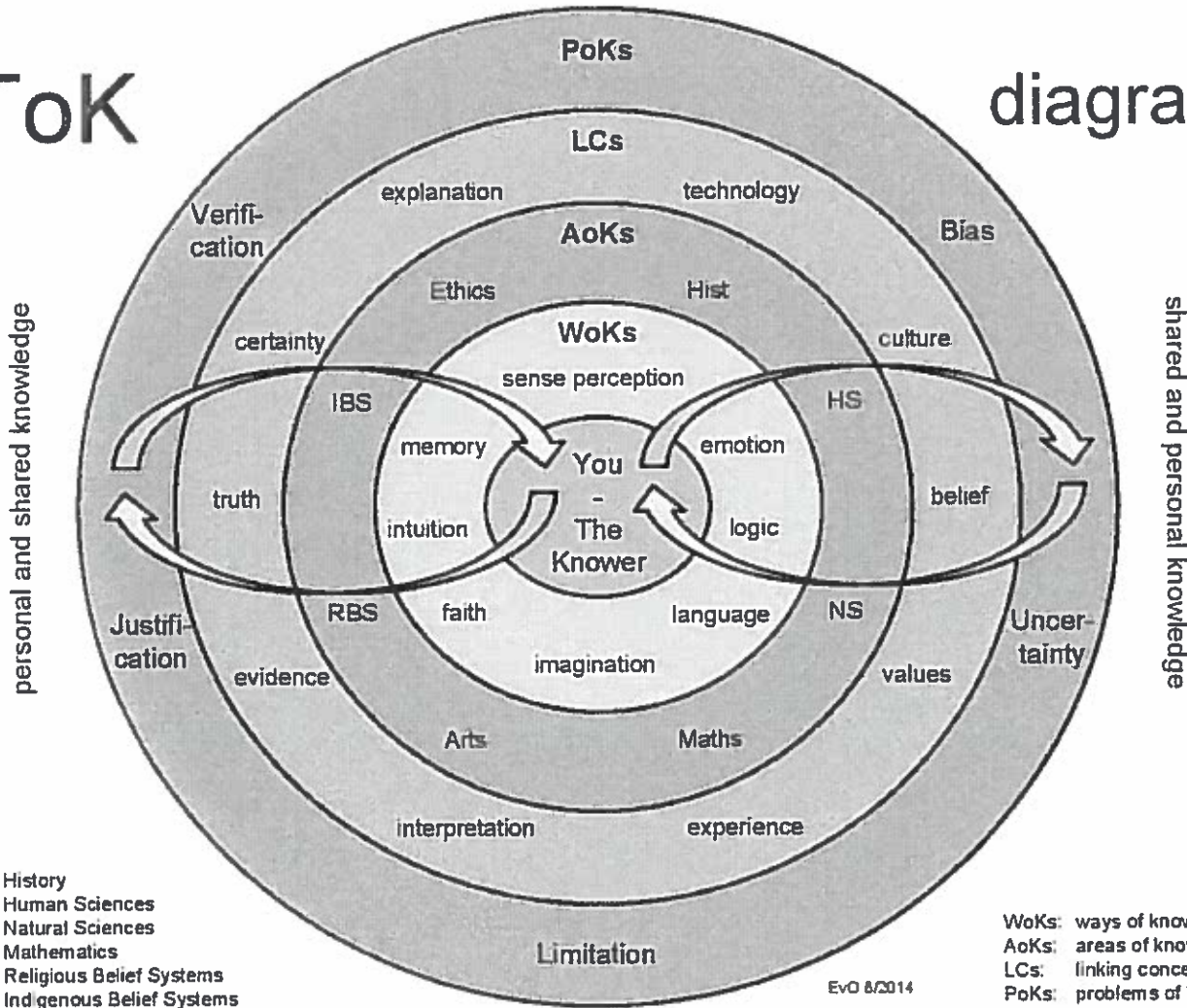


PoK = problem of knowledge
 LCs = linking concepts
 AoKs = area of knowledge
 WoKs = ways of knowing

