

## Reflective Piece 2

### Bullshit

Fifteen weeks ago, I chose “Ways of Being Human” as my week to facilitate for one simple reason: experience has shown me I have no idea how to do that. No handbook, no economic model, no tatau, theory or song has given me any valid<sup>1</sup> idea on how to be human.

When the topic changed, later, to “Ways of Writing Human”, I smiled. Literature has been the one way in which I have learnt to be human, despite often reminders from my brother that this was foolish. Literature provides a story, a model based on unrealistic assumptions:<sup>2</sup> it is quite the creative leap to move from literature (arts) to a theory on how to be human (sciences). Although CK students decided that gap was not as wide as in Snow’s time, it is certainly perceivable – if one knows the right way of seeing.

This is a course on bullshit.

This is *not* a bullshit course.

I have a tendency to believe any compliment directed at me is sarcastic.<sup>3</sup> Yet for thirteen weeks, peers with self-professed intelligence have listened to me and engaged intellectually with me – rather than openly suggesting that what I might have to offer is nothing. Not “nothing empirically true”: we’ve seen that valued<sup>4</sup> knowledge extends beyond ‘scientific fact’, as a Thai handbook is equally valuable if on making fish farms as on car choices based on birth day.<sup>5</sup> Not “nothing interesting”: my apparent firm belief in knowledge for knowledge’s sake<sup>6</sup> was referenced in another group’s final presentation.<sup>7</sup> Simply, “nothing”.

The concept of “0” arose in mathematics, via Brahmagupta. Objective evidence suggests I have an undergraduate understanding of mathematics; yet this understanding and knowledge, I seem unable to share. This is not C.P.Snow’s

---

<sup>1</sup> Valuable – see tutorial ticket week 9.

<sup>2</sup> A proper novel ought to be set in an imagined real world (not too unrealistic assumptions!). See *The Novel and the Reader: A Primer for Critics*, by Katherine Lever.

<sup>3</sup> Not that it was intended to be sarcastic, but that logically it must be. For more on the problems of intent, communication and interpretation, see Reflective Piece 1.

<sup>4</sup> Valid – see footnote 1.

<sup>5</sup> Day not date!

<sup>6</sup> In the spirit of “*ars gratia artis*”, I feel knowledge is inherently ‘good’.

<sup>7</sup> The Darsharian view, that knowledge is great for no other reason than being knowledge, was contrasted to the Cameronian view, that knowledge must serve some use to be valued.

cultural divide, necessarily;<sup>8</sup> this is a problem of communication and a problem of interest.<sup>9</sup>

For thirteen weeks, students have met in panels and tutorials (which the students themselves have run!) to unpack entire disciplines, cultures, worldwide problems. We have purported to be experts after perusing one or two articles on a subject. Bullshit! (Though I may simply be looking at this in the wrong way, much as mathematicians stared at the idea of “hyperbolic geometry” and labelled it “impossible”.)<sup>10</sup>

Arguably, the course is less about the substantive material, but rather approaches; ways of thinking, understanding, knowing. But to suggest we can discuss a subject with such little information undermines the idea of cross-disciplinary communication. Communication itself is difficult enough, let alone bridging vast gaps.<sup>11</sup>

Or perhaps we learn just how much knowledge and understanding can be changed through sharing: given a little, we see how we automatically innovate our understanding when faced with new ideas, sharing our lives with our fellow classmates.<sup>12</sup>

### Useful or Usable

The Western world values usable knowledge: “knowledge is something that people do”.<sup>13</sup> The enlightenment<sup>14</sup> is both our impetus and our playing field: we want to keep improving, and we wanted this before the rest of the world joined us.<sup>15</sup> Others jealously wished it, and we wanted to ensure they didn’t fall to communism, and so development spread.

For decades, development developed.<sup>16</sup> But only recently have people begun to question whether development is actually a good thing or not.<sup>17</sup> So much of Western life (and probably other ways of living as well) stands unquestioned and

---

<sup>8</sup> Unlike in Snow’s time, where “Oh, those are mathematicians! We never talk to *them*”, (*The Two Cultures*, p4), people actually talk to mathematicians these days.

<sup>9</sup> Steve Hatfield-Dodds in *Unravelling Complexity* noted that often complex problems are complex simply because too few people care, or too few resourceful people care.

<sup>10</sup> The need for more perspectives, or an appreciation of different perspectives, was discussed in *Reflective Piece 1*.

<sup>11</sup> The science/arts divide may be larger or smaller than we found in class; with little information to go on, who can say? See also our group presentation.

<sup>12</sup> Analogous to “Creating Knowledge” in the *Indigenous Ways of Knowing* presentation by Dr Kerry Arabana.

<sup>13</sup> Dr Duncan Campbell’s talk on *Asian Ways of Knowing*.

<sup>14</sup> Craig Savage in *Unravelling Complexity* noted that this particular age of enlightenment has lasted an unusually and inexplicably long time.

<sup>15</sup> Alistair Greig’s\*\*\*\* talk on *Developmental Ways of Knowing*.

<sup>16</sup> *Ibid.* Greig traced out decade after decade, until development’s critique in the 90’s.

<sup>17</sup> Estava article.\*\*

almost unquestionable; is development a good thing, or should we not now start questioning many of the other assumptions behind our way of life?<sup>18</sup>

The scientific method established “falsifiability” as the ultimate goal. Empirically provable knowledge was heralded as king above all other kinds. And so, in search of usable knowledge, many economic theories are rejected.<sup>19</sup>

Would economists who don’t care inordinately about realistic assumptions still be valued in today’s world? Or are we so focussed on the practical value, the verisimilitude of economic theories?<sup>20</sup>

Theoretical mathematicians have never cared very much for the practical value of their work.<sup>21</sup> That hyperbolic geometry was an “impossibility” did not preclude them from exploring and defining the topic theoretically:<sup>22</sup> many models existed before “the men who stare at sea slugs”.<sup>23</sup> But mathematicians are seen as an oddity in the Western world, as they chose not to search only for usable knowledge. Indeed, this theoretical/practical divide may sum up Snow’s gap as good as any other.



Yet in other places, other kinds of knowledge were valued. Thai handbooks covered topics ranging from the proper way to plant crops, to start a fish farm, to how to kiss, how to act and even what your birth *day* says about you. Indigenous people valued the stories and dreamings, sharing them both before they discovered “empiricism” – and happily in spite of that Western topic after colonisation. Indigenous people realised that humans are really only one

---

<sup>18</sup> Question, Week 10, Developmental Ways of Knowing.

<sup>19</sup> “After about five years of doing [standard statistical tests] on rational expectations models, I recall Bob Lucas and Ed Prescott both telling me that those tests were rejecting *too many good models*.” Thomas J Sargent, 2005, quoted in Timo Henckel’s presentation.

<sup>20</sup> Question, Week 9, Economic Ways of Seeing.

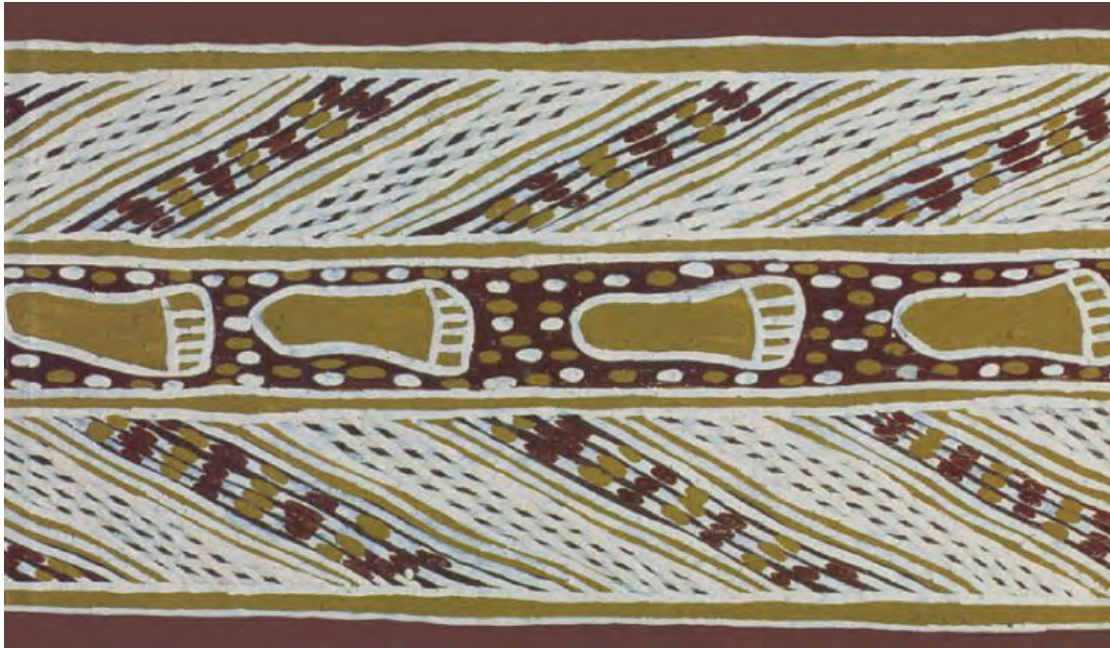
<sup>21</sup> Algebra lecturers at ANU often express both surprise and slight disdain when their work is used for practical applications.

