THEORY OF KNOWLEDGE BLOG POSTS 2014
by Eileen Dombrowski and Theo Dombrowski

I’ve consolidated here all the posts – 55 of them! -- that Theo and I have made this year, to make it easy for readers to get access to them. Most of these we posted originally on the Oxford Study Courses IB blog site http://blogs.osc-ib.com (collected here with permission), and many of them also appear on my own website Activating TOK http://activatingtok.net. Teachers may feel free to use any of these for classroom reading or activities, following usual conventions to acknowledge the source.

In our blog, we usually pick out current events – both current developments in areas of knowledge and current world events that bring knowledge questions to the surface – and frame them with TOK thinking. In doing so, we hope to support the connections between TOK thinking and the world encouraged in the course and its assessment. More specifically, depending on the topic of the post, we intend to:
- provide fresh examples or resources for use in the classroom to illustrate TOK concepts, methods of areas of knowledge, or the application of knowledge questions to real life situations (as required in the TOK presentation)
- raise ideas for further thought on TOK topics and TOK teaching
- model and encourage the kinds of critical skills we hope that students are developing in the course

We enjoy reading, thinking, discussing, and writing – recreationally. Our final intention is simply to share ideas in this way with each other (lots of good chat) and with a community of people who also enjoy ideas – the community of IB teachers of Theory of Knowledge.


Eileen Dombrowski
December 31, 2014
DOMBROWSKI TOK BLOG

2014

55 POSTS, plenty of TOK ideas

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In this compilation, we have used the post date on which the posts appeared on the OSC site rather than the dates they were re-blogged on Activating TOK.
LOOKING BACK TO 2013

Top Story of 2013: The Struggle to Control Knowledge

By Eileen Dombrowski. December 31, 2013

The top news stories of any year often spotlight knowledge – new discoveries, for instance, or technological achievements. In 2013, however, I’d say that some of the biggest debates centred on control of knowledge. Are all means to gain knowledge ethically acceptable? Who are the appropriate gatekeepers for access to knowledge, and how fierce is the fence they erect? Who gains and controls the benefits that come from knowledge? Who owns knowledge?

Probably the hottest controversy has flared up over government control of information, with debate over what the public has the right to know – or possibly in a democracy the responsibility to know. On one level, this is a story of government secrecy and individual whistleblowing, with Edward Snowden considered, depending on the perspective, either the villain or the hero of the year. Certainly, like other whistleblowers before him, he has met the wrath of his own American government, which has punished those who reveal wrongdoing more severely than wrongdoers exposed. (35-year sentence for Chelsea Manning’s revelations in WikiLeaks!)

Yet it is part of the content of what Snowden has revealed that makes this story doubly about knowledge: he has exposed massive data collection that the American government has made on its own citizens, and spying that it has carried out on allied world leaders. British and Canadian governments also share the scrutiny. The questions that emerge from this blaze are urgent ones, ethically and politically: What information should a government possess about its citizens, and what information should citizens possess about their government? Who should determine the answer to these questions, and according to what criteria? What are the political and practical implications of accepting particular perspectives?

Taking a little distance from this particular news story, we can frame some broad and general knowledge questions:

Who owns knowledge?
How can we determine, ethically, when knowledge should be shared and when it should not be shared?
What is the relationship between ethics and politics?

Although the whistleblowing story has been given far more coverage in the media, other significant stories of 2013 equally centre on the struggle to control knowledge — in the form of copyrights or patents. One event that has passed comparatively quietly is the legal ruling last month that Google is entitled to scan books and share them on the internet, regardless of copyright ownership: “Google’s Book-Scanning Is Fair Use, Judge Rules in Landmark Copyright Case”. http://www.wired.com/2013/11/google-books-2/

Passing far too quietly for their potential impact, according to many sources, are trade deals being worked out by governments with unprecedented levels of secrecy. It is WikiLeaks, not governments, which has shared with citizens the draft “intellectual property” section of the Trans-Pacific
Partnership Agreement which is reported as proposing “sweeping reforms including to pharmaceuticals, publishers, patents, copyrights, trademarks, civil liberties and liability of internet service providers.” For example, intellectual property rules under negotiation would give pharmaceutical companies longer monopolies over drugs, such that cheaper generic drugs that would save lives would be rendered illegal. The international organization Médecins Sans Frontières/Doctors Without Borders (MSF) calls the TPP “the most harmful trade pact ever for access to medicines in developing countries, unless damaging provisions are removed before the deal is sealed”. At the heart of this controversy is ownership of knowledge, with trade rules carrying huge implications for life and death.

Knowledge matters, and it matters who owns it and who controls it. Ownership of knowledge matters to citizens in a democracy who want to accept legitimate secrecy with clarity over what that is -- and who, at the same time, want to hold their governments accountable for the actions done in their names. Ownership of knowledge matters to creators of knowledge who want to benefit from their work, to businesses that want a return on investment in research, and to consumers and citizens who want their own lives and wellbeing to count in the balance against corporate profits. In some of the news stories of 2013 – especially in those that pitted secrecy against sharing – we can see that the concept of “shared knowledge” in TOK is a dynamic one, and can be even a hotly contested one within a social context.

References

infographic on affordable medicines: Médecins Sans Frontières/Doctors Without Borders (MSF) http://www.msf.ca/campaigns/trans-pacific-partnership/
MSF YouTube video: https://www.youtube.com/watch?v=II--xh29SYw#t=15

Googling 2013: questing knowledge?

By Theo Dombrowski. December 31, 2013
IBDP Student Blogs

The end of a calendar year (at least in Gregorian system that dominates most of the globe) is the time for reflection, statistics, and resolutions: global issues vie, in retrospective summary, for comparative significance. Bloggers, talk show hosts, prime time news shows are busy ranking and assessing. Globally, they ask, what are the most important news stories? Scientific discoveries? Sports events? and so on.

Who is better to judge the real significance of news stories, though, than The People? This is where the annual statistics released by Google can give us time to reflect not just on the year that has passed, but the global quest for shared knowledge of current events—well, sort of. It would be no doubt unfair to assume that Google searches are the chief means by which the sum of human knowledge of global issues is increased. (Think of the various news media and good old-fashioned conversation!) Or would it?

Whatever value we might put on them, the statistics on Google searches are cause for reflection. So brace yourself! Here they are. These, apparently, are what mattered most to internet users during 2013:
1. Nelson Mandela  
2. Paul Walker  
3. iPhone 5s  
4. Cory Monteith  
5. Harlem Shake  
6. Boston Marathon  
7. Royal Baby  
8. Samsung Galaxy S4  
9. Play Station 4  
10. North Korea

Many obvious comments could be made about this list—some of them deeply serious, some of them scathing, some of them good humoured. Because it is the beginning of a new year, however, it is probably best to let the list speak for itself and ask yourself a few questions about your own quest for knowledge, particularly of global issues.

1. For which of these did you yourself search?

2. What motivated you to make the web searches you did make this last year?  
a. Did you genuinely want to know more about an event or person of political, social, or cultural significance?  
b. Were you driven by morbid curiosity, the desire for sensationalistic detail, or other emotional stimulation?  
c. Did you want to buy something, possibly but not necessarily involving new technology?  
d. Other reasons?

3. If you compare what you know of the world now with what you knew one year ago, to what extent would you attribute that increased knowledge to:  
a. formal education  
b. news media and personal reading  
c. web searches  
d. conversation

4. And the last question? Isn’t it obvious? As a global citizen with knowledge gaps, what is your resolution for 2014?

(Some knowledge questions to ponder, when you feel like pondering: What ways of knowing are involved in motivation to pursue knowledge? How do you know what sources of knowledge are most reliable? Are we ethically responsible for gaining certain kinds of knowledge and, if so, why? What is the relationship between personal knowledge and shared knowledge?)

| HAPPY NEW YEAR 2014! |

“All cultures have always believed that the map they valorize is real and true and objective and transparent.”


I start the year with a glance back to a post on maps I made December 28, 2013.  
(http://blogs.osc-ib.com/2013/12/ib-teacher-blogs/dp_tokglobal/tok-the-map-the-territory/)

To it, I want to add an enjoyable PS.  
From his book A History of the World in 12 Maps, Jerry Brotton shares “the maps that tell us most about pivotal periods in human history.” Check out this article by Uri Friedman: The Quest to Create the Perfect Map.  
http://www.citylab.com/design/2013/12/quest-create-perfect-map/7989/|
Sensationalizing and distorting science: the media and “shared knowledge”

By Theo Dombrowski. January 5, 2014

“Researchers Shocked To Discover Hidden DNA Code”! Anyone even casually interested in the ever-expanding pool of shared scientific knowledge is likely perk up at such a headline. It takes a lot more than casual interest, of course, to keep track of scientific discoveries: dozens of credible websites (let alone scientific journals) are crammed with articles about yet more discoveries about the human genome—or about yet another exoplanet or species of bizarre beetle. Barraged with far more information than we can grasp, we want, understandably, the news that stands out—a “breakthrough” or, at the very least, “a ground breaking discovery.” And this, in mainstream media, is what we get.

Or do we? A recent episode of the podcast The Skeptics Guide to the Universe focuses on the way that any critical thinker has to be a careful in sifting through knowledge claims—even when those knowledge claims are made in reputable news sources and report the findings of even more reputable scientists. (Minutes 14:06 – 21:42, Episode #440, Dec. 21, 2013.)

Looking at a particular news release on the function of genomes, neurologist and podcaster Dr. Stephen Novella points out with understandable vehemence that a genuinely interesting discovery is virtually submerged by mis-statement and over-statement. In the process of expressing his anger with this particular news release Dr. Novella identifies several useful reminders of ways we can all approach science stories in the media:

1. **First, we should be particularly guarded when we see excitable word choices**, paramount amongst them words like “scientists shocked”, “baffled”, “mystified” or “flummoxed” or when we see any claim that a long-established theory has been “overthrown” or even contradicted.

2. Second, even when we realize that a news story is over-written or sensationalistic, **we should try to look past the silliness to tease out what actually has been discovered—not just for our increased knowledge, but perhaps even more importantly for our appreciation of how scientific knowledge expands**. As Dr Novella says, “I really enjoy it when science news reporting…takes the approach of walking you through the sequence of discovery and the thought process of scientists: this is what we thought, this is what we knew, this is what we didn’t know and this is how it fits into our evolving picture of scientific understanding….”

Of this particular news story he says it is “an exciting new piece—and that’s the story they should be telling”. “Instead they concoct this ridiculous story about how little we knew before and how totally transformative this is.” In fact, this is “an incremental piece of information but it’s like a puzzle piece that’s fitting into an existing puzzle.” Worst, perhaps, a science report like this is a “missed opportunity to tell the story of science and how cool it is.” As he concludes, this press release demonstrates “everything wrong about how to report science.”
3. **Third, we should be alert to the ways in which a news story can be used by ideologues to discredit either science in general or one field of science in particular.** A study that provides a refinement of understanding of such politically charged areas as climate science or evolution can be reported as proof of the weakness of science: “See!” exclaim such contrarians, “Here is yet more evidence that you can’t trust those scientists: now they’re admitting they made mistakes. First they expected us to believe one thing; now they’ve overturned that and who knows how long before they change yet again.” (You might like to look back to an earlier post in this blog: “Uncertainty’ in science: TOK and UN Climate Change Report, Sept 22, 2013)

So why do even reputable news sources sometimes sabotage science by the way they report well-founded knowledge? First, of course, it hardly needs to be stated what everyone knows: sensationalism sells. Other reasons for such misrepresentation are less obvious. **Typically, science stories come to us through three stages, each of which can sensationalize and thus obscure the real news behind the story:**

1. Scientists themselves can exaggerate the degree to which their discovery is a “breakthrough”, particularly if they are desperate to maintain uncertain funding.

2. An institution in which scientists work can issue a sensationalized press release, especially if they employ public relations professionals with the job of boosting the profile of the institution.

3. Third, news media can add another level of distortion not just to sensationalize it but also for other reasons. They may wish to push a political agenda of their own—or with the best will in the world, they may simply get it wrong. Sadly, apparently fewer and fewer news sources hire scientifically trained journalists to write their science columns. Science reporting is ripe for misinformation—or disinformation.

And getting it right is important. Many (though not all) of the critical issues that face our globe can be solved only through understanding science and using it responsibly — food security, climate change, water security, and pandemics among them. It is no accident that the chapter “The Natural Sciences” in the *IB TOK Course Companion* concludes with this social and ethical question: “What responsibilities do societies have for understanding and influencing the sciences?” Recognizing sensationalism in reports on science is one step toward understanding how this area of knowledge actually works and being better able to respond thoughtfully to its findings.

**References**


Another critique of the absurd hype given to the story: [http://www.geneticliteracyproject.org/2013/12/13/scientists-discover-second-code-hiding-within-dna/#.UrnZqGRDsTE](http://www.geneticliteracyproject.org/2013/12/13/scientists-discover-second-code-hiding-within-dna/#.UrnZqGRDsTE)

Image via National Institute of Standards and Technology, quoted from Genetic Literacy Project [http://www.geneticliteracyproject.org/2013/12/13/scientists-discover-second-code-hiding-within-dna/#.UrnZqGRDsTE](http://www.geneticliteracyproject.org/2013/12/13/scientists-discover-second-code-hiding-within-dna/#.UrnZqGRDsTE)
Journalism: Window or Filter on the World?

By Eileen Dombrowski. January 7, 2014

Today I want to step back from the passing show of a year’s events in review to recommend a not-so-recent commentary on the very nature of journalism and its relationship with truth. I encourage everyone to listen to a 10-minute BBC World Service broadcast from two years ago in which Owen Bennett Jones introduces Martin Bell for his commentary, based on earlier writing (1997) reflecting on his years as a war correspondent, entitled The Truth is Our Currency: reflections on the limits of neutrality.

What’s ultimately essential to TOK is not the specific stories of a given year but the continuing questions of knowledge: What is the truth? Analytically, what influences the reports that we are given on events in the world — what assumptions, what values? What perspectives can be identified, and what influences of bias or power? How do they affect selection, emphasis, and the colouring of emotion or values? How can we evaluate sources of shared knowledge to gain, most reliably, our own personal knowledge?

The concept of shared knowledge in TOK is a gripping one, as it embraces both the knowledge claims shared through rigorous methodologies in some areas of knowledge and the knowledge claims circulated in personal circles and the media. For the shared knowledge of journalism, Martin Bell in this podcast makes an excellent case for reporting does not aspire to be objective in the sense of being detached from life, but instead takes humanity into account and aspires to be fair.

References
http://www.bbc.co.uk/programmes/p00mczly

International school kids ha ha

By Eileen Dombrowski. January 16, 2014

Do you share an experience with writer Autumn Jones? You’ll recognize it pretty quickly if you do! I urge you to take a minute (you’ll be glad you did) to scroll through “An International School Kid (‘Your accent is so strange, you must be Canadian?’)” In TOK, we talk about scientists sharing knowledge, and artists sharing knowledge, and indigenous people sharing knowledge. Some of it is shared through a conscious methodology, and some of it is shared culturally. Where would you place the shared knowledge raised in this article? (And why did you laugh?) This article, unsurprisingly, was forwarded to me by a friend who was once an international student in my international class. Guess where her kids go to school!

References
http://www.buzzfeed.com/autmnjones/signs-you-were-an-international-school-kid-grak
Diversity of indigenous knowledge


In TOK, “indigenous knowledge” has been added to the spectrum of areas of knowledge we treat in the course. Yet what is the basis of this category “indigenous knowledge”? The map above is of aboriginal languages before colonialism, and what a diversity of language and culture it reflects even within the single continent of North America! Perhaps a good look at this map, and further examination of the extreme diversity of indigenous languages and cultures across the world, will prompt some serious knowledge questions about classification of groups as “aboriginal” or “indigenous”. Is the classification — using observation (WOK sense perception and reason) and WOK language — based on cultural characteristics held in common, or instead on historical and political situations imposed in common upon groups of unlike people?

Even more central to TOK are questions about the commonalities of knowledge within these diverse groups. In the Theory of Knowledge IB course companion, I follow the features proposed by the United Nations Educational Scientific and Cultural Organization (UNESCO), such as knowledge that is holistic and rooted in the specific land on which a cultural group lives.

Yet I remain uneasy. Do these features freeze the knowledge of cultural groups at a particular historical moment — as if they learned nothing more after they were colonized? If we are talking about traditional knowledge, why pick out the traditional knowledge specifically of conquered and colonized peoples?

Personally, I find the inclusion of Indigenous Knowledge within TOK areas of knowledge fascinating and magnetic, partly because it prompts us to come to grips with categories of knowledge — and consider who developed them, when, and why. Including it also requires that we recognize the contexts of politics and power within which knowledge is embraced or marginalized — or even suppressed, as were so many of the aboriginal languages shown on the map above.

If we aspire to be open-minded inquirers, as in the IB Learner Profile, then discussion of Indigenous Knowledge in a class context stands to take us into appreciation of the “values and traditions of others”, applied to cultural knowledge. If we approach it without these qualities, however, we risk adding further misunderstanding and affront to groups and individuals whose knowledge, historically, has so often been trampled.

References


“When will we ever learn?”: the arts and shared knowledge

By Eileen Dombrowski. January 28, 2014

“The establishment has always been concerned about music,” folk singer Pete Seeger said about his peace and protest songs. “I’ve quoted Plato for years, who wrote, ‘It’s very important that the wrong kind of music not be allowed in the Republic.’ And I’ve also heard there’s an old Arab proverb, ‘When the king puts the poet on his payroll, he cuts off the tongue of the poet.’ I think they’re both right.”

Pete Seeger, who died yesterday at the age of 94, knew something important about the arts as an area of knowledge. As we treat the arts in TOK, we are dealing with far more than the question, “How do we know what is beautiful?” We are dealing not just with beauty but also with meaning and communication – the very essence of shared knowledge. We are dealing with ways of knowing that show us the world as it is, and with imagination that suggests to us that another world is possible.

Pete Seeger used his music to protest what he saw as wrong in his American society – opposing the Vietnam War, for instance, and supporting the civil rights movement. Despite being blacklisted in the McCarthy era, when even suspicion of communist leanings was treated as a crime, Seeger persisted in using song to make political comment. Reviving and reworking folk songs, and writing his own, he was an influential force in American music, inspiring many other musicians and ultimately reaching a large audience.

In TOK he provides a fine example of creating art from a perspective (personal, cultural, political) with a purpose, and of the effect of the arts to bring groups of people together in shared response and expression. Many of his songs, from his anti-war song “Where have all the flowers gone?” (“When will we ever learn?”) to his version of the gospel song “We shall overcome” that became the icon song of the American civil rights movement, also exemplify how music, literature, painting or the other arts, even when rooted in specific times and places, can often resonate both emotionally and thematically in a way that could be argued to be universal.

Playing one of Pete Seeger’s songs in TOK class could open a good discussion on the kind of knowledge shared in the arts.

References


Above, Joan Baez sings “We Shall Overcome” in 2009 in Prague, with President Vaclav Havel, himself formerly a writer and dissident. Another context, another layer of meaning. https://www.youtube.com/watch?v=5FbAVOdA15c
Belief and bombs


Hardly a day goes by in the approach to the Sochi Winter Olympics without yet another news story about terrorist threat. The assumption underlying these stories seems to be that the terrorists in question are so strong in their unshakeable beliefs that they are willing to kill themselves and hundreds of others to achieve their political and/or religious goals. (In this case, it seems to be both religious and political if there really are links to the Buynaksk terrorist group.)

For a TOK class, the terrorist threats at the Olympics can raise questions about any of the following, interesting to explore:

- the language of labeling—words like terrorists, jihadists, freedom fighters, revolutionaries, guerrillas, insurgents and so on.
- identification of underlying assumptions behind the claim, often made, that the Olympics deserve special insulation from all political activity, as an example of the role of unstated premises in knowledge claims.
- ethical systems based on weighing consequences, as distinct from ethical systems based on identifying and following principles -- and the differences between them in justifications offered for particular conclusions and actions (more specifically, ends and means, particularly when violence is involved)
- the justifiability of basing any irreversible action on unpredictable effects.

However, the issue of extreme beliefs leading to extreme actions raises further, and perhaps less obvious, issues.

**Extreme actions – from extreme beliefs, or squelching of doubt?**

A current book and an even more current radio broadcast/podcast based on the book treat this topic of belief and action. The book Ethnographies of Doubt, Faith and Uncertainty in Contemporary Societies, edited by Mathijs Pelkmans, is discussed by the editor and one of the contributors, Alpa Shah, on the BBC radio show “Thinking Allowed“, hosted by Laurie Taylor. The outline of the book is also available online.

The entire thrust of the book (and podcast) is to encourage us to question some of our assumptions about those who generally appear to be utterly convinced of their beliefs—and willing to act on them. In fact, in working with groups of both religious and political “believers” over many years, both Mathijs Pelkmans and Alpa Shah report several findings, some fairly predictable, others not.

One such finding is that the newly converted—having overcome doubts—often appear to be the most certain in their beliefs. According to Pelkmans, “Recent converts are often particularly fervent in acting out their conviction, precisely because of their greater need [and momentary ability] to suspend lingering doubt.” He adds, “intense ideological movements can only retain their fervor by actively denying ambiguity.”

Another finding may be familiar to those who have noticed couples in romantic difficulties,
making a major commitment in order to overcome doubts (through deciding to get married or have a child): “rather than necessarily leading to inaction (although that is certainly a possibility), doubt may also be a facilitator of action by triggering a need for resolution.”

In the book’s Outline, Pelkmans further states:

“Religious and secular convictions can have powerful effects, but their foundations are often surprisingly fragile. In fact, the firmer the endorsement of ideas, the weaker the basis of these notions may be. Recent converts are often particularly fervent in acting out their conviction, precisely because of their greater need (and momentary ability) to suspend lingering doubt. And intense ideological movements can only retain their fervor by actively denying ambiguity.”

Even more surprising, perhaps, are two more findings:

a. doubt is widespread amongst even the most apparently absolute in their beliefs. (How strange, perhaps, to think of some of the most notorious terrorist acts like 9/11 or the Kenyan shopping mall massacre as committed by wavering believers.)

b. such doubt is constantly changing—waxing and waning over many years.

It is not surprising that we tend to equate extremist action with extremist beliefs. Even in academic circles, however, Dr. Pelkmans points out, when we read about ideologies, for example in anthropology, we get a distorted impression about the levels of certainty for two reasons:

First, those who speak about the levels of their beliefs tend to overcome many doubts in the very act of talking about them.

Second, we “tend to look at action or fully articulated ideologies rather than ‘catching doubt in midair.’”

Alpa Shah, one of the contributor’s to Pelkmans’ book, says something similar: “I’m very interested in the dialects between certainty and uncertainty, doubt and clarity which people are always dealing with. You like to label these people as revolutionaries or terrorists...in fact, people are inhabiting this middle ground and the decisions which lead them to one or the other are based on all kinds of relations of doubt and uncertainty and it’s that which causes action.”

Doubt and knowledge

This book and podcast on Doubt, Faith, and Uncertainty raise many issues of critical relevance to the Theory of Knowledge course. In TOK, we recognize the constructive role of doubt: in everyday life and in areas of knowledge such as the sciences and history, doubt activates further inquiry. Doubt in itself is not a weakness in knowledge, we might venture to say, but part of the process of building it.

Ideally, Theory of Knowledge students, unlike those described in Pelkmans’ book, are not interested in denying ambiguities but instead in exploring them in an open-minded way. They are not interested in squashing doubt but instead in assessing the most reasonable level of doubt or certainty. (See IB TOK Course Companion, chapter 3, on Seeking Knowledge.)

For IB students, TOK also fosters an ethical appraisal of actions based on knowledge claims. After all, their actions, according to the learner profile, are supposed to “help to create a better and more peaceful world.” How do we know what actions those are? An examination of ethics as an area of knowledge yields various ways of responding, with a thoughtful treatment of ambiguities.

