

Reflective Writing Task 2

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Introduction

In the first reflective writing task, I gave some detailed summaries of the effects each week of the Creating Knowledge course had on my learning and perspectives. This second piece will continue this for the remaining weeks of the course. Beyond this I'll also look at how my view of knowledge has changed throughout the course and how all of this links to my discipline of science.

Week 7: Indigenous Ways

Context

This week's panel was run by Professor Richard Baker, Dr Kerry Arabena and Dr Peter Radoll. Topics included Indigenous Knowledge Systems and Indigenous Identity.

Interpretation

The most interesting part of this panel was Peter Radoll's talk about identity within Indigenous culture, specifically how legal identity relied on the community's recognition of your Indigenous status, not just your genetic linkage. This is very interesting because I've studied a lot of Genetics, and to me proving something on legal grounds shouldn't require more than genetics. I also found it interesting when it was shown how the country is linked to their knowledge, the example being that the Whales migrate when the Wattle blooms. This kind of knowledge is based on a coincidence, which wouldn't be very useful in science, but is very useful in an Indigenous context. This made me want to ask whether the panellists believe that our Western Knowledge systems could learn some new things from these Indigenous Systems.

Outcome

The most interesting idea I got out of this week was how the scientific justification for something, such as relatedness, sometimes isn't enough. In Western culture genetics is a strong tool for exploring relatedness and solving crime, yet in an Indigenous sphere it isn't as effective. As I go on studying science, this week's panel will make me question whether scientific approaches are really as effective as we'd like for certain contexts.

Week 8: Asian Ways

Context

Week 8's panel was presented by Dr Nicholas Farrelly, who talked about Thai Handbooks, Dr Hwei-Fen Cheah, who talked about knowledge in Textiles, and Dr Duncan Campbell who talked about Chinese Libraries and the knowledge they contain.

Interpretation

The notion of the Thai Handbooks was interesting to me and reminded me a lot of lab manuals from chemistry that simply provide a "how" version of knowledge, which is very useful practically, but very different from how one thinks of knowledge when one thinks about what it is. The textiles provided interesting insight into the transference of knowledge between cultures, and how different knowledge areas can produce interesting products in textiles that show a synthesis of the knowledge bases that produced them.

Indian Textile traded to Palembang, South Sumatra. From National Gallery of Australia.
Source: Dr Hwei-Fen Cheah's slides.



Finally, the most interesting messages from Duncan Campbell were that Asian cultures categorise knowledge very differently and that we have to account for knowledge that has been lost. An interesting question relating to this was asked, about the political effect on knowledge content and distribution in the Asian region, and it's interesting to note that knowledge and politics are intimately linked in China, Thailand, and the Asian region in general.

Outcome

Firstly this week made me wonder why we don't have more common resources that are similar to Thai handbooks in our culture, because although they are different ways of conveying knowledge, their usefulness is unquestionable. The second main thing I wonder about is how much political decisions are affecting knowledge here in Australia, and to what extent government funding is influencing the knowledge we create and how it's conveyed to the public.

Week 9: Economic Ways

Context

Dr Timo Henckel started the panel by talking about public perception of Economics, and Professor Bob Gregory talked about Economic models and what they can tell us about people.

Interpretation

If the goal of economics is to study how people respond to incentives, then I see no problem. However, Timo Henckel highlighted the various assumptions in economics and I felt that many of these assumptions were dangerous and too big to be truly justified, probably because I'm used to very conservative assumptions that accompany scientific work. The main issue seemed to be macroeconomics, which seems to have largely shaped people's views of economics. A question was asked about whether an economic solution to climate change could be reconciled with an environmental solution, and it was noted that it doesn't necessarily matter. I feel however that in our current state globally, economic solutions spark more interest than environmental solutions, because nobody necessarily has to dramatically (or expensively) change their actions if an economic solution is adopted.

Outcome

The economic focus on efficiency is one science is also concerned with, and I feel it is an important link between the disciplines that I can think about more in the future. For example, if a chemist can devise a method to make Paracetamol at half the cost with double the output, this changes the economics of the Paracetamol market and affects the worth of the product. I feel that Macroeconomics should try to quantify some of its assumptions more, so that its systematic view of the world can have more accuracy built into it. This may also reinstate people's confidence in Macroeconomics.

Week 10: Development Ways

Context

Associate Professor Alastair Grieg talked about the Millennium Development Goals and the perspectives of Amartya Sen, Gustavo Esteva and Wolfgang Sachs on the nature of development.