<sup>22</sup> In the spirit of various Big Bang Theory posts in forums, I invite you to revisit the very first episode, where Leonard accuses Sheldon of having to invent 26 dimensions just so the [math] works. Sheldon retorts that the dimensions exist in every universe, “that’s the point”.

<sup>23</sup> Have *you* ever stared at sea slugs? I haven’t, not until this very moment.

component of the web of knowledge systems, with knowledge being a way to link humans to all other beings.<sup>24</sup>

Yet Indigenous knowledge systems could also be seen as social, physical and spiritual understandings that inform survival and contribute to a sense of being in the world.<sup>25</sup> The former aim is surely “usable” knowledge, whereas the latter may be “useful”: it doesn’t necessarily achieve any aim in and of itself, but it provides increased enjoyment and awareness of other possibilities. It was that latter sense that we explored in tutes, singing the way between water(coffee)holes, and planting ourselves firmly on mother earth.



---

<sup>24</sup> Dr Kerry Arabana, Indigenous Ways of Knowing.

<sup>25</sup> Ibid.

## Pluralism

Is there only one way that is the best way to act, or do you think many ways are acceptable and just as good? Is it better if a society learns this through various handbooks (explicitly), or that you are indoctrinated as you grow (implicitly)?<sup>26</sup>

Worldviews are seen to be interconnected and interrelated in a community, with these pluralistic views directing its members.<sup>27</sup> Surely this is a “better” way of viewing the world than the Western way, filled with empiricism and developmental ways of seeing. In our search for “true”, “valid” and “usable” knowledge, we deny other types of knowledge their place in the world. We stand to lose a lot.

*Science is organised  
common sense where  
many a beautiful  
theory was killed by  
an ugly fact.*

*T.H. Huxley*



In fact, we run into problems. Developmental Ways of Seeing have given us a strong need or drive to improve, one that is almost ingrained in our being. Yet we also feel a need to give back to communities, or those less fortunate. We run into the problem of being unable to appease two goals: do we want to be the best, or do we want everything to be equal?<sup>28</sup> While Development demands we be the best, and Economics suggests we look to efficiency over equality, our human nature<sup>29</sup> struggles to keep equality on the table. At its worst, in the Arctic role play, we saw that Westerners lack the ability to deal with a multitude of competing and valid interests.<sup>30</sup>

---

<sup>26</sup> Question, Week 8: Asian Ways of Knowing.

<sup>27</sup> Indigenous Ways of Knowing.

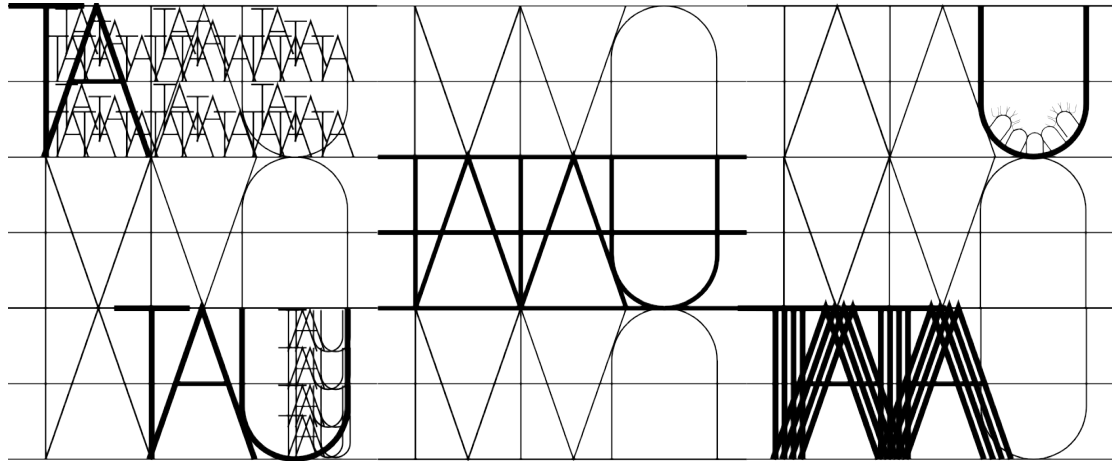
<sup>28</sup> Inequality was explored further in Unravelling Complexity, Week 9, again with Amartya Sen!

<sup>29</sup> Something shaped implicitly, rather than read in a handbook – though I often wonder how things might be if we were to learn “Ways of Being Human” through such writings.

<sup>30</sup> This was further explored in the Unravelling Complexity course. We cannot conceive proper solutions, although we have preferences.

Then again, equity as a branch of law developed in order that fairness and justice were available. While the common law was seen as a perfect and certain way of governing, the Western world allowed the simultaneous development of another set of laws to temper the application of rigid enactments.<sup>31</sup>

To Western viewers, *tataus* can have an abundance of interpretations. In tutes, we found that our natural approach to non-verbal, non-Western communication forms was to wax poetic, seeking out nebulous ideas rather than transliterating. Indeed, (poetically) the word *tatau* has a rich, pluralistic set of meanings and inspirations.<sup>32</sup>



### Sharing is caring?

Adaptability and dynamism are so ingrained in Indigenous knowledge systems; even while it is acknowledged that traditional knowledge should be shaped in the modern world, why are limitations placed on the sharing of such knowledge?<sup>33</sup> Knowledge must be respected: certain stories have a particular way in which they must be told; other knowledge is sacred, restricted for those of a certain age or gender. Knowledge itself must be preserved – made difficult as the source of knowledge (elders) grows old, and languages are lost.

What of the private libraries in private gardens? Was all knowledge in China secreted for the enjoyment of only a few? Should we follow Wilbur and Eliza's example, and enjoy knowledge only in secret?<sup>34</sup>

The Pacific Islander's concept of *tatau* has become widespread and those that desire tattoos may have no idea (and no concern whatsoever) for the culture and heritage that belies the black. Should knowledge not be shared, lest it be disrespected? Or only shared if people first learn the proper respect and care?

---

<sup>31</sup> Of course, it was only after William the Conqueror succeeded in invading England that these changes began to occur.

<sup>32</sup> See 'Afterword: Tatauing the Post-Colonial Body' by Albert Wendt for a list of these etymological inspirations, some of which are embodied in the image below.

<sup>33</sup> Question, Week 7: Indigenous Ways of Knowing.

<sup>34</sup> See *Slapstick*, by Kurt Vonnegut Jr.

Sharing knowledge formed the basis of my group's presentation at the end of the course. To me, sharing is a combination of communication and interpretation.<sup>35</sup> Yet even a small tutorial group has many different ideas of what "Asian", or "Development", or "Indigenous" means; each enjoyable and beautiful in their own right!<sup>36</sup> But to share different perspectives well/properly, I feel we must understand that often words and concepts mean different things to different people – this must be acknowledged, lest we fall into a double illusion of transparency.<sup>37</sup> We should embrace and exaggerate our differences, so we broaden the net of possible ideas: we need to learn not to assume that inferential distances<sup>38</sup> are small. All the while, we should remain respectful of those who are willing to share knowledge.<sup>39</sup>

### Sharing AND caring

The later half of this course has looked at different ways of knowing/thinking. We explored different cultures, mindsets, values, and with each new idea, we said to ourselves "our understanding of the world is changing" – whether true or not.

Being asked to sit on the floor, arranged in age order, tacitly teaches/reminds us about how different cultures perceive value and what a good basis for respect might be. My own obstinacy led to me sitting on the floor for the entire Developmental Ways tute, and yet fellow students shared their sweets with me: developed countries may still share and care with undeveloped countries, even if they wish not to change.

Economics promotes greed, they say.<sup>40</sup> I will happily learn new cultures and values (new knowledge in and of itself), especially if this allows me access to more knowledge!

But it's care not simply for the culture (respect for what I am about to receive), but also care for the person transmitting knowledge. Peer-led tutorials aren't necessarily about being taught the material. After all, I have access to all of it already. Rather, the unique and irreplaceable experience is the attitude and perceptions of this other person, their unique reaction to the subject matter. The idea of value/validity would never have occurred to me if not for Graeme's questions, and his desire to explore other aspects of economics. Cam allowed it to be abundantly clear just how strangely we treat interpretation of non-verbal ideas in the Pacific week. Sig and Tas, I now have the wonderful image of capitalism as a metaphysical monster – who's hungry!

