Ritsumeikan Uji Junior and Senior High School: Example Statements for Questioning Our Knowledge Event

Introduction: These are example statements produced by IBDP teachers about what their subject is. TOK students used these as the basis for their critical questioning during the "Questioning Our Knowledge Event". We are attaching "What is Language" and "What is Science" as examples.

What is Language?

There are somewhere between 3000 and 6000 languages spoken by humans today, but these are perhaps not really what we mean when we talk about *language*.

Language is perhaps better defined as the ability to acquire and use a complex system of communication. This *system* can be spoken or written, visual or aural, but what distinguishes it from the ways that animals communicate is that it uses a finite number of elements to produce an infinite range of meaning, and that the meaning is intentional and governed by reason rather than instinct.

Language is virtually universal among humans and the ability to acquire and use it is a unique capability of the human brain. Because of this, many people, such as Noam Chomsky believe that language is a pre-existing or *inborn* human ability.

Some, such as the Swiss linguist Ferdinand de Saussure, suggest that language should be defined as a closed system in which the use of certain symbols are governed by rules, but this idea of a closed system runs into trouble when faced with the ever changing reality of language over years, decades and centuries.

Some, such as the philosopher Ludwig Wittgenstein suggest that the real purpose of language is as a *tool* to help humans work together. He notes that humans always use language to express their ideas to have an effect on their surroundings.

Whichever way you look at it, human language is fundamentally different from the way that other species communicate, and the ability to acquire and use it is perhaps the single most important factor that has allowed humans to become the dominant species on this planet.

What is Science?

Science is mainly a means to investigate the word around us. There is a novel called The Martian
Chronicles written by Ray Bradbury that makes a simple but perspicacious summary of the differences
between art and science that can be paraphrased as, "Science can be used as a means of investigating the mysteries of life and art as a means of expressing and celebrating them."

The foundation of science rests on investigation through the scientific method. The scientific method, as
defined in the Zumdahl Chemistry text, is, "a framework for gaining and organizing knowledge. Science is not simply a set of facts but also a plan of action- a procedure for processing and understanding certain types of information." This is what makes science so fantastic and comprehensive. Yet, as the previous quote alludes, there are limitations to the kinds of questions science can answer. The scientific method is not designed or

appropriate to attempt to answer all questions, but it is an extremely powerful tool when the nature of the question is appropriate. In fact, many fields, such as history, archaeology, and economics are now trying to incorporate the rigors of the scientific method in an attempt to remove bias and legitimize their findings.

To frame what science is in the language of the IB, it would be useful to look at the IB Learner Profile and how it can help us to define science.

Science (and scientists) by its very nature is based on inquiry. The first step in the scientific method is
making an observation and coming up with a question or, in science-y lingo, a hypothesis. The entire pursuit of science comes to a grinding halt without inquiry. Most real scientists fit the IB learner profile extremely well. The following three scientists, while they exemplify all the IB learner profile characteristics, will be used as examples for specific qualities.

Let's analyze these by looking at one of the most famous scientists ever and certainly the most well known of the modern age, the physicist, Albert Einstein. Einstein, early in his career, revolutionized science and the way people (not just scientists) viewed the world around them through his Theories of Special and General Relativity. He was indeed a risk-taker by challenging the conventions of science, but he was led by evidence to alter the way he and subsequent generations would view the universe. However, many people believe Einstein wasted the second-half of his scientific career, because he failed to be open minded enough to accept a second revolution called Quantum Mechanics that went against certain beliefs he held. Some of the work Einstein did laid the foundations for the atomic bomb, although his intention was not for it to be used as such. He also signed a letter to US president Roosevelt urging that the bomb be built as it was believed that Germany was working on such an endeavor. Being both reflective and principled Einstein was later quoted as saying, "I made one great mistake in my life... when I signed the letter to President Roosevelt recommending that atom bombs be made; but there was some justification - the danger that the Germans would make them."

Although the idea of atoms had existed for millennia, John Dalton revolutionized the science of chemistry by providing an overarching theory supported by evidence known as 'Dalton's Atomic Theory'. Dalton was a school teacher, who began teaching at the age of 12. He had several difficulties to overcome such as not being articulate and being color blind, but he managed gain the knowledge necessary to make several important observations that led to his atomic theory and a primitive periodic table based on atomic weights. He overcame his deficiencies in elocution by writing a book entitled, A New System of Chemical Philosophy, a lucid description of his ideas, proving that there are many mediums in which one can perfect the art and/or science of communication.

To emulate these qualities the biologist Jane Goodall is a standout example. She is best known for her 45 year study aimed at understanding chimpanzees living in Tanzania. She exemplifies balance by being involved in the sciences of conservation, primatology, and anthropology among others, but she is also an activist using her knowledge and understanding to try to persuade others that caring goes beyond an interest in the human species and should involve a comprehensive view that pushes humans to care for all living creatures.

Science is difficult to define, but hopefully this helps build a framework for discussing the definition of what science is and what it can do.