In many ways, then, TOK stands against the terrorist’s squelching of doubts and violent
actions: it recognizes ambiguities, treats doubt as constructive and accepts degrees of uncertainty, and appraises ethically the connection between beliefs and action.

References


Photo Credit: markchadwickart via Compfight cc

Memory as a way of knowing: some resources

By Eileen Dombrowski. February 7, 2014

In TOK, we’re always on the lookout for fresh resources as we prepare topics and plan to stimulate class discussion. Sometimes the best sources of ideas turn out to be….our colleagues.

This is no surprise for anyone teaching a subject that, in effect, talks about everyone else’s! So it will also be no surprise if I draw your attention to posts on this Oxford Study Courses blog site by my blogging colleague Laura Swash, writing about psychology.

Have a look at her January and February posts on memory, a topic in psychology that is also, in our new course, a TOK way of knowing.

Her January 5, 2014 post, “The Cognitive Level of Analysis”, lists resources that are immensely useful for TOK. Particularly beneficial for a TOK class, where we’re not lecturing on subject matter but encouraging student engagement and discussion, are the resources from The Open University. On its website are some very short videos (some just 5 minutes) including memory tests students can take themselves. Many of these could launch a good discussion or give an outside voice on questions already raised in class.

Laura also links to a longer video that gives further background on memory. Her February post, “Cognition and emotion – flashbulb memories” raises questions about the reliability of memory that we also treat in TOK class as we deal with how ways of knowing interact. Thanks, Laura, for these resources.

I’ve certainly dealt with memory as a way of knowing in my own 2013 book, The IB Theory of Knowledge Course Companion (chapter 6), with class activities and background. But any book is best used in combination with other...
resources that complement what written activities can do to stimulate discussion. What could be better than a short video memory test to get students engaged?

Memory as a way of knowing, in my opinion, is a particularly magnetic topic for students. Memories are intertwined with their own sense of identity – both in their personal recall of experiences and in their acceptance of a “collective memory” within their cultural or social community. Moreover, memory provides justification for so many knowledge claims that its reliability and persuasive power are valuable to consider in class. It’s a topic actively researched within the cognitive sciences so that our understanding of how it works – and for TOK how it acts as a way of knowing – continues to shift and grow.

Photo Credit: Tom Rydquist via Complight cc

How wolves change rivers: variables and causation

By Eileen Dombrowski. February 22, 2014

This four and a half minute video, with splendid filming of animals in Yellowstone National Park in the USA, could be effective in a TOK class on the topic of the search for cause in the natural and human sciences: http://youtu.be/ysa5OBhXz-Q It could be used to stir thoughts (or summarize them) about causes, variables, experimental controls, and the limits of experiments outside a lab.

It’s not often that in nature, with all its intricately interconnected variables, one variable can be traced for its consequences (a “trophic cascade”) as persuasively as the re-introduction of wolves into Yellowstone. Hmmm…. Am I overstating? I suppose it could easily be argued that we’re changing variables within the natural world all the time and that we are confronted only too dramatically, far too often, with appalling consequences! But this example, unlike many, involves action deliberately chosen with prediction of good consequences for the natural world. And, unlike many, it is beautiful and hopeful to take into class.

Definitely not the Olympics!: kinds of knowledge and ways of gaining it

By Eileen Dombrowski Sunday, February 23, 2014

I’ve just posted “Definitely not the Olympics!” in my parallel blog for students, using the Olympics (and my own utterly non-Olympic experience) to raise some knowledge question about the interaction of kinds of knowledge and ways of knowing. Have you also brought the Sochi Games into TOK? The Olympics certain provide some splendid examples of gaining knowledge (what kind? gained how?) and testing it in practice and demonstration. Playing a short video clip of aerial skiing, slope style snowboarding, or ice dancing could launch class discussion that covers the TOK map and knits together threads that the course disentangles for purposes of discussion.

My own emphasis on “wipe-outs” — those moments of failing (sometimes spectacularly) to gain or apply knowledge — is simply a personal sense of humour that works in my
own classroom. Students who would be embarrassed to talk about their successes for fear of being thought to brag are likely to respond, with gusto, with tales of their own metaphorical belly flops. Others who would be embarrassed to talk about their failures for fear of losing the good opinion of their classmates often talk very openly about flops in the process of learning. Knowledge, after all, is often most entertaining when it's actively in process.

**BELOW: the companion post from the student lobe of this blog.**

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**Definitely not the Olympics!**


Yes, that's me sprawled in the soft snow -- and laughing. I thought I knew how to turn sharply left at the bottom of the steep hill. But evidently -- put to the test -- I didn't. This is definitely not the Olympics!

Have you, like me, been watching the competitions from Sochi? Do you, like me, cry out in sympathy when athletes wipe out? These people are all so skilled at hurtling swiftly over slippery surfaces or spinning their bodies in the air. They possess a knowledge that most of the rest of us can understand only by analogy to our own more moderate activities. And the medal winners -- put to the test -- show how brilliantly well they know!

But what kind of knowledge is it that a aerial skier possesses? (I watch with astonishment that people would even think of doing that with their breakable bodies!) What knowledge is it that a champion ice skate has gained and can demonstrate so gracefully that it looks easy?

In TOK, we often divide knowledge into different kinds: knowing how (skill), knowing that...(statements that something is so), and personal experience. This distinction is useful for thinking and talking about knowledge. But do you think that these kinds of knowledge stay separate for hockey players or snowboarders? How would you say they interact?

In TOK, we also talk about eight different ways of knowing. Again, this model of 8 ways is useful for bringing out distinctive features of each one. But would you say that they stay separate as the athletes we've watched during the Games learn their sports, and then learn to compete? In what ways would you say they interact for the luge or snowboarding?

And...I wonder. Do we gain more knowledge through our successes or our failures? Have you ever "wiped out" fairly dramatically -- in sports, in school, or in social life -- and found that you recognized, as you picked yourself up, something you'd never known as fully before? Our lives, with our own versions of wipe-outs or medals, are definitely not the Olympics. But we do live with many of the same questions of knowledge that are vividly in play in the Games.

Next time I try that same hill, I hope I'll make the turn!
Bellyflops and knowledge: “risk-taking” and TOK

By Eileen Dombrowski Tuesday, March 4, 2014.

In my last post, I was connecting wipe-outs (even if not of Olympic proportions) with the whole process of gaining know-how, and with much of its energy. I’ve been mulling further.

Isn’t it valuable in a TOK class to encourage students to take their own bellyflops more lightly in terms of failure and more seriously in terms of learning? The IB learner profile presents being a “risk-taker” as a goal. But what does this mean in an educational context, and how is it relevant to TOK?

“Risk-taking” as a concept: implications of accepting a definition

For one thing, the term “risk-taker” gives a very clear and quick example for students to think about regarding one of the important concepts of the TOK course: that the terms in which ideas are presented, and the concepts on which discussion is therefore centred, affect how knowledge is sought, gained, and interpreted.

Indeed, in hot public debates, different interest groups compete to have issues discussed in the terms in which they themselves frame them. (Is the source of oil in Alberta the “tar sands” or the “oil sands”, and what is implied by the difference in choice of words?) In new scientific theories or historical interpretations, thankfully with some removal from the rhetorical screeching of some public media, the concepts that move to the centre influence the way knowledge is constructed.

Choosing an easy example such as “risk-taker” focuses student attention on the different directions discussion can take, and action can follow, from accepting particular definitions.

I don’t personally share the admiration often given to some forms of risk-taking. Personally, I consider climbing unclimbed mountains or sailing unsailed seas often to be egocentric activities undertaken for personal glory; they waste resources, cause others untold worry and trouble, and sometimes (Mt Everest) damage the environment. Similarly, I consider the risk-taking of the so-called “captains of industry”, sometimes presented with warlike imagery on business pages of newspapers, also to be nothing but pursuit of personal benefit — with the risk (of not making a profit) not to be their risk primarily in any case. Above all, I think of risk-taking as exactly what I want teenaged students NOT to do! As a parent and a teacher, I want with all my heart to guide students through their teen years without their wrecking their bodies and minds on impulsive and reckless behaviour.

The IB profile gives a declaration, as if voiced by IB students, of how risk-taking is defined in its educational terms:

Risk-takers
We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.
This is not a common understanding of risk. But it’s certainly one I’m more inclined to embrace! In the wide range of what “risk” is considered to be, it’s clear that the definition of the concept sets the terms of discussion, the nature of aims, and the kinds of actions encouraged. It’s a quick and easy term for demonstrating the implications of definitions adopted.

“Risk-taking” as behaviour appropriate to TOK
In terms of TOK, I return to the risk of bellyflops – the dive that goes a little wrong, so that the diver smacks his or her stomach (ouch!) on the surface of the water. It stings...sometimes a lot. But it’s not life-threatening, and it is part of the process of learning to take the plunge more adeptly.

I’d say that TOK is the perfect class in which to encourage students to take the kind of risks that the IB recommends – to be adventurous in exploring ideas in cooperation with others and to try out “innovative strategies” of problem-solving and communication. In class discussion, students can try out new concepts and think through different perspectives – even if they aren’t initially very adept at doing so. In the class presentation, they can push both their thinking and their comfort level with different methods of communication. It’s a class for trying things out.

TOK, after all, is pretty safe. Although many a TOK teacher has lamented the minimal credit given to the course in terms of IB points, I’ve always thought of that alternative marking as a source of freedom for the course. While teachers of Higher Level subjects feel the pressure of getting their students to score well, TOK teachers can be a bit more relaxed. We can guide students to risk fresh ideas and strategies, and to take challenges – knowing that students’ Diplomas and university acceptance are not themselves at risk. Students might feel that they “failed” in trying out a new way of thinking or method of presentation – but we can help them to frame such risk as part of the process of learning, of gaining know-how, insight into alternative perspectives, and self-knowledge.

A bellyflop can sting – but not for long. And if students never risk the plunge, they may never learn to dive confidently into ideas, their implications, and consequent action.

Photo Credit: CRASH:candy via Complight cc

Skepticism – a million dollar challenge

By Theo Dombrowski Saturday, March 15, 2014

Many a TOK teacher has added spice to a discussion on the scientific method by tossing in, for critique, pseudoscientific knowledge claims made by astrologists, psychics, ghost hunters and the like. Guaranteed to ratchet up interest even further is the fact that a cool million dollars awaits anyone who can demonstrate “paranormal” ability.
For many years, former magician James Randi has been working to counter the claims of pseudoscience and to spread scientific skepticism (or “scepticism” if you use British spelling). Putting his money where his mouth is—literally—he has been offering a million dollars to anyone who can demonstrate paranormal abilities. So far no one has been able to do that.

James Randi and his educational foundation (the “JREF”) is probably the most colourful element in a movement particularly strong in the United States but with many international parallels. In fact, any TOK teacher or student who has checked out knowledge claims which are not accepted by the “scientific establishment” is likely to have come across a blog, podcast, or book by a member of the so-called “skeptical movement.”

In fact, if you’ve been following this blog, you’ve likely noticed references to such podcasts as “Rationally Speaking”, “Point of Inquiry” and “The Skeptics’ Guide to the Universe.” This isn’t surprising: in many ways, the purposes, topics, language, and issues common to the skeptical movement run throughout the Theory of Knowledge course.

Virtually any topic connected to AOKs and WOKs is handled by “skeptics”. For example, any discussion of intuition, faith, the scientific method, language, the social sciences can be linked to a lively and current discussion in the skeptical community. Most fundamental, of course, is the question of how we can apply critical thinking to knowledge claims.

“Skepticism”: a definition that matters

What does “skepticism” mean in this context? Turning to such sources can be a little confusing if you don’t have some background on the movement and its terms. First and most important is the word “skepticism” itself. The skeptical movement is closely associated with “systematic” or “scientific” skepticism. Like the TOK course, this movement is concerned with assessing evidence and gauging levels of probability or plausibility. It aims to treat knowledge claims as credible in proportion to the extent of current evidence, while acknowledging uncertainties.

Other uses of the word “skepticism” can create confusion as we look to scientific skepticism and the skeptical movement as a support for TOK thinking.

1. Philosophical “skepticism”, with its roots in Greek philosophers, is somewhat different, concerned as it is with difficulties of ever making any knowledge claim with certainty. Extreme skepticism results in accepting almost nothing as knowledge, since very few knowledge claims can be beyond doubt.

2. Another interpretation of the word “skeptic” is its popular association with “cynic”, or the common assumption that a skeptic is suspicious and detached. Not so! Where a cynic stands on the sidelines passing negative judgments on life and undertakings — witty ones if we’re lucky — a scientific skeptic is engaged in evaluating knowledge claims and looking for what best to believe.

3. Third, and genuinely misleading, is the use of the word “skepticism” in reference to “climate change skeptics” who reject the possibility of climate change, or “denialists” who insist that AIDS can’t possibly exist in their own societies or that the Nazi holocaust never happened. This kind of skeptic has sometimes been called a “pseudo-skeptic” because this skeptic is “in reality, a disguised dogmatist made all the more dangerous for his success in appropriating the mantle of the unbiased and open-minded inquirer”. (1) That is, these people call themselves skeptics to make themselves sound as if they’re scientific thinkers who won’t accept knowledge claims without evidence. In fact, they are simply rejecting good evidence that they don’t want to believe.
How is the skeptical movement useful to TOK?

Admittedly, some skepticism, though lots of fun for a Theory of Knowledge class, is of limited use for its subject matter (even though valuable for evaluation of justifications for knowledge claims). After all, the primary fodder for a lot of skeptical enquiry until fairly recently has been ghoulies and ghosties and long legged beasties—astrologists, Big Foot chasers, conspiracy theorists, alien spotters, ghost hunters, palm readers, iridologists, and the like. In short, it has centred on claims for which there is no solid evidence, but instead much “anecdotal evidence”—scattered stories that cannot be reliably generalized—and, often, some exchange of cash.

Nevertheless, much contemporary skeptical analysis can be rich source of examples for those who are interested in working through the connections between the principles of TOK and important societal issues, ones that affect human welfare. Purported (and remunerative) “cures” for diseases that threaten large numbers, fear mongering about vaccinations, dismissals of environmental impacts of some kinds of industrial, fishing or mining practice and so on seem increasingly to be subject to close analysis by scientific skeptics.

Turning to books, blogs and podcasts, the ToK student or teacher will, unsurprisingly, find a few repeated features. Prominent amongst them is the insistence that extraordinary claims (that is, claims contrary to currently understood science) require extraordinary evidence. (Celebrity testimonies and anecdotes, as skeptics repeatedly point out, do not constitute such “extraordinary evidence”! On the contrary.)

What the TOK student or teacher will find, in addition, is a lot of very familiar territory being covered and especially

- cognitive biases, heuristics, and faulty logic
- the role of media in innocently or willfully distorting evidence

Useful terminology for scientific skepticism

Turn to a skeptical site and expect to see a lot of reference to cherry picking, confirmation bias and anecdotal reportage. Perhaps helpful for those first turning to skeptical sites is a brief list of some of the common terms, hardly unique to the skeptical movement, but certainly common there:

1. “red flag”. A red flag is a trait of a knowledge claim that instantly makes the judicious reader or listener cautious. An extraordinary scientific “discovery” made by a single individual that has been the elusive goal of much well-funded research by institutions (such as cold fusion, or a perpetual motion machine) is a typical red flag—particularly when it is coupled with a request for donations for further research. Extravagant claims for a single “cure” covering a broad range of diseases, or claims to overturn the “medical establishment” are likewise “red flags”.

2. “hand waving.” Hand waving describes the kind of irrational dismissal of rational enquiry through use of vague or evasive language, appeal to intuition and the like.

3. “true believer.” A “true believer” is someone who will insist on believing in something contrary to all substantial or credible evidence. “I just know…” or “I don’t care what you say…” or “All I know is…” are typical gambits of the true believer.

4. “woo” (rhymes with “boo”). Woo is the belief in especially irrational or counter-scientific phenomena. Most paranormal and “New Age” beliefs in, for example, crystals, homeopathy, and faith healing are commonly considered “woo”. 
As for the sites worth exploring, there are many. Because most of these are largely or partly maintained by volunteer enthusiasts, they are not consistently interesting. Likewise, much of the quality varies with the guests (often authors of papers or books) being interviewed. Some of these, too, swing at times toward general issues and at other times to reports on recent findings in human sciences or natural sciences. However, all of them are often a rich source of entertaining, stimulating, and thought-provoking investigation into the nature of shared knowledge.

Below is a list of some of these sites, with the first two being my favourites.

**Some Podcasts and Blogs**

**The Skeptics’ Guide to the Universe**: “Your Escape to Reality” (news stories with a recurring interest in pseudoscience, astrophysics, developments in alternative energy, listener email responses, interviews, quiz games)

**Rationally Speaking**: “exploring the borderline between reason and nonsense, likely and unlikely, science and pseudoscience” (often with a philosophical angle)

**Skeptically Challenged**: “Throwing Down the Gauntlet to Pseudoscience” (often interview-based)

**Inquiring Minds**: “...in depth exploration of the place where science, politics and society collide” (often oriented to cognitive issues)

**Reasonable Doubts**: Your Skeptical Guide to Religion (an emphasis on religion)

**Point of Inquiry**: “the Center for Inquiry’s flagship podcast, where the brightest minds of our time sound off on all the things you’re not supposed to talk about at the dinner table: science, religion, and politics.”

**Skeptic zone**: “The podcast from Australia for Science and Reason”

**Blogsites**

**NeuroLogica**: (“Your daily fix of neurological science, skepticism and critical thinking”)

**Skepchick**: (casual and spontaneous format; emphasis on female issues)

**What’s the Harm**: (emphasis on quack medicine, pseudoscience and beliefs that have caused suffering and death)

**Skeptical Science**: (“Getting skeptical about global warming skepticism”)

**Skeptical Inquirer**: The mission of the Committee for Skeptical Inquiry is to promote scientific inquiry, critical investigation, and the use of reason in examining controversial and extraordinary claims. Skeptical Inquirer is the official journal of the Committee for Skeptical Inquiry. Six times per year Skeptical Inquirer publishes critical scientific evaluations of all manner of controversial and extraordinary claims, including but not limited to paranormal and fringe-science matters.

**Junior Skeptic**: A branch of Skeptic Magazine—requires subscription fees.

**Footnotes**


Photo Credit: cbcastro via Compfight cc
Shared knowledge: selection (Malaysian flight 370)

By Eileen Dombrowski Friday, March 28, 2014.

In TOK, we deal with “shared knowledge”, the knowledge (or at least knowledge claims) that we pass from person to person in a family, a community, the world. In some spectacular cases, an event in one part of the world captivates the attention of the rest, and what is “shared” becomes the stuff of media buzz and private conversations across the globe.

In this commentary from the Canadian Broadcasting Corporation, Rex Murphy points out many of the problematic issues of the story of Malaysian Flight 370 — the wild range of speculation within the shared pool of knowledge claims, and the impact of knowledge (and lack of it) on the people whose loved ones were aboard. But he also raises another important point: when the media focus attention on one world event, they focus attention away from others that, according to other criteria, may be much more significant.

In TOK, these knowledge questions are forever with us:

• Out of all possible observations and reports, what do we select as important, and why?
• According to what criteria do we accept some interpretations, and rule out others, in everyday life and areas of knowledge?
• What is the effect on knowledge of investigating some phenomena extensively, while ignoring others — and to what extent is such selection and imbalance a characteristic (arguably even necessary) feature within areas of knowledge?
• And….what are the implications for human lives?

This TV news commentary is short and punchy, worth watching to provoke a discussion on what questions of knowledge inevitably arise from a hot story in the media.

The National, CBC News, March 27, 2014  
http://www.cbc.ca/player/Shows/Shows/The%2BNational/Rex%2BMurphy/ID/2445192345/

Fashion, symbolism and perspectives

By Theo Dombrowski Tuesday, April 1, 2014

In the student lobe of these blogs, I’ve just posted on a recent controversy that could engage students in TOK discussions on symbolic representation and cultural perspectives. What are they “saying” as they wear certain symbols, such as the tee-shirt design that juxtaposed a skull and triangles that could be interpreted as a star of David? The department store H&M made a public apology as it withdrew the tee-shirt. I won’t repeat here what I wrote for students, but you may well want to hop across to that post for a commentary and a couple of thought games on symbolism and meaning.

In my personal life, I recall the family discussion some years ago when our teenaged son was about to wear a swastika to school because it was “cool”. We had an intense conversation…and he did NOT wear it. At the time he had appalling ignorance of history…but perhaps was sufficiently aware to know how to provoke his parents!

BELOW: blog post for students on fashion statements, with some ideas for knowledge questions that the recent H&M controversy could raise
Fashion statements and what they “mean”

By Theo Dombrowski. April 1, 2014.

It’s a weekend morning. You’re going shopping. You will be seen. You look at various T shirts in your cupboard. Which one should you choose?.

Be careful. After all, you are making a “fashion statement.” We’re all familiar with the notion of the “fashion statement”—presumably that your deliberate choice of clothing is “saying” something—about your personality, your mood, your values, your self-image.

Feeling in one of those moods, you reach for a T shirt with a skull design—the kind of thing that has been popular for many years now. So now you are making a “statement”. Or are you? What you are “saying” might not be very clear. Even when you make statements with words, your meaning might be misunderstood. When you are making statements with clothing you are even more susceptible to being misunderstood. But wait: it’s not just the clothing itself—the fact that you have a T shirt with a raw image—that is “speaking”. It is also the specific image on your T-shirt—the skull.

As a keen student of ToK, you will recall that all language involves “symbolic representation”. You’ll also recall that symbols shift and slide in their meaning with perspectives. These perspectives may be personal or cultural, but they colour how symbols are understood. For example, “white” has associations that are very different in a traditional Chinese setting (death) from what it suggests in a European one (purity).

Expect, then, as you saunter through town in your skull T shirt that you will be “read” differently by different people. Some will understand you to be saying, “I’m tuned-in to the fashion scene and know what other people of my age value.” Others will hear: “I’m a nonconformist and don’t care what other people think of me.” Yet others? “I’m a grim realist; I don’t hide from the truth.” Or “I have a sense of humour and like to shock stuffy people.” Or “I hate the prettified superficiality of social respectability”. (How might others interpret your statement?) (Note that while there is a great deal of subjectivity in response, there are limits. No one is going to “hear” your statement to be “I am a cat lover”. Let’s not overdo the idea of subjectivity and perspective!)

When Statements Become Insults

What, though, if your T shirt has not just the image of a skull, but, also a religious symbol—like, for example, a crucifix or a Star of David. As you may have heard, a major department store chain, H & M, recently was selling sleeveless T shirts showing a large, roughly drawn skull in the centre of a even larger set of two triangles, one red, one black,
intersecting to form the shape of a six-pointed star. The whole design had a deliberately rough, coarse sketchiness that some would call “grunge”. Can you guess what the reactions would be?

As the Associated Press reports: “The shirt first came under fire in the media from Israeli writer Eylon Aslan-Levy, who was horrified to see the shirt in a London store. In a Times of Israel blog, he wrote: ‘I doubt that there were anti-Semitic intentions ... but there is no escaping that the juxtaposition... of these two symbols is entirely inappropriate and offensive.”

Other reactions varied, of course, but the outrage was loud and clear enough that the department store apologized for the “anti-Semitic” implications, made assurances that those implications were unintentional, and withdrew the T-shirts: “We are sincerely sorry if the T-shirt print has offended anyone, it was not our intention to provoke such a reaction.”