---

<sup>35</sup> Both of these were explored somewhat in Reflective Piece 1.

<sup>36</sup> My feature article interview with Professor Robert Cribb touched on pluralism. He suggests that, when searching for historical "truth", one must value both "mechanism" (empirical fact finding) and "meaning" (only those interpretations which are valuable!).

<sup>37</sup> See [http://lesswrong.com/lw/ki/double\\_illusion\\_of\\_transparency/](http://lesswrong.com/lw/ki/double_illusion_of_transparency/).

<sup>38</sup> See [www.thejach.com/view/2011/08/inferential\\_distances\\_again](http://www.thejach.com/view/2011/08/inferential_distances_again).

<sup>39</sup> Whether the handbooks or elders/lecturers tell us to or not.

<sup>40</sup> Dr Timo Henckel agrees that this is a common conception.

This is two-way education: assume you have something to offer and something to learn.<sup>41</sup> You don't need to offer any particularly important insights, or "facts" you've accumulated along the way. Despite being pitched as a cross-disciplinary course, there weren't too many instances where a student expounded or relied on their particular discipline; and those few instances certainly weren't the most memorable aspects of the course.

Any piece of knowledge, interpreted by many, leads to that many more pieces of knowledge. A power set<sup>42</sup> of interpretations, if you will.

### VCUG2001: Creating Knowledge

It's not about the subjects: you can't hope to learn such topics in a few hours during one week.<sup>43</sup>

It's not about learning how to share knowledge:<sup>44</sup> this happened, implicitly. Nothing was said about how one might do it, or improve.

It's not about respecting other cultures: reducing them to one or two catch phrases and ideas, and subsequently abusing these for marks certainly doesn't seem like respect.

It's barely about creativity, creating knowledge, university research: these were touched on early on, and quickly buried under other considerations.

Maybe it's about the dynamic creation of knowledge that happens in any community of learners. As we share our lives, ideas and interests, an almost never-ending discussion of new thoughts arises.

---

<sup>41</sup> As seen in Indigenous Ways of Knowing.

<sup>42</sup> The set of all possible subsets of a set. Or here, the set of all combinations of interpretations of a piece of knowledge.

<sup>43</sup> Or, my abstract-preferring eyes refuse to acknowledge this as the point. I'd prefer something more intangible, that transcends the course itself.

<sup>44</sup> The Indigenous week discussed knowledge about how to learn knowledge. I'm sure there are handbooks on how to write handbooks, just as there are TED talks on making TED talks.



## Appendix 1: Tutorial Tickets Weeks 7 – 11

### Week 7: Indigenous Ways of Knowing

I'm currently taking a Law and Psychology course (one of the few interdisciplinary courses offered by the Law school, but well worth it). A focus question is how this new 'psycholegal' branch will develop, as for quite some time, neither discipline has viewed the other particularly respectfully or amicably. The idea "galtha" suggests a particular meeting ground: "Our knowledge comes from the context of our learning, and we must negotiate an agreement about our perspectives if we are to produce significant knowledge". Interdisciplinary studies require a negotiated agreement about what our pasts (dhin'thun) suggest, and finding a way to meld them together.

Law, more generally, is built around the idea of following and improving a long line of precedents. Those keen enough to study the history of law (far more interesting, I might add, than the practical black-letter law which comprises the bulk of law courses these days. This, of course, is simply part of the trend of universities these days: it's now the education *business* [and cousin, business is a boomin']. Enough of that) can pinpoint and relish in cases which demonstrated a change in social thinking. Cases which realised that women ought to be able to retain land after their husband died; that jumping out of a speeding car isn't a reasonable means of escape; that people need to be able to understand criminal proceedings rationally before they can be allowed to be tried, if we care at all about fairness. Dhudakthun speaks of great respect and understanding for the past, ancestors, elders and the traditional ways - yet we honour these footprints, the great truths that have been passed down, not by merely imitating them, but by emulating them into our present world.

In mathematics, I love seeing the development of new ideas, new ways of thinking. So many branches were invented in order to fill a need - tracing through the history of mathematics, and the history of famous mathematicians, is a beautiful thing. It is a beautiful thing, I expect, in any subject. And yet, Western universities seem to have little love for the past (perhaps through lack of time, more pressing needs, or the existence of a small subject entitled "The History of X"): we look to practicalities, the skills necessary to live and flourish in the modern world, without necessarily understanding the development behind these ideas, the reasons they exist, the purpose they once served and hope now to serve.

A gap is created whenever we define one. The terms Indigenous and non-Indigenous suffice, in creating a gap. However, it's not "well-defined" (ah, mathematics, always a safe refuge). There's no reason that the distinction, once made, creates an 'actual' gap. Indeed, Moreton-Robinson and Walter's chapter shows that, in some respects, the two ways of thinking overlap. I cannot see (immediately) why having a true gap or not having a true gap benefits anyone in any way.

I am far more interested (call it a morbid fascination with mirrors in mirrors) in how non-Indigenous thinking views Indigenous thinking, and vice versa. Further, and far more exciting, from a non-Indigenous lens, now looking at Indigenous thinking, what do we say about our non-Indigenous thinking? Mapping from N to I to N appears to change things!

## Week 8: Asian Ways

### *Rituals and conventions in Law*

HIRAC: Heading, Issue, Rule (or Law), Application, Conclusion. We are taught that all legal questions can be answered by multiple applications of this method, drilled into us from day one.

Footnoting: Every statement must be footnoted if it derives from another source, or is a principle of law requiring a precedent/authority.

Obiter and ratio: Whenever we read a case, we look to discern what is the 'ratio decidendi' (reason for the deciding), and what is merely 'obiter dicta' (things said in passing).

### *Rituals and conventions in Mathematics*

Formal proofs: We learn to justify each statement, introducing whatever lemmas, corollaries and theorems are required to move from where we are to where we want to be. Everything is pure, logical, structured - beautiful.

Clarity and subtlety: Mathematical proofs are valued for their ability to state a result in its simplest form, without any unnecessary comments or steps. One remarkable ability of great mathematicians is to appreciate and utilise very subtle arguments. Rather than bombard a principle with powerful theorems and overkill a result, a great mathematician makes use of very simple, almost straightforward ideas in order to deduce something remarkable. A ritual, from this, would be the reworking and cleaning of old proofs.

Existence and Uniqueness: One ritual which occurs in almost every discipline of mathematics is asking the question whether a particular thing exists, and, if it does, whether such a thing is unique. For example, does there exist an even prime? Yes, 2. Then, is such an even prime unique? Yes, 2 is the only such example.

### *Scientific and Local Knowledge*

Above, I chose an example which was almost inherently graspable. Formally or not, everyone in this course could show that 2 is an even prime, and further, that it is the only even prime. However, examples exist which are beyond the 'reasonable man', and indeed beyond those blessed/cursed with a deeper understanding of mathematics. Scientific knowledge (in all its purity) extends potentially without limit, whereas local knowledge is bounded by people. The notion of 'handbooks' suggests that, while the bulk of scientific (though I would much rather use the more general term "specialised") knowledge may not easily be transferred from expert to novice, it is possible to bridge that gap somewhat. Distill basic and relevant points about a broad subject and distribute these in an easy to grasp manner. This can be done through handbooks, or through small lectures, informal gatherings, wikipedia pages.

## Week 9: Economic Ways of Seeing

### *The Adherence Test*

Whether or not pasta sauce adheres to the pasta as it is poured on is a test: we have criteria we can objectively judge. Is it valid when deciding 'superiority'? That depends on whether adherence falls under the concept of 'superior pasta sauce'. Here, my interest in the question almost disappears: the question is easily answerable by determining which of two situations we are in ("adherence" is an element of "SPP", or it is not). That determination could be made through focus groups, or determining the type/types of superior pasta sauce, or any other way. Importantly, it is of almost no interest to me *which* determination is made!

### *Empirically Testable Knowledge is more valid, less valid, as valid*

For me, knowledge is 'valid' where it is useful. The idea of 'validity' comes from the idea of 'worth'. Being greedy, almost all 'knowledge' is useful, even where logically unproven (or perhaps even false). To say that empirically testable knowledge is more valid (more valuable) may be true, in the sense that I can then comfortably use this to deduce more knowledge. Knowledge which is not empirically testable is not necessarily logically sound: any new knowledge which may be said to result from this simply results from whatever empirically testable knowledge you already had.

Consider building a tree with wooden blocks and leaves. Wooden blocks can support either wooden blocks or leaves, but leaves cannot support anything. Finding new blocks is wonderful, but as is finding leaves! They are just as useful for the tree, and it doesn't really matter where they sprout.