ToK

diagram



Shared knowledge

Shared knowledge is assembled by a group of people. Most of the subject disciplines studied in the Diploma Programme are good examples of shared knowledge. For example, chemistry is a vast discipline built up over centuries by a large number of people working together. Individual chemists can contribute to this knowledge base by performing experiments. The results of this research are then written in the form of research papers and presented to peers for review. If there is enough corroboration of the results according to standards set by the chemistry community, they are accepted and become part of the corpus of chemistry knowledge. This knowledge is passed on through technical articles written in specialist chemistry journals.*

By participating in the ownership of shared knowledge, an individual belongs to a particular group possessing a particular perspective on the world. The TOK guide states that we belong to many such groups. Examples include:

- family groups
- religious groups
- groups associated with particular academic fields, such as mathematicians
- groups associated with particular views within an academic field, such as neo-classical economists
- groups sharing a particular culture
- groups sharing particular artistic knowledge, such as sculptors
- groups sharing particular interests, such as fishing
- political groups
- national groups
- ethnic groups

Part of adopting an internationally minded perspective in TOK is therefore acknowledging that membership of a particular group is likely to provide a particular perspective on the world that could be quite different to other groups.

The TOK guide also suggests that **shared knowledge is not static**. As our methods of inquiry change and develop, so the knowledge they produce changes. These changes might be gradual, but there are occasions when they might be sudden shifts in thinking. These sudden shifts are sometimes described as paradigm shifts.

Examples of these types of sudden shifts in thinking/paradigm shifts include:

- shifts in the visual arts from representational Western art of the 19th century to impressionism to cubism to abstract expressionism
- the paradigm shifts in economics from the classical economics of the 19th and 20th centuries, stressing the rationality of the individual, to the behavioural economics of the late 20th and 21st centuries, stressing the systematic irrationality of the individual
- the paradigm shift from deterministic physics of Newton and Galileo to the indeterminacy of quantum theory

- the paradigm shift from Freudian views of mental processes to the modern cognitive perspective.

Personal knowledge

Personal knowledge, on the other hand, is not so easily shared. This might be because it is not so easily put into words. The TOK subject guide stresses that this type of knowledge **depends crucially on the experiences of the individual** whereas shared knowledge does not.

Examples of personal knowledge include:

- knowledge I gain through practice and habituation, such as the ability to play football, ski, play the piano, dance, paint portraits and so on
- knowledge of my own personal biography through my memory
- knowledge of my feelings and emotions
- knowledge of the world around me gained through my senses
- unique knowledge that I have constructed as a result of a detailed exploration into an aspect of an existing AOK.

Each type of knowledge identified above is personal and is usually not communicated (and if it is, it is not accepted by the community) and so remains in the realm of personal knowledge, not shared knowledge.

Relationship between shared and personal knowledge

Here are some examples of how personal knowledge can contribute to shared knowledge.

Individual research can contribute to advances in the natural sciences. Paul Dirac's personal insight led to his discovery of the equation for the electron. The form of the equation suggested the existence of a particle that was the counterpart of the electron bearing a positive charge. But Dirac's work had to be validated by the established procedures in theoretical physics first before it was accepted as knowledge by the scientific community.

Individual artists can contribute to the development of a genre. Steve Reich's accidental discovery of the effect of two recordings of a violin going out of phase with each other led him to use this technique in his creation of minimal music. This technique is now widely used in many different musical genres.

Adam Smith's perceptive realization that the market was a mechanism that, under certain conditions, could transform the self-interest of producers and consumers into a socially optimal allocator of scarce resources became a standard method of analysis in classical economics. His insight may have been intuitive and triggered by his own highly individual style of thinking, but it passed the test of peer scrutiny and is now economic orthodoxy.

Examples of shared knowledge influencing personal knowledge.

Exposure to current artistic trends might influence the thinking and imagination of an individual artist (or musician or novelist).

