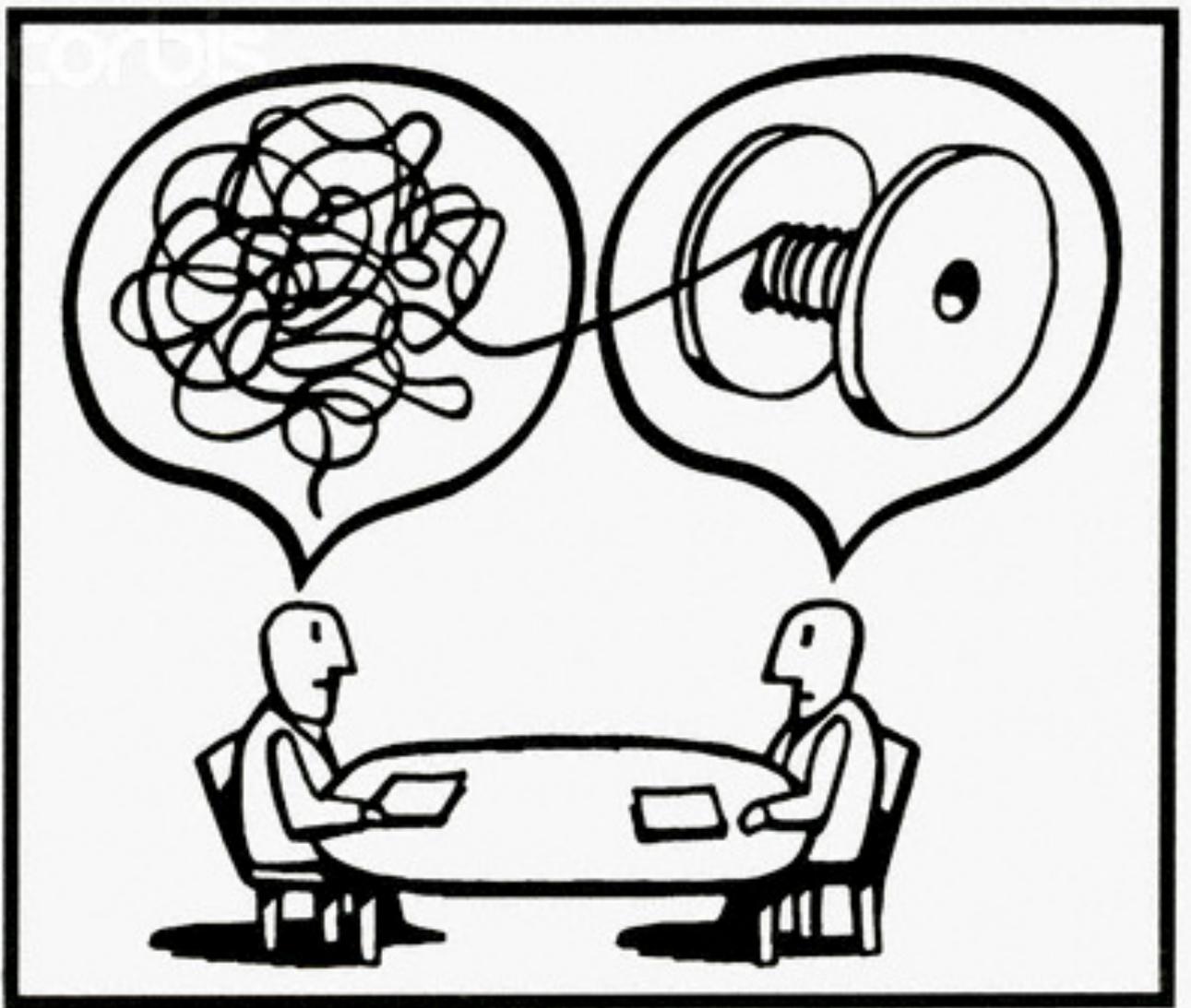


# Unravelling Complexities

## Learning Portfolio Part I & Part II

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\* N.B. Public lecture II is on page 36

## Week 1

# Introductory Panel

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A university is a place 'to which a thousand schools make contributions; in which the intellect may safely range and speculate. It is a place where inquiry is pushed forward... discoveries verified and perfected, and...error exposed, by the collision of mind with mind, and knowledge with knowledge.'

This is possibly one of my favourite quotes. For me, it encapsulates why I am at university, and in particular why I chose to apply to undertake this course. Firstly, I see university as a place where I am exposed to new and daring ideas that challenge my perspectives so that I view the world with a more informed opinion. To a certain extent, this has happened in a few of my courses – most notably Politics and Government in the USA and Strategic and Security Studies. These two courses taught me about complex political and strategic perspectives on US foreign policy and its relationship with Australia.