### *Models, World of Models, and the "Real" World*

If economists worried desperately and incessantly about the real world, that field would appear remarkably barren (compared to what it has offered us in its current playful state). Economic models are based on assumptions, some of which are particularly relevant, others that can be discarded without affecting the results. Robert Sugden discusses this (see *Credible worlds: the status of theoretical models in economics*) nicely, by reviewing two economists who make claims about the real world based on models, without any explicit connection between models and the real world. This is (supposedly) justified by inductive reasoning.

From my (limited) experience, economists don't start with the real world! One doesn't attempt to model reality; rather, one creates a model and draws conclusions within the model world. It is possible to generate useful knowledge from models; whether you accept that it applies to the real world or not doesn't change the validity/worth of the knowledge.

## Week 10: Development as a Way of Seeing

Amartya Sen defines development as the expansion of freedoms; development is both a process and an end goal. I prefer the thought that 'development' is seen as a process: the movement or change from one thing to the next. Having identified an end goal, we can evolve/develop in order to achieve that goal.

Defining development as an end goal limits the idea. Indeed, Sachs points out that the end goal we call 'development' is (quite probably) better known as 'Westernisation'. This is the unifying and normalising expanse of Western cultures, ideals, ideas and ways of thinking into the rest of the world; the diversity-killer which imposes one perspective onto anyone it finds.

Is Sen's concept of 'development' (the end goal) a good one? He notes two reasons why freedom is central to the development process, the second of which bothers me. Hopefully I've misinterpreted. But at the very least, Sen's work unfortunately conflates 'develop-the-end-goal' and 'development-the-process' (not entirely his fault, maybe; it just so happens that in his theory, the two end up being the same). I'd prefer that goals and the process to reach the goals were thought of separately. It allows us to critique the goal without criticising the process (where you have a bad goal, but good implementation skills); further, it reminds us that to achieve one goal, there may be many processes.

'Development', the Sachsonian concept, seems to be a fairly powerful enemy of the continuation of traditional knowledges. We've seen this already in the last few weeks. The spread of Western ideals (indeed, the spread of any culture) has led to diminution of other cultures. When one culture is oppressive and wants to be superior, others suffer. Imposing one sense of development on another community seems tragic.

As for the creation of new knowledge, I'm going to rant. Personally I always feel a little disinterested and irritated when a work is praised specifically for involving more than one culture: artists who draw from non-Western ideas are held in such high regard, composers influenced heavily by Oriental themes. So what? Do we pride people solely because they managed to see the world has diversity? Or is the praise due because development/Westernisation is slowly removing diversity? Why can't the work be praised on what it offers, and how effective it is? Not that it used a particular tool, but that it used it well!

Why is it that we don't seek to create new kinds of knowledges (plural!) by blending two different styles? We seem more concerned to point out that we are, in fact, using two separate, distinct and identifiable styles side-by-side. I suspect it's because I'm in a Western culture, dominated by those ideas: we don't like to assimilate, we like to dominate and usurp.

The creation of new knowledge may dry up as we become more and more 'developed-in-the-Sachsonian-sense'.

## Week 11: Public Health and Evidence-Based Policy

International law currently allows for the creation of soft law only: treaties, declarations, regulations and any decision from an international court are often only advisory and suggestive. Through ratification, countries opt to be bound (and indeed, often, how far they will be bound) by certain parts of any particular treaty. International obligations aren't easily enforced, though this is the current tool available.

Radical developments in international law may see a change in this. If the world (as a whole) were to decide that ecological problems require both a united decision and strict methods of enforcement, a new creature of international law may be created: one which mandates and requires countries to do something, regardless of whatever their domestic law says. Having established what the world wishes to do with the Arctic, law can help in creating, maintaining and enforcing that decision.

I'm a little unclear as to the second question. Is it the distinction between a writer aiming for a particular agenda/audience versus being forced to write for a particular agenda/audience, or the distinction between biased groups versus biased individuals? Or biased material versus 'pure' material? There are 'dangers' (intentional blindness and confirmation bias limits information, for example) where a particular focus is given, but I suspect these 'dangers' are no more exacerbated than in anything else - all knowledge ought to be examined, appreciated and questioned (in no particular order). However, for the sake of the question:

Yes, there's a difference. In fact, depending on the interpretation of the question, there can be many differences. Harking back to our Economics week, these different kinds of knowledge may (are) all be 'valid/valuable', but ought to be acknowledged and appreciated while recognising their context. The Arctic Climate Feedbacks report is easier to read, brighter, has a profoundly clear message, whereas the article is potentially far more rigorous and informative, though not as immediately accessible. I wonder whether the knowledge we adopt is less related to what we see as 'more correct', and perhaps more related to what is easiest for us (noting paradigm shifts, any need to alter our own behaviour, what already aligns with our perceptions). It's a lot easier to say "I don't care; let other people discuss the Arctic" than engage meaningfully with even broad summaries.

## Appendix 3: Tutorial Secret Plan

### Tutorial – Ways of Writing Human in the World

Five minutes have been left untouched, in case of emergencies. The tutor \*will\* directly be involved in all activities. She may even be asked to read out one of the passages for interpretation.

Max and Darsha will take each of the two split groups in the second exercise. At all other stages, we will share responsibility for prompting and keeping the discussions on track.

Icebreaker (less than 20 minutes)

- Students write their favourite authors and favourite novels on the whiteboards as they enter
- We write up a few of our own (Dracula; Orwell; Frankenstein; Philosophy texts; whatever takes our fancy and seems controversial given their answers)
- On screen: Overview and Introduction to Tutorial (attached)
- Discussion (Large Group - to finish at 11:20)
  - **Focus question: Why do we like literature?**
  - What is a classic? What makes a particular novel a 'classic'?
  - Similarities and differences between reasons
  - If enough controversy, students can 'defend' their particular choice against 'attacks'
  - (If brought up): Different interpretations
  - (If brought up): Disciplinary barriers, ways of thinking
  - (If brought up): Escapism. Won't go into much detail, either here or later.

Interpretation discussion (30 minutes)

- Discussion (Split into two equal groups)
  - **Focus question: How do we interpret literature? Subjective, objective?**
  - Both groups throw around a cartoon. Each person must first say something to add to an interpretation of the cartoon before speaking
  - Dostoyevsky (8 minutes)
    - Characterisation

- Reader implicitly learns about the character
  - Stream of consciousness: almost essay-like writing
- If a lull, consider the following prompts:
  - Existentialism
  - Conflicted/fallible narrator
  - Russian context: end of Russian empire; many authors experimenting with new styles (Gogol's surrealism)
- Maugham (8 minutes)
  - Characterisation
  - Reader explicitly learns about characters
  - Short story
  - Fluid, conversational, clichéd writing style (he was often criticised for this)
- If a lull, consider the following prompts:
  - Context: British author, celebrated
  - Writing from what he knows
  - Homosexuality - led to many strong female characters
  - Modernism
- Group discussion: what did we all talk about? (12 minutes - aiming to finish at about 11:55)
  - What were the authors aiming to do?
  - Does this appeal to everyone? Discipline bias?
  - Can literature talk about human condition? About human experiences? Which style is better?
  - Mario Llosa's article: "The premature obituary of the book. Why Literature?"
- Break! (10 minutes - variable if we think we need more time)
- Interpretation exercise (20-25 minutes)

- Volunteers (or selected victims) from the class will each read one of two extracts from Alice in Wonderland to the class. Encouraged to be dramatic.
- Students write their own interpretation of the extract (individuals)
  - Can be written very briefly, in dot points - just main ideas, things that catch the student's attention
- Try to keep the above two to 10 minutes
- Students then compare in pairs (5 minutes)
- Directions about potential disciplinary biases: "When you are considering your interpretations, also consider whether your own background has influenced this or not".
- Do different disciplines react in different ways?
- How does literature talk about 'humans', 'humanity', 'the human condition'? Does this supplement our disciplinary understanding, is it radically different, or is there overlap?
- Tute tickets
- Everyone brought back for large group discussion (10 minutes)
  - **Focus question: Where does the knowledge creation process occur?**
  - Reader response criticism
    - Where is the 'knowledge' created? Do authors put forward one objective idea, or does every reader create their own interpretation?
    - Is this a problem? A glorious complement of human life?
  - Do disciplines affect interpretation?
    - Bring in tute tickets explicitly, depending on what we get
  - (If it comes up): Creativity
    - Creativity is about making something new, being inspired by the world and putting forward a novel idea
    - But if literature and novels ought to be showing us something about the real world, how creative can they be? Are they taking liberties with what the 'truth' is?
- Final group discussion: What has come out of this tutorial? (20 minutes)



- What did you find most interesting?
    - Individuals each say one thing
  - Has your impression of literature differed in this tutorial?
    - Large group discussion
  - How does this relate back to the ideas in the course, Creating Knowledge?
    - Large group discussion
  - Any questions, concepts, ideas which you want to bring up in the panel?
- 15 minutes for next week's tute

### Introduction and Overview

“Ways of Writing Human in the World”

Today we're looking at ways of writing human in the world - the ways in which literature (and other written arts) can shape our understanding of humans, humanity and the human condition.