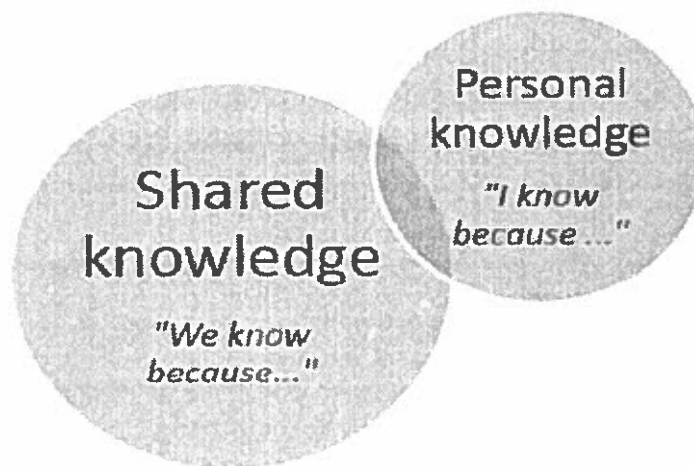
Immersion in the biological sciences and medicine might enable one to understand better one's own medical conditions.

Access to the fundamentals of psychology might allow an individual to develop a deeper understanding of his/her own states of mind.

A course in ethics or moral theory might allow a student better insight into his/her own ethical and moral outlook.

Reading a history of one's own nation might give a deeper understanding of one's own past.

From an individual point of view, shared knowledge is considered to be a form of authority. Knowledge has authority because it has, in most instances, been validated by the procedures and methods of inquiry of the subject area concerned. The individual without recourse to these same procedures might feel that he or she has to take the authority on trust. An example here might be a patient trusting the judgment of the medical profession.



TOK ESSAYS SHOULD CONTAIN

½ SHARED KNOWLEDGE AND ½ PERSONAL KNOWLEDGE

*Tok examiners like it when you include knowledge claims from the courses you are currently studying! Consider one piece of shared knowledge presented to you in each of your classes right now. What questions do you have about HOW that knowledge was obtained?

Shared Knowledge Claim:

- 1.
- 2.
- 3.
- 4.

Question about claim:

The TOK course examines how we know what we claim to know. It does this by encouraging students to analyse **knowledge claims** and explore **knowledge questions**.

Knowledge claims

Examples of knowledge claims within particular AOKs or by individuals about the world:

- The earth can only sustain a finite number of humans, defined as the earth's carrying capacity.
- The picture on the wall is beautiful.
- *The Scream* was painted right *before* the Expressionists and other artists of the early twentieth century made it a trend to put a focus on the expression of their inner feelings and emotions.
- The sum of the squares of the lengths of the sides of a right triangle is equal to the square of the length of the hypotenuse.
- The sun will rise tomorrow.
- Julius Caesar manipulated his way to the position of consul of Rome in 59 BC.

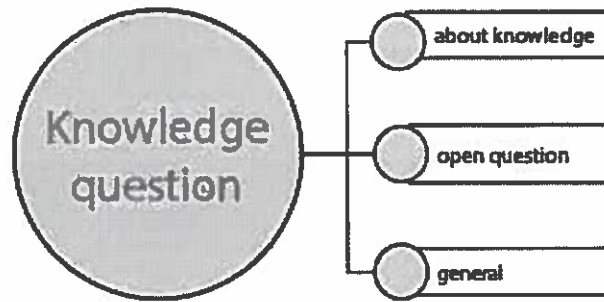
From a student's perspective, they may see our subjects as groups of 'kinds' of knowledge claims.

For many students, success may be defined as their ability to remember or produce knowledge claims that are accepted as being 'true'.

Success in TOK however is found in the student's ability to step-back and address the Knowledge Questions that stem from these knowledge claims.

Knowledge Questions

In TOK we examine the basis for our knowledge claims by asking knowledge questions.



Instead of focusing on specific content, KQs focus on how knowledge is constructed and evaluated.