Interpretation

Of the three perspective presented on development, I feel that parts of each are correct. I feel that development was a historical process; I feel that development can be a way for the West to subjugate the world and I feel that the age of globalisation is well and truly upon us.

The Millennium goals are what make me see them all as partially true, because they have defined much action and direction in the past and present. A question was asked about what benefit the development goals have for developing countries, and it seems that the benefits

are not clear, even though the goals are. Perhaps this shows a disjunction between developmental knowledge and the outcomes of its implementation.

Outcome

I feel that development is going to be something that we must have some difficult debates about in the future. The development goals hardly tackled the massive problem of sustainability, which is one of the greatest threats to our current lifestyles. We need to start asking questions about the direction of development, which is intimately linked to questions about the goals of the human race and what the human race will do in the future.

Weeks 11 & 13, Arctic Role Play & Public Policy

Context

Week 11 was the Arctic Role Play, facilitated by Professor Neil Hamilton. Many groups were involved such as environmental NGO's, the scientific community, an oil company, the Arctic Inuit, Canada, and Greenland, who my group represented. Week 13 involved a scientific exploration of climate change led by Associate Professor Janette Lindesay and a socio-political exploration lead by Professor Stewart Lockie.

Interpretation



I've placed this map here to emphasise the strong conflicts on interest in the Arctic Region, as a practical representation of the politics of issues such as Arctic governance and action on climate change. In our role play, we as Greenland had a strict set of guidelines which we had to follow to the letter.

These guidelines were the opinions, values and policies of the group we represented. Although these guidelines were fair, true and legal, they didn't make solving the practical issue of an oil spill in the Arctic any easier.

What I learned from this is that intergovernmental action, which is a requirement of issues in the Arctic and issues involving climate change, is never simple and the particular interests of all the parties involved will conflict. There doesn't seem to be much of a way around this without someone yielding to a new position, or someone accepting a compromise. In the case of climate change, the knowledge surrounding the issue is valid, clear and foreseeably true; however implementation of action in light of this knowledge requires change and compromise on the intergovernmental level.

Outcome

Overall these two weeks emphasised how socio-political factors control the use of knowledge created within the scientific disciplines. I know that scientists don't often play a part in the implementation of the knowledge they create, and now I'm starting to see why they don't. The arenas of implementation use different tools, different processes, and require different types and styles of knowledge which a scientist can't necessarily work with. It seems that the scientific knowledge itself isn't so much what matters on the implementation level, what seems to matter more is what people think the scientific knowledge is, and what people think can be done with it.

Evolution of Personal Perspectives during the Course

I think the first thing the course did for me was changed my perspectives on what knowledge is. It seemed more concrete when I started, more scientific, consisting of evidence based hypotheses, proofs and dis-proofs. The creativity and critical thinking weeks eroded the soil around my particularly solid view and changed my perspectives on the amazing thinkers of science. It made me view them at a lower level, more like normal people instead of extraordinary people. In a sense I think it gave me a more realistic perspective because it reinforced the idea that extraordinary knowledge doesn't have to mean there was anything extraordinary about the creator. Now it seems more like the environmental and ideological condition these people existed in may have facilitated their challenging and unique knowledge creation.

The second phase of the course made my idea of knowledge more convoluted and complicated. If my idea of knowledge were a tree, the second part gave it more branches. It helped me to recognise the greater whole that my scientific knowledge/discipline existed within by providing perspective on different disciplinary and cultural knowledge systems, which allowed me to see links between these very different areas. By doing this my overall awareness of the complexity of knowledge on a more global scale has become much more defined and extensive.

The final phase changed my perspective on the products of knowledge; you could see it as a change in the production and composition of any fruit that may fall off my idea of knowledge tree. As a student going into science it seemed relatively clear that as a scientist you would develop knowledge that will be decisively implemented, leading to a better world. Unfortunately, this isn't the case, and probably never will be.

The natures of different groups, interests, politics, economics and equality will change the product produced from knowledge, it will control who has it and who doesn't, and it will control how much it helps and how much it doesn't help. This makes me want to have a say in how any knowledge I create in science is implemented, but I know this is a complex arena to enter, and not one a science degree directly prepares one for.

Overall these three phases will have and have had conscious and unconscious effects on my perspective. This will provide future thought pathways for myself, which may allow me to explore areas of knowledge and thought that I may not have known existed, or still don't know exist.