There is, however, a fundamental problem with universities at the moment. That is, most degrees have limits on how many 'out of faculty' courses a student can do. To me this seems antithetical to the ideas articulated by John Henry Newman. How are students able to question their disciplinary perspectives if they are not introduced to new ideas from inter-disciplinary studies?

I definitely know that my understanding of US foreign policy would have been aided by the economics and law disciplines. An economics perspective, could have informed me about the technical aspects of the US-Australia free-trade agreement. The legal perspective would have enlightened me to the international law obligations that the US is subject to. If all of these study options were available to me, I would be more equipped when tasked with analysing a complex problem on this subject area. But since I am an Asian Studies/Arts student, I am limited to these two faculties and am subsequently unable to benefit from such a well-rounded education.

Unravelling Complexities is a wonderful opportunity to engage in a well-rounded education and should be showcased to the rest of ANU to demonstrate that inter-disciplinary study is possible, and above all, important.

Since I was in Thailand, completing the ANU's South East Asian Frontiers course, I was unable to attend the panel or tutorial for this week. If I were at the panel, I would have asked the guest lecturers whether they thought ANU should introduce an inter-disciplinary aspect to all degrees, particularly the double degrees – which are especially limited.

### *Ticket*

I would like to use my background as an Asian studies student and apply the interdisciplinary elements taught in the Vice Chancellor's course to better understand Australia's complex relationship with Asia.

A significant aspect of this relationship is, and will continue to be, the debate over climate change and who is most responsible for its prevention. This dilemma was at the core of the failed Copenhagen negotiations.

The politics of climate change traverses many disciplines. There are many differing perspectives in Asian Studies on how Australia should approach an increasingly powerful and wealthy Asia. Equipped with the interdisciplinary analytical skills obtained by this course, I hope to figure out which perspectives are reasonable and which are not.

## Week 2

# Wicked Problems

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This panel was enlightening for a couple of reasons. Before attending this panel I used the words 'complex' and 'complicated' interchangeably. The Oxford Dictionary definitions demonstrate why I thought this was so. As shown below, the definitions are essentially identical.

### Complicated:

- Consisting of many interconnecting parts or elements; intricate: *a complicated stereo system*
- Involving many different and confusing aspects: *a long and complicated saga*<sup>1</sup>

### Complex:

- Consisting of many different and connected parts: *a complex network of water channels*
- Not easy to analyse or understand; complicated or intricate: *a complex personality the situation is more complex than it appears*

Now I understand that there are useful and definable differences between the meanings of the two words. Steven Cork's definitions will always stay with me because they are valuable tools to use when trying to understand the many different and seemingly unsolvable issues that inhabit the world. When I use the words, 'complex' and 'complicated' in this learning portfolio, I am referring to Steven Cork's definitions.

### Complex

- Difficult to determine boundaries
- Not just simple causes and effects
- Feedback loops; *the snowball effect*

### Complicated

- Many components
- Understandable and predictable processes and rules; *a complicated piece of machinery*

For the tutorial, Chris instructed us to place problems that face Australian society into categories from 'most wicked' to 'least wicked.' Problems included: climate change in Australia, Australia-China relations, mental health in rural Australia and religious symbols in public life. Many people placed their issues in the 'Very Wicked Problems' box.

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[http://oxforddictionaries.com/view/entry/m\\_en\\_gb0168430#m\\_en\\_gb0168430](http://oxforddictionaries.com/view/entry/m_en_gb0168430#m_en_gb0168430)

I was tasked with the placing the issue of 'Australia-China relations' in one of the boxes. While this is obviously an extremely complex problem that and should have been placed in box number nine, I decided to play devils advocate by putting my disciplinary hat on and assuming the position of a Realist (from the international relations discipline). Realists think that there are definably right and wrong perspectives and solutions. As such I placed my problem into box 2. I did this to emphasise the point that the perception of the complexity of a problem is usually made from a particular perspective. Thus the same analysis can be applied to finding a solution to the complex problem – perspective forms opinion.

Diversity → Complexity ↓	Single party	Multiple parties, each having only some of the relevant knowledge	Multiple parties, conflicting in values/interests
Both problem and solutions known <b>Heifetz Type 1</b>	Tame problem 1	Australia-China Relations from a Realist's perspective. 2	3
Problem known, solution not known. Relationship between cause and effect unclear. <b>Heifetz 2</b>	4	5	Wicked Problem 6
Neither Problem nor solution known <b>Heifetz 3</b>	7	Wicked Problem 8	Very Wicked Problem 9

This exercise taught me that there is always a solution to a problem. Whether it's right or effective is a matter of perspective. I have come to the conclusion, which may change over the course, that it is these differences of opinion and the subsequent solutions that make problems complex.

Another element to complex problems is the Black Swan. The Black Swan article highlighted that we form our perspectives on the world through observation and

experience. As such, things we're unaware of, aren't factored into our perspectives largely because humans are 'blind with respect to randomness.'