- The earth can only sustain a finite number of humans, defined as the earth's carrying capacity.
How certain should we be about claims that have not been tested?
- The picture on the wall is beautiful.
Is aesthetic knowledge merely subjective, or can beauty be understood more objectively?
- *The Scream* was painted right *before* the Expressionists and other artists of the early twentieth century made it a trend to put a focus on the expression of their inner feelings and emotions
How much do you need to know about an artwork before you can say that you understand it?
- The sum of the squares of the lengths of the sides of a right triangle is equal to the square of the length of the hypotenuse.
Are we justified in our sense of certainty about mathematical claims?
- The sun will rise tomorrow.
Is evidence of the past sufficient for predictions of the future?
- Julius Caesar manipulated his way to the position of consul of Rome in 59 BC.
How does a historian assess the reliability of sources?

Knowledge Questions force us to examine the nature of knowledge in our subject areas.

Knowledge Questions can be based on doubt, wonder, recognizing unstated assumptions etc.

Any number of different KQs could have been asked for each Knowledge Claim.

TOK: WEIGHING and WORDING KNOWLEDGE CLAIMS

In your presentation and essay, you put forth knowledge claims. Some these claims will be **factual** in nature (e.g. In 2017 the overall immigration level remains higher in Canada than in recent years.) These are claims 'in' knowledge.

Others will be claims concerning the **concepts** of TOK (e.g. scientific knowledge develops in a cumulative fashion). These are claims 'about' knowledge.

HOW YOU WORD THE CLAIMS YOU MAKE IS VERY IMPORTANT

Both of the claims above are stated in an uncompromising way – that the contents of the claims are certain.

But claims can be worded differently. For example:

- X is certain – it cannot be otherwise
- X is probably the case – but there is a small chance that it is not
- X is as likely as not
- X is unlikely but is nevertheless possible
- X is not possible

This spectrum also exists regarding the **confidence** we have in making various claims. For example:

- We know X.
- We are fairly unsure that X is the case.
- We are fairly unsure that X is the case or not.
- We are fairly sure that X is not the case.
- We know that X is not true.

It is important that you do not make stronger claims than you need for your arguments to work. Be prepared to use **modal forms** of expressing your claim. For example:

- It is possible that X...
- X is consistent with the evidence
- It could be argued that X...
- X is not self-contradictory.
- X is logically consistent with Y

While each of these expressions makes a claim, it is much **weaker** than the original one. Saying that X is **possible** is much weaker than saying that X is true. Saying that X is consistent with the evidence is not the same as saying that X must be the case. Rather, it says that X is a possible explanation of the evidence but *doesn't have to be*. Get used to using the appropriate strength of claim for the work you want it to do.

Sometimes arguments rest on **factual claims** and it is particularly important that you get the facts right (and that means checking your sources and giving correct references). But most of the time, factual claims belong to more complex examples that make up a part of the analysis.

Your goal is to **enlighten** the audience or reader. This means that it should *advance* the argument in some sense. The reader should understand a little more about the nature of a particular TOK problem or question. Of course, this will require that some solid conclusions are reached after the more playful discussion or exploration. Your overall attitude is one of exploration NOT dogmatic defence of previously established ideas.

Great work on pointing out assumptions the other day! This is a critical thinking skill to be developed towards your final presentation and essay. There will be a few on the next test as well. Here are some of your thoughts.

1. There is a deep conflict between science and religion.

Assumptions?

- i. Scientists wouldn't believe in God (or Allah or Buddha etc.)
- ii. Science and religion aren't compatible, however, may share some similarities.
- iii. There is something that links (or makes compatible/incompatible) science and religion.
- iv. The negative (i.e. "conflict") may be more important than what unites them.
- v. Assumes there is a conflict or "answer".

2. The arts are relevant on a personal level and so cannot be said to contain "knowledge" at all.

Assumptions?

- i. The arts matter (as they are relevant). People can relate to art.
- ii. Knowledge should be objective or absolute, and not just relative or relevant to the person.
- iii. Knowledge has value (more than the arts if they do not have knowledge?)
- iv. Knowledge has to be same for everyone to be called "knowledge".

3. Psychology is more subjective than physics.

Assumptions?

- i. Psychology and physics have something in common i.e. both subjective.
- ii. Physics isn't as subjective, therefore more objective?
- iii. Content of psychology and physics is comparable.
- iv. The scientific (and social scientific) method can result in subjective and /or objective results.
- v. Psychology is more personal.