Throughout the tutorial, consider the following questions. We'll be asking for voluntary responses at the end.

- What did you find most interesting in this tutorial?
- Has your impression of literature differed in this tutorial?
- How does this relate back to the ideas in the course, Creating Knowledge?

The tutorial will be comprised of the following exciting activities

**Icebreaker:** What is your favourite novel? Favourite author? And why?

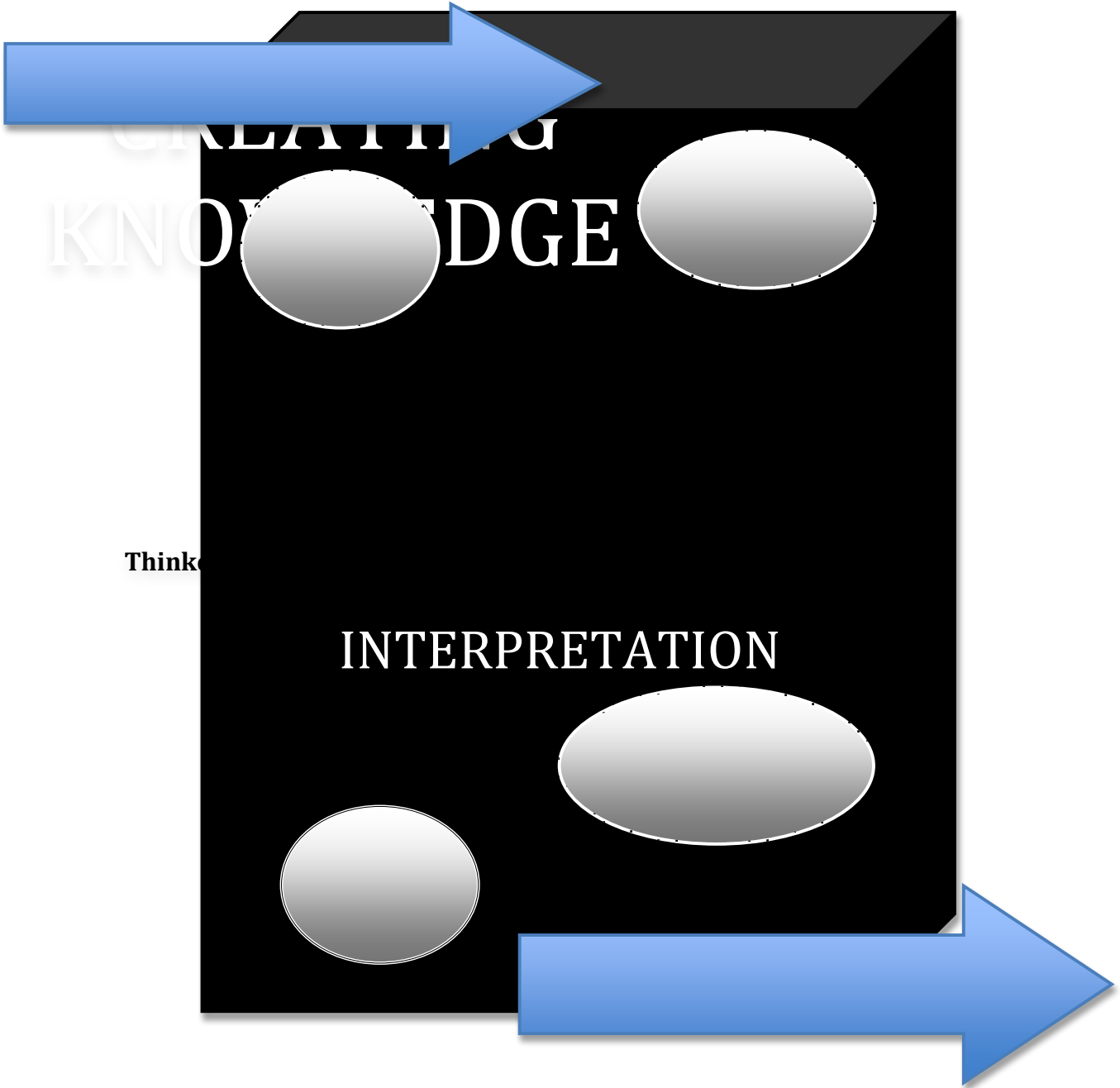
**Focus readings:** Maugham and Dostoyevsky. Likeable and annoying characters, ways of writing, and the effect and impact of literature.

**Interpretation:** How do we each interpret texts? Where does the knowledge come from? Do disciplines affect our ability (or willingness) to interpret things? (Feel free to volunteer for an exciting dramatic role in this exercise! Two lucky winners will enjoy a breathtaking experience)

**Conclusion:** Looking back, looking forward.

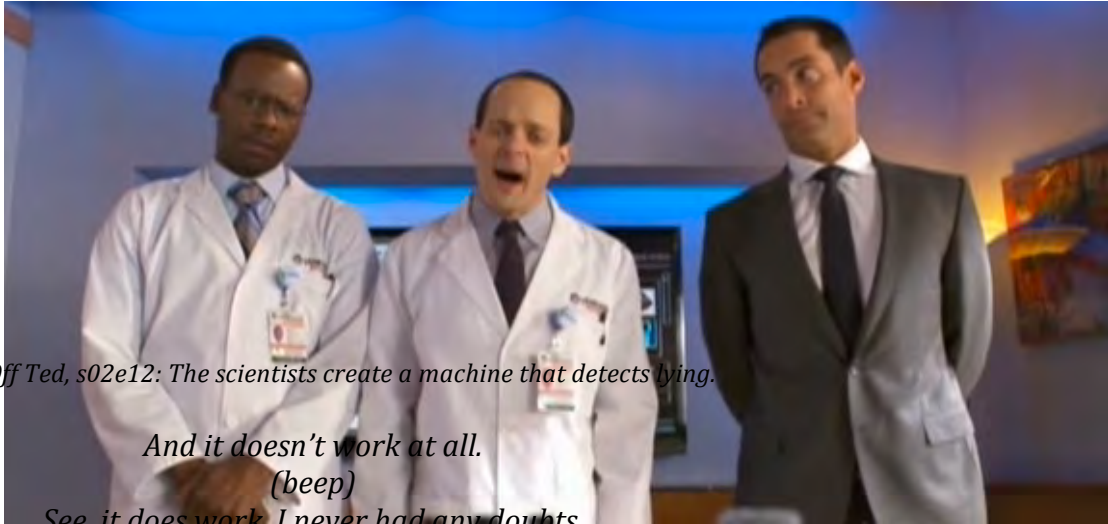
Appendix 3: Reflective Piece 1  
Disciplines

Context



Think

u4521074



*Better Off Ted, s02e12: The scientists create a machine that detects lying.*

*And it doesn't work at all.*

*(beep)*

*See, it does work. I never had any doubts.*

*(beep)*

*Okay, I had a small doubt.*

*(beep)*

*Okay, every day I am incapacitated by fear. I don't know **where** the magic comes from, and I'm **terrified** that one day I'll wake up and it will all be gone. And I'll end up alone, living in my brother's basement with his trains.*

*Buzz, damn you!*

Don't question the creative process, nor would I choose to explain it. Forgive me. Six weeks into a creating knowledge course has provided a better framework in which to attempt such an onerous (and inherently terrifying) task, but "I would prefer not to". Rather, borrowing a leaf<sup>1</sup> from Professor Michael Barnsley, I propose to examine what affects the creating of knowledge, and what effects can occur after knowledge is created. The process itself remains in a black box: we know it happens, we assume a feedback cycle, but we don't question where the magic comes from.

## Tutorial Ticket: Creativity

far responses have been to the 'Creativity and Songwriting' piece, I might start with  
(Coral!)

### The Story So Far...

Week 2  
Panel  
Mathematician (or perhaps I should say, 'speaking as someone who would like to claim to be a  
mathematician'), the TED talk on hyperbolic geometry as found in coral reefs and salads was fairly  
engaging, and a little insulting. Let it not be said that mathematicians are not creative, merely  
they don't spend an inordinate amount of time staring at sea slugs.

Back to the idea of creating knowledge, if you believe that ideas are discoverable (Black Swan,  
discoveries aren't the result of great planning and hard work, but random chance.  
Ideas are created by 'divine inspiration' or 'creative genius' - professionals and amateurs  
alike happen to be snorkelling through a coral reef and be hit by a figurative non-Euclidean

ideas (though is not equivalent to) McIntyre's concluding statement "creativity can be  
operationalized as a property of complex systems rather than of singular individuals".  
and the process of creating knowledge, rests not with the poor individual struggling to  
earn a salary, but in the as yet inexplicable forces of the world.