Symbolic statements, not just in language

As a ToK student you may feel spurred by this incident to ask a few questions about symbolic statements:

- How much do intentions actually form part of the meaning of a symbolic statement. The store executives claimed no insults were intended. Should intentions be considered as an integral part of the meaning or disregarded?
- How much should we accept the ambiguity inherent in any symbolic statement and, as a result, hesitate to insist on a single interpretation—and, therefore, “knowledge” of its meaning?
- How much should we accept that cultural or personal perspectives create a range of “meanings” of which we might, ourselves, be oblivious?
- If we discover that an individual or minority group is offended by a “meaning” of a symbol or set of symbols, should we respect their feelings, or, applying utilitarian principles, insist on majority opinion?

Symbolism and the Arts: A Thought Game

Symbols aren’t just important in ToK approaches to language (or religious knowledge). In your study of the Arts as an AoK, you will also be aware of meaning conveyed through non-verbal or purely suggestive means. You will also have thought about the intended audience and the intended purpose of such use of suggestive or connotative devices—as, for example, skulls or cultural symbols.

With these in mind, design a T shirt using the following guidelines:

1. Aiming just to be inventive, and not to make a “statement”, choose two culturally loaded symbols and juxtapose them — that is, place them together within a design. Do you find that a meaning arises not just from the two independent symbols, but also from the juxtaposition? What, for example, if you juxtapose the image of a gun and a pair of comedy/tragedy masks? What if you juxtapose the image of a hypodermic needle and a rainbow? A scorpion and a martini glass? An egg and an atomic explosion? Give your design to friends ask them what it “means”. How much do you think they are justified in “knowing” what it means, even if you didn’t intend that meaning? How would you compare this situation with that surrounding the H&M shirt?

2. Now, take the opposite approach. Produce a design that aims to shock viewers with a criticism of an established ideology or religion. Would you even consider juxtaposing:
   a. a skull
   b. the Star of David?
   Think about it.....

Now, next Saturday, as you choose what you will wear to town....
Big bang, big smile: happy moment in sharing knowledge

By Eileen Dombrowski. April 4, 2014

https://www.youtube.com/watch?v=ZlfIVEy_YOA

In TOK, we speak of the natural sciences as shared knowledge — as knowledge built collectively as scientists publish their work and others use it toward their own. But rarely is scientific knowledge shared with quite such a personal touch as in this video.

In it, Chao-Lin Kuo of Stanford delivers the news to Stanford physicist Andrei Linde, proponent of the theory of cosmic inflation, that his team of astronomers has just found evidence in support of Linde’s theory. Their discovery of the “signature of primordial gravitational waves” provides the so-called “smoking gun” for the Big Bang. It’s a tremendously significant breakthrough. But what moves me in this video is Chao-Lin Kuo’s gesture of delivering the news personally, with champagne, and Linde’s choked-up response as it sinks in.

References


Breakthrough in science: gravitational waves

By Eileen Dombrowski Monday, April 7, 2014

https://www.youtube.com/watch?v=CVfaV61hu8

In my last post, I was captivated by the immediate impact on Andrei Linde himself of the recent breakthrough in astronomy, as recorded while Chao-Lin Kuo announced the big news that his theory concerning the Big Bang and inflation of the universe had been significantly borne out with evidence. I was most interested in the humanity of science, and the people behind a major breakthrough.

But what does this breakthrough illustrate for TOK about the nature of science? What does it show of scientific prediction — prediction that is not a foretelling of the future, but prediction that if a theory is correct then certain other things, possibly observable, will be the case? What does it show about the role of theory in holding together research and communication within the scientific community, and about the collective nature of scientific knowledge?

For those of us who do not have the understanding of physics to grasp its
significance with ease, *Nature* gives us a 3 minute video and a short article “All you need to know about gravitational waves”: enough for us “get it”. In TOK we do not need to know all about the physics to see the characteristics of science in action.

**Reference**

“Big Bang’s gravitational waves detected”, https://www.youtube.com/watch?v=CVfaV61hu8

**Time-delay in vision: TOK sense perception and the world**

By Eileen Dombrowski. April 15, 2014

“What you are seeing at the present moment is not a fresh snapshot of the world but rather an average of what you’ve seen in the past 10 to 15 seconds,” says a neuroscientist at the Massachusetts Institute of Technology. Jason Fischer, who conducted experiments while a PhD student in David Whitney’s lab at UC Berkeley, is lead author of a new study finding that what we see “may be a time-averaged composite of now and the past”.

The brain, in effect, smooths over the fluctuations in what we perceive so that the world seems more continuous and stable.

“The brain has learned that the real world usually doesn’t change suddenly, and it applies that knowledge to make our visual experience more consistent from one moment to the next,” says Fischer. He calls the averaging filter a “continuity field”.

**“The visual system sacrifices accuracy for the sake of the continuous, stable perception of objects.”**

David Whitney of UC Berkeley explains further:

“The continuity field smoothes what would otherwise be a jittery perception of object features over time. Essentially, it pulls together physically but not radically different objects to appear more similar to each other. This is surprising because it means the visual system sacrifices accuracy for the sake of the continuous, stable perception of objects.”

An article in *Psychology Today* points out the advantages: “Without the smoothing out of the rough edges, our perceptions of reality would become a hodge-podge of fragmented and surreal images.” Overall, our visual system is reducing the complexity of the environment by cutting out visual “noise”. We can look out through the rain and not see every falling raindrop; we see instead, through it, the road signs, the shop fronts, and the people. We are not hypersensitive to every moving shadow or slight movement around us.

According to researchers, without the continuity field “faces and objects would appear to morph from moment to moment in an effect similar to being on hallucinogenic drugs.”

For TOK, this is one more example, along with familiar ones such as change blindness
and inattentional blindness, to bring into classes on sense perception.

Personally, I find this study quite delightful as another insight (no pun intended) into the gap between the world and how we perceive it. I never lament that sense perception as a way of knowing does not give us, at any scale, a perfect record of the world. What interests me is what knowledge we gain regardless, both through our senses and, as in this study, about our senses and how they work. Our ways of knowing (WOK) are the source of our areas of knowledge, but our areas of knowledge certainly illuminate how some of those WOK work. (And personally — I'm very glad not to have any more visual clutter to deal with!)

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Yasmin Anwar, “Scientists pinpoint how we miss subtle visual changes, and why it keeps us sane”, UC Berkeley News Centre, March 30, 2014.
http://newscenter.berkeley.edu/2014/03/30/continuityfield/


Photo Credit: Michele Catania via Compfight cc

TOK and Counterfactual History

By Theo Dombrowski. May 15, 2014

“Those who cannot learn from history are doomed to repeat it.” Ho hum? Heard this before? In the first place, this famous “quotation” is apparently a distortion—albeit a slight distortion—from George Santayana’s actual assertion, “Those who cannot remember the past are condemned to repeat it.” More to the point, the statement raises important questions about the nature of historical knowledge.

In fact, it doesn’t really matter what a particular philosopher actually said (or even whether, as is often claimed, that it was Edmund Burke who said it first). What matters is that the widely quoted version has captured the imagination of those who accept the vital importance of historical knowledge, not as an end in itself, but for the way it can translate into understanding—and acting on—current social and political forces.

But this isn’t enough. Of what is this knowledge supposed to consist? Surely not merely the sequence of incidents! The assertion makes most sense if we understand it to refer to causes and effects. As historian Charles Freeman says, “the excitement of history lies in trying to offer explanations for developments.” (TOK Course Companion, p. 283)
In this centennial of the start of World War I, the widespread scrutiny of the war’s causes thus becomes not just discussion of Kaiser Wilhelm’s personality, Serbian resentment of Austrian domination and so on, but more generalized principles of what kind of action leads to what kind of consequence.*

**Counterfactual history and causality**

A new book casts a provocative light on the nature of historical knowledge—and suggests all sorts of interesting exercises and discussions for a Theory of Knowledge class. In *Altered Pasts: Counterfactuals in History*, Richard J. Evans examines the phenomenon of so-called “counterfactual histories”.

For those who might be a little hazy on this phenomenon, a counterfactual history is a kind of “what if” speculation on how big chunks of history would have been completely different if a single key event or decision had been different from what it actually was.

At first blush, this kind of speculation might seem like the kind of hypothesis we expect of most academic disciplines. The “hard sciences”, of course, lose much of their purpose if they stop with description of what has happened or is happening. On the contrary, the physical universe can be understood fully only as complex pattern of “if/then” links. (The same is true even for biology, with its complex web or nature/nurture causalities).

But history? In the first place, much is to be gained by simply knowing, descriptively, what has, in fact, happened. In this case, the chief knowledge questions involve knowledge sources, perspectives, and ways of knowing discussed in the Course Companion pp. 276-281.

Second, though, when we try to understand cause and effect, though crucial to the most thoughtful approach to history, complexity can explode in our faces. We might think that by asking, “What if?” we gain deeper understanding into why. In an article published the month before the release of his book, (and using the particular example of the first world war) Evans says no:

“…this kind of fantasising is now all the rage, and threatens to overwhelm our perceptions of what really happened in the past, pushing aside our attempts to explain it in favour of a futile and misguided attempt to decide whether the decisions taken in August 1914 were right or wrong. For that way, of course, leads not to historical understanding but to all kinds of wishful thinking, every hypothesis political in motivation.…”

**More problems with counterfactual histories**

This isn’t the only charge that Evans brings against this kind of hunt for cause and effect through speculation:

“Counterfactuals”, as such “what-if” speculations are generally termed by the aficionados, are often claimed to open up the past by demonstrating the myriad possibilities, thus freeing history from the straitjacket of determinism and restoring agency to the people. But in fact they imprison the past in an even tighter web: one tiny change in the timeline – Archduke Franz Ferdinand escapes assassination in Sarajevo, the British cabinet decides not to enter the war – leads inevitably to a whole series of much larger changes, sometimes stretching over decades almost up to the present day.

Although he doesn’t say so directly, he seems to be suggesting that counterfactual histories are a kind of butterfly effect/chaos theory in reverse. Remove that fluttering but terrier with a snip of a hungry bird’s beak, say counterfactual historians, and what would happen to that hurricane on the other side of the world? “Calm as a millpond”, would apparently be their answer. In other words, Evans' criticism seems to be, first, that
counterfactual histories ignore complex webs of causes of historical events. As Evans points out “every historian tries to balance out the elements of chance on the one hand, and larger historical forces (economic, cultural, social, international) on the other.”

Second, and closely linked to this primary objection, is Evans’ argument that counterfactual histories overlook the importance of other random events in history that could have intervened even if the singled-out “cause” in the chain were (hypothetically) changed: “…this ignores, of course, an infinite number of chances that might have deflected the predicted course of events along the way –”.

If we apply Evans’ point to our hapless butterfly, then it seems that even if it were to have become a tasty dish for a starling before it fluttered its hurricane-inducing wings, there could have been other butterflies to take its place—or, even more appropriately, other sources of initially tiny air turbulence.

A third objection is that counterfactual history seems to be shackled to two narrow and outmoded kinds of historical thought. First is the “great man” view of history, long defunct, and second is the “kings-and-battles” summation of the past.

Even given Evans’ objections, we might guess it is more in the practice of counterfactual history than in its essence that these previous three limitations are evident. Arguably, the same is true of his fourth objection, that counterfactual history is mostly churned out in the form of “reactionary fantasy”–where ‘what if’ counterfactual history is really little more than ‘if only’”.

Or, more put more harshly, “Counterfactuals are the byproduct of a paranoid nostalgia specific to the right, where “greatness” is forever being sabotaged by leftists, liberals or whoever.”

Using counterfactual history to illuminate history as an AOK

A discussion in TOK class could well involve not only these four objections, but also some others, and ones that beautifully combine WOKs and particular claims of history as an AOK.

After all, as sharp students will point out, “What if” is a question absolutely fundamental to the “hard sciences” and, perhaps to a lesser extent, the human sciences. Forming a hypothesis, they will point out, is what the sciences are all about. What they are also all about, though, of course, is testing the hypotheses.

And the very fact that historical hypotheses are largely untestable is the main reason history is separated from the human sciences as an AOK. That is, they are not testable by replicating the events (as closely as is possible with variable human beings) and making further observations!

And yet – in history, interpretation of the past is still constrained by the evidence. We cannot re-run a specific battle, a particular plague, or the development of a farming technology in order to take better notes. However, the evidence that has come down to us in documents or artifacts provides the basis for any interpretation of the past; it must not be “imagined away”.

But what might substitute for testing a hypothesis in a counterfactual history? When the real events of the past are indeed “imagined away” – with the substitution of events as they did not happen – then the
hypothesis conflicts with the evidence. It is false. When a sequence of counterfactual consequences then follows as a result of a false account of the past, then we have left the realm of historical knowledge.

Nevertheless, counterfactual histories may usefully illuminate the way that history is constructed, and also illuminate the nature of specific historical events.

Counterfactual histories as a popular trend
Why—other than to push ideologies—are such counterfactual histories suddenly so popular? Evans speculates that much strikes to the heart of fundamental questions of shared knowledge:

“Perhaps it’s because we’re living in a postmodern age where the idea of progress has largely disappeared, to be replaced by uncertainty and doubt, and where linear notions of time have become blurred; or because truth and fiction no longer seem such polar opposites as they once did; or because historians now have more licence to be subjective than they used to.”

In terms of TOK what will probably stand out most are two issues that raise knowledge questions:

• the contemporary blurring of truth and fiction—an idea that Evans expands upon in a podcast discussion of his book, where he singles out the spurious knowledge claims so common on the internet.
• the trend towards increasing subjectivity in writing history. His comment becomes a reflection on this particular AOK and how, according to Evans, it increasingly combines researched shared knowledge with personal, ideological, or cultural perspectives of the historian. (See the Course Companion pp. 285-287)

In this anniversary year of the First World War, students and teachers alike are likely to come across lots of shows, articles, re-enactments, and speculations. In fact, given the current popularity of all counterfactuals, they are likely to come across many other areas of history making a “What if” claim on their credulity. Whether in the context of class—history class or Theory of Knowledge class—the fortunate I.B. student will be well equipped to react thoughtfully and analytically to such claims.

What if?

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Photo Credit: Robin Bain via Compfight cc
Satire, stripping away sugar coatings

By Eileen Dombrowski. June 25, 2014

You can still get access to the satirical video through this blogsite, with its accompanying commentary: desmog. It seems that the oil company Suncor did NOT like the spoof done by sumofus of their promotion of the Alberta oil sands. The original site, which I viewed just an hour ago, is now marked “page not found”. But it’s now on YouTube. I encourage you to watch first the original video ad and then the spoof.

But how is this contest between the oil companies and their opponents relevant to TOK? In this case, I’d suggest that the video provides a splendid example of satire: it mimics the kind of voice, kind of images, and emotional appeals of Suncor’s political/economic advertising campaign. It imitates them in order to bring sharp attention to a smooth and ingratiating presentation of information — information that the satire replaces with counter-claims, even while maintaining the same smooth presentation.

Humour can often be generated from the sheer incongruity between subject matter and its presentation, and often has a very hard edge. Mockery can strip away sugar coating to bring attention to the knowledge claims under the surface...in order to contest them.

So here’s a general question for you to think about, even while you’re laughing at funny take-offs: In what ways can humour, and especially pointed satire, expose biases and methods of persuasion in the presentation of knowledge claims?

Or pose the broader knowledge question: can imaginative presentation conceal truth — and/or reveal it?

References

Original ad campaign: Suncor “See what Yes can do”:
https://www.youtube.com/watch?v=JtYJDxy2-SI

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TOK and the “real world”: How do we engage most appropriately when knowledge claims have been politicized?

By Eileen Dombrowski. June 22, 2014

As a TOK teacher, do you feel you can be “political” in the classroom? I’d love to have your thoughts on this topic. (Please use that “comment” feature!) I’d love to know how others walk the line between being relevant to the world – and hence engaged in its issues – and being neutral in order not to be accused of...
being an ideologue, inappropriately, in the classroom. Would you, for instance, give the following article to your students, and if so, how would you frame it for discussion?:
“5 times Canadians were utterly misled about the Northern Gateway pipeline”.
(http://www.pressprogress.ca/en/post/5-times-canadians-were-utterly-misled-about-northern-gateway-pipeline
)

In TOK, we are teaching critical thinking and trying to give students tools to apply to everyday life. We introduce them to biases in language, statistics, and images, and encourage them to understand the way that differing perspectives influence knowledge claims and colour the way they are presented as information. We encourage them to understand how science is constructed and to recognize the role in knowledge of scientific consensus among relevant experts.

And yet, when it comes to the most pressing topics of our times, we might hesitate to apply the critical awareness that we’ve been developing. Should we step around the Big Issues to avoid controversy beyond the classroom — and preserve our own peace?

I’m offering this particular article as an example because I’m suddenly not sure whether I would use it if I had a class this week. The article is extremely relevant to TOK in illustrating, with immediate real world relevance, some of the awareness and skills of analysis that we teach. It also accords with my own personal conclusions – and I find that this fact makes me trust the article more but distrust my own judgment more about the advisability of using it.

Some of my conclusions on knowledge claims made by industry and political groups are based on values and charged with emotion. I find these relatively easy to exclude from what I’d knowingly share in the classroom, and would declare them in class only to give students practice in listening for the influence of my own perspective on how I select reading material and frame questions.

Evidence-based conclusions, politicized

Oddly, I’m far less sure about what to present in the classroom, in this controversial decision over an oil pipeline, when my conclusions are based on evidence. Let me disclose some of my own conclusions, so that you might immediately see some of the dilemmas the topic raises for me – not for me as a private citizen, but for me as a teacher.

• I accept the conclusions of climate scientists that our climate is warming because of human actions. The relevant experts have long reached consensus on this. There is no controversy over whether climate change is driven by human activity within legitimate science, but only within the media, with the pseudo-controversy driven by interest groups.

• The Enbridge pipeline, if built, will take crude oil from the oil sands of the Canadian province of Alberta to the port of Kitimat on the west coast of the Canadian province of BC (British Columbia). As giant tankers transport the product to the Asian market, I have good reasons to expect (despite the uncertainties of prediction and risk assessment) an oil spill that would devastate this coast. (I live on this coast.)

But this is my problem, and probably yours as well (though possibly on other topics): even evidence-based conclusions have been questioned and treated as ideological by interest groups, in this case the oil
companies and their supporters. False controversy has been generated over climate change, and empty assurances of safety have been offered to counter very real concerns about navigation of huge tankers through rough off-shore waters. Has it become “too controversial” and “too political” these days to deal in the TOK classroom with the influence of the fossil fuels industries on the knowledge claims that the public is given.

Can we talk meaningfully of “evidence-based conclusions” when economic and political influences muddy the evidence that the public, including our students, is given? So my question is this: how do you, in your own classroom, deal with knowledge claims that are evidence-based in ways that accord with critical thinking and respect the process of scientific knowledge— if they have become contentious politically?

Do you avoid applying critical thinking to issues if they have been surrounded (as a tactic) with controversy, or do you feel an extra responsibility for dealing with them as case studies in the difficulties of building knowledge?

Now, back to the article that I offered as an example at the beginning. It’s clearly illustrating skills we teach in TOK for recognizing perspectives as the writer deals with some of Enbridge’s tactics of persuasion to convince the public of the safety of transporting oil: manipulation of maps, resistance of interest groups to the findings of science that undermine their knowledge claims, emotional language and innuendos of advertising and politics.

Moreover, the article itself is useful material for analysis. The writer doesn’t just expose a few of the tactics of the oil company, but uses some of his own to bring us onto his own side. He’s not distorting fact as Enbridge does. Still, he’s not taking a detached stand, either, with his use of a colloquial, even folksy, voice and heavy sarcasm. If I chose to use this article in class, I’d ask students to identify the writer’s own tactics to get us to share his attitudes!

Two problems in balancing perspectives on Big Issues

I’d face two further problems, though, in going very far in this direction of balancing treatment by critiquing both perspectives.

1. For one thing, I wouldn’t want to have my limited hours for TOK completely swallowed up by issues of global warming and the political and economic influences on the flow of information in the public realm. There is so very much that students do not know on any Big Issue! If I could work with other groups within the school—a current affairs group or a debating club, perhaps—then maybe I could expect students to gain background information elsewhere. But do I want to open the door to a Big Issue at the risk of tipping classroom discussions heavily toward information exchange rather than TOK meta-analysis of how knowledge is constructed? Are Big Issues too big to touch in TOK, given the scope of the course and our limited hours?

2. For another thing, I wouldn’t want to be trapped into the fallacy of “truth is in the middle”, with opposing perspectives balanced as though they have equal claim to truth. It seems so fair to look at both sides equally! Ironically, it is often truly fair-minded people, wanting to listen to different perspectives, who are most susceptible to being persuaded that the knowledge claims of all groups should be taken equally seriously.

As a result, one of the most successful tactics of industry-funded climate change deniers has been this very appeal to the middle ground— to create doubt around the conclusions of climate scientists by convincing the public that “the other side” should be taken as seriously as the “side” with the full weight of scientific evidence. (The elected representative of my own Canadian region has asserted that climate change is not...
Although evaluating different perspectives is as important in TOK as initially identifying them, do I want to give climate change denial equal play in class, in an echo of the pseudo-controversy?

What is your own reaction to these dilemmas? For this particular article, would you use it in class to illustrate biased strategies of communication of knowledge claims? If students brought it to class out of interest or proposed it as their real life situation for a presentation, how would you respond?

The general question: How can we best engage TOK in the world?

You probably realize that I’m using this particular article – one that strongly raises questions for me personally — to provide just one example of potential teaching material that could present dilemmas for a teacher. Ultimately, what’s important to us in TOK is the more general question: how can we best make our course relevant to the real world and encourage students to develop the thinking skills to sift the knowledge claims they encounter?

As we encourage students to identify different perspectives and their influence on knowledge claims, do we simultaneously encourage the critical evaluation of their claims to knowledge – their justifications and process/methodology? To what extent does the central importance of critical analysis make it too time-consuming to touch the Big Issues of our times? To what extent must we avoid being “political” in class, when knowledge – how we build it, what justifications we accept, how it is communicated within areas of knowledge and to the public – is influenced by economic and political perspectives?

Do you have any thoughts to share that could help us all walk the line thoughtfully and effectively between too little engagement in the real world, and too much?

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“5 times Canadians were utterly misled about the Northern Gateway pipeline”, Press Progress, June 16, 2014. http://www.pressprogress.ca/en/post/5-times-canadians-were-utterly-misled-about-northern-gateway-pipeline

History: the past in the present


A symphony concert. A statue. These artworks of sculpture and music are charged with meaning in the context of war commemorations in Sarajevo today. The music is Haydn’s “God save the Emperor” and the statue is a monument to the assassin who killed the emperor’s heir. If you know anything about the outbreak of the First World War, you might feel a chilly shiver. The tensions live on: “Sarajevo divided in First World War commemorations.” http://www.ctvnews.ca/world/sarajevo-divided-in-first-world-war-commemorations-1.1889061

Knowledge questions for TOK:

To what extent does history give us knowledge of the past, and to what extent does it give knowledge of the present? OR To know the meaning of a work of art, is it necessary to know its social or historical context?
TOK and mathematics: how not to be wrong?

By Theo Dombrowski. July 2, 2014

“As it develops, mathematics moves both towards the abstractions of the mind, and also towards the connection with the world.” Thus begins the section on “Pure and Applied Mathematics” in the ToK Course Companion. (p. 357). The nature of the relationship between the abstract nature of mathematics and “the world” is one of several issues examined in a new book on mathematics by University of Wisconsin mathematician (and “maths journalist”) Jordan Ellenberg. In How Not to Be Wrong: The Power of Mathematical Thinking he takes a fresh look at many of the issues underlying mathematics as an “area of knowledge.”

For those who aren’t inclined to read the whole book, many of the most important ideas in the book are easily accessible through reviews, interviews, online versions of Ellenberg’s introduction to the book, and, perhaps most usefully for a TOK class, a lively and engaging interview on a podcast: Inquiring Minds, Episode 39, June 19, 2014 (approximately 18:10 to 46:20).