Conclusion

The course content has strongly and directly challenged many of my pre-existing perspectives. Because of this, some of the solidarity in my perspectives has been converted to uncertainty. The nature of creating knowledge is a complex one, constantly under assault from your personal perspectives, your circumstances, your assumptions, your influences and your disciplinary specialisation. It is something we all will and must experience differently and it something ever changing and adaptive. Overall it's important to understand that the complexity of knowledge creation is something worth acknowledging and it's something we should all be uncertain about.

Reflective Writing Task 1

Week 1: Introduction to Creating Knowledge

Context

Vice Chancellor Ian Young highlighted the kind of framework a university functions within and why it functions the way it does. Dr Aat Vervoorn highlighted the nature of knowledge and what kind of principles it incorporates.

Interpretation

Ian Young's talk was useful for me because it gave me insight into thinking about researchers at ANU and the context of their knowledge creation. An interesting idea was the notion of academic freedom, which allows researchers to be critical of current events, while having the back up of university administration. Dr Aat Vervoorn's notion of knowledge being like a compost heap was very interesting and seemed very true in the case of biological and chemical research, which I'm interested in. A lot of the time in science new ideas incorporate/add to old ideas to produce a different, dynamic product which is still open to the same adaptive changing process.

Outcome

The main thing I learned from this week was that knowledge isn't as much of a common sense topic as one thinks. It is complicated, multifaceted, quite structured and infinitely dynamic. This knowledge will probably influence how I think about my 4th year of University and how I go about discovering a research topic.

Week 2: Creativity

Context

This week's panel consisted of Dr Denise Ferris, who talked about creative education in the arts, Professor Graham Farquhar, who talked about plant science and dance, and Dr Shayne Flint, who talked about creativity in radar engineering.

Interpretation

One of the main things all 3 speakers mentioned is that it's hard to find time to be creative when one has so many other demands to meet. Shayne mentioned that creativity is more of a means than an end, which made me want to ask how anyone knows they're being creative, or that they are even on a creative path? It seems very difficult to actually know, which makes me wonder how recognition of your creativity by others affects your creativity.

Another very interesting aspect of the panel's responses was that an interdisciplinary and diverse environment seems to foster creativity. Alongside this, both Dr Ferris and Professor Farquhar mentioned they both previously associated with areas, such as chemistry and dance respectively, which weren't clearly linked to their current areas of work, but did have an effect on how they think.

Outcome

This panel gave me a very strong sense of the importance of time for being creative and the effect a diverse environment of people and places can have on how you think and the creativity you can construct. In science a lab group can consist of a diverse group of people, so after this panel I feel I will appreciate this diversity more and understand better how it influences creativity and knowledge.

Week 3: Critical Thinkers

Context

During the 2 hour panel we listened to Associate Professor Alastair Greig from CASS talk about Karl Marx and Professor Angela Woollacott from the School of History talk about Mary Wollstonecraft. This was in the context of Marx and Wollstonecraft's critical and unique thoughts at the time they existed.

Interpretation

One interesting thing Alastair highlighted about Marx was the change in how he thought and what he thought as he aged and as times changed. Yet despite this change Marx maintained a strong degree of critical thought across various subjects. It would seem that critical thought isn't restricted by degrees of specialisation, but more that it's an adaptive character inherently important within different spheres of thought. Professor Woollacott highlighted that gender has no bearing on critical thinking ability. This is interesting because some people would say gender roles/influences would have a great effect on thought, but I would say it only has an effect on what they might be more interested in thinking about.

Outcome

One key thing both speakers indirectly showed to me was that a disrupted life and a disrupted time seem to provide more meat for critical thinkers to attack. A main question I asked was whether it is now harder to think critically in the face of all these established ideologies? I think that Alastair said it was harder to a certain extent. When I study science I always wonder how on earth am I going to be able to think critically about any of this when it all makes so much sense? This week's panel will hopefully help me address this in the future.

Week 4: Ways of Writing Human

Context

For week four Ms Mary Kilcline Cody talked about W. Somerset Maugham, Associate Professor Alastair Greig talked about Literary Form and the Modern Condition and Canberra Times cartoonist David Pope talked about cartoons and their ability to convey meaning.