At the point of the article, McIntyre notes that the ability of an individual to make particular  
discoveries (or be creative) is limited by their access to, and knowledge of, the particular fields that hold  
the edge. We, as humans wishing desperately to add something to the world, are inherently  
what little we know and have experienced (in contrast to the vast array of colourful and  
ideas floating just under the surface), and our access to those things we haven't yet  
known. And then we have to decide what to do with the inundation of new knowledge.

Mathematicians were able to create 'models' for hyperbolic geometry, but nothing quite as simple,  
and as beautiful as the natural ones in the world. Striving to create a new idea is a difficult and  
problematic, and often will fail to be as succinct and breathtaking as these unengineered  
ideas. Yet we still strive and enjoy the battle.

Thought. I love the idea of croqueting coral reefs, and the blend of disciplines that are  
involved in such a task. Yet, the product (a coral reef composed entirely by human hands) seems  
less exciting to society than the discoveries behind it. Mathematicians missed something very  
valuable which was present both in society and nature for years! And this will continue to happen.  
Is there something we can do to 'prevent' this, or 'minimise' the next depressing/exciting  
moment when the boundaries are exploded out? Perhaps that is better phrased as: Is there not  
something we can do to speed up/bring about the next moment?

## Tutorial

- Habitus
  - Innate knowledge of the world
  - Personal experiences combine to form a source of “inspiration”.
  - Unaware of what led us to “profound discoveries”
- Radical=rejection?
  - Is rejection so grand?
  - Revolution, orthodox
- Creativity as an incremental process

## **Week 3**

### Panel

- Grasp and Reach (Nisbet)
  - Ability to predict
- Concrete and Abstract
  - Empirically grounded theoretical work
- Living but transcending the contingency of the moment
- Holism
  - Making connections between apparently distinct realms
- “de omnibus dubitandum”<sup>45</sup>
- Late Marx: “I am not a Marxist”
- Continuity thesis: Lenin vs Stalin
- Mary Wollstonecraft
- Vindication of the Rights of Woman: attacked views of several influential contemporaries
  - Foundational text of feminism

## **Week 4**

### Panel

- “Intelligentsia” alienated
- Modernist idea: rationality above social reality and historical conditions
- Dostoyevsky attacks reason and self-interest
- Only volition makes us human
- Maugham+Dostoyevsky: hard upbringing
- Doctor’s eye for symptoms
  - Physical/social
- Different readings inspired by different backgrounds/disciplines/ways of thinking/looking/knowing
  - Critical analysis
  - *Creating/Discovering* knowledge
- Based off reality
  - Maugham admits lack of imagination
- Cartoons on non-rational level
- Hope enough readers share common framework
  - Small: can’t set up gag in cartoon

---

<sup>45</sup> Or, “trust no one”. But the truth is out there...

## Tutorial Facilitation: Ways of Writing Human in the World

The tutorial seemed to go well, though already I have a few criticisms of how Max and I managed to run things. There were a number of positive outcomes: we had a lot of discussion, from each member of the class - everyone felt able to contribute, and indeed, did contribute their views and perspectives. The range of approaches to literature was fantastic: some loved it, couldn't live without it, while others were happy for it to remain far, far away.

A few ideas came out that I had never considered. The idea that reading a novel for pleasure could be conflated with reading an article critically for meaning. Is it that I love and enjoy reading, and have done it for so long, that I no longer think about reading critically for meaning? Or do I not fully enjoy the texts that I read, because I've let my critical analysis skills rust?

I loved seeing the different reactions to Seymour: An Introduction (one of my favourite novels of all time). People were quick enough to see that the book describes the narrator more than his subject. But then, to hear the different views on the narrator: delusional, loving, snide, pretentious. Even more surprising: most of these were things that I had thought myself. Of course, reading the novel as a whole allowed me to synthesise my own impression of the narrator; while it incorporated elements of each of these and more, it had more finesse, more subtlety.

Things that weren't done well: time management. We finished on time, having gone through all the exercises. However, I suspect there wasn't quite as much *depth* as I would have liked for many of the topics. We didn't manage to get into reader response criticism (and the knowledge creation process) explicitly - though students did mention it implicitly, and it appeared that the two readings had prompted some thinking and ideas.

The discussions themselves, while enjoyable, education and informative, didn't necessarily stick to a good topic. We're looking at "Ways of Writing Human in the World". Either Max and I were unprepared, or we didn't facilitate the tutorial well - but I felt that the discussions seemed to move away from the idea of humans and humanity, and more towards literature and its interpretation. As facilitators, we had tried to move into something a little more general, but not at the expense of missing out on some of the key points that should come out of a discussion on the topic itself.

Preparing for the tute was simple, easy and enjoyable. Literature has long been a passion of mine - and often due to what it can say about humanity! Max and I were able to bounce ideas off each other effectively, planning out potential activities that brought out ideas we had thought of for a while, ideas we loved.

### **Week 5**

#### Panel

- Science: compartmentalises; excludes; reduces
  - Prediction (testability); repeatability
- Nature understood if studied closely enough (really?)
  - Quantum physics: only probably certain

## Tutorial Ticket: The Sciences/Humanities Gap

Reading a page from one of our panel speakers, consider that the 'sciences' are 'more exact' than the 'arts'; science researchers discover new, original ideas, while arts researchers establish established works and analyse, re-presenting their views on something old. Humorous, unfortunately simple. (Apologies for the inverted commas; more on that later!)

States that the scientists are growing in popularity, and indeed, advancements in science research, development, innovation, understanding "want to say" are breathtaking and quick. We look for them, yearn for them. Meanwhile, there is the constant scare that the arts are (only one battalion in the Arts army) will soon perish. Personally, the lack of diversity in many mass-produced "books" these days is rather depressing. With insufficient funding, I might lament the loss of the glory days of literature. (So much more I could add on this point.)

Briefly, do you think artists still gather to share ideas and experiences? Or are we so entrenched in capitalism, competition, that we no longer have such luxuries? Are academics, artists, writers fiercely protective of their intellectual property, or is it still a sharing community? Rampant, Dionysian. Which reminds me, Apollonian versus Dionysian anyone?)

Do not know how to categorise the sciences and the arts, sciences and the humanities - beyond the various cliched approaches given to me. Sciences include chemistry, physics, mathematics, anything that counts towards a BSc. Arts and Humanities include the glorious plethora of subjects available in a BA. Despite the myriad of subjects, arts students are asked to put down their major in their first year, while science students (who often burrow deep and specialise in only one area - and I'm no exception) can opt never to choose their major. Fox and hedgehog may indeed!

Chemistry and physics interact in a way similar to how 'sciences' and 'humanities' may interact. Mathematics seeks to be pure, uncontrived, logical - everything reasoned from the ground up. Physics often takes wild guesses, noting the patterns of behaviour and claiming "it's like that. It's probably that" (mathematicians later, unhappily, go on to prove the physicists correct in their assumptions). Similarly, 'science'-minded people often try to formalise their way to a solution, while 'humanities'/'arts' people may feel more comfortable with intuitive leaps, drawing on different unconnected ideas and synergising new paths.

Three questions were all answered quite poorly in this response. I'm able to say what subjects seem more like a 'science' subject, and which more like 'humanities', but I don't think any prejudices arise merely from being one or the other (rather, I don't want any prejudices to arise in me because I'm one or the other). I'd like to think that, despite what Snow was writing about ages ago, the youth is changing! We're realising that we have to interact, regardless of where we find ourselves on some intellectual/specialist spectrum. Concepts in one area often have related concepts in another - by a different name, derived from a different source, yet inherently similar.

## Tutorial Ticket: Pacific Ways of Knowing

to believe that knowledge (ideas) can be translated (mapped! via morphisms) between languages and different schools of thought, without losing too much meaning.

ts in one discipline are beautifully expressed in that particular jargon, and our usual way to explain them (via analogy, or some other simplification) often loses much of the meaning in order to communicate. • Culture of education (esp in Au)  
○ Funnelling/specialisation  
○ Liberal arts/science degree first, then focus?  
○ Third culture: renaissance man!  
○ Polymaths

gain, following the three questions I am posed for "while you were reading", I value the depth absurdly high, and would risk my life to earn it and pass it on. I believe one ought to understand the intricacies of a particular medium before attempting to use it - and ought to try all the different mediums available before choosing one! Always find the best way in order to communicate.

amount of information in a tatau, in the words used to describe it, in the culture behind it, is phenomenal. Are to say that, since such things aren't 'written' (in English) but physically and orally expressed, that such knowledge is tacit? It's *there*. I wouldn't be able to read it or use it (sadly), but the knowledge has been communicated in a particular way.