Although Ellenberg scrutinizes several issues, three seem particularly good for a TOK class.

1. Redefining mathematical thought

In TOK – and, indeed, in this blog -- we talk about areas of knowledge in order, amongst other things, to consider their relationship to ways of knowing. The fact is, though, we talk about mathematics. According to Ellenberg, though, in thinking that we’re doing so we’re not getting our classification quite right! On the contrary, says the author, the very act of thinking about math is the math!

Is Ellenberg just being provocative and/or redefining what we mean by the word “mathematics”? Consider what he says: “To say that there’s math and then there’s thinking about math, like asking how we consider all the hypotheses, is the argument justified, blah de blah blah….no that stuff is the math. The symbolic manipulation, and multiplying numbers together [and so on]…that is to math as typing is to writing. You need to be able to do it. It’s part of math, but exactly what I want to fight is the idea that actually thinking is something that takes place separate from the math. It is the mathematics.”

At the very least, his claim is an excellent starting point for a discussion about mathematics’ “relevance” even to those who don’t employ its tools (i.e. those couldn’t differentiate their way out of a paper bag). After all, in Ellenberg’s terms, we are all doing “mathematics” by the very act of rational thinking (more of a feat, alas, amongst many of the general public and many of the politicians who lead us, than calculating the area under a curve!).

2. Mathematics and certainty

When looking at Areas of Knowledge, many TOK teachers like to treat mathematics first and the arts last. The idea, of course, is that it is easiest to look at issues of certainty, shared knowledge, language, reason, even intuition and imagination in an area of knowledge where the issues are comparatively clear cut, the degree of
“objectivity” and certainty highest.

While not exactly contradicting this perception of mathematics, Ellenberg seems to go out of his way to stress its fuzzier side. Consider this part of the interview:

**Chris Mooney (interviewer):** What you’re saying is we need to be more nuanced and we need to be more able to process uncertainty in how we think about complex topics involving numbers….
**Ellenberg:** There’s a stereotype that mathematicians are exactly the opposite of people who care about nuance. I think most people if they were to imagine the psychological makeup of the mathematician. . . would say, “Oh, that’s somebody who’s very black and white, who thinks in yes or no, very precise, down to the tenth decimal place terms…”. The mathematical way of thinking…can be like that, but it’s not the only thing it is. We try to valorize [give value to] uncertainty too, and study it, and bring it into our orbit.

**Chris Mooney:** Calculation sounds very precise and it sounds very rule based and can only lead to one outcome and it satisfies those who want a very clear answer and so that sounds very direct, but what you’re saying is that it’s more about knowing how to analyze a problem, which leads to all different kinds of analysis and knowing which one to apply. …It’s very difficult to do and it’s very nuanced to do.
**Ellenberg:** And that’s what makes mathematics an art and not just an algorithm that we mindlessly apply.

In fact, Ellenberg repeatedly emphasizes that “common sense” can—and in some contexts should—trump calculation. In this a case, we might ask whether he is valuing “gut feeling”, intuition to replace objective analysis. If that is true, then is he endorsing the “woo”, non-science-based medicine, “hand waving” and all the other characteristics of those who feel they can ignore scientific results? Should Jenny McCarthy’s “Mommy Instinct” that vaccinations cause autism trump the numerical data?

No. And this is where it is illuminating to look at a third issue he considers:

3. The role played by mathematics in the current crisis in medical science and social science

And the crisis? According to Ellenberg this crisis lies in interpreting data (numbers!) that result from the countless studies that crowd current research.

“I don’t think it’s overstating to say that there’s a kind of crisis in medical science and social science that people are truly feeling unsure about how well the standard techniques for saying does this drug work or does it not work; does this psychological intervention work or does it not work? We have a standard tool box for making these judgments that we’ve had for 70 years and the cracks are starting to show.”

Computers, it seems, are part of the problem:

“You can test 10,000 different things just at the touch of a key stroke”–and, “just by chance, 1 in 20 of them is going to pass the test; you’re going to have a lot of spurious results that give the appearance of being meaningful.”

And this is where our previous point about common sense comes into play. No–Ellenberg is not, after all, saying that irrationality should trump rationality. Quite the reverse: he is warning that mathematical calculations can be misleading–and that, as a result, we need to be meticulous in how we interpret them.

“If you see two studies which give you the exact same numerical data about the effectiveness of some intervention but one of them is about a cancer drug that is sort of in the same family as other drugs and the other is about waving a swatch of branches over the patient, I think it’s totally
okay to end up with different opinions about whether the intervention works, even though in some sense the evidence you get is numerically exactly the same. You’re allowed to take into account what you think is crazy and what you think is reasonable....."

Mathematics and Engagement

Even more powerfully, the interview ends with a reassertion of a principle that should gladden the heart of any student or teacher who sees TOK as a vehicle for separating the cognitive wheat from the chaff, as honing skills for engaging responsibly in “the world”.

In order to emphasize this notion, Ellenberg describes an imaginary “philosophical battle” he creates in his book, between two historical figures. One is former U.S. president Theodore Roosevelt, a gung ho Man of Action, who espouses the principle: “just do it”. The other is the poet John Ashbery, his view summed up in his poem “Soonest Mended” and his seminal evocation of “this action, this not being sure....”

(http://www.poetryfoundation.org/poem/177260).

Who wins the debate? Ellenberg cheerfully admits that he had his “thumb on the scale”, and tips the balance in favour of Ashbery.

“But exactly this difference between the Rooseveltian point of view that all of this mathematical stuff is okay but really it’s just book learning and the real stuff is the person who is just willing to charge ahead without thinking so carefully....to say that not being sure, is saying let’s consider, is saying let’s look at what we can prove and what can’t we prove, what have we thought about and what haven’t we thought about--that is a kind of action. It’s the kind of action that mathematicians carry on... that is the kind of action that has moved the world just as much as armies and planes.”

What better epigraph for a TOK course than “Let’s look at what we can prove and what can’t we prove, what have we thought about and what haven’t we thought about--this is a kind of action”? What better endorsement of thinking than to claim it is “the kind of action that has moved the world just as much as armies and planes.”?

In his introduction to his book, Ellenberg makes a similar and in some ways more valuable point, though with not quite the same orchestral cadence:

The mathematical ideas we want to address are ones that can be engaged with directly and profitably, whether your mathematical training stops at pre-algebra or extends much further. And they are not “mere facts,” like a simple statement of arithmetic — they are principles, whose application extends far beyond the things you’re used to thinking of as mathematical. They are the go-to tools on the utility belt, and used properly they will help you not be wrong.

Mathematicians, take heart! If we return to our opening assertion from the Course Companion, we find in Jordan Ellenberg a wonderfully resonant spokesman for the “relevance” of mathematics as an Area of Knowledge: “mathematics moves both towards the abstractions of the mind, and also towards the connection with the world.”

References


Other interviews and reviews


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Here’s a great story for TOK: “Nazi perfect Aryan poster child was Jewish.” We certainly don’t need additional evidence to debunk racist and nationalist classifications of humanity, but the bitter ironies of this particular story do make it hit home.

How we classify – how we group our particular observations into general categories, and then how we use those categories as conceptual generalizations – is a recurrent theme in TOK, involving most ways of knowing (especially intuition and reason, language, sense perception) and all areas of knowledge (all of them, but notably the natural and human sciences and history). As this story brings home, there are plenty of implications for how we group people, and then attach values and emotions.

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Bolivia reverses congress clock: symbolic representation and (disputed) meaning

By Eileen Dombrowski. July 12, 2014

I love plenty of knowledge questions – but sometimes I delight even more in the answers, especially when they jolt me for a refreshing moment into someone else’s way of seeing the world. Did you see that Bolivia has reversed the direction in which the hands on the clock on its congress building in La Paz will move?

The reason? Well, the conventional direction reflects the movement of the sun across a sundial...in the northern hemisphere. And so, argues the Bolivian government of Evo Morales, a country in the southern hemisphere should free itself from colonially imposed ways of thinking.
Of course, not everyone is happy. Some Bolivians interviewed are upset about change, and an opposition Bolivian lawmaker declares that the government “wants to change the universal laws of time.” (the what?) *Time* presents the change as reflecting political right and left, with the Bolivian clock hands now moving “left” and “backward”. (Don’t conventional clock hands also move left across just as high a proportion of their dial? Isn’t “backward” loaded with values?) And a writer for the American CNN pontificates condescendingly: “These may be clear symbols, but what doesn’t seem clear to these leaders – you can change a horse’s direction, a sun’s position, a date on the calendar or even what clockwise means – but your country’s successes will still be based on the substance of your policies, not the style of your symbols.” (Are national leaders truly unclear on this?)

But TOK teachers should be happy. The “clock of the south” example takes only a moment or two to recount in class. Yet here we have an event that provides splendid visual representation of conceptualization of time (so abstract!) tied to the geographical position (so concrete!) of the cultures that developed it. It easily ties symbolic representation to place and contemporary representations to historical power as northern hemisphere representations likewise become the conventions of the colonial south.

It also raises knowledge questions about the extent to which our conventions of representation – as Bolivian leaders suggest – really do affect how we think about the concepts they stand for (as we discuss in TOK regarding language). Regarding the clock, are you convinced?

Reactions in the media to the “clock of the south” – with many reports using the clock to be scathing about Bolivian leader Evo Morales – raise plenty of further issues of perspective and interpretation of an event! (Nobody, by the way, is going to be forced to adopt the reverse clock of the congress building.) A more balanced comment can be found on The Day: Current Affairs for Schools: “In a show of national pride and identity, the Bolivian government has reversed the direction and digits on its Congress building clock. Is this a thoughtful symbol or just a waste of time?”

The larger knowledge question is the one that brings the Bolivian congress building clock within the scope of TOK: In what ways do our conventionalized systems of representation (such as maps or language) reflect and/or entrench cultural assumptions about reality? The smaller, more applied question, though, is the one that makes the Bolivian clock jump out for me as an ongoing interest of my life: If our own cultural assumptions buried in our representations are invisible to us, how can we become aware of them?

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TOK and classification: the jerk

By Eileen Dombrowski Saturday, July 19, 2014

After my last post on classification (July 7, “Nazi poster child was Jewish”), I thought you deserved a lighter one. (After all, for many of us, summer holiday has begun!) I’m picking out the same central topic – classification of people – but this time with a laugh: “The essence of jerkitude. If it seems like everyone around you is an idiot, you may be a jerk.”

In the author’s “theory of jerks”, he defines his term, describes the phenomenon he observes, speculates upon the reasons for “jerkiness”, and reflects on the implications of this classification for our own self-knowledge. Above all, his “theory” is about classification — who belongs in this category, and why.

The article’s clever, funny, and pointed. But are there knowledge questions running through this article? Yup. You bet! First thing, you’ll want to apply a bit of critical thinking to the methodology behind this classification, and ask an applied question: “Is this category rigorously established? No? Really?”

And then, in a more abstracted way, you’ll probably go for a couple of grander TOK knowledge questions: “How do the human sciences give us knowledge of human classification? What methodologies are most reliable, and why?” OR “To what extent does understanding other people’s perspectives involve the TOK ways of knowing of imagination and emotion, sometimes combined in ‘empathy’?”

BUT…..if you’re on holiday, you might not want to think about methodologies or fuss about rigor. You might just want the laugh…and the obscure sense that, rigorous or not, the author might have illuminated something….ah….er….“true”. And then, like me, you’ll want to exit before stumbling over the obvious next question!

References


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Opinions on bringing up children: prompting TOK discussion through literature


On a day when students seem hard to rouse to even a mild level of vehement engagement, they will almost certainly perk up when asked questions like the following:

1. If a parent coddles a child every time it cries will the child become manipulative, crying to get whatever it wants?  
2. Should a child ever see its parents naked?  
3. Should a baby be breast fed or bottle fed?

Chances are, of course, you will discover some strong opinions. The tone of certainty which can accompany such opinions, normally reserved for verifiable knowledge claims, seems common in questions of child-rearing—where verification is, to say the least, elusive.

But what have these questions to do with TOK? Clearly, they are not knowledge questions but instead questions within research, within the scope of the human sciences. Equally clearly, conclusions will be based not just on facts but on values. For a TOK class, such questions and their answers are the grounding example (or the bait!) to lead students into broader knowledge questions about methodology and justifications for knowledge claims. And to lead them further into thinking about knowledge claims and analysis, let us turn, for today, not to research articles but to literature.

A Novel of Social engagement

Booker Prize winning novelist Ian McEwan has one of his protagonists consider exactly the vehemence typically accompanying questions on child rearing—a vehemence that, as the protagonist observes, is odd for two key reasons:

1. For virtually every “fact” about childrearing there seems to be an equal and opposite one.  
2. The “fact” of one generation can easily become the fiction of the next.

First published in 1987, The Child in Time has, this year, been given a new lease on life because of its current availability in electronic form. Though many parts of the novel provide rich and savoury opportunity for examining knowledge questions, one particular passage (pp. 77-78) is brilliantly focused on exactly the issue of unsupported knowledge claims about child rearing.

IB students are used to examining passages of fiction in literature and language classes, of course, but doing so in a TOK class—though emphasizing different tools of analysis—can be both refreshing and illuminating because:

1. the way of presenting the ideas—with irony and verbal flair, couched in a narrative context—is colourful (and fun!).  
2. the very way that one can explore ideas through fiction allows the opportunity to reinforce some thoughts on the Arts as an area of knowledge.

The following passage from the book provides some good material for students to examine in TOK terms. It is followed by two questions to give students, with ideas to raise during discussion.
PASSAGE FOR TOK COMMENTARY

Narrative context: Early in the novel, the protagonist, author of children’s books, is participating on a government committee given the task of writing a book on how to raise and educate young children. Aware that his position can hardly be disinterested, he assures the committee that children should learn to read between ages 5 and 7. Immediately thereafter, though, he thinks he just might be wrong. (boldface not in original)

He was not even sure—in fact it might be a rather fine thing, to pass the first eleven years of life playing the accordion, dancing, taking old clocks apart, listening to stories. In the end, it probably made no difference either way, nor was there any way of telling. It was that old business of theorising, taking up a position, planting the flag of identity and self-esteem, then fighting all comers to the end. When there was no evidence to be had, it was all down to mental agility, perseverance. …

And there was no richer field for speculation assertively dressed as fact than childcare….For three centuries, generations of experts, priests, moralists, social scientists, doctors—mostly men—had been pouring out instructions and ever-mutating facts for the benefit of mothers. No one doubted the absolute truth of his judgements, and each generation knew itself to stand on the pinnacle of common sense and scientific insight to which its predecessors had merely aspired.

He had read solemn pronouncements on the necessity of binding the newborn baby’s limbs to a board to prevent movement and self-inflicted damage; of the dangers of breastfeeding or, elsewhere, its physical necessity and moral superiority; how affection or stimulation corrupts a young child; the importance of purges and enemas, severe physical punishment, cold baths and, earlier in this century, of constant fresh air, however inconvenient; the desirability of scientifically controlled intervals between feeds, and conversely, of feeding the baby whenever it is hungry; the perils of picking a baby up whenever it cries—that makes it feel dangerously powerful—and of not picking it up when it cries—dangerously impotent; the importance of regular bowel movements, of potty training a child by three months, of constant mothering all day and night, all year, and, elsewhere, the necessity of wet-nurses, nursery maids, twenty-four-hour state nurseries; the grave consequences of mouth-breathing, nose-picking, thumb-sucking and maternal deprivation, of not having your child expertly delivered under bright lights, of lacking the courage to have it at home in the bath, of failing to have it circumcised or its tonsils removed; and, later, the contemptuous destruction of all these fashions; how children should be allowed to do whatever they want so that their divine natures can blossom, and how it is never too soon to break a child’s will; the dementia and blindness caused by masturbation, and the pleasure and comfort it affords the growing child; how sex can be taught by reference to tadpoles, storks, flower fairies and acorns, or not mentioned at all, or only with lurid, painstaking frankness; the trauma imparted to the child who sees its parents naked, the chronic disturbance nourished by strange suspicions if it only ever sees them clothed; how to give-your-nine-month-old-baby a head-start by teaching it maths.

Here was Stephen now, a foot soldier in this army of experts, asserting, as energetically as he knew how, that the proper time for children to become literate was between the ages of five and seven. Why did he believe this? Because it had long been standard practice, and because his livelihood depended on ten-year-olds reading books. He was arguing like a politician, a Government Minister, passionately, seemingly innocent of self-interest….

The young child who can read,” Stephen said, “has power, and through that acquires confidence.”
1. In what ways does this passage offer a critique of common failings in making generalizations about human beings?

The passage clearly makes a handy potted version of a sub-discipline within knowledge of human beings. Childcare is shown, through this protagonist, to epitomize several potential problems with making generalizations about human beings – problems that highlight the importance of careful methodology in the human sciences:

1. Where inductive reasoning (studies with controls) are scant, deductive reasoning can be flourished under the banner of expertise—and yet without the (questionable) premises spelled out.

2. Particularly problematic are the kinds of patterns and generalizations often sought by human scientists when they concern cause and effect—and effects to be felt in the future.

In this particular case, self-proclaimed “experts” from several different areas of knowledge make pronouncements—
generations of experts, priests (c.f. religious knowledge) moralists (c.f. philosophy), social scientists, (c.f. sociology, psychology) doctors”(c.f. natural sciences). According to the protagonist, when it comes to childcare, virtually no AoK is immune from making unsubstantiated knowledge claims!

3. Through the protagonist’s eyes, questionable claims to knowledge can be buttressed by
   a. invoking “common sense”—and thus beg the question
   b. invoking “scientific insight” and “scientifically controlled intervals”—and thus undercut objections through suggesting objectively obtained facts
   c. invoking “grave consequences”, “trauma” and “danger”—and thus, through appeal to fear, (c.f. argumentum ad baculum) silence objection. The same arguments implicitly make premises about the thin edge of the wedge and, of course, deterministic psychological causality centred on the exclusive importance of nurture (at the expense of nature).

2. In what ways does this fictional passage exemplify the methods of literature and the arts?

Where does the author stand? The protagonist’s (and, perhaps, the author’s) own views act as direct and indirect comment on the whole area of childcare expertise.

How?
   a. partly through direct assertion: e.g.”It probably made no difference, nor was there any way of telling.”
   b. partly by irony arising from loaded and extravagant language. Phrases and words associated with the experts, like “pouring out instructions”, “divine nature” of a child, “flower fairies and acorns”, or “lurid” create a powerful impression that all pontificators at either extreme of every question are histrionic and laughable. Irony is a powerful tool!

Looking at the passage as a piece of fiction can afford the wily TOK teacher yet another opportunity to drive home some issues about the Arts as an area of knowledge. Although the Course Companion goes into considerable detail to explode common assumptions about the Arts as a vehicle of knowledge, there will always be those whose first thought about this AoK is that all art is driven by “self expression”—as if all artistic works are spontaneous emotional outpourings from the deepest recesses of the artist’s hidden self, aimed only at providing some sort of technicolour catharsis (and let the public be damned).

What better passage than this to demonstrate that, whatever “self expression” it might reflect, it is almost certainly something entirely different as well. Even the most earnest proponent of self-expression as the essence of art will be hard pressed not to admit that this passage is, above all, intellectual analysis.
driven by the protagonist’s interest (and possibly, but not inevitably, the novelist’s) critical and ironic social commentary.

As in the example here of McEwan’s *The Child in Time*, literature engages in social commentary so often – and so often so well! Although we don’t turn to novels for evidence-based, testable generalizations about human beings, we can appreciate their role in exposing how many human beings think and act, often with analysis and commentary. A novel can bring to life plenty of knowledge questions (e.g. *How do we know what the best way is of raising a child?*) in an engaging way, and invite critical examination of the different methods of answering them.

**References**


Photo Credit: dhammza via Compfight cc

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**Shared knowledge: a moment of “Wow!” and then…**

By Eileen Dombrowski. August 1, 2014.

You HAVE to watch this video from Discovery Channel! Watch it, and then rotate your screen for the view at the end. First, just enjoy it. And then we can link it to TOK: Mount Everest in 3D: Experience the Trek to the Summit. http://everestavalanchetragedy.com/mt-everest-journey.html

For me, there are moments of wordless wonder – amazed at being given an echo of experiences so far beyond my own life, shared through stories or images. But, in a characteristic for which I have often been teased, I don’t stay wordless very long.

**1. First, the “wow!” moment.**

In TOK, we distinguish between *personal knowledge* and *shared knowledge*. In the Course Companion I call their interaction “the zone of exchange” and find this space dynamic. For those of us lucky enough to have access to education and technology, this young century is an exciting time in the Zone.

How has technology affected our access to knowledge in 2014, do you think, compared to our access just 100 years ago? How much more can be shared, and how?
For me, this video of the ascent route of Everest is amazing. I’m not a climber — I’m scared of heights and I’d simply hate all that gear and all that danger — so the fascination has nothing to do with wanting to get out there myself. If you’re also saying, “This is amazing”, why are you amazed?

Are there videos, films, stories, novels, scientific discoveries that give you this “wow!” moment? Can you pick out one example of a time when you’ve said something like, “That’s amazing! How did they figure that out? How did they do that? Isn’t it fantastic that they can show us this?”

2. And then the metaphor moment.

This video gives such an aerial view sweeping up icy passes and ridges, and such an overview in the screen rotation at the top.

To what extent can you make an analogy to Theory of Knowledge, in the way that it looks out over all knowledge to see its characteristic features and the way the bits fit together? How far does the metaphor fit and plan an image of TOK – and at what point does it break down as irrelevant or even distorting?

3. And then the analytical moment.

I love the “wow” and can’t resist the metaphor, but it’s when we look at what knowledge is involved and what exactly is being shared in the communication that we’re most into Theory of Knowledge. I love this phase just as much, with all the thoughts that rise to the surface as I watch the video a second time (at least!):

• The video carries the title “Everest Avalanche Tragedy”, labels spots on the ascent with their names, locates in one spot a terrible tragedy that killed 16 sherpas, imposes a red line for the route, floats the country names “China” and “Nepal” in the distance, and features a button for donation. To what extent is this film a record of what we see (perceptual), and to what extent a presentation of what we know (conceptual)? What does it have in common with maps? If it is used to establish ideas, what point is it making?

• To what extent can we expect to share the personal experience of mountain climbers — their firsthand knowledge — even with the best of words and images? Does this particular video seem to be aiming to share experience, or something about experience at a scale removed from it? At what point does direct personal experience become knowledge — personal knowledge, then shared knowledge? In what ways does the sherpas’ knowledge differ from the knowledge of those who arrive from outside to climb Mt. Everest?

• Why do you think that some achievements, some discoveries, some wrecks, some tragedies become mythologized? (Can you name a few that seem to be iconic of some idea or feeling?) What is it about Mt Everest, for example, that has made it part of popular knowledge, knowledge shared around the world? What is the role of images? numbers? stories?

• What ways of knowing are involved in giving Mt. Everest its place in shared knowledge? What areas of knowledge have been involved in our being able to see this video and understand what it is representing? What technology? What besides technology?

• One of the significant features of this video is the further knowledge it invites us to gain, not about climbers in general but the sherpas who carry an expedition’s supplies up Mt. Everest. (See the homepage of this video from Discovery Channel: http://everestavalanchetragedy.com) What are the ethical issues that surround the climbing of this iconic mountain – such as impact on the people who live there and the environment? Are such impacts always best approached through ethical theories based on consequences (utilitarianism), or are other just as relevant?
And now, back to the “Wow!” I confess that I’ve written all of these analytical questions to place this video in TOK context — and to set up a possible class discussion — simply because I wanted to put the video on my blog. I wanted to share it because I find the overview amazing. And I find the human tragedy, treated only quickly in this excerpt, deeply moving.