Interpretation

To me it seems the ability to write in a more human way to convey meaning is a skill that only a select set of people do master. Writers and cartoonist are these people. I asked whether scientists might become better at conveying their ideas if they studied more literature, and I received a kind of mixed response, in that it would help with their expression, but the very nature of what they convey is a difficult one for literature to help with. This led to discussion of how science fiction can help to convey the scientific world. This helped me appreciate the contextual use and relevance of human literature.

Outcome

I think the main thing this part of the course will help me with is to write background introductions for lab reports, because these are meant to convey the information that is required to interpret the report. In effect it has been an exercise in understanding how someone else could think about what I write.

Week 5: Science-Humanities Gap

Context

Week 5's panel discussion was led by Professor Aidan Byrne, who talked about science and Professor Toni Makkai, who talked about the Humanities. This panel mostly explored the nature of characterising the two areas as different disciplines.

Interpretation

The main thing I learnt in this panel is that science and the humanities sound very similar to each other even when two very different people talk about them. Their methodologies are the same, but their contexts are different. One major idea we tried to demonstrate in my tutorial was that given the same problem, science and humanities would solve it in similar ways. I believe this is the core element, that the only difference between them is their material. A question was asked about which tackles the bigger issues in society and my interpretation of the response was that both do, in their own ways, but their synthesis is required to really solve the biggest issues.

Outcome

This week really blurred the lines between the two disciplines for me. One argument against science has been that we don't communicate our ideas and we don't take full responsibility for our work's implementation. I think this week has taught me the value of one day trying to communicate the science I may discover and trying to influence how it is implemented. I will also better appreciate the longer time required to complete humanities research and the importance of proper implementation of humanities research.

Week 6: Indigenous Ways of Knowing

Context

This week's panel wasn't a panel; it was a cultural experience of Pacific Knowledge, facilitated by Dr Katarina Teaiwa and Reverend Latu Latai.

Interpretation

Ancestry and kin were two of the major factors influencing people of the Pacific. This maybe prompted the question of whether the West could learn from this Pacific ideology. It was highlighted that Pacific cultures think as a collective and we think as individuals, which may inhibit our ability to solve problems requiring significant population change. Interestingly, Pacific cultures have the ability to adapt our ideologies, in the form of modern status associated with PhDs/degrees. It seems they are much better at adapting and absorbing than we are. This is probably a bi-product of their cultural inclinations.

Outcome

This topic is probably the hardest for me to understand, but I do see the benefits of Pacific Knowledge methods for instigating change. I don't yet know how I could try to use such knowledge in the future, however I think this idea of collectivity could help to remind me that I do science to help society.

Tutorial Facilitation Reflection

The most interesting part of the process was trying to give an activity a purpose and link it to the discussion, and I think our Mr Squiggle exercise did a good job. Trying to organise and actually physically run the tutorial wasn't hard, but steering the discussion was a challenge. We managed to get everyone to talk, but steering them towards a deep conclusion about the topic was hard. I think if I did it again, I would focus more on how to steer a discussion, probably by trying to think more like the participants. Defining clear goals for the tutorial was also an essential component.

Tutorial Tickets

Week 2: Creativity

I think the key thing that helps creativity flourish is a good degree of skepticism. It seems that we view those who are exceptionally creative as extraordinary, possibly because their view is at least partially focused on questioning the ordinary. This view could then be expressed in how they act and what we see them do, leading to this extraordinary character. In this case they possess no mystical ability; they simply possess a perspective, a dynamic perspective that can oscillate fluidly between the boundaries of skepticism and acceptance. I think from here it is important to realize that what we see as creativity may not be so clear to the creator. Maybe without our acknowledgement (or without the promise of status relating to the outcome of their creativity) their ability may become diminished, or not actually exist at all. It begs the question as to whether creativity is creativity without recognition? We could say yes, but society's view on things does seem to matter. I then finally wonder about how different individuals and different groups within our human society appreciate and recognise creativity, and to what extent this recognition regulates the fruition or destruction of creative possibility.

Week 4: Ways of Being Human

I particularly found Dostoevsky's piece interesting this week, for a number of reasons. The main reason would be that the character's views are somewhat alien, yet strangely justified. But the interesting point isn't so much the content of the character, it's more the fact that despite this content, I understand what they're trying to say about human thought.

One of the main strengths in human writing is that we can more easily relate to it because we have experienced similar feelings and experiences, yet in the case of Dostoevsky's piece, I feel a little differently.

I think how we interpret human writing is heavily reliant on contrast with what we have experienced, not just the similarity of our experiences.