### Tutorial

- Pacific = family, village, society orientated
- Western = individual focussed
  - Separate, seeking company/companionship
- Irreversible changes
  - Messing/fiddling with things we don't know
- Having "attacked" the Pacific with our way of thinking, what next?
  - Solve their problems using Western thinking?  
Adopt, adapt + appreciate Pacific ways of thinking?
  - Leave them alone, rather than mess things up further?
- Importance of context
- Mediums need to view things as they were meant to be, to appreciate meaning properly
- Small gestures which alter meaning, subtle nuances



## “CREATING”

### Creativity

Creativity may be a process that we will never see. Audiences see the final product, but are rarely able to see the process behind it - what led to this particular work? Are there visions and revisions<sup>46</sup> or a secret album?<sup>47</sup> What if there is no creative process, just realising or remembering ideas that were always there?<sup>48</sup>



The concept of the ‘habitus’<sup>49</sup> suggests creativity is merely a blindness of the self. We can’t tell where the inspiration came from, so we consider it creative – though it is probably informed by *many* different, identifiable sources. Being unable to explain how you arrived at a conclusion suggests a creative leap. Hence bold artistic movements are celebrated as creative, while rigorous proofs (of new concepts) using old methods are simply seen as exercises.

Conversely, Humanities studies acts, events and works from the past, while Sciences make entirely new discoveries. Creativity appears in many guises: to say discovering ‘new’ things is greater than creating ‘new-based-on-old’ things seems inelegant. “Creating” and “discovering” are both valued.<sup>50</sup>

### Pre-Creation

Great creative thinkers are rooted, inspired by the world around them, yet able to look forward and predict. Their ideas are shaped by context: social and physical surroundings.

---

<sup>46</sup> See *The Love Song of J Alfred Prufrock* by T. Stearns Eliot.

<sup>47</sup> See *Juliet, Naked* by Nick Hornby.

<sup>48</sup> See *We Can Remember It for You Wholesale*, by Philip K. Dick. Also, *Total Recall*, the loosely adapted film.

<sup>49</sup> “A “feel for the game”, a “practical sense” ...a set of dispositions which generates practices and perceptions.” (Phillip McIntyre, ‘Creativity and Songwriting’).

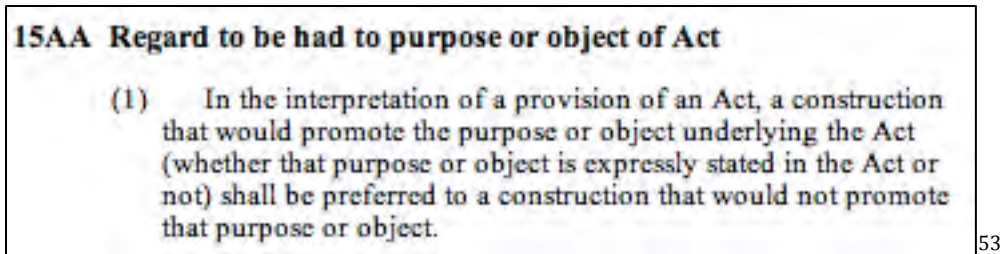
<sup>50</sup> This divide was explored more thoroughly in Week 7, not included in this reflective piece.

Theories provide order to complicated or disordered structures. Humanities use theories to make clear what values, biases and prejudices are at play. Essentially, they attempt to invoke the 'habitus': formally recognise what has inspired the current thinking.

Mary Wollstonecraft rebelled against current ideologies, in what may have been the beginning of feminism. Humanities strive to be revolutionary in undermining; indeed, Arts movements are forever moving directly against the current trend. Meanwhile, creative scientists are those willing to forget the current limitations.<sup>51</sup> Rebellion and rejection appear to fuel creativity, which suggests that creativity is simply *anything* outside our current box.

### Post-Creation

Creative ideas are fantastic, but what about what happens afterwards? Interpretations often colour the idea far more than intention.<sup>52</sup> Our ability to interpret comes from our ways of knowing, and knowledge from interpretation.



## “KNOWLEDGE”

### The Reader

Cartoonists hope that their readers share a common framework; that the necessary understanding is already present before the cartoon is viewed. Often this works well: the point is succinct, clear. Current events provide the necessary context.

Yet different readings of larger creative works exist: informed by different backgrounds or perspectives, different readers react differently to texts.<sup>54</sup>

Is knowledge created by the reader or the writer?<sup>55</sup> Is Mozart the source of genius, or Quatour Mosaïques?<sup>56</sup> The playwright or the actors?<sup>57</sup> What of

---

<sup>51</sup> While everyone else believed Aristotle, Galileo was the only one who wished to test the idea that heavier bodies fell faster. As the story goes, this was, of course, ridiculed and disbelieved for some time.

<sup>52</sup> See *Through the Looking Glass*, Chapter 6 – ‘Humpty Dumpty’, for a beautiful exploration of the trouble with intent and interpretation.

<sup>53</sup> *Acts Interpretation Act 1901*, s15AA. A legal approach to interpretation: intent, or purpose, is everything.

<sup>54</sup> A beautiful example occurred naturally in my tutorial: presented with an extract from *Seymour: An Introduction*, four students had four completely different ideas of how to describe the narrator.

<sup>55</sup> This concept was explored through reader response criticism, which suggested that true meaning is created only in readers, and that there is no objective meaning in any text. We’ve

originators and translators?<sup>58</sup> Creating knowledge is only the beginning. Science can create facts and figures, but it yearns for the humanities to interpret these.

### Interpretation

Are scientists responsible for ramifications? Einstein paved the way for the atomic bomb, by providing the Special Theory of Relativity and later convincing Roosevelt to begin development. Yet he never meant atomic bombs to be used.

Humanitarians? The continuity thesis follows the works of Marx, who claimed he wasn't a Marxist. Lenin, the 'good Marxist thinker', is contrasted to Stalin, a 'distortion of Marxist thinking'.

Artists? Following *My Foolish Heart*,<sup>59</sup> J.D. Salinger refused to allow any subsequent adaptation of his works, despite many offers.

Authors? Maugham, who admitted a lack of imagination, borrowed from real life to create 'The Letter'. Critical analysis can lead to multiple interpretations. What 'knowledge' did Maugham create? Do interpreters discover the real-life story, what Maugham left, or create their own ideas?

Should creators be responsible for the myriad of interpretations? Should they have control over such things?

### Context

Context both inspires and defines knowledge. Great creative thinkers are said to be both concrete and abstract; have both grasp and reach. The word 'tatau' suggests 'tattoo', yet in the Samoan context, so much meaning is imbued in that idea.<sup>60</sup>

---

moved on from this (another grand narrative), but personally, I love that we considered that possibility.

<sup>56</sup> An Austrian string quartet, which plays only on historical musical instruments, and aims (above all else) to reveal the inner spiritual wealth of any piece they interpret. What they have contributed to the world, though mostly unknown, is remarkably profound.

<sup>57</sup> I remember someone in a tutorial mentioning how Harold Pinter, when directing his own plays, was fanatic about every small detail. The play was to be performed *only* as he intended, with no embellishments or intrusions from other minds. Here we have an artist (and a profound one, in my opinion) taking complete responsibility for his work. I wish I had some supporting evidence.

<sup>58</sup> See *Not By Its Cover*, by Philip K. Dick. More related, I strongly suggest finding a copy of Douglas Hofstadter's essay, 'Translator, Trader: An Essay on the Pleasantly Pervasive Paradoxes of Translation'. That, or find a copy of his translation of *La Chamade* (ever since reading through ANU's copies of Sagan's translations, I'm a little worried about how much her style changed in her short story collection. Was that the translator, or her?).

<sup>59</sup> Arguably adapted from "Uncle Wiggily in Connecticut". Apologies for my negative insinuation. Salinger was originally keen to adapt all his works, but following this experience, he refused to let anything of his fall prey to movie-making hands. He did consider adaptations may occur after his death, but noted: "It pleasures me no end, though, I might quickly add, to know that I won't have to see the results of the transaction."

<sup>60</sup> See *Northern Lights*, by Philip Pullman. The golden compass (alethiometer) has no words, only thirty-six symbols. Each symbol has an infinite range of meanings (often pictured as rungs on a ladder), and any question can be asked by combining three symbols only! Ancient Western



The loss of context can be seen as unforgivable. Pacific and non-Pacific people express disgust over uninformed people wanting a *tatau*. How can such a rich heritage be forgotten or outright ignored for personal pleasure?<sup>61</sup> Ironically that attitude goes directly against the heritage and history implicit in a *tatau*.



Yet we don't even know the context/meaning/history behind the words, images and metaphors in our own culture.<sup>62</sup> Why not let people be tattooed without meaning, culture or history? Isn't it just another form of expression? Are we misinterpreting their creative spirit as an insult?