Things we do know tend to dictate how we see the world. This blinkers us to what could happen. It is the things we don't know that are the most dangerous because we can't prepare for them.

Philip Delves, a former journalist at the Telegraph in the UK, wrote a book called 'What They Teach You at Harvard Business School (HBS): Years Inside the Cauldron of Capitalism.' To paraphrase, he concluded that the \$175,000 he spent at the HBS was not worth it because it did not factor in the Black Swan concept. He stated 'For all its vast reputation, power and pomposity, you feel that HBS neither understands the complexity nor acknowledges the chaotic unpredictability of the world economy any better than anyone else.'<sup>2</sup> Perhaps, Philip should have saved his money and taken the 'Unravelling Complexities' course this semester, he could have learnt that in the second week!

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[http://entertainment.timesonline.co.uk/tol/arts\\_and\\_entertainment/books/article4443213.ece](http://entertainment.timesonline.co.uk/tol/arts_and_entertainment/books/article4443213.ece)

## *Ticket*

### **We will discuss the Preliminary Reading, the nature of Wicked Problems, and how we can approach Black Swan thinking.**

The article, 'Wicked Problems: The Implications for Public Management' was an insightful piece which drew on the example of social policy making to explain the nature of 'wicked problems.' The article drew on Rittel and Webber's paper, 'Dilemmas in a General Theory of Planning.' Rittel and Weber's paper declared that the days of solving major problems through an 'engineering' approach had ended. Instead, to reflect a more pluralistic modern society that exhibits differing values and aspirations, modern problem solving now generally relies on differing perspectives rather than scientific certitudes. As such, 'wicked problems' are seen as linked to social pluralism where solutions to these problems are not true-or-false, but good or bad. Consequently, there is no single best approach to tackling such problems. This article highlights that one's perspective determines ones understanding of complex problems and solutions.

The Black Swan concept neatly compliments this article. Naturally, humans form their opinions on their observations and experiences, rather than something that is inconceivable. Hence, the article highlights that the things we don't know can't inform our perspectives. While this may seem obvious, the consequences of ignorance are rarely contemplated. Humans are not in the habit of dealing with uncertainty or unpredictability. Failing to deal with the unexpected, is one of the largest problems people face when trying to decipher a complex problem.

## Week 3

# Collapse in Systems and Networks

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From the time humans walked the planet, systems and networks have been integral parts of our lives because they provide a semblance of structure to our chaotic and unpredictable world. Ideally, systems and networks connect disparate elements to ensure that they synthesise to solve a problem. In reality, systems are rarely as streamlined as this. Elements of systems sometimes contradict each other thus harm the system overall or simply don't solve the problem.

The main theme for this week has been the importance of relationships within systems to connect differing perspectives. Whether it is differing perspectives on how a problem should be tackled or how to solve a problem by incorporating all of those differing perspectives. This week showed the importance of creating systems, networks and frameworks to deal with complex problems.

In the readings from week two, specifically 'wicked problems,' the authors articulated the view that the engineers perspective was over. That is the purely scientific, 'right or wrong' way of approaching problems had been abolished. Dr. Shayne Flint confirmed this. He stated that engineers deal with complexity by 'separating concerns,' that is breaking up the problem into differing disciplines (both inside engineering and in an interdisciplinary fashion) to solve the overarching dilemma. This could involve solving the problem by separating the concerns into electrical, mechanical or civil decomposition as well as incorporating cross-disciplinary collaborative efforts. These might include drawing on physics, chemistry, biology, engineering, medicine, sociology to solve problems like sending a man to the moon and creating the iphone. This highlighted the point of what I perceive to be the point of Unravelling Complexities, the importance of interdisciplinary perspectives on complex problem solving.

Dr. Flint said that 'Focusing on things rather than relationships between things often fails to deal effectively with contextual dynamics.' This was the most important lesson I learnt this week. Tim Anderson hosted a wonderful tutorial where this point was clearly demonstrated. He split us in two groups and asked us to create the tallest tower from spaghetti and marshmallows. My group decided to build a tower by first 'securing the base.' What we forgot to do was focus on the relationship between all of the elements in the tower. Thus we created a structure that was unsound and collapsed. This lesson can be applied to all complex problem-solving issues.

**Confusing Word: 'Peace'**

It was unclear what the word 'peace' meant in the *Intergovernmental Organizations and the Kantian Peace: A Network Perspective* article. Did it mean the cessation of an inter-state war, a civil war or a dictatorship? If we look at Burma, some may say that it is peaceful because it is not at war with another nation. Others might argue that the Burmese Junta is waging a war against its citizens to ensure that the Junta retains power. These people would consider Burma to be un-peaceful. To analyse the impact that IGOs have on 'creating peace,' the definition must first be settled.