Because it does seem that a person with certain experiences could look at the experiences of someone else and gain a better view of their own experiences by realising the differences between the two. Sometimes we simply can't define something, so we define it as what we know it is not. It is through this sort of method that I think human writing addresses major issues, such as psychology, not so much by directly attacking the issue, but by contrasting it.

Week 5: Science Humanities Gap

I am the facilitator.

Week 6: Pacific Ways of Knowing

So when I started reading the *Hau'ofa* piece, I firstly felt kind of bad because I saw myself as one of these macroeconomist etc types, which seemed like the enemy in the article. I think *Hau'ofa* clearly highlighted why I think like this, because of my education background and the effect this has had, similar to her view on how teaching about the hopeless state of the Pacific influenced her students. It was interesting how *Hau'ofa* said that Pacific culture's worlds were so big, because she spoke in the past tense, which made me wonder whether their worlds are still so big, or whether this big world has been distorted by non-Pacific influence.

Wendt's article highlighted the significance of Pacific language and understanding very well. The different ideas on what it means to be clothed in certain Pacific cultures and in non-Pacific cultures provided a really good contrast for me. This article also reminded me of visiting NZ, and having a Maori group explain the significance of their facial tattoos. The key element I found was *Wendt's* comment that people try to interpret Pacific writings without understanding the culture behind it, which I think is a grave and foolish mistake.

Week 7: Indigenous Ways of Knowing

The piece *Indigenous Methodologies in Social Research* strongly highlights the Indigenous notions of connectivity with knowledge and connectivity with land. I think this kind of knowledge and knowing is suited to Indigenous culture and also reflects the historical background of indigenous cultures very strongly.

I have always wondered why we don't facilitate this indigenous knowledge by allowing indigenous cultures to have more participation in our land management practices. For example, Aboriginal people are experts at controlled burning, which under their management would probably be more efficient and effective than our methods. I don't think however that we could change our Western ways of knowing to be the same or extremely similar to Indigenous methods in every respect, because it would require radical change and connectivity to knowledge and the land that we just don't have.

I found the *Yolgnu Ways* piece very interesting when it talked about *Dhudakthun* because it seemed like the perfect way to try and understand historical figures. It was interesting how the goal of their educational framework is to make people who can celebrate "who we are and where we are in the modern world", a very different goal to our Western System.

Week 8: Asian Ways of Knowing

Asia for me is this kind of blurry pseudo geographical/cultural/religious area of the world. If I were to describe where Asia is to me, it is East of Europe, South of Russia and North of the Pacific. However it is not such a homogenous area of the world, it is a truly diverse area to me. This is because I have visited two very perceivably different Asian countries, Thailand and Japan.

It's interesting because as a visitor in Thailand, you didn't hear about or see these "handbooks" that are described in the readings, however when you're in Thailand, in a local community, you can see the products of this knowledge in festivals and in agriculture. In both countries the religious knowledge base is extremely visible, and in Japan their entire culture is exceptionally visible in the integrity of its people, the integrity of their environment and in the clear respect they display in everyday life. One major thing that struck me when I returned from Japan was just how much more respectful the people of their country are. I think that how knowledge is conveyed and stored throughout Asia varies a lot, but I think the systems in place are very much dependant on the people and the history of each country.

Week 9: Economic Ways

The "Economics of Knowledge" article Avril posted in our tutorial instructions highlighted well how economics has a bearing on my areas of study in biology and chemistry. It basically highlighted the fact that people working in these scientific areas provide new, innovative knowledge that can be used by economists/countries etc to gain a competitive edge in the markets of supply, demand and exchange globally.

This is interesting because back when we did the Science-Humanities week, we discussed how the social sciences determine how the natural/physical sciences are implemented within the public domain. Economics has been highlighted in the readings as a social science, yet when you think about who would implement the knowledge gained in the natural/physical sciences, you think (or at least I do) of politicians.

The article on "Thinking like an Economist" was very interesting in how it tried to help you think outside of economics about economics. While reading it I found the description of using graphical and algebraic representations interesting, but incomplete. I felt that a more systemic way of viewing economics might be a good compliment to these algebraic descriptions, something like the systemic thought used in Earth Systems Science.

One major question the articles made me wonder about was how well economic models account for technological change and advancement and the effects these advances have on public perception and action.

It is clear that events in society influence how and if people spend their money, but how does the attitude towards future technological advancement affect people's opinions on the nature of their own financial future?