References


TOK and The User’s Guide to Economics

By Theo Dombrowski. August 13, 2014

Interviewed in the TOK Course Companion, economist Susan McDade (working with the United Nations) comments that “most economic theories” used in the West are based on “assumptions [that] can be pointed out to be weak or not always true” and argues for a complex series of values that are typically ignored by economists. Economics, as we recognize in TOK, is very much a human science — inescapably human in its study and interpretation of aspects of human behaviour. In this regard, a useful further resource for our TOK treatment of the human sciences is a new book by Ha-Joon Chang, Economics: The User’s Guide.

Chang’s ideas are easily accessible in many different interviews and reviews, but perhaps most neatly and efficiently laid out, first, in an article written by the author himself and, second, in an extensive review and summary of the book.

First, to point to the crucial need to meet majority assumptions, Chang challenges the status quo. “There isn’t just one right way of ‘doing’ economics, despite what most economists tell you.” At another point, he writes, “The focus on the market has made most economists neglect vast areas of our economic life.” Straw men? Alas, it seems not.

Second, to give a handle on the complexity, Chang gives us a satisfying number—nine: “there are at least nine different schools of economics, each with its strengths and weaknesses.” (In her review of the book, Zoe Williams identifies and summarizes them.) Third, he goes on to point out that the complexity arises from the complex nature not just of different social systems, value systems and cultures but of human nature. Rather than seeing the complexity as a justification for throwing up our hands in post-modern
helplessness over answers, though, he argues for a multi-pronged approach.

“The economic reality is complex and cannot be fully analysed with just one theory. The various economic theories conceptualize basic economic units differently (e.g., individuals v. classes), focus on different things (e.g., macro-economy v. micro-economy), ask different questions (e.g., how to maximize the efficiency with which we use given resources v. how to increase our abilities to produce those resources in the long run) and try to answer them using different analytical tools (e.g., full rationality v. bounded rationality).

“As the saying goes, ‘he who has a hammer sees everything as a nail’. If you approach a problem from a particular theoretical point of view, you will end up asking only certain questions and answering them in particular ways. You might be lucky, and the problem you are facing might be a ‘nail’ for which your ‘hammer’ is the most appropriate tool. But, more often than not, you will need to have an array of tools available to you.

“You are bound to have your favourite theory. There is nothing wrong with using one or two more than others – we all do. But please don’t be a man (or a woman) with a hammer – still less someone unaware that there are other tools available. To extend the analogy, use a Swiss army knife instead, with different tools for different tasks.”

Importantly, though, for those would go too far in dismissing altogether the possibility that economics can provide genuinely helpful “knowledge”, Chang emphasizes the dual principles of cautious pragmatism and intelligent (and, again, complex) skepticism:

“Saying that economics is a political argument does not mean that ‘anything goes’. Some theories are better than others, depending on the situation at hand. But it does mean that you should never believe any economist who claims to offer ‘scientific’, value-free analysis.”

Zoe Williams, reviewing the book in The Guardian, effectively summarizes these notions:

“...we are witnessing a failure of plurality. Our current landscape has been created by the acceptance of a few core principles – the individual as perfectly selfish, perfectly rational, able to create perfect markets by acting in her own interests; we have ignored plausible competing theories and have suffered for it.”

She goes on to give some examples, particularly ones that extend beyond the wealthiest countries:

“Political and ethical judgments are present even in ostensibly value-free exercises, such as defining the boundaries of the market. Deciding what belongs in the domain of the market is an intensely political exercise. Once you can drag something (say, water) into the domain of the market, you can apply the ‘one-dollar-one-vote’ rule to decisions surrounding it, making it easier for the rich to influence the outcome.”

Conversely, if you can take something (say, child labour) out of the domain of the market, it becomes impossible to influence its use with the power of money.

Most important, though, are words that will resonate with any critical thinker (which is to say, we hope, any TOK student or teacher): “I aim to show the reader how to think, not what to think, about the economy.”

A TOK class discussion based on either or both articles is likely to raise many important ideas about knowledge, extending beyond the specific human science of economics:
- the importance of interdisciplinary understanding within the human sciences
- the limits, but also the pragmatic implications of knowledge claims in the human sciences
- the need for cultural perspectives where “the West” in particular has tended to run rough shod over developing nations
- the need to consider multiple perspectives and theories, not to value them all equally (c.f. “false balance”), but to gauge their strengths and weaknesses
- the enormous power that a theory, even when imperfectly tested, can wield both over its proponents and society

Ha-Joon Chang, reflecting on the very nature of knowledge in economics, is presenting ideas relevant to others in his own field. In addition, though, he is contributing to our understanding in Theory of Knowledge of economics as a human science and the debates within it.

References


Also see:


http://www.cam.ac.uk/research/discussion/its-time-to-demystify-economics

Cupcakes and sushi: fads, trends, and questions of knowledge

By Eileen Dombrowski. August 19, 2014

What’s the difference between a fad and a trend? How is the passing craze for cupcakes relevant to knowledge in the human sciences? A light story on food fads raises some general knowledge questions. My friend and co-author Mimi Bick has sent me a link to a podcast and a personal story, both of which use entertaining ways to connect everyday social and economic responses to the larger questions of how we study human beings.

The Podcast

In Q the podcast, Jian Ghomeshi interviews David Sax, who writes on food culture in North America. They talk (18 minutes) about why and how certain foods capture the imagination and the market in contemporary North America: “The Tastemakers: Why We’re Crazy for Cupcakes but Fed Up with Fondue.” (It’s interesting to note their “all”
and “everyone” statements as they speak of a context where everyone has access to restaurants...and to food.)

Mimi’s Story

I ate sushi for the first time in what then was an expensive restaurant in downtown Montreal. If you remember from your visits there, it was either on Crescent Street, de la Montagne or Drummond. It must have been in the early 80s. My friend Debbie took me there and eating sushi was a crazy experience. Raw fish! The thought wasn't too appetizing but we sat at the bar and it was so neat and pretty and it felt sophisticated. That green stuff on the side — it was like a hit of cocaine straight to the nose. I was wowed.

Twenty-five or thirty years later sushi is an inexpensive fast-food in every neighborhood in Santiago, Chile. You can buy trays of it in the supermarket or even at the gas station's convenience store. A few years ago I had to take my son to the emergency room as he was violently ill with what turned out to be for the doctors an easily distinguishable intoxication from sushi he ate at school (a classmate’s mum brought it in for some celebration). A conversation and a blood test was sufficient for the doctor to determine this. What happened in the intervening years?

Knowledge Questions

The following 6 questions are drawn from the stories of cupcakes and sushi, now using these tasty foods as no more than examples in considering ideas about methods and measurement:

- What is the difference between a “fad” and a “trend”? Is there a “tipping point” and if there is, what determines it? What defines a “trend”?
- What is a trend or (trend estimation) in business and economics and in natural and social science research?
- What does a trend mean, mathematically speaking?
- According to some, a “trend” is identified when three points on a graph relate to each other in a particular way, for example they incrementally ascend or descend. What assumptions about data collection does this entail?
- What are the implications of a trend, broadly speaking, for culture and cultural change?
- How do technologies assist us in the identification of trends and likewise push forward their development from fad-status?

This final question is at a level of greater abstraction and removal from the examples of cupcakes and sushi, and it takes a more general overview than do the knowledge questions about trends. It lifts to the level of the open and general knowledge question that would be expected of a TOK presentation:

- How are generalizations about human behaviour established and justified in the human sciences?

We start with cupcakes and sushi, and end with an area of knowledge and the knowledge questions that drive it.

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http://www.cbc.ca/q/blog/2014/05/26/david-sax-tastemakers-food-trends/

photo by Frédéric Bisson  https://www.flickr.com/photos/76u76/
Why is TOK’s critical thinking so important?


“Those who can make you believe absurdities, can make you commit atrocities.”

Voltaire

“The eye sees only….”

By Eileen Dombrowski. August 30, 2014

https://www.youtube.com/watch?v=5pQM-f9G2hQ

Ongoing research on the eye gives fresh meaning to an idea that runs right through TOK – literally most relevant to sense perception, but metaphorically to confirmation bias (WOK intuition) of all kinds. This 3-minute video on the way the brain anticipates changes in the visual field takes as its opening a quotation from French philosopher Henri Bergson: “The eye sees only what the mind is prepared to comprehend.”

This quick, clear video raises knowledge questions about our screening of the world, involving selective attention and anticipation even at the most basic biological level of sense perception. In a TOK class, it could complement well the more recent research into “continuity fields” in vision, on which I blogged a few months ago (April 15): “Time delay and vision: TOK sense perception and the world.”

Shared knowledge: sharing through methodology, or through PR?

By Eileen Dombrowski. September 1, 2014

Behind the stark issue of climate change — like the other challenges of our times — looms a concept essential to explore in Theory of Knowledge: shared knowledge. How does knowledge reach people? Through what process of sharing does the public gain knowledge that will affect their lives? Two recent news reports highlight contrasting processes by which knowledge claims on climate change reach the public — with profoundly different implications for action.

The two reports I pick out are from science and from business/politics:

- the first is the latest scientific consensus on climate from the Intergovernmental Panel on Climate Change and
- the second is an announcement that 10 of the world’s top public relations companies have publicly declared that “they will not represent clients that deny man-made climate change or seek to block emission-reducing regulations”.

The IPCC report is undeniably significant in summing up the current state of scientific knowledge, including strong warnings about the future. But is it possible, for the way knowledge is shared with the people whose lives are affected, that the story about the PR companies may be even more important?
The non-news: IPCC confirms the scientific consensus, updating it.

The draft report from the IPCC is scarcely news at all. It “seeks to tie together previous reports the panel has released over the last year and offers a stark assessment of the perilous future the planet and humanity face due to global warming and climate change.” The Associated Press quotes Pennsylvania State University climate scientist Michael Mann in his reaction to the draft:

“The report tells us once again what we know with a greater degree of certainty: that climate change is real, it is caused by us, and it is already causing substantial damage to us and our environment. If there is one take home point of this report it is this: We have to act now.”

The IPCC report is a synthesis of what the international group of scientific experts have communicated already. They have followed the methodology of science to share their findings with each other, have reported their consensus to a world body, and are giving us knowledge that has urgent implications: that we have to act fast to mitigate the impact of climate change that is already upon us. But these implications are the very reason for the false “controversy” over climate change that has claimed so much media space.

Look closely at what Michael Mann is saying:

- fact: climate change is real and already damaging
- fact: it is caused by us
- implication: “We have to act now.”

The first two knowledge claims are scientific conclusions, justified on the basis of evidence. The third is not. It is an implication – in this case the conclusion toward which the facts compel the writer. The implications are social -- ethical and political. They present an imperative for action resisted by coal and oil companies, whose profits would be affected by regulation.

In the case of climate change, the implications of the scientific conclusions have all along been the reason for industry denial of the science and their funding of the denial campaigns.

The real news: Many PR companies will no longer accept clients or campaigns that deny climate change.

And that is why I suggest that the second news story may actually be more important for the way knowledge on climate change is publicly shared. If Public Relations companies, recognizing the significance of IPCC reports, no longer accept to run campaigns denying climate change, then the public is much more likely to gain accurate information.

“Public relations firms,” comment journalists with the Guardian, “have played a critical role over the years in framing the debate on climate change and its solutions – as well as the extensive disinformation campaigns launched to block those initiatives.”

In early August, the largest American PR company, Edelman, joined the original ten PR
companies with the following strong statement:

“Edelman fully recognises the reality of, and science behind, climate change, and believes it represents one of the most important global challenges facing society, business and government today. To be clear, we do not accept client assignments that aim to deny climate change.”

The withdrawal of major PR companies from funded disinformation does not, unfortunately, solve the problem of increasing greenhouse gases. The IPCC report, as reported in the New York Times, found that efforts around the world to limit emissions are being “overwhelmed by construction of facilities like new coal-burning power plants that will lock in high emissions for decades.” Moreover, PR companies still remain who have not made any commitment to reject campaigns to block information or disseminate disinformation.

However, the rejection of disinformation campaigns by some of the largest firms has made a change in the social context for the fake “debate” over the science of climate change.

**Knowledge questions**

Some central points for Theory of Knowledge are well illustrated by these stories on climate science and its social context. (See TOK course companion, “A Guide to Evaluating Knowledge Claims”, 219-220):

1. The concept of *shared knowledge* is no more than a starting point. About any controversy with conflicting knowledge claims, we might well ask: “What do we mean by ‘shared knowledge’? Who is doing the sharing, for what purpose, by what means, and with what implications for action if we accept the knowledge claims?”

2. Acknowledging differences in *perspectives* is likewise no more than a starting point, since not all perspectives have the grounds to be taken equally seriously in their knowledge claims. We might ask: “What assumptions, values, and selected information come with this perspective? What justifications of evidence are offered for this point of view? Is it reasonable to accept it?”

3. A *methodology* within an area of knowledge is a means of seeking the truth, communicating findings, and setting up the possibilities of replication and testing. About any controversy with conflicting knowledge claims, we might again ask: “What is the process by which these conclusions have been reached? What are the criteria for accepting conclusions? Is it reasonable to accept them ourselves?”

**Action questions**

But this particular story – the story of climate change in our times – raises another truly important question of ethics, politics, and action:

“*Given* that climate change is real and damaging, and that human beings are causing it, what should we DO?”

This is where the social debate should centre – not on the science of climate change, now long established, but on the *implications of knowledge for action*.

TOK contributes to the debate through understanding and analysis of perspectives. It contributes skills of following arguments thoughtfully and analytically, evaluating evidence and tracing implications. It also contributes awareness of ethics and ethical argument. However, as argument moves beyond the “is” and the “should” into actually planning actions, it moves at the same time beyond the scope of TOK. It is in other parts of the IB that students should pick up the
implications and learn to take appropriate and effective action.

Some actions are spelled out in the video with which I conclude, calling for action later in this month: “Mobilize. March. Make history.”

People’s Climate March - Sept. 21st
https://www.youtube.com/watch?v=JUUTB2vY

Indigenous Knowledge: definition, implications, and controversy

About all areas of knowledge, we ask questions that take us straight to methodology and social context. Who owns knowledge? How is it passed on as shared knowledge, and within what controls of methodology or power? We may think instantly of the sciences, and even controversies over current scientific conclusions and scientific products (e.g. medicines and technologies).

Yet some of the oldest knowledge in the world is equally ignited by these knowledge questions, which burn hotly in our news. As Indigenous Knowledge joins the other categories in our TOK areas of knowledge, it brings living issues of definition, historical and social context, and control of what is taught to the next generation.

Education: shared knowledge and social control

In Canada this week, more controversy has erupted over an agreement between the Assembly of First Nations and the federal government over a bill on First Nations education. In dispute have been the degree of First Nations control of aboriginal education and the extent of federal funding. In play has
been the question: *Who controls the knowledge that will be passed on to the next generation in a schooling system?* More specifically, what extent do aboriginal people decide their own schooling, and to what extent the government? Both the content of the bill on education and the process of reaching apparent agreement in February (now contested) are subjects of controversy.

**Who controls First Nations education?**

This is no lightweight question. It was only last spring that the Truth and Reconciliation Commission concluded four years of hearings into Canada’s residential schools and their “cruelty and abuse” of native children forcibly separated from family and culture. In 2007, Canada made a formal apology for the residential school system and the damage it has done to aboriginal peoples.

The historical justification for residential schools (from the perspective of the federal government of the time) was to educate the children — educate them away from Indigenous Knowledge passed on culturally and toward European knowledge passed on in a residential school — knowledge that would integrate them and make them easier to manage within a dominantly European society.

With some awareness of this historical background (which varies with the part of the world), we can ask some of the leading questions about Indigenous Knowledge (IK) with greater understanding of the significance of what we consider to be the answers.

**IK: definitions and implications**

Although I have treated major knowledge questions already in the *IB Theory of Knowledge Course Companion* (chapter 21) and don’t want to repeat a lot here, I would emphasize the following questions as applicable to what is happening right now in our news. All of them are connected, in one way or another, to the central concept of definition — and the implications of how we name our concepts and draw their boundaries.

1. **WHAT is “indigenous knowledge”?**

   Do we define IK by describing its most usual traditional characteristics, such as experiential knowledge of living on a particular land or the holistic nature of much indigenous knowledge, such that dividing science, religion, and the arts into separate areas makes no sense? Is the definition affected by WHEN the knowledge was gained and WHO gained it?

2. **WHEN is “indigenous knowledge”?**

   Is it something of the past that ended historically with Contact — such that it is either “preserved” or “lost”, but not current and evolving as other areas of knowledge are (and as IK had been prior to the instant-freeze moment of Contact with Europeans)? As indigenous people continue to learn, create, and communicate, is their new contemporary knowledge excluded from the category of IK?

3. **WHO has, or can have, “indigenous knowledge”?**

   IK is different from most of the other TOK areas of knowledge. Scientific knowledge, or historical knowledge, or knowledge in the arts is open to people of any ethnic background (even though they may bring influences from their backgrounds). But indigenous knowledge is tied explicitly to particular ethnic groups as cultural knowledge — groups classified as “indigenous”. The relationship is intimate between their knowledge and their identity.
Yet to what extent do the indigenous groups around the world present a commonality, and to what extent difference? And how does the degree of variability of indigenous cultures and what they know affect what we consider IK to be?

If you answer question #1 above by insisting on traditional features of IK, and answer question #2 by placing Indigenous Knowledge in the historical pre-Contact past, then you will probably find the current First Nations responses to educational systems irrelevant to the Theory of Knowledge course – except insofar as traditional knowledge is preserved or lost by the contemporary people of question #3.

However, if you answer question #3 by saying that IK is the knowledge held by indigenous people and recognize First Nations to be historically continuous, then you will accept that, over the past couple of centuries, their knowledge (like everyone else’s) has changed. You will notice that they often have strong feelings about the education they consider currently best for their children – just like other parents and community leaders in the world – regardless of whether or not the educational issues centre on the preservation of traditional knowledge. And, if you think of what many in the present generation of adults suffered in the residential schools, you can understand why they do not fully trust the government to know what’s best for them.

You may also be more inclined, perhaps, not to think of indigenous people – or even one cultural group of indigenous people – as holding a homogenous perspective on knowledge and schooling. Just for example, the Assembly of First Nations has been politically divided over the process of ratifying the educational bill that their Chief signed. Many felt strongly that a meeting with the government should be on their terms, as nation-to-nations, in the presence of the representative of the Crown – not in the Canadian capital of Ottawa between the National Chief and the Prime Minister. The National Chief resigned in May in face of protests over his style of leadership, and this week’s controversy centres on the degree to which he included — or failed to include — other chiefs in the process of reaching the contested agreement in February.

Is background political disagreement between indigenous leaders on a federal bill, though, relevant to IK in the Theory of Knowledge course? That depends on the definition you accept of IK. If indigenous knowledge is what indigenous people know, and if the process of sharing knowledge from one generation to another includes the system they accept of schooling, then the answer is yes (even though in TOK we ensure that we keep our focus on the knowledge and don’t get overly absorbed into its sociology and politics).

Actually looking at the people themselves does make Indigenous Knowledge messier to treat in TOK: it becomes harder to make generalizations as cultural groups change over time in their knowledge, and harder to cut out of the picture the complex social and political forces of past and present. In my mind, however, IK is all the more interesting for its shifting cultural context, multiple perspectives, and contemporary debates over control of educating the next generation. If we can recognize IK for its traditional achievements and at the same time see it within its contemporary context, then we take a major step toward appreciating the living human processes of passing on knowledge — not just Indigenous Knowledge but all other knowledge as well.

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“How ever did they manage?” I’ve spent today as a tourist at the Mesa Verde World Heritage Site in Colorado, tromping around pueblo sites and gazing at the historic cliff dwelling houses of the native peoples of the American southwest. It’s hot out – too hot. How ever did the people get water to drink and irrigate their corn? Simply eating and drinking in this arid environment would be such a problem. Then what comes to my mind is one definition I’ve read of a word that is so difficult to pin down: culture. “Culture,” goes this definition (one of many definitions), “is a set of solutions to problems.”

Problems and solutions? We might immediately turn to social geography for comment on societies developing in particular landscapes, or to cultural anthropology for comment on groups working together in systems of social cohesion within their own worldviews. Myself, though, I head for the usual place. I think about Theory of Knowledge.

How did the Anasazi people know how to survive? Actually walking through an ancient pueblo or descending a ladder into an underground kiva encourages a visitor to feel intensely – even physically – how practical knowledge connects people, and how much it matters. Thirsty, I look for cisterns and want to know how they stored scarce water. I’m impressed by all they figured out – and how they applied their TOK ways of knowing to discover and test solutions.

I’m impressed, too, with the shared knowledge they constructed over time so that the society as a whole could flourish. They developed better and better building methods so that their houses were less likely to burn — and so that by the end of the 13th century they were able to build the elaborate structures of the Cliff Palace at Mesa Verde. They learned to use the natural materials around them. They developed agriculture, wove baskets, made splendidly decorated pottery, and established trade routes. Their shared knowledge – built up and passed on culturally – gave them so much more than mere survival.

I’m inclined in any case to be impressed by what smart people figure out in any field. But there’s something powerful about confronting a land that seems so inhospitable and recognizing what score you’d get yourself on a survival test.

I’m pleased that Indigenous Knowledge has been added to the TOK course — regardless of whether particular TOK classes ever pursue it. Its inclusion says clearly that in TOK knowledge is not just the province of philosophers or academic specialists. It is constructed and claimed by all people of the world, past and present. As we speak of “shared knowledge” we are referring not only to the depersonalized methodologies of many academic areas of knowledge but also (with appropriate comparisons) to the sharing of
cultural groups — such as the Anasazi constructing, in vast and arid canyons, an entire way of life.

I return gratefully to my air-conditioned car and escape the heat. As we descend the paved road from the high mesa, to join the highway below, I’m still musing, “How ever did they manage?” Surely the most impressive of all human achievements is knowledge.

“Don’t Even Think About It: Why Our Brains are Wired to Ignore Climate Change”

By Theo Dombrowski. September 23, 2014

On September 21, more than half a million people in 166 countries (approximately 400,000 in the New York flagship march alone) marched to demand that world leaders act to tackle climate change. Their demand was directed in large part to the leaders converging today for an emergency UN Climate Summit. Will their huge numbers have any effect on the attitudes—or beliefs—of those who have not already accepted the conclusions of 97% of the world’s climate scientists?

According to the author of a recent book, the answer just might be yes—but not, perhaps, for reasons that most protestors might expect. In Don’t Even Think About It: Why Our Brains Are Wired to Ignore Climate Change, George Marshall summarizes, analyzes, and illustrates some fundamental questions of the way that humans gain shared knowledge—or, equally, refuse to accept overwhelming evidence.

“More than any other issue it exposes the deepest workings of our minds.”

The dog-eared historic example most used to illustrate this characteristic of human close-mindedness, is, of course, Galileo. Galileo’s case, however, is, let’s face it, just a little old. More to the point, it is usually explained, comparatively simplistically, in terms of faith/ideology, backed by power, trumping scientific evidence. Alas for the spread of shared knowledge… The limitations, and the reasons for those limitations, on the sharing of knowledge might be relatively unimportant in some cases: the future of humankind might not much depend on our all knowing the six flavours of quarks or who wrote Shakespeare’s plays.

Marshall’s example, climate change, though, is both more immediately pressing and more dismayingly complex. If what Marshall says is true, many of the biases, heuristics, fast thinking patterns of intuition and so on considered by many ToK teachers (See 2013 IB Theory of Knowledge Course Companion, chapter on Intuition) make a virtual impenetrable barrier to increasing our shared knowledge of climate change beyond present levels. In fact, Marshall’s most underlying argument (remember the title of his book?) is that our non-rational selves, our ‘hard wiring” is just about—but not quite—insuperable.