**Complex issue: Emissions Trading Scheme (ETS)**

Labor's Emissions trading Scheme (ETS) is complicated because it consists of a number of synthesised economic and scientific components. This complicated scheme is ultimately understandable and predictable, which prevents it from being complex. The complex part of the ETS is trying to implement it into Australian law. There are a number of actors, which depending on your perspective can be rational and irrational, as well as numerous factors that impact upon whether the scheme will be passed into law. These elements create a network that consists of competing and complementary interests, which in turn renders the outcome unpredictable. Therefore making this issue complex.

## Week 4

# Collapse of Empires

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Using the example of the 'Fall of Rome,' Paul Burton demonstrated that there are many different versions of history. He articulated that even though there are many versions, humans are attracted to certainty and thus create traditional narratives to make sense of uncertainty. These dominant perspectives on what is perceived to have happened become the 'narrative arc.'

In my opinion, I think that the logic behind 'narrative arc' formation can be applied to how people try to understand contemporary complex problems. That is, people are faced with a number of perspectives, all of which are plagued by uncertainty, and from this they attempt to form perspectives and make decisions. As such, the theme for this week is the negative impact of 'narrative arcs' when trying to understand complex issues.

### *The formation of 'narrative arcs'*

Paul said that it is extraordinarily difficult to create an accurate history when there is only a small pool of sources to draw from. The fragmentary state of many ancient historical sources means that history can be bereft of context and agenda, and thus inaccurate. In addition to this, historians can be swamped by too many sources. The literature on World War Two is an example of this. There are so many sources and competing perspectives. As such, the complexity of discovering what actually happened in modern history is almost as difficult as ancient history. This problem is compounded, in both ancient and modern history, when dominant perspectives form from the available sources – creating 'narrative arcs.'

Joan Beumont mentioned the ANZAC Legend as an example of a 'narrative arc' in Australian history. The disaster at Gallipoli centred on the British making the fatal error to land at the wrong Turkish beach. The event has been romanticised to such an extent in Australia, that one could be forgiven for not knowing that the Gallipoli campaign was a disaster. The ANZAC 'narrative arc' chooses to focus on mateship, rather than the 26 111 Australian casualties and the mistakes made by the British officers. This 'narrative arc' shows how easily information can be manipulated to suit a particular perspective.

Thus when trying to unravel complex problems, one must be aware of the manipulation of information and try to 'know' as much as possible before formulating a perspective.

### *Contemporary 'Narrative Arcs'*

Formations of 'narrative arcs' are unfortunately not limited to the discipline of history. We can see, in most disciplines, certain theories or ideas that have gained merit not because they are better than any other idea, but simply because there has been a mass movement to support or cultivate that particular perspective. A contemporary 'narrative arc' could be the widespread

misinformation campaign launched by the Bush Administration, which spread the false idea that Iraq had weapons of mass destruction. The problem with 'narrative arcs' is that they blinker other ways of thinking about an event or issue and deemphasise any whiff of uncertainty or the unknown. As the Black Swan concept highlights, disregarding uncertainty is one of human kinds greatest weaknesses.

The tutorial did not mention 'narrative arcs,' which I felt was the most fascinating aspect of the week. Instead, the most interesting part of the tutorial was when everyone was tasked with completing a word association with the words 'collapse' and 'empire.' The most interesting aspect of this exercise was that each word association for 'collapse' was similar. The same was the case for the word 'empire.' In fact, none of the definitions contradicted each other. We can see, from this small example, how easy it is to not think outside the box. It shows how easily people are influenced by each other and 'group-think.' As such it allows one to better understand the concept of the 'narrative arc' because it shows how easy it is for humans to simply follow one another without question. A scary thought.

## *Ticket*

### **What main points does Kennedy make?**

In this book, Kennedy made the central point that military conflict is 'always examined in the context of economic change.' Building on this concept, he argued that the triumph or collapse of any one Great Power has usually been as a result of lengthy fighting by its armed forces and effective or ineffective utilisation of the state's productive economic resources, relative to the other leading nations. While noting that there are of course other elements apart from the military and economy which determine nations strengths, he stated that 'wealth is usually needed to underpin military power, and military power if usually needed to acquire and protect wealth.'

### **Write a brief description of something that may be considered an empire and why.**

An empire is an entity that has a monopoly over a particular area. Google is a horizontally integrated empire that seems to be the master of all trades. In itself it can provide an email service, images, Google earth, Google maps, Google scholar and Google translator. Google could be considered an empire because it has a clear monopoly over the dissemination of information on the Internet.

### **Write down an example of a concept from your discipline or background that has evolved over time.**

The role of women in Western society has evolved substantially over time. Women were traditionally seen housewives who cared for their children and husbands. The Two World Wars helped to change the notion of a woman's role. Women were expected to work in traditionally masculine jobs because many of the men had joined the military. Despite these role changes during the war, it wasn't until the 1960s that women collective fought for real change. The women's liberation movement hoped to empower women by changing the cultural mindsets about women's roles, aspirations and abilities. Although the women's movement has fought with varying success for many things, such as equal pay for equal work, equal employment opportunities and in some cases even paid maternity leave, there is still a long way to go before the perceived role of women in society permanently changes.