4. Indigenous knowledge is primitive and pre-scientific.

Assumptions?

- i. Science is man-made and was created after indigenous knowledge.
- ii. Science is better than i.k.s. (due to connotation of word "primitive")...i.e. it is "right"!
- iii. There is no science in indigenous knowledge.
- iv. Indigenous knowledge is not as useful as scientific knowledge and/or has no place in science.

TRY THIS ONE!

- s. Philosophy is not a mandatory high school subject in Ontario.

TOK: breaking cliches and pointing out assumptions!

Breaking clichés

Example: Science is reason

The break: "While there is something to the claim that science, of course, is founded on reason (more specifically inductive derivation of laws and paradigmatic theories, which are then solidified and expanded by deductive testing), science is of course a complex human enterprise in which knowledge is created through different ways of knowing. Imagination (and the emotions of curiosity and desire to shake the dusty old Newtonian system being taught by doctrinaire professors) led Albert Einstein to revolutionize knowledge in physics.

1. Arts are totally subjective and what is art (or good art) is a value judgement and a matter of opinion.

The break:

2. All of Mathematics is a sealed, certain system of theorems founded upon irrefutable axioms and supported by rigorous proof.

The break:

3. There are no absolute ethical principles, because every society has different ideas of what is right and wrong.

The break:

Making Clear Arguments – TOK (Some help from Richard van de Lagemaat)

An argument is not a series of statements loosely related to a theme, but “a connected series of statements intended to establish a definite proposition”. While loosely related statements merely state things, an argument gives reasons (*premises*) to support a claim (*conclusion*). To see the difference, compare the following two sets of statements:

1. Astrology is the belief that the position of the stars at the time of your birth affects your destiny. There are ten times more astrologers than astronomers in the United States. Despite its popularity, astrology cannot be classified as a science.
2. One of the hallmarks of a genuine science is it makes testable predictions. Admittedly, astrologers do make predictions, but they are so vague that they cannot be verified or falsified. So, unlike astronomy, astrology cannot be classified as a science.

The difference between 1 and 2 is that, while 1 makes three unrelated assertions about astronomy, 2 makes a claim – “Astrology cannot be classified as a science” – that is supported by reasons. A simple test for a good argument in a series of statements is the *therefore* test. If you can put “therefore” in front of one of the statements and have the series make good, coherent sense, you have an argument.

Exercise: In 3-7 sentences, argue well that History is/is not a science, or that History is/is not an art.

Counter-arguments

In TOK, you will not stop at good arguments, however. You will also need good counter-arguments. If you cannot think of good counter-arguments to what you are saying, it is probably so obvious it is not worth arguing at all. But avoid the *straw man fallacy* of constructing and then demolishing weak counter-arguments. If you plan to take a position on an issue, the best way of carrying conviction is to show that it can withstand the strongest criticism that can be leveled against it.

Once you have a counter-argument, you will need to decide how it affects your original argument. There are two main types of responses you can make:

1. Refutation: You reject the counter-argument by showing that it is mistaken, unlikely or unimportant.

2. **Concession:** You allow that there is some truth in the counter-argument and qualify your original argument to take account of it.

Here are two abbreviated, rough-sketch examples to illustrate each of the above patterns of response:

1. We usually assume that human beings are capable of genuine altruism (*claim*), but it could be argued that even so-called altruists are simply doing what they want to do – and so, in a sense, are being selfish (*counterclaim*). However, if everything anyone ever does is described as selfish, it effectively robs the word “selfish” of its meaning, rendering the point self-defeating (*refutation*).

2. The language of universal human rights reflects a widespread belief that values are objective (*claim*); but some people argue that the sheer diversity of moral practices means that there are in fact no objective values (*counterclaim*). Admittedly, different cultures have different views about, for example, sexual morality (*concession*); but I would still argue that there are some core values common to all societies (*qualification of claim*).

2nd Exercise: To the fully developed argument you made in the first exercise, now add a 3-7 sentence, fully developed counter-argument that ends either with a refutation or a concession/qualification.

Now you have constructed a solid, balanced TOK argument/counter-argument pair!