Most of us alert our students to pitfalls in our ability to process evidence because we hope that understanding these pitfalls can lead to bypassing or minimizing them in ourselves—as
well as recognizing them in others. While such knowledge of our mind’s pitfalls may be helpful, in the case of climate science, Marshall says such knowledge falls far short of being sufficient.

In fact, Marshall claims we can hardly go deeper into understanding how humans struggle to process information and develop convictions than through examining their relation to climate change: “More than any other issue it exposes the deepest workings of our minds.” The deepest workings of our minds? This is an impressive claim and one worth at least considering. As he writes in his introduction to the book, entitled simply “Questions”, “How is it possible, when presented with overwhelming evidence, even the evidence of our own eyes, that we can deliberately ignore something—while being entirely aware that this is what we are doing?” (italics mine)

Where to Find Marshall’s arguments

Marshall’s whole book is well worth getting as resource for TOK teachers and, of course, everyone else. Without buying the whole book, however, three online resources can provide the most central of his arguments and form the basis of many provocative quotations for discussion.

First is an interview conducted a few months before the book was published.

Second is the “look inside” link to the book’s online sales site. Here you can see the illuminating and extensive Table of Contents and well as read the Introduction, called “Questions”.

For those who want a quick-and-easy summary of many of the book’s points, third is a review by Matthew Hutson, himself an author of a good TOK resource The 7 Laws of Magical Thinking: How Irrational Beliefs Keep Us Happy, Healthy, and Sane.

Marshall’s Arguments

So what exactly does Marshall reveal about our “hard wiring” that makes it so difficult for so many of us to embrace the scary assertions of climate science?

A few of his claims might prove interesting fodder for class discussion—particularly if some insist they themselves don’t fall victim to them. Here is a sampler:

1. We are only likely to accept as “convictions” assertions about climate change if our friends, family and/or other social groups do—in other words, if it is a “social fact”, or as Marshall says, “that’s to say that the people around, the people they know in their networks, their family, friends and community are actively seen to hold this attitude and conviction.” (interview)

“What will shift a climate change denier, not the professional ones of course but the general public, is citing the evidence that people like themselves who share their values happen to believe in it and happen to accept it.”

2. “We have parallel processes within our brains and one process deals with the analysis of data. The other deals with the emotional implications of data and the sense of threat, and that these processes work in parallel but can also be kept quite separate. When we receive our information from the scientific source, we can actively collude with those different processes by making sure that we keep it over there in our scientific part.”
Note Marshall’s particular emphasis on active collusion.

The titles of three of his (very short) chapters seem to go further in developing this active collusion:

- Chapter 12. Uncertain Long Term Costs. How Our Cognitive Biases Line Up Against climate Change
- Chapter 16. Paddling in the Pool of Worry. How We Choose What to Ignore
- Chapter 20. Tell Me a Story. Why Lies Can Be So Appealing

3. The victims of natural disasters forecast by climate scientists are unlikely to make the connection between the disaster and the forecast for several different reasons including “a reinforced sense of their own immunity, and an artificially reduced sense of the probability of something happening again.” Does this sound a little like the belief that lightning never strikes twice in the same place? Perhaps—and all the more tellingly because, science tells us, lightning does do exactly that.

4. People who have children are less likely than those without children to accept the truth of climate science. Consider

- Chapter 35. What Did You Do in the Great Climate War, Daddy? Why We Don’t Really Care What Our Children Think

And does all such “hard wiring” lead to denial of climate science?

If Marshall is right, then no. In fact, part of the point of his book, it seems, is to consider not just the innate/genetic qualities of our minds that lead to entrenched opposition to each but, also the opposite, those qualities that all humans have in common. These he describes as “our common psychology, our perception of risk, and our deepest instincts to defend our family and tribe.”

While “common psychology” might seem too broad a term to be very illuminating, his second two points, if true, are, presumably, grounds for some hope in an otherwise pretty hopeless situation. After all, any behaviour that is “hard wired”—as the term goes—we are told is, if not quite insuperable, something requiring huge effort and, in the terms of the inaccurate metaphor, something close to “rewiring”.

But how much is Marshall himself creating shared knowledge or merely providing impressions and opinions?

What will immediately occur to anyone alert to the ways that knowledge is created and shared is that Marshall himself is actually applying many of the techniques of the human/social sciences to the social treatment of a natural science (or, more accurately, a series of interdependent natural sciences).

Partly, it seems, Marshall’s evidence is second hand research, derived as he tells us in his introduction from speaking to “leading experts in psychology, economics, the perception of risk, linguistics, cultural anthropology and evolutionary psychology”. (All these areas of knowledge have their own methodologies, of course, and their relative claims on degrees of certainty.)

Partly, in addition, the author has conducted his own research amongst “hundreds of non-experts”—that is, “ordinary” people and, in particular, victims of natural disasters. While we might appropriately ask when anecdotal evidence, however compelling, is real evidence, “hundreds” of interviews comes close to being a convincing sample size—assuming that the interview methods are rigorous and the interpretations equally sound.

More to the point, he says he has interviewed those normally associated with views most strongly resistant to climate science, including “evangelical leaders” and “Texan Tea Partiers”. In fact, in the true spirit of critical
fairness (and TOK!), he was determined to consider perspectives. As he says, “I have even enjoyed meeting the people whose life work, to which they apply great dedication and creativity, is to undermine my own life work.”

Given these claims it may be surprising that Marshall eschews many of the key methods of communicating shared knowledge: “There are no graphs, data sets, or complex statistics in this book.” Does this weaken the authority of his book? No doubt for some it will. For those who accept his central arguments, though, it won’t.

And that brings us back to the great public demonstrations of Sept 21 and….

**Climate Change in the TOK class**

No doubt there will be many TOK teachers who want to avoid discussion of climate change. Why?

- As Marshall points out himself, it is often considered tactless to do so if family or friends have been victims of natural disasters.
- Climate change (like religion, perhaps?) is often seen as too sensitive a topic to bring to class: it is “The kind of thing that people avoid talking about within their own families because they know their Uncle Bob is a climate sceptic and they don’t want to have a row over the Christmas pudding, that kind of thing. I think people actively try not to talk about it.”
- In summary, “I suggest that the most pervasive narrative [and the greatest impediment to effective behaviour] is the one that is not voiced: the collective social norm of silence. [my emphasis] This response to climate change is all too similar to that other great taboo, death, and I suggest that they may have far more in common than we want to admit.”

If, however, what Marshall says is true, it is the very fact that people DON’T talk about climate change that keeps so many of us inured to its truths. Remember what he says about “social facts”?

Further, if what Marshall says is true about social facts, then a TOK discussion will perform on a small scale what may have been performed on a large by the mass demonstrations on September 21. Perhaps, just perhaps, hundreds of thousands of marchers constitute enough of a critical mass to allow some climate change deniers to feel the peer influence and develop their own acceptance.

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photo by Kristina Banks, EnergyAction Coalition, People’s Climate March NYC 9/21/14

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So who needs language?

By Eileen Dombrowski. September 25, 2014

Can we write more directly and more effectively to each other by chucking out all those words and using emoticons or emoji instead? Three social networks are offering images to bypass text altogether. Could this be, at last, a universal language?

Emoticons are not new. But till now they’ve stayed in place as an adjunct to text. What’s new is the advent in the past two months of emoji-only apps that claim to replace text and still achieve communication.

To my mind (or possibly to my sense of humour, which sometimes usurps it), there is something wholly delightful in learning that Herman Melville’s vast classic novel Moby Dick has been “translated” into emoji.

But is this language? Is this the way of knowing we discuss in Theory of Knowledge?

If you’d like to pursue this question, I suggest you have a look at two short articles. For background on the newly-released apps see “The rise and rise of social networks” by Alex Hern; and for some initial commentary “Emoji: the first truly global language?” by Alex Clark.

For TOK, emoji can prompt knowledge questions, the following among them:

- How can we know whether the emotions we feel are equivalent to those felt by others? What areas of knowledge deal with this question, and in what different ways? To what extent are our other TOK ways of knowing involved — for instance, sense perception, language, and reason — in trying to establish some degree of commonality or even universality? (And do emoji act as evidence?)

- What are the essential features of human language? How does a language such as English, Urdu, or Swahili differ from other forms of symbolic representation such as those created in the arts? How do differences affect the kind of knowledge we can communicate and exchange?

Applying serious knowledge questions to emoji could lead to some serious answers and arguments, but could also give a few smiles along the way — and perhaps, as a side-products, some attempts at visual poetry and chem lab write-ups. But I wouldn’t try to tell you what emoticons to use…because I just might slip and use all the wrong ones. Oops!

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Alex Clark. “Emoji: the first truly global language?” The emoji has come a long way from its origins as a cute footnoote to text messages. Its many symbols are now used to form entire sentences. But what will we lose in translation? The Observer, 30 August 2014. http://www.theguardian.com/technology/2014/aug/31/emoji-became-first-global-language


**Arts and transformation?**


“There might be a case,” the TOK subject guide allows, “for supposing that the arts have an important function as a medium for social criticism and transformation.” *Might be a case? Supposing?* No overstatements here! The arts (arguably literature most directly) are used so widely as a vehicle for social critique that I offer one more example only for its current relevance: 26-year-old poet Kathy Jetnil-Kijiner from the Marshall Islands was selected to read a poem to the Opening Ceremony of the UN Secretary-General’s Climate Summit last week.

Watch the youtube video and decide for yourself if, in the words of the TOK guide, the arts “might have social and political implications”.

Recent research in the cognitive sciences goes far, it seems to me, to affirm the case that the arts have a role in social transformation. We apparently resist facts and logical arguments if they do not accord with the beliefs we hold in common with our social groups (see blog post on climate change Sept 24). Intuition and confirmation bias once again?

Can we hope that the arts, including this poem written by the poet to her daughter, will achieve the communication – through language and emotion – that reason cannot?

120 heads of state at the UN gave Kathy Jetnil-Kijiner a standing ovation, and an official UN source said that many were moved to tears.

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Schooling the World: free preview this month

By Eileen Dombrowski. October 2, 2014

Schooling the World has just announced that their film is available this month for free preview. *Schooling the World: The White Man’s Last Burden* is now streamed with subtitles in eleven languages. Its free downloadable discussion guide has abundant material that is fairly easily re-framed to make it explicitly relevant to TOK.

I recommend this film highly as background for Indigenous Knowledge. It prompts some giant knowledge questions about shared knowledge in different cultures — what knowledge is considered most important, how it is learned and validated, and how it is shared from generation to generation. This is a thought-provoking film, beautiful to watch.

Grisly and sensational: Jack the Ripper and a TOK critical thinking

By Eileen Dombrowski. October 7, 2014

Have your students heard of Jack the Ripper? If not, you’ll probably want to skip this activity. Even though it would still be an exercise in evaluating sources and evidence, a lot of the shiver would be lost — and hence the fun in class. However, if they have heard of the brutal serial killer who stalked East London, England, in the 1880s, this could be an engaging activity for early in the TOK course — to launch critical approaches quite broadly and plant vocabulary ready for more subtle application later on.

1. Read.

First, give the students the link to the newsflash from the British source *The Daily Mail* (bold face is in the original):

WORLD EXCLUSIVE: Jack the Ripper unmasked: How amateur sleuth used DNA breakthrough to identify Britain’s most notorious criminal 126 years after string of terrible murders
2. Discuss.

Questions: Do you believe this report? Why or why not?

Discussion should raise issues such as the reputation of the news source, the style of presentation, the apparent reliability of Russell Edwards (and his possible motives), the kind and quality of evidence.

3. Supplement with counter-claims from other sources.

When they’ve had a chance to do some questioning themselves, give them links to articles of skepticism and rebuttal which swirled on the internet and social media after the Daily Mail’s big story. The following would work well:

- “Are YOU Jack the Ripper? No. And neither’s Aaron Kosminski”. usVSth3 blog. This blog post presents 4 numbered reasons for rejecting the story.

- Christopher Moraff, “Jack the Ripper is Still at Large”, The Daily Beast, 9.29.14 This blog post sums up reasons for skepticism in circulation on the web and provides background on the Jack the Ripper legend: “a cottage industry has grown up around the case. There are dozens of competing Jack the Ripper tours, websites, and books, most with their own self-appointed ‘expert’ attached; over the past century a string of hoaxes has duped more than a few of them into making claims about the Ripper’s identity that they later regretted.”

The same questions could be posed after students have read the rebuttals: Do you believe the report in the Daily Mail? Why or why not? This time, students are likely to modify or amplify their responses, and (most important) articulate better their grounds of (likely) rejection. The same critical analysis should be applied to the blog posts of rebuttal.

4. Link the activity explicitly to TOK critical questions.

Anyone with a copy of the IB Theory of Knowledge Course Companion can flip to chapter 3 “Seeking Truth” and substitute the current Jack the Ripper story for the short and generic one I’ve given on page 54, “VOODOO DOC DANCES UP A STORM”. The specific discussion questions on page 55 would need a bit of adaptation, but the same general TOK knowledge questions come up:

- What characteristics of a source of information indicate reliability – or otherwise?
- What characteristics of the presentation of information indicate reliability – or otherwise?
- What characteristics of your own response show you an immediate inclination in yourself to accept or reject the story? Can you identify attitudes or values that might boost your critical thinking – or blind it?
- broadest knowledge question, for reflection and possible writing: Does it matter if what we believe is true? Why -- or why not?

Early in the Theory of Knowledge course, I like to use stories that are absurd or dramatic to give students entertaining material that’s easy for them to question and easy for a teacher to debrief in TOK terms. Why not borrow for class some of the sensationalistic buzz that drives the tabloids and social media – and at the same time get to talk about it? Such material – and there’s plenty around! – helps to plant the analytical approach and the reflective questioning in order to build on it, in more subtle ways, throughout the course.

References

http://usvsth3m.com/post/96977532433/are-you-jack-the-ripper-no-and-neithers-aaron

Mathematician Alex Bellos was intensely irritated by the question. Was that person in the audience mocking him, or possibly ridiculing what he’d been saying about mathematics, to ask such a bizarre and irrelevant question at the end of his lecture? The audience member had asked him, as others had done before, “What’s your favourite number?”

In this podcast conversation from Radiolab, Bellos describes his abrupt shift of perspective as he realizes that the questioner is asking in sincerity. Quickly, he discovers that half the members of his audience have “favourite numbers”. And so begins his own investigation into emotional and imaginative associations with numbers, and the non-rational characteristics that many people attribute to a numbering system he had previously seen exclusively in terms of reason.

The ideas in this podcast are familiar to most TOK teachers – the emotional associations we gather with symbols within our symbolic systems of representation (which we consider in WOK language as it intersects with WOK emotion and WOK imagination) and the mystic meanings that have been given to numbers in many cultural contexts (which we consider in AOK mathematics). What makes this podcast of interest to TOK teachers, other than the entertainment listening to it (I liked it!), is that it sets up a quick and easy activity to warm up a class to talking about the intersection of our ways of knowing – and from there into mathematical ideas.

“Ideas for using the podcast in class”

Listening to the podcast may give you better ideas, but this is what came to my own mind as a class activity. With a light touch and sustained speed, you could fit it into 45 minutes — though an hour would work better.

1. **Ask your class if any of them has a favourite number, and if so, what makes that number special.** (I find a personal and anecdotal opening to class usually brings a group together and “tunes them in”.)

2. After their own responses, **play for them the first 3 or so minutes of the Radiolab podcast** (after the signature opening) – enough to put their own imaginative and emotional associations with numbers (or the absence of such associations) into a larger context of other people’s reactions. In minutes 1-4:15 Bellos speaks of his reaction to the question “What’s your favourite number?” We hear the voices of people who left messages about what numbers they like best, and why.
3. **Introduce the class BRIEFLY to examples of different cultures attributing emotional or even mystic significance to numbers.**

(Warning: Be careful to be clear on what you are exemplifying: you are picking out cultural meanings to illustrate the widespread human tendency to attribute non-rational meanings to numbers, but not suggesting to your students that they should take the knowledge claims of numerology or other superstitions seriously.)

Some examples:

Numerology, or the attribution of mystic properties to numbers, recurs in many cultures. Wikipedia gives a brief introduction (the opening paragraphs probably enough for TOK class) and some write-ups on specific numbers such as 108. Websites abound – far too many! — that list cultural associations or earnestly promote them. (A useful one is a list for the Meaning of Number 3.)

A striking example is the ancient Greek Pythagoreans (named after mathematician Pythagorus 6th century BCE) attributed special significance to numbers. For them, the associations were more than simply poetic, as they believed that numerical relationships were the essence of reality (Kline, 76):

"The number one they identified with reason, for reason could produce only a consistent whole; two was identified with opinion; four with justice because it is the first number which is the product of equals (to the Pythagoreans one was not a number in the full sense because unity was opposed to quantity); five signified marriage because it was the union of the first odd and first even number; seven was identified with health, and eight with love and friendship…. all the even numbers were regarded as feminine, the odd numbers as masculine." Morris Kline, Mathematics in Western Culture, page 77.

4. **Return to a couple more minutes of the podcast** (up to 6:40) for snippets of history on numbers and symbols and (up to 8:12) the voices of people explaining how they think and feel about the numbers 1 and 2.

5. **Broaden out to knowledge questions for discussion** — or else summarize ideas already raised in discussion by connecting them explicitly with knowledge questions.

- Does the existence of “favourite numbers” and numbers to which non-numerical ideas are attached suggest anything about how we use our TOK ways of knowing? In what ways do emotion, imagination, and reason enter our relationship with numbers – as they do for our other symbols, from words to flags? What other ways of knowing may be involved?

- What ideas associated with numbers are essentially mathematical (e.g. relationships such as sequence, symmetries, and factors) and what ideas are personal or cultural (including both the sound and the written version of numbers)?

- Write a definition of “number”. What is a “good definition” of the mathematical concept of number, and what is the role of a good definition? If possible, submit your class definitions later to your mathematics teacher to ask for his or her thoughts. (Note that the knowledge framework for areas of knowledge has a section entitled “language/concepts”.)

6. **Conclusion.** In a written article, Alex Bellos comments, “We are sensitive to arithmetical patterns, and respond emotionally to them.” If you have time in class, it would be worthwhile to end by playing the rest of the podcast. It centres on the number 7, the “world’s favourite number” in the online survey with over 30,000 respondents that Bellos ran. In discussion with Radiolab interviewers, he concludes that 7 is the favourite number not because of cultural influences but because of
mathematical features inherent to the number. Our arithmetical sense, he thinks, is what influences culture.

7. Possible follow-up writing exercise for the class

I’d suggest a non-mathematical follow-up for a short, reflective piece of writing to bring the discussion back into students’ personal spheres (and to squeeze more TOK ideas out of the class time). The writing could, in turn, lead back to class discussion.

Suggested guiding questions:

In what ways is Alex Bellos’ realization that his audience members are sincere in their question (What’s your favourite number?) a good example of a shift of perspective as we talk about it in TOK? (IB TOK Course Companion page 28)

- What assumptions was he making?
- What values were involved in his judgment?
- What conclusions had he reached?

When he suddenly realizes he could have “jumped to conclusions”, how do his assumptions, values, and conclusions abruptly change?

Link to personal knowledge:
Have you ever experienced such a change of mind, or witnessed someone realizing that they had misinterpreted a situation? What are the advantages of keeping an “open mind” – and why is it often difficult?

References


Pareidolia in Your Pocket

By Theo Dombrowski. October 21, 2014

Virtually everyone who carries a cellphone with a vibrating mode in that handy pocket regularly experiences “phantom phone vibrations” (estimates are as high as 90%). Also called, a little frivolously, “ring-xiety”, “hypo-vibrochondria”, and “fauxcellarm”, the phenomenon has been the subject of considerable speculation for several years.

Apparently, too, the syndrome is at its highest amongst the younger crowd—including IB students—and amongst those who have an emotional connection with the use of their cell phone.

It is a striking reminder that pareidolia—the inclination of the brain to create meaningful pattern even from random sensation or data—is not limited to the sense of sight, but can be found across the range of sense perception, including the sense of touch.

The internet is full of articles mulling over the incursions of technology into our very sensibilities and concluding, amongst other things, that the “syndrome” is “all in the head.” Well, perhaps it is—but not, according to research, in the sense that “the head” generates delusions from no immediate stimulus. It does so only in the sense that “the head” mediates and interprets external phenomena. Jon Snyder, in an article in Wired, updates research by Beverly Hills clinical psychologist David Laramie:
Hallucination may not be the most appropriate term, according to Laramie. “You’re misinterpreting something, but there is this external cue. You’re not totally making it up.” A compelling alternative, he suggests, is pareidolia. Essentially, it’s your brain getting a little bit carried away with its normally very useful talent for finding patterns in the world around you.

Finding patterns, perhaps—but from where? you may ask. The speculation here—and it is, so far, largely speculation—is that minute sensations created by clothing rubbing are enough to trigger the pattern-finding response.

Speculating on explanations

As is so often the case with these cognitive quirks that characterize amusing, irritating, or even dangerous human responses, researchers want an explanation (though some might claim, perhaps, that this in itself is a kind of pattern-finding!). As is so often the case, too, the (necessarily speculative) explanation connects our cognitive quirkiness to times when our ancestors were slouching around the savannahs of Africa: those of our ancestors who were quick to interpret the slightest sensations (sound, sight, or touch) as evidence of a lurking and peckish sabre-toothed-tiger were, naturally, more likely to survive and pass on their traits than the less sensitive type. The disadvantages of over-interpreting were few. Those, however, of under-interpreting were… Well, let’s all use our imaginations on that one.

The “take home” messages?

Sense perception as a way of knowing, though often felt to be the most reliable, has its perils. As the Course Companion observes (page 89), the point of looking at these tricks of the brain in the act of perceiving is to remind us all that “This kind of seemingly simple and involuntary filling in of missing information to form a recognizable pattern” underlies the fundamentally interpretive nature of so much of our sense perception. With the grasp of pattern so swift—before the logical mind can get itself into action—sense perception works together with intuition as a way of knowing.

The particular kind of misinterpretation of the senses called pareidolia is not limited to the sense of sight. Nor is it limited to conspiracy theorists or u.f.o-oligists who comb through photos and videos for evidence in support of their alarming (or disarming) theories. Nor is it limited to extremely credulous people—who, in a most infamous case, were willing to spend $28,000 on a grilled cheese sandwich in which they could “see” the face of the Virgin Mary!

One of the most common sense misperceptions of modern technological life is particularly common with students—including I.B. students. But will knowing of this research change your reaction to your cell phone when it seems to vibrate? Will it at least reassure you if you answer it—and nobody’s there?

One of the most delicious paradoxes in our quest for knowledge is that sense perception is both the way of knowing many of us trust most and, simultaneously, a way of knowing we recognize to be often untrustworthy. Seeing may, indeed, be believing. But is it really knowing?

References


Teaching TOK with a sense of purpose

By Eileen Dombrowski. October 25, 2014

IB Theory of Knowledge is taught in a great variety of ways — and sometimes very badly (as the current subject report laments). But what is the BEST way of teaching TOK?

I offer today a recent paper of my own, expressing my own thoughts on how best to structure and connect the ideas of the course, and where to place the emphasis to make the course integrated and purposeful.

In most ways, Purposeful TOK is nothing new. You can imagine me as a workshop leader running activities for teachers, asking everyone to focus the key words of the aims, objectives, and marking criteria — and then inviting discussion on the questions that everyone can see coming! I apologize that, in a paper, I give a lot of assertive sentences, no anecdotes — and no coffee breaks.

My goal in writing should be clear. I love TOK, see its skills as urgently important in the world, and want all teachers at least to consider my argument that, when taught best, it is centrally a course on critical thinking applicable to the world. We need it!

I hope the paper might also stimulate some discussion toward developing and refining the already-substantial support that TOK teachers are given by the IB in core documents.