AN INTRODUCTION OF LANGUAGE AS A WAY OF KNOWING

T. Chanecka, March 2012

The IBO original Theory of Knowledge diagram

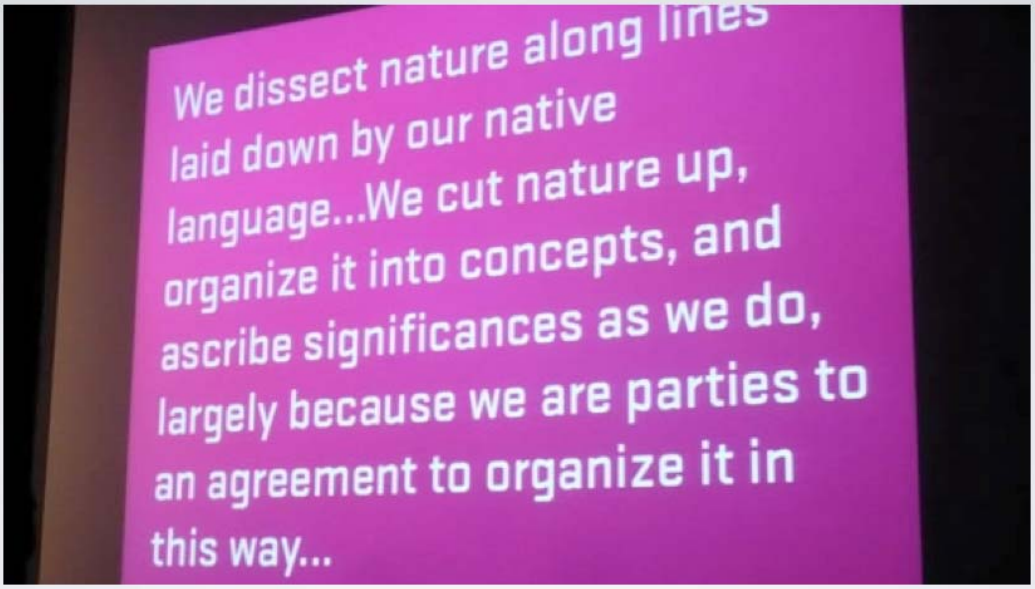
Language as a mystery:

Can you pick up my rishikaa from the dry cleaners?

Language as a mystery

- Do we really know more about a rishikaa or a kansutantine?

The Sapir-Whorf Theory



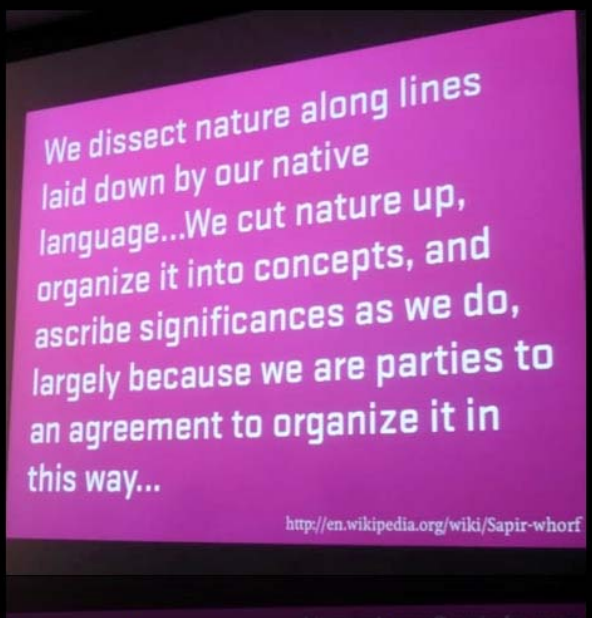
THE HYPOTHESIS

IN OTHER WORDS: OUR LANGUAGE SHAPES AND LIMITS WHAT WE CAN THINK.

Consider these two Japanese Words:

kotatsu
炬燵

wabisabi
侘び寂び



Does it seem that one would be easier for non-Japanese speakers to understand than the other?

SAME WORDS, BUT DIFFERENT VIEWS

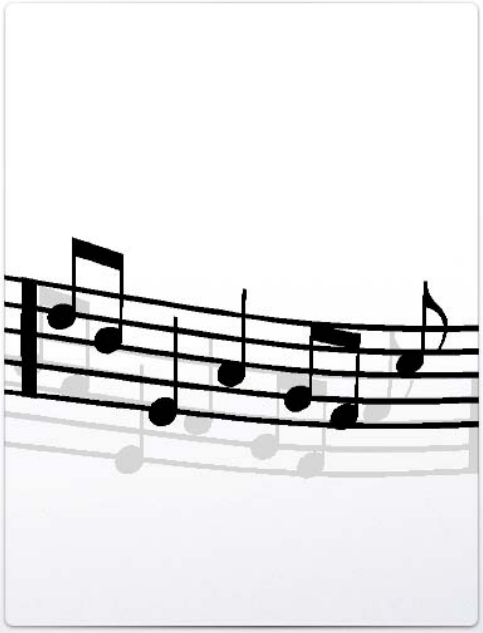
What color is the traffic light?