## Week 5

# What is Development?

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The complexity of effective aid giving was the theme for this week. The main focus for this week was: which countries need aid? The role of politics in aid giving and how it is best delivered.

### *Who needs aid?*

Steven articulated that the international norms associating 'rich' countries as the most powerful, are changing. 'Poor' countries are now gaining prominence and power on the international stage. Income brackets determine which countries are rich and poor. This economic perspective – branding countries according to their income brackets is an easy way to quickly comprehend the standard of living for a vast sum of people in that nation. Although, I am still not sure about using this economic perspective as the sole determinant to ascertain the income bracket of a nation. From a social science perspective, I still think there can be a lot said for measuring access to education and health to determine the 'wealth' of a country.

There is an emerging trend towards low income bracket countries such as China becoming increasingly powerful on the world stage. This begs the question - who needs aid? Before this panel, I believed that all countries in the low income bracket deserved aid. Discovering at this panel that China is in the low income bracket has questioned my stance. Surly China, an emerging country with an economy that is propping up the world economy after the Global Financial Crisis (GFC), does not need aid. This was essentially Steven's conclusion. But aid is still desperately needed in African countries where their economies aren't as strong as emerging nations. So why do governments still provide aid to emerging countries? This leads neatly into the politics of giving aid.

### *The politics of giving aid*

Aid donation to emerging countries appears to be all about currying favour with a country that will become powerful in the near future. Drawing from my Asian Studies background, and specifically a course I did called 'Engaging Asia', it is clear why Australia provides aid to countries like China.

I acknowledged in my week three entry that there are many differing perspectives on the Australia-China relationship. One perspective is that China is a threat to Australia's security. Others say that China is economic powerhouse that Australia must be intimately involved with. This makes managing the Australia-China relationship complex to navigate because there are a number of stakeholders with differing perspectives on what agendas are most worthy. This relationship is a policy-makers nightmare. The complexity of this relationship was highlighted in the most recent Defence White Paper. In one section, China was a threat. In another, it was a country that Australia had to become closer with, economically and politically.

Australia's aid relationship with China seems to traverse these two perspectives. It can be seen as Australia's attempt to formulate a positive political relationship with China, in order to reduce the Chinese's suspicions that Australia considers it to be a 'perceived security threat.' This is just one solution that policy makers have formulated to combat the Australia's complex and unpredictable relationship with China.

### *How is aid best delivered?*

In a Security and Strategic Studies course I undertook, we studied human security. One of the questions posed by the course was whether NGOs or government aid-donors were more effective at administering aid. I wanted to ask Dr. Howes which method he preferred, but the opportunity was not provided.

Luckily for me, the readings this week were, in part, about Geoffrey Sachs' opinion on effective aid delivery. According to Sachs, aid is best delivered without a political agenda. As I mentioned in this week's ticket, one of the most influential aid-giving institutions, the IMF, attached political ideology to its delivery of aid. The IMF's ideology delivered financial aid to developing countries on the condition that the country would restructure its economy to become free-market oriented, focus on debt reduction and slash public spending. Joseph Steiglitz firmly believed that this policy contributed to bringing about the Asian Financial Crisis. As such the IMF has slightly softened its hard ideological edge and acknowledges that it needs to be more flexible with its lending practices and need not place undue emphasis on the reduction of public spending.

The Asian Financial Crisis clearly impacted the IMF's policies. What is clear is that the narrative arc, that 'capitalism was infallible,' which was created after the United States' victory over the Soviet Union, was challenged by the advent of the Asian Financial Crisis.

This article relates to Indonesia's relationship with the IMF after the Asian Financial Crisis: <http://www.thejakartapost.com/news/2010/04/14/the-%E2%80%98new%E2%80%99-imf-and-indonesia-it-time-turn-page.html>

## *Ticket*

1. In these articles, it is clear for two reasons, that Sachs is sceptical of the effectiveness of government aid. He is concerned about the effectiveness of government-provided-aid and consequently he thinks private institutions with a good track record should distribute the money.
  - He is critical of the role of USAID. He articulated that it acts as an adjunct to US military and foreign policy rather than operating as a world-leading development institution.
  - Sachs wants money given to Haiti, but doesn't want the money to go through the US government. The money should be managed by the Inter-American Development Bank (IADB). It seems that he is saying that state-based aid giving is ineffective and must be administered by institutions with a proven track-record in dealing effectively with developing nations.
  - He also highlights that these institutions must provide money to locally controlled development. Essentially he argues that local empowerment reduces dependency.
  
1. Secondly, he is concerned about accountability mechanisms applied to aid-giving nations.
  - The Guardian article highlights that aid accountability is a complex issue to manage because there aren't international accountability mechanisms that track promises and outcomes. Since the promises made in international negotiations rely on agreement, rather than the law, it seems improbable that an international accountability mechanism will be effective in enforcing decisions.
  