Although I consider the newest subject guide to take TOK in very good directions, I feel there is work yet to be done on it — perhaps in the next round of curriculum review. Above all:

- The concept of “perspectives” (central in the TOK aims and marking criteria, and, I would say, in IB educational goals) is given minimal explanation and development. The concept truly needs more analytical treatment if it is be useful in evaluating the ways in which perspectives shape entire bodies of knowledge claims.

- Although ways of knowing are asserted in the guide to “underlie the methodology of the areas of knowledge”, the knowledge framework in its generic version ignores the ways of knowing entirely — even in the section treating methodology. In its subject-specific versions, the knowledge framework does not develop connections with ways of knowing consistently. In my opinion, there needs to be much more connection made between the TOK ways of knowing and the areas of knowledge that they are used to build.

I hope that the ideas I offer, including both ideas aligned wholly with the new guide and criticism given respectfully, will stir up thought on connecting the parts of the syllabus effectively with each other, and connecting the syllabus effectively with the TOK aims. Those aims are, in my mind, the essential goals of any education that hopes to guide students to thoughtful engagement in the world.

Eileen Dombrowski Purposeful TOK
DOWNLOAD FROM:
http://activatingtok.net/tok-resources/
What makes an example useful for you to take to TOK class?

By Eileen Dombrowski. October 28, 2014

Cupcakes, climate change, smiley faces, disputes over indigenous education, Jack the Ripper, poetry, numbers, and phantom vibrations from cell phones – I’ve blogged recently on all of these unlike topics. Theory of Knowledge is an omnivorous subject, finding in the issues of the world a vast menu of knowledge questions. Yum!

Today, though, I step back from the examples I’ve put on my plate to my criteria for choosing them. What makes an incident or phenomenon tasty not just for a blog post but also, more significantly, for a TOK class?

To my mind, the touchstone questions to answer about any potential stimulus material for class are the following:

• Does it lend itself to raising ideas relevant to TOK understanding, and does it raise enough to be worth the class time you would invest in it? More specifically, does it raise knowledge questions and lend itself to critical analysis?

• Is it manageable in the amount and distribution of time you have in class?

• Are its complexities and nuances at the right level for your particular students such that class treatment is more likely to clarify TOK concepts than to muddle them in student minds? If there is material to be read, is it accessible in length and sophistication to your own particular group of students, with their skills and their time?

• Is it likely energize your particular class group and make the lesson enjoyable?

I’d also add a couple of other generic questions, applicable especially to topics that treat religious beliefs, ethical actions, and sex or violence:

• Will your students feel safe talking about this topic in TOK class?

• Will your students feel a topic like religion is so “personal” that it should never be discussed? (They certainly will have heard this claim from others)

Are there other criteria that you use as you select examples for your own students? I welcome comments.
The Shroud of Turin: perspectives, faith, and evidence

By Eileen Dombrowski. October 28, 2014

Intense emotions and extensive discussion have swirled around the 4-metre-long cloth known as the Shroud of Turin. Is it really the burial cloth that was wound around the body of Jesus Christ after his crucifixion (as many Christians believe), miraculously preserving His image? Or is it a hoax?

Earlier this month (Oct 9-12), a conference in St. Louis, Missouri brought together international presenters and participants on the topic “Shroud of Turin: The Controversial Intersection of Faith and Science”. However, it is an article by historian Charles Freeman that may at last give some definitive answers.

In an article published this week in History Today, Freeman argues that the cloth is neither a miraculous burial shroud nor a deliberate hoax, but a 14th century cloth used in church Easter rituals with significance attributed later. His research is riveting for those of us interested in how knowledge is created.

As a starter for Theory of Knowledge teachers potentially interested in using the Turin Shroud in class, I’ll offer some ideas on whether and how to use it in class. These are opening ideas for you to improve if you choose this topic. I’d certainly welcome your comments on this post if you’d like to join the brainstorming.

Is the Turin Shroud a useful example for you to take to class?

I blogged earlier on the general criteria I’d used for selecting class material. Does the Shroud make it onto the menu? I think it does, but teachers have to apply the questions with their own class circumstances in mind.

Certainly, the overall controversy over the Turin Shroud raises knowledge questions about the role of faith in interpretation of evidence – or more broadly about the role of perspectives in what is even considered to be “evidence”. Indeed, the basic beliefs or assumptions of perspectives are a good starting point for questions:

- if people do not accept the possibility of divine miracles and/or the divinity of Jesus Christ, they are likely to reject knowledge claims that the Turin cloth is His burial shroud;
- if they do accept this possibility, or if they are uncertain, they may or may not be persuaded by “evidence” the first group is likely to discount.

Relevant here are a coherence check for truth (Does this knowledge claim fit with what I already know?) and confirmation bias.

Since many examples could be used for the interaction of faith and evidence in justifications for knowledge claims, I think what makes the shroud controversy stand out as useful for class is the contribution of historian Charles Freeman. It seems to me to fill a need in TOK, one emphasized in the subject report from the May 2014 session: “Once again, examiners complained bitterly about the gross misrepresentations of history that seem to have become so deeply entrenched.” (page 6) In the commentary on a
particular title, the report laments, “History as an area of knowledge continues to be badly treated.” (page 15) It could be very useful for students to look closely at the evidence and reasoning that Freeman uses to reach his conclusions, see the careful scholarship behind them, and recognize some of the methodology of a professional historian.

**Will this material “work” in class?**

 Teachers will certainly have to judge for their own class groups according to criteria such I proposed regarding amount of time and the level of complexity of material.

**But will students feel comfortable talking about this religious topic?**

 On religious topics, people sometimes feel threatened if they think a belief core to their identity is being questioned, and consequently they sometimes find it hard to hear what is actually being said. It’s not likely that the Turin Shroud would make students anxious, though. Plenty of Christians do not accept the shroud as authentic or feel its status has any bearing on their faith. Even the Pope is non-committal about it. But it’s worthwhile assuring students that the purpose of treating it is not to discuss whether it’s reasonable to believe in Jesus Christ but whether it seems reasonable to believe that the piece of cloth is His burial shroud. The TOK purpose is to consider the role of perspectives and the interplay of faith and evidence as justifications in giving answers to knowledge questions.

**What materials would be useful to bring to class for this lesson?**

 I’ll just offer a few thoughts on dealing with the Turin Shroud in class – and leave it to you to generate better ideas and to fill in the blanks I leave.

 For the controversy as a whole, you might gather some alternative interpretations of the shroud for students to consider. Plenty of views are available online, including some of the discussion at the Missouri conference. I pick out here a few potential sources that contribute different angles on what a range of people think. They can act as starters for the better lesson that you’ll build:

- A short video linked from the website of the recent conference in Missouri provides a lively introduction to the controversy. It refers to investigations done by the Shroud of Turin Research Project (STURP) and stresses the “fabulous mystery”: “Shroud Encounter: Experience the Mystery”. The conclusions reached by Shroud of Turin Research Project (STURP) are available. [http://www.shroudencounter.com](http://www.shroudencounter.com)

- Many people believe the shroud is the authentic burial cloth of Jesus. The shroud will go on exhibition in 2015 in Turin, and tours are being extensively organized. Two million people are expected to visit, many of them pilgrims coming to venerate a holy object. In a review of one book on the shroud, a writer in The Telegraph observes, “For most “shroudies”... [the puzzle of the shroud] is more than just intellectual. It offers that elusive but faith-validating proof that Jesus died exactly as the gospels say he did.” [http://www.telegraph.co.uk/news/religion/9162459/Mystery-solved-Turin-Shroud-linked-to-Resurrection-of-Christ.html](http://www.telegraph.co.uk/news/religion/9162459/Mystery-solved-Turin-Shroud-linked-to-Resurrection-of-Christ.html)

- Those who believe the shroud is authentic find justification in the Shroud of Turin Research Project mentioned above. Another study concludes that the Shroud could be authentic, and attributes the image of a body imprinted on it to a sudden release of radioactivity triggered by an earthquake at the time Jesus was wound in the cloth. Useful source for this interpretation: “Shroud of Turin Real? New Research Dates Relic To 1st Century, Time of Jesus Christ.” [http://www.huffingtonpost.com/2013/03/28](http://www.huffingtonpost.com/2013/03/28)
The Catholic Church, which owns the cloth, does not commit itself to a view that it is the authentic burial shroud of Jesus Christ. The Pope uses the Turin Shroud for more general reflection and messages: he speaks of the face in the shroud as a representation of human suffering, at the same time conveying peace. Useful source: “Pope Francis: Turin Shroud ‘conveys a great peace’”.

The article by Charles Freeman is essential as one of the sources for a TOK critical treatment of the topic, and for a demonstration of the methods of the historian: “The Origins of the Shroud of Turin”, History Today. His article summarizes evidence such as carbon dating previously done and adds new research findings.

It would be sad not to introduce students to a sense of the continuing controversy – not just its content but its tone. Refer students to the blog by Stephen Jones in which he rages at Charles Freeman – for his credentials as an historian (which, I must interject, are excellent!), the religious beliefs Jones infers that he must have, and his treatment of evidence.

How do these materials lead to a good TOK lesson?

Once you’ve prepared your own sample of perspectives, how do you make a good class lesson?

For one thing, it’s important to keep your eyes on the purpose: whether or not the Turin Shroud is authentic isn’t ultimately what we care about in TOK. Instead, we care how people think and argue about it depending on their perspectives – that is, according to my own analysis,

- their assumptions and their values,
- their consequent selection of information they consider relevant and convincing,
- their processes of validation of knowledge claims, and
- the implications they draw from their methods and conclusions.

Discussion of the Shroud can lead to appreciation of how very much people really care about particular knowledge claims and what justifications they accept and pass on. In part, we can enjoy the human spectacle of varying views and hot reactions. Most important, though, we can hone our own critical thinking skills by seeing knowledge claims in context and evaluating the justifications offered.

How to manage the class time?

My own suggestions are pretty ordinary, but do get some variety into the activity:
1. LESSON. Give one class period to the overall controversy to bring out knowledge questions of perspectives and justifications (using a video, student reading and presentation, teacher introduction).

2. HOMEWORK. Then give the Freeman article for homework with some guiding questions, such as those I suggest below.

3. LESSON. And then give discussion time to the methods of historians.

1. LESSON: perspectives and justifications

• (10 minutes) Open with the 3 1/2 minute video (“Shroud Encounter: Experience the Mystery”) that stresses the mystery, and take a few minutes after it to discuss its slick and high-energy presentation, which clearly owes much to advertising. (Is it, in fact, advertising? Advertising what?)

• (25 minutes) To put the different perspectives into play, break the class into small groups, each one assigned to try to understand one of the perspectives and to explain it to the rest of the class. Allow no more than 20-25 minutes for this part, since if you sink into details you’ll never climb out! To get students to move from description to analysis in their quick summary, it can be helpful to give them some prompting questions (which are variously relevant), such as:
  • What seem to be the central views expressed? What seems to be assumed, and what is presented as argument?
  • What justifications convince those who accept them?
  • What counter-arguments are acknowledged by those who hold a particular view, or by the writers of articles on those views?
  • How convincing do you find the justifications put forward in both the argument and counter-argument?

• (20 minutes) Give students a brief introduction to the conclusions and kinds of arguments made by historian Charles Freeman, a quick summary of the attack on him, and a summary of the attack on the attack. You’ll be giving them some sense of how historical research works not just within peer debate but also within public controversy — before they zero in on historical research.

2. HOMEWORK ASSIGNMENT: reading and analysis in preparation for discussion

Ask the whole class to look at the article by Charles Freeman, in order to consider his methods as characteristic of a historian. As quick background to his article, a short review in The Guardian sums up many of his main points: “Turin shroud was made for medieval Easter ritual, historian says”. Freeman’s article itself (“The Origins of the Shroud of Turin”) requires considerable attention and close reading to absorb its nuances — but a rougher treatment in class is probably sufficient to make essential points about what evidence an historian uses, and how.

Many students would benefit, I suspect, by some support for reading comprehension of this scholarly article — either by having you as the teacher sum up the arguments and their support (fast) or (better) by having you guide them to the structure of the argument with its questions, evidence, and stages of conclusions so that they are able to skim more effectively. The information in the article is not in the end what’s beneficial for TOK, so students need also to prepare for discussion on historical methodology. Feel free to use the support I’ve worked out below if it’s useful to you.
GUIDING QUESTIONS ON THE ARTICLE TO PREPARE FOR CLASS DISCUSSION

PART 1. Read the article.

Roughly trace the argument made by Charles Freeman, watching for key sentences that summarize points or mark stages in reasoning.

“It is obvious that many areas of its history and the iconography of its images have not been fully explored,” says Freeman of the Turin Shroud in the second paragraph of his article. Here at the beginning, what areas does he pick out as having been insufficiently considered till now?

The first part of the article considers depictions and descriptions (largely 1578 to 1750) of the Shroud, which was in the possession of the Savoy family. Notice the careful details gathered toward support of the shroud being a medieval work made 13 centuries after the death of Jesus Christ (first record of the shroud’s existence in 1355 and subsequent references, apparent vividness of the images on it at the time compared to now, consistency of those images with 14th century iconographic styles of representation). Then watch for the sentences such as the following that indicate stages of argument:

“One is moving toward an attribution of the images on the Shroud to the 14th century, but what is perhaps the most fascinating evidence is still to come.” What point does Freeman then make through giving (unpleasant) details of the scourge marks on the body?

“When one sees the variety of depictions of the Shroud in the 16th and 17th centuries it is hard to see any other explanation for their vividness than that they were painted on the linen.” Why does Freeman examine linen and paintings on linen in such detail? On what grounds does he cast doubt on the STURP studies?

“So the argument that the Shroud is a painted linen cloth of the 14th century and that it has decayed significantly seems strong but it is important to see whether there is any evidence that contradicts this.” What further evidence does he draw from the carbon dating and from a study of contemporary spinning and weaving? Why does he bother to consider the possibility of cotton fibres floating around in the workshop? What is his point regarding the presence and later absence of the modest loincloth?

“What can we say about the painting on the Shroud?” Why does Freeman examine body position in the image?

Why does he rule out, at the end of Part I, the possibility of deliberate forgery?

At the beginning of Part II, Freeman sums up what he has already established: “…the Shroud cannot be, as many still believe, the burial shroud of Christ, nor can it have been expected to have been passed off as that by whoever painted it.” He then moves on to confirm its 14th century context. He comments on the use of representation of Christ that was conventional in the 14th century, the contemporary use of linen cloth for display in church ritual, the pilgrim badge that confirms details of the shroud’s image, and probable places for the shroud to have been made. Why does he give so much detail as he places the Turin Shroud in context of “the most joyous of the medieval liturgies, that commemorating the Resurrection of Christ at Easter”?

PART 2. Prepare for class discussion.

Overall, what does this piece of research illustrate of the methodology of history as an area of knowledge?

To what extent does Charles Freeman rely on research already done by others, building on their work? Pick out a couple of examples of earlier historians or scientists to whom he refers for his own evidence. To what extent is history, necessarily, shared knowledge?

To what extent does he critique research already done by others, arguing against their conclusions when he finds omissions and flaws in their work? Pick out at least one example. Do you agree with this claim?: “History is a record of the past created by competing interpretations?” If so, what makes some interpretations win out over others?
Which of the following come into Freeman’s treatment of the topic as evidence to support his overall argument: historical documents referring to his object of study, historical visual depictions of the object, examination of physical materials of which the artifact is made (cloth and paint for chemical composition, carbon dating, techniques of weaving)? With reference to other history with which you are familiar, what can you add to other kinds of artifacts and records that historians examine?

Why does Freeman go into so very much detail in his treatment of his subject?

To what extent can Freeman, studying the past, point to single pieces of evidence as conclusive, and to what extent does he depend on converging “lines of evidence” which contribute to building an overall argument? How much and where does he depend on high probability rather than watertight proof?

To what extent does Freeman look not just at the one object itself but at the consistency between it and factors in the context that help to explain it – e.g. consistency between the object and similar ones at a given historical period (in iconographic style of representation, in materials from which it is made and style of workmanship)?

In what regard does Freeman’s test of the plausibility of his own explanation depend on considering what could contradict it?

To what extent does his explanation at the end also gain support from consistency as he opens up into a broader consideration of the practices of the time in which he sets the creation of the shroud? Since we can’t replay the past to make fresh observations, does history depend even more than the sciences on the overall coherence of the knowledge claims and interpretations?

3. LESSON: methods of the historian

The two sets of homework questions provide a basis for discussing the article, first for comprehension of what Freeman is arguing and then – much more important for the TOK take-away ideas — for discussion of the general methods of historians.

Final Comments

I’ve gone into much more detail here than I ever intended to do as I started to tackle this topic. I must stay away, for a few days, from the “recreational thinking” that compels me to blog! It gets too absorbing! Still, I hope that something here may be useful to you – if not the topic of the Shroud of Turin itself, then perhaps some of the ideas on approaching material that I’ve offered along the way. I welcome comments if you’d like to add your own ideas on treating the topic of the Turin Shroud within the TOK course.

Selected References


http://www.historytoday.com/charles-freeman/origins-shroud-turin

Conference “Shroud of Turin: The Controversial Intersection of Faith and Science”.

http://www.stlouisshroudconference.com


http://www.huffingtonpost.com/2013/03/28/shroud-of-turin-real-jesus_n_2971850.html


With 2 million people expected to visit Turin in 2015 to see it, the Shroud of Turin and all that is associated with it will continue for at least the next year to be a useful current event for IB Theory of Knowledge.

And – in terms of resources -- this topic of the Shroud of Turin just keeps getting better and better for TOK. In my last post, I outlined TOK lessons based on it. But now – even better materials for launching a class! A podcast interview with historian Charles Freeman (25 minutes), linked from the website of History Today, readily sets up a leaner lesson on the methods of research of an historian. The interviewer applauds Freeman’s research as “historical detective work” on an “unsolved mystery” and invites him to explain his methods of investigation.

Given a choice between giving students Charles Freeman’s article to read and giving them the podcast interview with Freeman to listen to, I’d choose the podcast myself because of practical issues of time. But the lessons I outlined in my last post covered considerably more TOK territory, so if you decide to use this podcast in class instead of the article, I’d recommend at least reading through what I said there for perspectives and controversy on the Turin Shroud.

The Turin Shroud: Methods of the Historian
Paul Lay interviews Charles Freeman. “The Turin Shroud”, History Today, October 29, 2014. This podcast can be downloaded or played online.

http://www.historytoday.com/blog/2014/10/podcast-turin-shroud

In preparation for class discussions on methodology in history, I recommend giving this podcast to your students, along with guiding questions that help them focus their minds analytically as they listen. Below is a set of questions I worked out myself as I listened.

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Shroud of Turin podcast: new material for AOK History

By Eileen Dombrowski Saturday, November 1, 2014

The image of the shroud pictured above is a poster from 1898. By then the images on the shroud were faint.
LISTENING TO THE PODCAST: GUIDING QUESTIONS

What accidental discovery triggers Freeman’s investigation of the Turin Shroud? In what ways could you apply to this lucky accident the well-known quotation attributed to Louis Pasteur: “Chance favours only the mind that’s prepared.”?

Notice Freeman’s use of the term “assumptions” – initial premises for constructing an argument, or beliefs so basic that we might not even notice that we’re accepting something without question.

- What does he say that the “shroudies” assume, and what are the consequences for their explanations?
- What does he propose as an “assumption” himself? What are the consequences for his own explanation and the areas of research it points him toward? In what ways does Freeman’s “assumption” resemble a hypothesis as used in the sciences?

As he outlines information that he found that bears on the shroud, what is he examining? documents? visual depictions? artifacts? Are his conclusions based on the physical traces left of the past, the reasoning that connects them, or both? (What is “evidence” in AOK history?)

To what extent are the conclusions he reaches based on consistency (coherence check for truth) – consistency between the depiction on the shroud and fourteenth century iconography (iconography = conventions of representation), and consistency between his conjectured use of the shroud and the church practice of the time?

Notice Freeman’s steps in reasoning: “So what clinches this further…” “So we’re coming closer…” “What actually clinched it…”

How does he put the linen cloth in contemporary context? What early hypothesis does he discard? What evidence persuades him? Why does he favour the context of the Easter ritual? What evidence persuades him?

Don’t miss the explanation that Freeman gives of how the shroud might have first been presented as the authentic burial shroud of Jesus Christ. How did Freeman piece together this narrative?

How do you think that the documented historical connections might be treated quite differently if the narrative were made into a movie, with the story treated as gripping, a medieval setting, and costumes? After all, it involves the background of the plague of the Black Death and the setting of Troyes (gloriously medieval); a knight away doing battle, his wife, and clergy at the time; initial opposition by the church; possibly miracles attributed to the shroud boosting its status to a venerated object; later display of the shroud to throngs of pilgrims. What is the relationship between the stories pieced together by historians and literature or film based on them?

Why does Freeman rule out forgery and deliberate hoax? Why does he think that his research and explanation will be favourably considered by the Catholic Church?

Toward the end of the interview, Freeman sums up what he considers to be the role and importance of the Turin Shroud. After all the evidence he has gathered in support of his initial “assumption”, why does he end with a note of caution, “I’m going to be a little cautious, but I think this is the best single explanation of the shroud”?

What research does Freeman suggest now needs to be done by appropriate experts to answer further questions that have come up through his own investigation? In what ways has the work done by Charles Freeman benefited from research done by others before him, and in what ways does his own contribution feed into a larger pool of “shared knowledge”?

Misinformation, implications, and responsibility: fact-checking on Africa

By Eileen Dombrowski Sunday, November 9, 2014

“What do these statements about Africa have in common? A white farmer is killed every five days in South Africa. Earlier this year Nigerian Islamists Boko Haram burnt 375 Christians alive. The Democratic Republic of Congo is the rape capital of the world. Johannesburg is the world’s biggest man-made forest. Answer: despite being widely accepted, none of them are true.” (“Get your Africa facts right”)

Sorting fact from fiction is particularly difficult when the stories come from afar and are buried in myths previously accepted. In TOK, we want to develop the constructive “doubt response” (IB TOK Course Companion, 53ff) in face of misinformation. However, when the false stories neither jar with what we know already (coherence check for truth) nor come with supporting justification in the form of readily checked evidence (correspondence check for truth), then how are we to judge what to accept? Enter websites dedicated to catching and countering misinformation!

In Africa, a continent often skewed in representations in western media, websites such as Africa Check and BudgIT provide a valuable resource for journalists and the public. The homepage of Africa Check makes this declaration:

We hold public figures accountable

For democracy to function, public figures need to be held to account for what they say. The claims they make need to be checked, openly and impartially. Africa Check is an independent, non-partisan organisation which assesses claims made in the public arena using journalistic skills and evidence drawn from the latest online tools, readers, public sources and experts, sorting fact from fiction and publishing the results.

Surely, for teachers and students of TOK, such fact-checking services are more than a resource for accurate information. After all, in TOK we concern ourselves not with particular facts but with how knowledge is constructed — and consequently, at a general level, with the forces within society that warp information, and thus skew knowledge claims and the justifications offered for them. We are immensely conscious of the need to evaluate sources of information — just as a fact-checking website is. And we recognize that the website has to be, in turn, evaluated.

In TOK, we also point to the implications for accepting particular knowledge claims and perspectives: what we accept has consequences for how we think and act. For instance, misinformation spread within and about Africa has in the past seriously set back attempts to eradicate polio in Africa and more recently hampered public compliance with health warnings over ebola.

I highly recommend the following article by Monica Mark in the Guardian: “Get your Africa facts right: websites seek to stem flow of misinformation”. In TOK, we could seriously argue that we have that responsibility in all parts of our lives and learning: to try, as best we can, to get our facts right.

References


Africa Check: sorting fact from fiction
http://africacheck.org

Poppies and remembrance: symbolism and perspectives

By Eileen Dombrowski. November 11, 2014

Controversy again over poppies and remembrance – or in TOK terms, over symbolism and shared knowledge!