Why can cartoonists put forward clear messages, while Marx couldn't? Is common ground necessary?

---

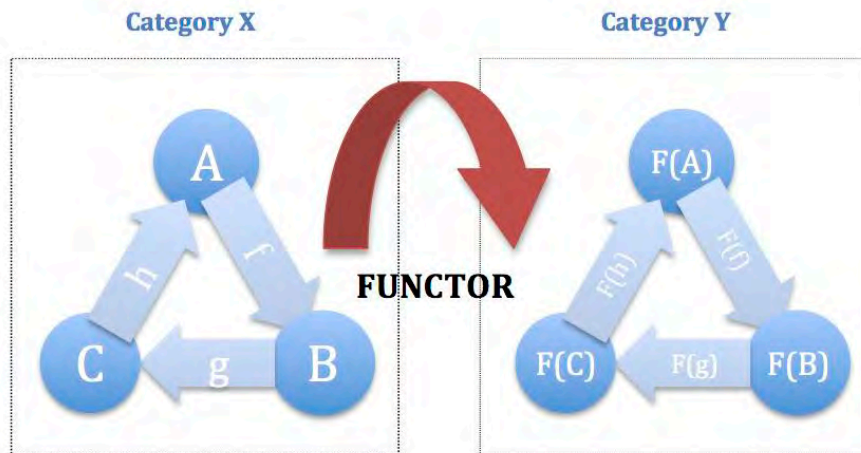
languages retain this beauty, as do non-Western languages – but sadly most English speakers prefer to see words as tools, not broad poetic concepts.

<sup>61</sup> On seeing Bamana sand divination, Ron Eglash was fascinated. It appeared to be a pseudorandom number generator which presented feedback loops, similar to those found in fractals. Wishing desperately to learn more about it, he was rejected by all Bamana sand diviners, as they would only pass their knowledge on in the proper tradition. Eglash eventually conceded, and went through the proper training. We prefer anecdotes in which respect is shown to culture and context.

<sup>62</sup> Apologies to those who are interested, and have strived to learn the etymology of the words and ideas they use.

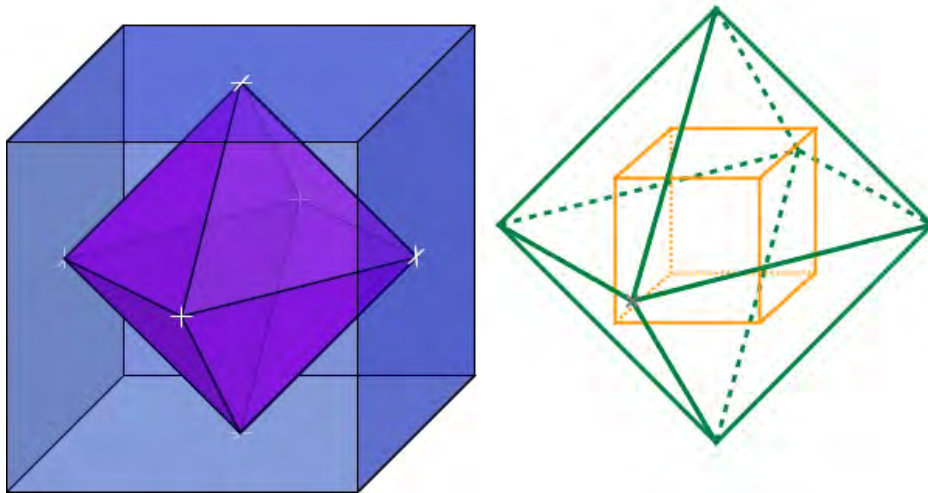


Communication<sup>63</sup>



Hedgehogs and foxes. This is my favourite way to consider “breadth versus depth”. Modern society slowly acknowledges a need for interdisciplinary studies, which certainly enhance both breadth and depth – often creating new things.<sup>64</sup> Yet how can those with specialised knowledge communicate with broadly educated people?

The science/art divide, highlighted by C.P.Snow, may not be as prevalent now. Yet there is still little communication between disciplines. We see the need for numerical science to be supplemented by more human-orientated perspectives, but are we able to communicate intricate concepts from one discipline to another? Analogies often lose both the beauty and context of an idea.



<sup>63</sup> An idea I developed through the Unravelling Complexity course was a disciplinary functor. Functors, in mathematics, map from categories to categories: importantly, they preserve both objects *and* relationships. To communicate between disciplines, ideally we don't want to lose any information – especially not subtle nuances that alter meaning so poignantly.

<sup>64</sup> For example, the interdisciplinary subject of ‘complexity engineering’, which evolved from classical and complex engineering, is designed specifically to handle complex systems, by drawing on our knowledge of nature and engineering. Lie Algebras, something I studied in mathematics last semester, is a meeting of three distinct branches of pure mathematics. It is relevant to both mathematicians and physicists, both of whom work/worked towards understanding the new concept of a Lie algebra.

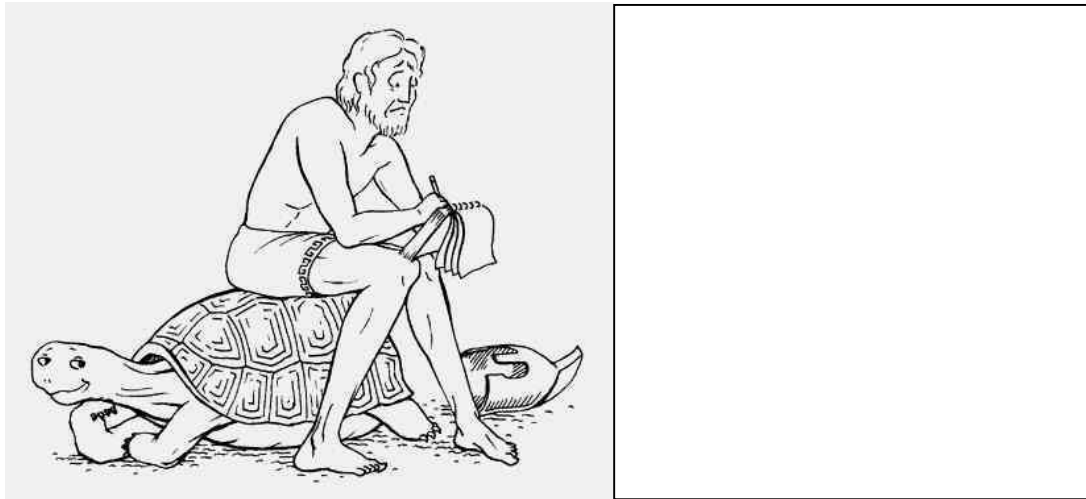
"Until I've granted that, of course I needn't grant Z. So it's quite a necessary step, you see?"

"I see," said Achilles; **and there was a touch of sadness in his tone.**

*See, the beautiful thing is that, the Cube and the Octahedron, they're exactly the same. It's just a different way of viewing it - but so different that you barely notice they're naturally the same. That's male and female thinking: they're exactly the same, but you could never tell by looking. You only realise it when you start to understand, unpack, appreciate both."*<sup>65</sup>

*What the Tortoise Said to Achilles, by Lewis Carroll*

Whether cross-disciplinary, Pacific-to-non-Pacific, or cross-perspective, communication is susceptible to the same interpretation issues.<sup>66</sup>



---

<sup>65</sup> Part of a conversation I had with a friend, discussing male and female thinking. Mathematical analogies are an almost natural fallback for me these days; I'd love to think that might show 'holism'. The pictures may help to explain what I'm talking about. If you identify the vertices of one with the faces of the other, the two shapes suddenly reveal themselves to be almost identical. Almost! Do you want to see the relationship of the faces, or the vertices?

<sup>66</sup> Achilles, hoping to prove *modus ponens* to the tortoise, remains eager that the beauty he sees in the method will eventually win the tortoise over. However, as he notices that the tortoise will never be convinced of *modus ponens* *without* *modus ponens*, he becomes disappointed. How is it that an idea seen as so beautiful in one mind can't retain that beauty when transferred?

There is a Western need to divide, distinguish, label and own. We created disciplines and wished them to be distinct. We view the Pacific as many small individual islands, not as a “sea of islands”. We limit our thoughts and processes – which may very well lead to creative discoveries!<sup>67</sup> We must find a way to communicate knowledge effectively.



But are we stuck in our ways of thinking? Creativity could be that which allows us to move outside our fixed thinking, or viewing our way of thinking from another perspective. And on, and on, *ad infinitum*.

---

<sup>67</sup> Of course, arguably, these “creative discoveries” would have been freely available to anyone, had the distinctions and limitations not been in place. Specialisation helps us dig deeper, but removes our ability to move laterally.