1. General Observations
  - The CNN article on Sachs demonstrated that economists experiment on developing economies to see if they can influence a positive outcome.
  - I went to a public lecture by Joseph Stiglitz, who declared that the International Monetary Fund (IMF) and World Bank (WB) have stopped experimenting on developing economies with hard-line free market economics because it has proven not to work.
  - This fits into the concept of the narrative arc. The US's victory in the Cold War was seen by many as the triumph of free-market capitalism. As such, the 'positive benefits' of market-capitalism were emphasised and became institutionalised into the policies of the WB and the IMF. This meant that all countries, if they wanted aid, had to restructure their economy to a 'successful capitalist model.' The narrative, which determined IMF and World Bank policy, was debunked after the Asian Financial Crisis.
  - This shows that there has been a change in the aid-giving 'narrative arc' in the international realm.

## Part II

## Week 6

# Financial Crisis

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### *Introduction*

I thought both Prasana Gai and Renee Fry's lectures were interesting and clear. They both explained in great detail *how* the Global Financial Crisis (GFC) occurred. However I think that their lectures lacked any substantive analysis on *why* the GFC occurred.

Economic policy makers in the US and many other countries around the world were (and still are) informed by the neo-liberal economic perspective which essentially dictates that the free-market is paramount and that government should be discouraged from regulating the market. Fry and Gai did not analyse the theoretical debate behind the collapse, which I think would have been quite useful for explaining why the GFC occurred. From my perspective, I think the main theme for this week centers on the need to understand the theories that inform policy-makers.

### *Understand the theories that inform policy-makers*

A lack of government regulation of the market in the US was one of the main factors that led to the sub-prime mortgage crisis and subsequently the GFC. The problem here, like many other policy areas, is that a dominant perspective to maintain the neo-liberal 'anti-regulation' status quo pervades debate because people with vested interests back this perspective. I think the Global Financial Crisis should call into question the dominant way of seeing and practicing economics, and seek to find alternative, safe strategies that will help us avoid the same problems in the future.

Apart from not wanting to regulate the market due to ideological reasons, I reflected during the tutorial on the inability of the government to comprehensively regulate the financial markets because operators in the global economic framework often know how to move ahead of the regulation curve, so they are never actually doing any thing technically illegal.

### *Panel Question*

Do you think the neo-liberal economic perspective will continue to inform economic policy making the US?

I would have asked this question because I have heard many political science lecturers speak on the topic and it would be interesting to hear an economist's perspective on the issue.

### *Connections*

(1) Connections within the course

This week connects with a theme discussed in week four, the Collapse of Empires. In week four we learnt about how 'narrative arcs' inform debate. A narrative arc was described as being the dominant view on an issue. We can see that for years, the neo-liberal way of running the economy has been the dominant narrative arc which has informed policy makers. I wonder whether this will change in the future?

(2) Connection with another course

In Security and Strategic studies we learnt about China's decision to save its capital after the Asian Financial Crisis. In lectures on this, the lecturer argued that China's decision to do this prevented the GFC from being worse because it allowed China to continue buying US imports- which helped to stimulate the US economy during the worst of the crisis.

(3) Connection with contemporary issue

Many European countries have been affected by the GFC. Some European politicians on the 'right' have seen the global financial crisis as an opportunity to cut welfare payments in the name of 'fiscal restraint' in a time of economic uncertainty. Observers suspect that this is a way of dismantling the welfare state and moving towards a more neo-liberal approach to economic management. Which is ironic, considering a lack of regulation of markets (a key neo-liberal tenant) was arguably one of the greatest factors that contributed to the GFC.

*Toolbox*

(1) Understand the theories that inform policy-makers, only then will you be able to predict their actions.

## *Ticket*

The 'Affluenza' piece demonstrates that people in Australia are never satisfied with their personal economic situation because someone is always earning more than them. Their lives are driven by a sense of lack rather than a sense of realistic appreciation for what they've got.

This piece explains that people are driven by an insatiable desire to be relatively wealthier than their compatriots. This desire is clearly obvious in the Australian economy, where work hours have steadily increased over the years. It is unclear whether the desire to be wealthier is a product of human biology, or whether it is driven by the capitalist consumer culture that dominates Australia. Perhaps it is a mixture of the two.

The Credit Crisis video was the most comprehensive explanation of the sub-prime crisis that I have ever seen. It demonstrated that the crisis was created out of a desire to make more money. The most obvious problem was that sound laws or institutions did not regulate this desire. As such, lenders and investment companies were able to be as unscrupulous as they wished, knowing that there wouldn't be any major legal ramifications.