Language in Areas of Knowledge

Tone

Sine

What else?



Discuss...

Thank You!

TOK Meaning Worksheet “Zoosh”

Name_____

下の文章を読み、設問に答えなさい。辞書を使っても構いませんが、周りの人と相談せず解きなさい。

My friend likes zoosh very much. Zoosh is a kind of bickywan and it mukduks in Eacherton. My friend likes it because it is very ubelgot, so he got fourteen vigerons of it. Not only is zoosh ubelgot, it is also very good for your moperanics. If you have two vigerons of zoosh each day, you will feel wonderful and your moperanics will stay healthy for a long time.

1. What is zoosh?

2. Where does it mukduks?

3. Why does the speakers’ friend like zoosh?

4. What is zoosh good for?

5. How much zoosh does the speaker say you should have each day?

6. Why did I ask you to do this exercise?

Language as a Way of Knowing

1. ３人一組のグループで、下の語をグループ（又はペア）に分類しなさい。なぜそのような分け方にしたのか、言えるようにしておきなさい。

ビール　　challenge　　ボランティア

詫び寂び　　simple　　アピール

cool!

チャレンジ　　grateful　　*kotatsu*

déjà vu　　sushi　　神様　　すごい！

2. 下の選択文の内、他の２つの文と意味が異なるものを一つ選びなさい。
   a) I usually go to the bank on Tuesdays.
   b) I go usually to the bank on Tuesdays.
   c) I go to the bank on Tuesdays, usually.

3. なぜ次の文の意味は複数の意味を持ちうるのですか。
   Yuto ate the bread on the floor.

4. 言語学者は言語は以下の３つの特徴(rules)を持つと言っています。
   1) Language is rule-governed.
   2) Language is intended.
   3) Language is creative and open-ended.

   自分の言葉で、それぞれの特徴(rules)について説明しなさい。

ATHENS AND SPARTA

- Although the Persian troops pushed into Greece, in 480 and 479 B.C. the hoplite armies pushed them out of the Ionian Peninsula.
- This led to a long period of peace in which two city-states were strongest, Athens and Sparta.
- Culturally, they were very different, and other Greek citizens looked more towards Athens for leadership.

Causes of History Worksheet
TOK Class

Which of the following “facts” would a historian likely consider when explaining the reasons for the 9/11 attacks in New York and Washington D.C. in 2001?

a) The U.S. government was slow to react to reports that Osama bin Laden was determined to strike in America, possibly using airplanes.

b) Osama bin Laden’s parents did not die when they were young.

c) The U.S. aviation did not strictly check all passengers for small knives.

d) It was a very clear and sunny day.

e) No one had ever dreamed that Al Quaeda could organize such an attack.

f) Newton’s laws of motion say that objects striking other objects creates force.

g) The World Trade center was not made out of stronger materials.

h) When it became clear that the U.S. was under attack, people became very confused and scared.

国際バカロレア・ディプロマプログラムにおける「ＴＯＫ」に関する調査研究

平成２３年１１月２日
平成23年12月6日改正
平成24年1月12日改正
初等中等教育局長決定

１．趣旨

国際バカロレアのディプロマプログラム（以下「ＤＰ」という）の中核をなす「ＴＯＫ」は、国際的に通用する批判的・多角的な思考力やコミュニケーション能力を育むことに有効な教育プログラムである。

しかしながら、ＤＰは英語等外国語で行われることを前提としており、指導教材はもとより、その目的、内容や指導上の留意点等についても英語で作成されており、その内容を理解することは困難である。

そのため、ＴＯＫに関して、その趣旨、目標、内容や指導上の留意点、さらには、単元の指導・評価案や具体の指導の状況について、その概要を把握することが可能な日本語の資料を作成することによって、日本の高等学校においてＴＯＫを中心とした国際バカロレアの趣旨の理解を深めるとともに、国際バカロレアの趣旨を踏まえた指導を行う学校の拡大を目指す。

２．調査研究方法

別紙のとおり、国際バカロレアに知見をもった研究者・研究グループの協力を求め、現在ＤＰプログラムを実施している学校の実地調査等により、具体的な指導事例の収集等を行う。また、必要と認める場合はその他の者の協力を求めることができる。

３．具体的な調査研究の内容

以下の内容について調査研究を行い、報告書を作成する。

○　国際バカロレアの趣旨・概要
○　ＤＰの中の「ＴＯＫ」の位置付け、各教科との関係
○　「ＴＯＫ」の趣旨、目的（育成を目指す資質や能力）
○　「ＴＯＫ」の指導・評価体系、内容
○　「ＴＯＫ」の指導・評価上の留意点、方法
○　「ＴＯＫ」の具体的な単元の指導・評価計画の例
（核となる指導の固まりごとに複数の事例）

４．期間

平成２３年１１月４日～平成２４年３月３１日

５．その他

この調査研究に要する庶務は、初等中等教育局教育課程課において行う。

（別紙）

国際バカロレア・ディプロマプログラムにおける「ＴＯＫ」に関する調査研究協力者

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＜その他、本資料の作成に協力いただいた方＞

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