In Britain, a headscarf with a poppy pattern has been sold to Muslim women to “raise awareness about the 400,000 Muslims, most of them Indian, who fought alongside British troops in the First World War.” Condemning this poppy scarf, one Muslim woman calls it one of “the most ill-conceived of the recent spate of ‘we are not extremists’ initiatives. I also take issue with the fact that a symbol of my religion is being appropriated as a marketing tool for empire. (”Brits divided over ‘poppy hijab’”)

If poppies on Remembrance Day carry symbolic force in your own part of the world, you might find this controversy engages your class in discussion on a number of topics that link sense perception, language, intuition, memory, and emotion as ways of knowing -- topics including the nature of symbolism, the intersection of personal knowledge and shared knowledge, the effect of ambiguity on socially shared knowledge, and the role of perspectives in interpretation and exchange of knowledge claims. A broader discussion on the meaning of Remembrance Day symbols and ceremonies is also likely to raise ideas considered within history as an area of knowledge.

For those from countries without this tradition, let me explain. Today, in many countries of the Commonwealth of Nations (formerly the British Commonwealth), we paused at 11:00am, the 11th hour of the 11th day of the 11th month, to remember soldiers who died for our countries. On the day that marked the end of the hostilities of World War I in 1918, we wear red poppies representing the flowers in Flanders Fields where many soldiers from that war lie buried. Over nearly a century since that time, the Remembrance Day poppy has become charged with additional meanings and intense emotional associations.

To consider some of the TOK ideas that emerge from the small red poppy lapel pin, I refer you to a blog post from two years ago by my husband and blog partner Theo Dombrowski: “My poppy means…” http://blogs.osc-ib.com/2012/11/ib-teacher-blogs/dp_tokglobal/guest-my-poppy-means/

In my country, Canada, an analytical discussion of the poppy demands some sensitivity: the symbol carries intense personal associations for many individuals, and carries patriotic associations for the larger public. Yet, in my own mind, it’s the emotional intensity that makes it particular valuable to discuss in a safe TOK context, where we understand that considering meaning is not a disrespectful activity, and
where we recognize that considering a range of perspectives can enlarge our own grasp of what is going on as “shared knowledge” is created within a social and political community.

If you have any further thoughts on how the Remembrance Day poppy stirs ideas or questions relevant to Theory of Knowledge, I welcome your comments!

References


Earthquake trial acquittal: scientific prediction and responsibility


“Today we have an earthquake after the earthquake,” declared a grieving relative of a victim of the 2009 earthquake in Aquila, Italy, as charges against six earthquake scientists for failing to warn people of the quake were dismissed by an Italian appeals courts this week. The case, distressing though it is, provides a gripping example for TOK knowledge questions that surround scientific prediction and its relative uncertainty in different sciences, and, more urgently, the relationship between expert knowledge and social responsibility.

The scientists were convicted two years ago for not warning the inhabitants of Aquila in advance of the 2009 earthquake that killed more than 300 people. Yet how could they possibly have predicted the quake when prediction is so uncertain in seismology? Scientists from around the world protested the sentence, and some media claimed that it was science itself that was on trial.

For TOK, some knowledge questions arise around prediction in the natural sciences: To what extent are the natural sciences characterized by being able to predict? What uncertainties attend prediction across the range of the natural sciences?

The legal case centred on the advice passed on to the public after a meeting of the experts less than a week before the major quake hit. A seventh man, a public official, has not been acquitted because the advice he gave townspeople was deemed too reassuring in face of the risks. It is easy to understand the perspective of the relatives of the victims, who blame bad advice for the death of their loved ones. Lawyers for the accused experts, however, contend that there is no certain causal link in any case between the advice given and people’s decision to remain in their houses on the night the quake hit.

For TOK, some knowledge questions arise around expert knowledge: What is an “expert” in scientific knowledge, or more
broadly in other areas of knowledge? Does “expert knowledge” equate to “certain knowledge”? How can we best evaluate our sources of knowledge?

**Other knowledge questions** revolve around the relationship between science and social responsibility (or knowledge and ethics): What ethical responsibility do experts carry when giving advice on decisions or actions to take? Does a society carry any responsibility for listening to or following the advice of experts? What is the relationship between ethics and law?

I’ve blogged before on this story of the Italian earthquake scientists, both when they were charged and when they were convicted, so refer you to my earlier comments if you’re interested in further details of this case: “scientists on trial for failing to predict” (Oct 8, 2011) and “earthquake shock: prediction and responsibility” (October 23, 2012)

I’ve also used it as an example of a topic for a TOK presentation in the *IB TOK Course Companion* (page 418).

I’ve followed this story, I admit, with some agitation. I’ve found it distressing as I’ve thought from the perspective of those who lost loved ones and believe that their deaths could and should have been prevented by people on whom they relied for their safety. I’ve also found it distressing from the perspective of the accused experts who must wish they had known more, had known better, but who — according to the appeal court’s acquittal — were not guilty of giving bad advice.

Like me, many other teachers are likely to find this story resonates with them as they take responsibility, in many situations, for student safety. What knowledge is expected of us, and what are the limits of our responsibility when we use the phrase “To the best of my knowledge…”?

### References


White men and climate change: statistics and reliable correlations


When we hear the much quoted claim, “There’s lies, damned lies, and statistics,” many of us smile ruefully, suspecting that we have been duped by statistics at some points in our lives. How should we react, therefore, when we read a detailed report, accompanied by graphs and numbers, that, in the U.S., non-whites are more concerned about global warming than whites?

After all, though we’ve known for a long time that statistics can be manipulated, we also know that statistics are much more effective and precise than words for communicating relationships such as proportions or correlations. Can we trust this report correlating race and attitudes to global warming? With the increase in “data journalism” the need for critical thinking is probably more acute now than ever before.

The impact of “data journalism”

We’re all used to seeing some graphs and numbers in the media, but “data journalism” (sometimes called “data-driven journalism”) has increasingly been embraced by influential media. Books and websites instruct journalists and journalists how best to use graphs, charts, “info graphics” and so on to present information. (e.g. http://datadrivenjournalism.net/) Meanwhile, cognitive studies demonstrate what most of us probably suspected—that data and the statistics that they generate are not generally seen as “damned lies” but as more convincing than general statements.

So, again, what do we make of the claim that, as statistics show—and they really do show—that non whites in the U.S. are more concerned with taking action on climate change than whites? This assertion is made in FiveThirtyEight, a site created with the express purpose of using “data journalism”. (Other main early starters include another website called Vox and The Guardian) At this point, it may be a good exercise to pause and look at the article critically to see if it is obviously flawed. After that, we will introduce the critique of its knowledge claims.

Pause to read this article:

http://fivethirtyeight.com/datalab/the-racial-gap-on-global-warming/

Re-interpreting the data

Most likely, most of us will find the generalizations drawn from the data to be sound. Chris Mooney, co-host of the podcast Inquiring Minds (Oct. 2, 5:08 to 10:08) argues otherwise.
His approach to the same data makes a fascinating example of the ways “data crunching” in data journals can lead to misleading or distorted conclusions— even without any deliberate desire to manipulate.

As he says of the article in FiveThirtyEight, “This is a classic example of using limited data analysis to miss what the big picture is.” Looking at the data itself, rather than just the conclusions drawn in the article, Chris Mooney goes further, drawing into his analysis his own knowledge of another field of enquiry, so-called “risk assessment”:

“In the field of risk assessment there is this well known phenomenon. It is called the ‘white male effect’…. That is, “White males are less concerned [than other groups of the population] about a wide variety of risks including environmental risks.”

Why is that important? Well, according to Chris Mooney, “The real story is white males. It’s just as interesting that women are more concerned about the environment than men [as it is that non-whites are more concerned than whites.]”

“Why is this happening? Let’s get some causal explanation here. It’s not actually all white men. It is white men who are conservative, who are highly individualistic in their values so they are the opposite of communitarian, wanting to take care of everybody in society…. [they] are highly hierarchical so they are the opposite of egalitarian. So these people are at the top of the totem pole. They are privileged and they dismiss a certain kind of risks, risks that are disruptive to the status quo if you are going to address these risks like climate change.”

We can’t help but notice that our intrepid announcer has switched from looking at a correlation to (he argues) causation! In addition, he has introduced knowledge from outside the data itself. Chris Mooney uses, as part of his own knowledge claim, research done at Yale on the “white male effect”. One extensive study is accessible to read online in (ironically or appropriately?) a statistically detailed analysis.

His turning to such research, is, according to some critics of data journalism, exactly what should always be done and too often isn’t. (See the article in Forbes Magazine identified below.)

Best Practices

Chris Mooney argues, looking at the original data properly requires enormous care. Even in well-intentioned or objective handling of data, it is far too easy to miss what Chris Mooney calls “the big picture.” In this particular case, as he points out, “There is a race component to it, there is a gender component to it, and there is an ideology component to it.”

While TOK students look at the use of data and statistics either within reason as a way of knowing or mathematics as an area of knowledge, they will find increasing need to keep their critical faculties on high alert in a media world where Data Journalism is increasingly widespread.

Further reading

Three of many articles on problems with data journalism and the future of data journalism:

http://qz.com/189703/the-problem-with-data-journalism/ Emphasizes the desirability of keeping " data analysis simple, clean, and transparent." and the need to " exercise humility and not take our results too literally."

http://www.forbes.com/sites/gregsatell/2014/06/01/this-is-why-data-journalism-is-failing/ Emphasizes the need to have expertise in the topic to which data applies: “data only tells part of the story. Understanding data requires real world expertise. “

Who’s an “Indian”?:
classification and implications

By Eileen Dombrowski. December 1, 2014

Who’s indigenous? And does it matter? These are significant questions, with significant answers. They are relevant to TOK both through the newly added area of knowledge, indigenous knowledge, and an old area of knowledge, ethics – as well as to all the ways of knowing involved in classifying our concepts.

Two stories in this past month’s news bring them to life: a court contest in Canada about who is classified as “aboriginal” and a conflict in Tanzania over whether indigenous people have any claim to their traditional land.

Indigenous knowledge is an area not classified according to the same criteria, it seems to me, as the academic areas of knowledge. But I could be wrong. Is scientific knowledge defined as the knowledge held by scientists, or are scientists defined as the people who have studied science? Which comes first – the definition of the knowledge or the definition of the people? Do we define and classify in the same way for indigenous knowledge as we do for the sciences or other areas of knowledge? Maybe yes, maybe no. (See my September post asking “What/when/who?” about IK: Indigenous Knowledge: definition, implications, and controversy)
Canada: Who is classified as “Indian”?

If indigenous knowledge is tied inextricably to the people who hold it, then this week’s decision by the Supreme Court of Canada gives us an interesting story to follow in TOK: the Court has accepted to hear a legal case to decide whether Métis and non-status Indians fall into the category of “Indian”, as Inuit and status Indians do. The classification carries some important implications: only “Indians” have certain entitlements under the law. Métis and non-status Indians are arguing that they should have the same rights, but the federal government is arguing against including them and therefore being compelled to extend the benefits to them.

KNOWLEDGE QUESTIONS:
To what extent are our areas of knowledge categorized by who is doing the knowing? Compare the natural sciences, the arts, religious knowledge, and indigenous knowledge for the role of the knowers in the definition of the knowledge. What is the impact on our knowledge of the ways in which we categorize our world? What ways of knowing are involved in classifying?

Tanzania: Is Indigenous Knowledge dependent on the land?

If indigenous knowledge is tied to traditions from the past (the when of indigenous knowledge), then removing people from their lands and way of life affects both the people and their knowledge; traditional ways of living die out. Although it would be easy to find examples all over the world of indigenous peoples expelled from their lands, and of cultural knowledge being lost, the situation facing the Masai of Tanzania has hit international news again this week: “Tanzania accused of backtracking over Masai’s ancestral land”: “Tanzania has been accused of reneging on its promise to 40,000 Masai pastoralists by going ahead with plans to evict them and turn their ancestral land into a reserve for the royal family of Dubai to hunt big game.”

Being expelled from their lands, the Masai insist, would destroy their heritage – their way of life and all the knowledge that goes with it. Last year, the Tanzanian government said that it was dropping plans for a hunting zone for a company in the United Arab Emirates, but that cancellation is now being seen by some as merely a ruse to deflect international protest.

KNOWLEDGE QUESTIONS
What kinds of knowledge are held by indigenous peoples living a traditional life on ancestral lands? (What experiential knowledge? What how-to skill? What kinds of knowledge claims?) To what extent does the existence of that knowledge depend on sustaining the connection between the people and their traditional way of life on their traditional lands?

To what extent can understanding an area of knowledge be separated from understanding the characteristics and methods of the people who possess it?

Should indigenous knowledge be protected and/or sustained? What ethical perspectives come into play in attempting to respond to this question?

GLOBAL ISSUES QUESTIONS
Beyond TOK: In the conflict of interests between groups with claims to land, what ethical guidelines would you argue should be followed in political decisions, and why? (Yes, this question is a big one – and takes us right to the border between applied TOK and global issues. In my opinion, discussions within global issues benefit enormously from TOK thinking.)
These two stories, from Canada and from Tanzania, highlight different aspects of indigenous knowledge. Both also highlight, strikingly, the way in which indigenous knowledge has a geographical, social and political context. In my mind, the issues of social context ripple right through all of our areas of knowledge.

Further reading/viewing


References


Electrocution and Marriage Rates: Correlation or Cause?

By Eileen Dombrowski Wednesday, December 10, 2014

The comic charts on the website Spurious Correlations (http://tylervigen.com) are already familiar to many TOK teachers. But if you’ve missed this resource till now, you won’t want to miss it any longer. Did you know that the number of people who died by becoming tangled in their bedsheets correlates with the total revenue generated by skiing facilities in the US – or that the number who were electrocuted by power lines correlates with the marriage rate in Alabama? Would you infer that one causes the other? “I created this website as a fun way to look at correlations and think about data,” says Tyler Vigen.

With charts drawing arbitrarily connections between variables, Vigen makes a serious point through comedy. He also provides a pull-down menu for visitors to his site to create their own arbitrary connections – an activity that students are likely to enjoy. The site is immensely useful for TOK classes on the difference between correlation and cause, and hence for the natural sciences, human sciences, and history.

For further explanation on correlation and cause, refer students to page 128 in the IB TOK Course Companion.
Doing good is good for you: Ethics and the Human Sciences, TOK and CAS


(re-post from December 16, 2013 OSC blog. It's so appropriate for this time of year!)

Is there really anything newsworthy about the value of doing good to others? So much has been said over so many centuries that surely current psychological research cannot add tremendously to our understanding! And surely doing good falls within the scope of ethics -- and not within the scope of the human sciences! Yet, quite the contrary: recent studies in the human sciences do contribute knowledge -- and knowledge that is particularly welcome at a time of year when in many parts of the world religious and secular traditions celebrate caring for others and giving generously.

Personally, I find the results of these studies give my heart a little lift -- maybe because they confirm some things I want to believe about human beings (confirmation bias!), and some obscure sense of fairness. They indicate that doing good for others -- for instance, engaging in many of the volunteer activities of CAS -- can improve our own health and happiness. Moreover, they suggest that doing good for others is contagious -- that those who benefit pass on their attitudes and actions!

I welcome these conclusions at a time of year when, in my part of the world (western Canadian coast), huge social emphasis falls on giving gifts and caring about the welfare of others. In my own community in recent weeks, innumerable people have been busily supporting undertakings from the local to the global -- from gathering contributions for local food banks to organizing fundraisers for relief or development beyond our borders. As at any other time of year, they seem to feel pretty good about helping others.

Admittedly, it's certainly not new to say that people feel good about doing good. What is fairly new, however, are the forms of justification provided for this familiar knowledge claim. Recent studies illustrate the methods of the human sciences, their differences from the methods of ethics even when the subject matter appears to overlap, and the benefit to our understanding of incorporating the contributions of both these areas of knowledge. They also point to the overlap in questions posed by TOK and by CAS reflection.
Ethics and the human sciences: different questions, different methods

As we are aware in TOK, ethics is an area of knowledge that deals with **how we should think and act**. It asks, “What is the nature of goodness?” and “How do we know what the moral thing is to do?” It works through analytical thought and argument to establish and clarify concepts and, at the applied end of its spectrum, to argue for different approaches to justifying -- guiding or judging -- moral choices and decision-making.

The human sciences, in contrast, are an area of knowledge that deals with **how we do think and act**. They ask, “How do people actually behave, and how do we know this?” “What are the appropriate methodologies for studying people to answer these questions?” They do not necessarily take on questions of moral actions at all -- of generosity or kindness -- but when they do so, they investigate them with methods that test for significant correlations in actual human actions and responses, and venture into suggesting causal connections.

“Goodness” and the Methods of the Human Sciences

In recent studies of the effect on people of doing good for others, methods include ones characteristics of the human science of psychology: questionnaires and interviews with questions carefully prepared to survey a population; tests to see how people respond to specific set-up situations; and brain scans to observe what happens in the brain when people are stimulated to think of particular situations.

The results of questionnaires show that people who volunteer or donate to help others benefit in their own health and happiness. In one study, for instance, 76% of a sample of over 3,000 American adults surveyed by the UnitedHealth Group indicated that people who volunteered felt better physically, mentally, and emotionally.

Survey results like this always raise the attendant critical questions:

- How can questions be designed to quantify experiences?
- In a study of volunteers, what is the effect of having the population self-selected?
- Was there a control group, or perhaps a before-and-after study?
- Were the questions phrased in any way that could bias the answers?
- Could respondents be inclined to affirm the positive features of their own choices?

The survey, in this case, was run by a professional polling organization experienced in surveys and interpretation of results. (For a description of their methods, see page 14, Health and Volunteering Study)

More closely analogous to IB CAS is a different study of 106 high school students.

Researchers at the University of British Columbia used both questionnaires and physical examination of heart health (inflammation, cholesterol). They found that “students who reported the greatest increase in empathetic and altruistic behaviour after their volunteering experience also exhibited the most pronounced improvements in their health.”

In a wider-reaching study of 200,000 adults in 136 countries, researchers from Simon Fraser University in Vancouver combined a variety of methods: they crunched data, asked questions, and did tests. They found a positive link between charitable donation from income (data) and subjective well-being (questionnaire). They also randomly assigned adults to spend on themselves or on
others (tests), and found that those who spent on others experienced greater happiness (questionnaire).

Although many more studies could be cited, I'll choose just one more (from msn health) illustrate the range of methods in psychology in testing any correlation between generosity and personal well-being, and the search for cause. The technology of MRI scans of the brain allows psychologists to see in physical terms what goes on inside us as we make choices that we deem generous. In this study, “When participants chose to donate money, the brain's mesolimbic system was activated, the same part of the brain that’s activated in response to monetary rewards, sex, and other positive stimuli. Choosing to donate also activated the brain’s subgenual area, the part of the brain that produces feel-good chemicals, like oxytocin, that promote social bonding.”

Oh – and let me squeeze in just one more! (from pnas.org) Generous actions from one stranger to another seem to be contagious, according to tests that trace cascades through social networks. Generosity is passed on, though with decreasing effect, over several degrees of separation.

And why am I smiling about all this?

Maybe I don’t really know why I’m smiling as I read these studies. Maybe I need a good psychologist and some MRI brain scans to tell me.

BUT…I suppose I’m tallying one for my side – the more cheery and optimistic (most of the time) view of life, with a tendency to look for what feels like justice. (Confirmation bias again!) Generosity can be its own reward after all – in the benefits to health and happiness for those who think and act with empathy. Those in the hair-shirt school of moral theorizing, who suggest that to be truly moral an action has to be itchy, uncomfortable, and self-sacrificing, might not be chuckling. (But it’s clearly neither generous nor empathetic of me, either, to be laughing at their hair-shirt approach to morality!)

I also started to laugh (foolishly) about economists who make the assumption that we choose out of rational self-interest rather than concern for others. But then I realized that they were the ones who should be laughing at me! They can point out that findings of benefit to health and happiness demonstrate that it can be rationally self-interested to help others, even without expectations of reciprocity. (I wonder if the same benefit accrues to your health if your motive in doing good is solely to improve it.)

TOK and CAS

I’m also very pleased, after decades of involvement in both TOK and CAS, to think about how they work together in encouraging students to involve themselves in questions of empathy and ethical action.

TOK deals with empathy most centrally as a convergence of ways of knowing. Emotion and imagination, and possibly intuition, are most obviously involved in being able to “feel for others”. But they are accompanied by the other ways of knowing, such as sense

perception and reason leading to general observations of people and the world that help us to understand sadness, hardship, and need. Memory and language, further, help us assimilate what others have said about the circumstances of need and the impact on human beings.

Empathy is a topic that arises in many parts of the TOK course, mostly related to questions of understanding other people – and whether “understanding” is a reliable justification for interpretations in the human sciences, history, or the arts.

Most relevant to this topic of generous action, though, is TOK’s treatment of ethics. It considers ethical perspectives that give different lines of argument on helping others – possibly based on principles, possibly based on weighing of consequences, possibly based on caring. (I won’t repeat here all I’ve given in my book. You can check chapter 16 of the Theory of Knowledge IB Course Companion.)

Both TOK and CAS, in their reflections, link empathy and ethical concepts with how we interact with others. Yet TOK, as ever, stands back from actual engagement in action. What it contributes is important: skills of critical thinking to evaluate the knowledge base on which effective action rests, recognition that knowledge has implications for action, and awareness of ethical perspectives on evaluating right action.

But then it is CAS that takes over and plans volunteer work and various forms of actively helping others. It is CAS that provides the experiential knowledge and develops skills not just of acting but of acting ethically and effectively. As teachers, we’ve long recognized the benefits for students’ education of actively helping others in the community and the world; their doing so is significant to IB educational goals. But now we can add another benefit, with the support of psychological research: we could well be improving our students’ own health and happiness, for now and for the future.

And a final PS: some classroom support and a classroom activity

If you’ve read this far, you probably share my own interest in connecting TOK with the world – with real research going on at the moment and its implications, and with the relationship between thinking and acting. For an emphasis on developing critical thinking toward acting well, I can refer you to my TOK IB course companion. For now, I’ll leave you with a classroom activity.

Classroom activity

Researchers Lara Aknin and Elizabeth Dunn won an honorable mention in the Social Psychology Network’s 2013 Action Teaching Award for this activity entitled “From Wealth to Well-Being: Spending Money on Others Promotes Happiness”. I’ve not used it myself in class, but I can see its usefulness for catching student interest and launching discussion on connections between ways of knowing and ethical ideas. It could also broaden into a discussion of the relationship between TOK and CAS. I leave it, with all its possibilities, in your hands.

And finally, I send you all the good wishes that, in my part of the world, go with this season. As we move deeper in deeper into darkness, I wish you, at the very least, a Happy Solstice! In many a metaphorical way, enjoy lighting the candles.

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UnitedHealth Group, Doing Good is Good for You: 2013 Health and Volunteering Study. (Note methods of research outlined on page 14.) http://www.unitedhealthgroup.com/%7E/media/UGH/PDF/2013/UNH-Health-Volunteering-Study.ashx


Gifts Photo Credit: PetitPlat - Stephanie Kilgast via Compfight cc
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MRI magnetic resonance imaging: Credit thomas23, flickr

Theory of Knowledge blog, 2014

Note to readers:

We really hope that you will find something in the preceding pages of use to you, at the very least to stimulate your own ideas. We’ve enjoyed thinking and writing as we blogged, but have been motivated by the possibility that others besides ourselves would also find it magnetic to apply the critical thinking of TOK to the world around us.

You are certainly welcome to use the material from these 2014 blog posts for TOK purposes in class. We ask that, if you do so, you credit the source following the usual conventions.

Best wishes for your own continuing enjoyment of IB Theory of Knowledge.

Eileen Dombrowski
Theo Dombrowski

December 31, 2014.