Three things that make the financial system complex:

1. Lawmakers and regulators can't always be up-to-date with methods of investment. As such they are unable to legislate and arbitrate in some areas. The Back Swan strikes again.
2. It difficult for politicians to make laws to regulate the market when their major campaign donors would be the companies that suffer. Catering to the many different interest groups is a 'wicked problem' that makes government regulation of the economy a complex problem.
3. The interconnected nature of world economies makes it difficult for individual countries to control which elements (good or bad) affect them.

## Week 7

# Addressing Indigenous Disadvantage

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### *Introduction*

Trying to solve the problem of indigenous disadvantage has been a challenge for many decades. As a wealthy country, Australia should theoretically be able to improve living standards of Indigenous Australians, the complexity of the issue is centers on the fact that no one can decide *how* it should be done.

This debate about 'how' the Indigenous disadvantage should be addressed lies in the shadow of how to effectively balance the preservation of traditional Indigenous identity with modern Australian approaches (the main theme for this week). This is a charged and highly polarizing debate which is often dominated by two camps. On one side the neo-liberals argue if communities aren't economically viable, they should be shutdown. On other side of the debate sit the cultural relativists who believe that policies should be designed to focus on the preservation of indigenous culture.

This framework is entirely unhelpful because any policy proposed for dealing with how the indigenous disadvantage could be reduced is automatically slotted into either side of this debate. This framework automatically polarizes the debate, and decades of policy discussions indicate that this polarization is unhelpful.

### *Effectively balance the preservation of traditional Indigenous identity with modern Australian approaches*

John Taylor's lecture quoted Keith Windschuttle, who is a clear proponent of the neo-liberal perspective: "The remote Aborigines are loaded with twin economic burdens: they inhabit regions that have no jobs or business opportunities and the state gives them an income with no effort on their part. The only solution is to stop funding and thus close down all those settlements where unemployment is chronic and where there are no economic prospects, which is most of them." It is quite evident that Windshuttle blatantly disregards the importance of the land in the preservation of Indigenous culture. I have always disagreed with the neo-liberal argument on this topic and this quote demonstrated the worst-of-the-worst neo-liberal perspectives. I am a big believer that communities need to find solutions that suit them. But I think it is a mistake to fall into the cultural relativist argument that the communities should do whatever suits them contrary to basic standards of health and education in a highly developed country in the 21st century. Clearly health statistics suggest that neither side of the debate has been successful with 'Closing the gap' or managed to come up with a sustainable solution to the reduction of Indigenous disadvantage. I was totally shocked to see Peter Radoll's graph from the lecture which demonstrated that the life expectancy of Indigenous Australians was 20 years lower than non-indigenous Australians.

Radoll's lecture focused on the need of Indigenous higher education to help solve

the complex problem of indigenous disadvantage. He argued that it is helpful for Indigenous students to study teaching or nursing because it would be beneficial for them to bring those skills back to their community. I recently helped out with a project at Burgmann College which has a partnership with Doomagee in Northern Australia. The aim of the project is to bring kids from the community down to Canberra to give them the opportunity to pursue high school, TAFE or university. One of the most problems that they face, which was mentioned in Randall's lecture, is that they become accustomed to modern Australian city life and don't want to go home. Randall agreed that this was a huge problem and stated that: 'Success breeds success but there is a concern that as you become more educated you then lose your Indigenous identity as they are immersed in the dominant culture of western education in university.'

All research suggests that education is the key to empowerment. But in the Indigenous context, it's a double-edged sword because education often means that Indigenous students lose substantial contact with their cultural heritage. This issue alone clearly demonstrates that this is truly a wicked problem.

Preparing for the tutorial, I found it useful to draw upon the table used by Head & Alford in the first couple of weeks to determine how 'wicked' this particular problem is. I believe the problem of indigenous disadvantage ranks amongst the most wicked problems for Australian policy-makers, because like Afghanistan climate change, the problem has multiple parties conflicting in interests/values, and neither the problem nor solution are clearly known.

### *Panel Question*

How should policy makers balance the obligation to improve health and education standards in remote Aboriginal communities whilst remaining sensitive to traditional cultural practices and values?

I think this is an important question because it goes to the heart of the problem of indigenous inequality in Australia, that being the conflicting views of stakeholders as to what the most suitable approach is.

### *Connections*

#### (1) Connections within the course and a contemporary issue

Solving the problems of indigenous disadvantage comes down to how the programs should be structured to determine where the money should go. This issue is linked to the problems that occur in Australia's aid giving efforts, as demonstrated in week 5 of my learning portfolio. Australia's aid-giving efforts, similar to 'close the gap,' are determined by the framework of political debate surrounding how the money should be spent.

#### (2) Connection with another course

This issue of trying to balance the preservation of indigenous identity with modern Australian perspectives was evident in a course I completed last year called Politics in Indonesia. Indonesia is a multi-ethnic country which has had

many issues with trying to reconcile its multiple identities. During the Sukarno era, Pancasila was created. It focused on the 5 most important elements that bound Indonesian society together. It was an attempt to synthesise all of the competing identities in society. The success of this policy is debatable, but what this demonstrates is that trying to reconcile competing identities in society is not unique to Australia.