Week 10: Development Ways

I found the first article by Amartya Sen interesting because it attempted to explore how 'we have to see individual freedom as a social commitment'. This is to me a very complex issue because to alter people's personal perspectives on development, many people need to be aware of the actual goals of development.

In the context of creating knowledge, I feel that development can increase the opportunities for knowledge creation but it can also limit the kinds of knowledge that can be created. This is because of the nature of development, and how work in one area of it intrinsically affects another area. Because development is so complex, this domino effect of effects may lead to certain areas of knowledge being neglected or omitted, without anyone realising.

In saying all this I feel the goal of development is a lot like what Wolfgang says, in that it's this kind of unreachable dangling carrot humanity has been chasing after. That's not to say that I feel nothing has been achieved, but more that the end goal is unattainable. The main thing that has been achieved is that some good knowledge has been created due to the motivation of development.

Week 13: Public Policy

The arctic role play week clearly demonstrated to me why the areas of policy/politics etc are such difficult areas to actually get substantive work done. Everyone had valid knowledge when they came to the table. They had a problem to work together on. They all had goals and aspirations to fulfill. But that simply wasn't enough.

It seems that when a plan of action was developed to be voted on, the plan reflected one interest group's knowledge and had some kind of conflict with another group's knowledge at the same time. There was never a balance and I feel it would be exceptionally difficult to find an equal balance. One interesting thought on equal representation of interest groups during a policy/action debate comes out of our economics week, in that a lot of the time an efficient distribution of a quantity isn't an equal distribution. Perhaps to make these difficult policies solve a problem quickly, one interest group's knowledge needs to be prioritised over the others.

A major block to action was of course who would foot the bill at the end of the day. Somebody would have to eventually, but if this were a global crisis, with global implications, everyone would foot the bill and nobody would have a choice in the matter.

This is interesting to me when you think about some dictatorships in the past. Some had exceptionally clear goals they wanted to strive toward and they did so by taking people's choice out of the equation. This makes me wonder with climate change how long we might have before we can't do anything to mitigate the effects of climate change?

We seem to at the moment have a choice, to an extent, on what action we can take with climate change. However the possibilities that arise from choice are getting in the way of us developing a clear directive on what to do. So the question I wonder about from all this how we can develop a definitive plan of action that we're willing to stick to, while we have such a range of choices on how we are going to tackle the problem.

Tutorial Secret Plan

Pre Activity – 8:45-9:00 (Samm and Keiran)

- Make the room into two distinct tables one with science things on it and one with arts things on it
- Write up quotes from the text to be used in the discussion
 - o Nations all over the world will soon be producing generations of useful machines, rather than complete citizens who can think for themselves, criticise tradition, and understand the significance of another person's sufferings and achievements.' – the Australian
 - o 'Professor Nussbaum argues that universities play an important role in nurturing good citizens, but that is at risk as the arts and humanities are dumped in favour of technical and scientific disciplines.' – The Australian
 - o 'We have a very mobile economy and we don't know what the jobs will be 20 years from now.' – The Australian
 - o "I christened to myself the 'two cultures' for constantly I felt I was moving among two groups – comparable in intelligence, who had ceased to communicate at all." – Two Cultures
 - o "I should be the last person to suggest the two can at the deepest level be distinguished" – Two Cultures
 - o "As my model for how the sciences and humanities should interact because I believe that neither pre strategy can work" – Hedgehogs and Foes
- Flyvbjerg is professor of planning at Aalborg University in Denmark and the author of a series of hands-on case studies of regional redevelopment in that country. His own work has been intensely practical, a matter of advising Danish politicians and civil servants about urban planning schemes and evaluating those schemes against the background of democratic ideals.
- (Note the practical application of the humanities, a common argument is that they achieve nothing useful)
- Quote from text; They have made it clear that using the term "science" to cover everything from string theory to psychoanalysis is not a happy idea, because doing so elides the difficult fact that the ways in which we try to understand and deal with the physical world and those in which we try to understand and deal with the social one are not altogether the same.

We will decide at the time who facilitates discussion around particular quotes.

Introductory Activity – 9:05- 9:10/9:15 (Both introduce)

- Be split into groups dependent on whether they are science or arts – interdisciplinary kids can choose. Facilitate an even number on each side.
- Show Sheldon video.
- Now that we have some trivial perspective on how someone may think of the divide, we're going to look at the characteristics of the two areas.

Science and the Humanities Gap 9:15-9:20/9:30- Keiran Introduce.

- In the 2 groups depict on the opposing whiteboards what you see as the major characteristics of science or humanities. Specifically focus on how they each do research, what kinds of knowledge they create and the nature of the research that they conduct.

Group Discussion – 9:30-9:55- Samm Introduce.

- Exploration of the nature of the divide between science and humanities.
- What are the distinctive differences between the two areas? (K)
- Did anyone find their family/friends favoured one side? (S)

- Did anyone have a more unique reason why they favour one side over the other? (K)
- Bring in the tutorial reading quotes (top) and tutorial tickets(below)
 - Empowering Aristotle Article
 - o Interesting comparisons that are highlighted in the text (make sure people read it, if no give a brief explanation, or put up on the board)
 - The Two Cultures
 - o He suggests some very brash things about scientists and artists do people agree or disagree with these generalisations? (If time, do tickets first)
 - Foxes and Hedgehogs
 - o Do we think that in determining that there needs to be a fix it is reinforcing the divide?

(K)Alicia Gall – “Research in the humanities is mostly history based, while science research involves experiments. Science requires its researchers to understand terminology, and go forth with their own experiments. Humanities requires reseachers to come up with their own idea, and fit that in with what has already been done.”

- Examine how similar ‘going forth with an experiment’ is to ‘come up with their own idea’ etc. Also note the historical longevity of science and how in class one learns the “classical laws” for modern application. –Just ask her to elaborate and ask others what they think.

(S)Min Tan – “For future benefits and problem solving purposes, knowledge from the two disciplines should be merged.

- Examine whether the two can be merged, possibly try and draw out some kind of example of where merging would be best. Highlight the effect of contrasting the two by trying to integrate them, thereby leading to more visible differences?

(K)Alexandra Gill- “Within science, research is typically conducted through experimentation to collect data. Such data is then analysed and compared with hypothesis based on previous experiments. It is this comparison and repetition that forms theories and models within the discipline of science.

Within humanities, research is conducted often through real-life comparisons and peer analysis. The continuing critique, analysis and drawing upon various sources form the basis of findings and research.”

- Note the peer review method of science, and how much new work can be based on a perceived hole in old work. And how different is “data analysis compared with hypothesis based on previous experiments” to ‘real-life comparisons and peer analysis etc’
- Maybe mention the idea that humanities develops the socio-political framework while science provides the ideas that the framework implements.

This section will mostly be time and user interest driven, topics will basically be taken from this list as they become relevant, or they will be excluded if they won’t lend anything to the current mode of discussion. At least one tutorial ticket will be mentioned.

BREAK- 9:55 TO 10:05

Group Activity 10:05 – 10:35 Samm Introduce

- Now that we've looked at differences between the two and why one side may be more favoured etc, we're going to do an activity involving Mr Squiggle.
- Each group is given copies of the same Mr Squiggles, from which they must create an identifiable image.
- The goal of the activity is to highlight that despite their inherent/distinct differences, the sciences and humanities are still composed of people who can react and achieve similar outcomes in similar ways by similar processes.
- Activity if necessary
 - o How would your area solve the issue of Climate Change?
 - o How would the other area solve the issue?
 - o Do we need to bring them together to solve it?

Individual question time, then sharing with the group – 10:35-10:45 Keiran Introduce

- Consider since you will have the two heads of departments some questions that you would like to pose.
- 5 mins question thinking, 5 minutes sharing some questions and discussing them.
- Try to encourage those who may not have shown as much of an active participation. Because the room will be divided for a long time, it may be hard for all to get in and evidently contribute.
- Room will possibly be reformed into one big group near this time, depending on time constraints etc, and whether we feel it is required/valued/useful.
- Maybe a small vote at the end to finish off as to whether there is a divide or if it's just a perceived divide lacking true substance.

Other Group Explanation of their Tutorial - 10:45-10:55

Goals:

- Firstly highlight the differences between S and H.
- Design discussion to explore these differences and how and why people perceive them, and whether people do actually take a side.
- From highlighting the differences, it is hoped people will start to realise the inherent similarities alongside these differences.
- Have a practical activity to highlight the objective achievement possible on both sides and the fundamental normal people behind them.
- Facilitate development of challenging questions and a passion for constructive argument, criticism and elaboration.
- Attempt to give everyone equal ground to provide their ideas, facilitating this such that nobody competes for constructive input.