### *Toolbox*

1. When devising policy, remember that all policy is created in light of a broader debate, but don't let the parameters of the debate limit what you think should be done.

## *Ticket*

**What does each text imply are the main problems facing Indigenous Australians, and attempts to address them? Do they point to many problems, or a few underlying ones?**

I've chosen to focus on one question and two articles for this ticket. The two articles that I draw from center around the failure of policy makers to identify the problem, and the inadequate policy that is subsequently created.

Pearson articulates that policy makers focus on the negative historical Indigenous experiences to explain substance abuse, rather than focusing on the real cause – addiction. Pearson articulated that for many young Aboriginals, historical problems aren't the driving force that determine substance abuse. To fix this, Pearson argues that policy makers must acknowledge the fundamental problem of addiction. Otherwise policy makers will be treating the wrong problems and nothing will change.

Gary, has another (some may say, racist) take on the situation. He argues that indigenous culture, is a drawback when it comes to Aboriginals integrating into 'Australian' society. He strongly believes in a free market approach to dealing with the problems associated with indigenous communities. He stated that "Aborigines should be treated as other citizens are treated, and allow them to integrate into the modern economy under the same suite of incentives and disincentives and civil obligations as others. All that remains is for the policy-makers to shift ground."

The problem with Gary's point of view is that not all Australians are, for a variety of reasons, treated "the same". As the FAHCSIA statistics show - only 42.9% of Indigenous students attended secondary school, compared to 65% from a non-Indigenous background. As such, statistics like this, demonstrate that Indigenous Australians cannot be "treated as other citizens are treated." Indigenous communities need a lot more government help than average Australian society. In essence, I don't think that Gary's suggestion of introducing free market principles such as self-dependence and individuality will help to solve the wicked problems that plague indigenous communities.

## Week 8

# Environmental Problems

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### *Introduction*

Environmental problems are often polarising. Take the debate over climate change and the ETS for example. Within the debate, people are either ‘sceptics’ or ‘believers,’ which is an entirely unhelpful framework to be operating within because it limits meaningful debate. The first theme written about in this reflection centres on the notion that the framework of a debate will often influence the outcome. The second theme evident in this week’s reflection is that there are differing levels of appropriate regulation depending on the problem.

### *The framework of a debate can influence the outcome*

For years, the Greens looked like nutcases in the Australian political arena. Ten years ago, most Australians asked how the Greens could possibly be serious when they argued that the temperature of the globe was rising due to manmade actions. The debate was dominated by those who disputed the notion that the globe was warming, now (except in the Liberal Party) it is quite unpopular to espouse this view. Today, the broader policy debate centres on how climate change can be prevented. The framework of the debate changed because the Greens albeit over a long period of time, changed the parameters of the debate to ensure that it was more favourable to their perspective. To use Dover’s concept, the Greens managed the ‘normalise,’ the notion that manmade climate change was a worthy problem that needed a national public policy solution. The Greens example demonstrated that when dealing with complex public policy problems, it is important to frame the debate in line with your own goals so your outcomes are eventually reached.

### *Depending on the problem, there are differing levels of appropriate regulation*

Steven Hatfield-Dodds’ lecture outlined that there are many different ways to make laws to regulate sustainable behaviour. He articulated that regulation in relation to the environment was usually difficult to enforce. To directly quote Steven, ‘regulations should be matched to underlying impediments, taking account of different types of motivation.’ Policy tools designed to cater to different motivations include:

- a) Persuasion. i.e. ‘do the right thing.’
- b) Education and Information.
- c) Self-regulation, codes and standards.
- d) Grants and subsidies.
- e) New Markets. E.g. tradeable permits
- f) Regulation

Dovers agreed and spoke about the politics of 'instrument choice.' That is, a policy initiative will involve specific instruments to achieve its goals because regulation is not 'one-size fits all.' That is, policy interventions use instruments to drive behaviour change, or individuals, households, firms, communities, sectors and governments. These policy instrument choices should depend on the individual context of a complex problem.

The contexts of problems are usually determined by stakeholders, and in the tutorial we did an exercise which demonstrated how difficult it is to balance differing stakeholder perspectives. This indicated that choosing what types of regulation to implement is often difficult to discern.

### *Panel Question*

How do we promote effective long-term sustainable development when environmental management strategies are constantly being reassessed according to the latest scientifically-verified techniques?

I would ask this question because it would be interesting to discover how environmental policy makers factor uncertainty into their long-term strategic vision.

### *Connections*

#### (1) Connections within the course

In week two of my learning journal, I emphasised the importance of understanding that there is often more than one 'correct' answer when solving complex problems, because people have many differing perspectives on how complex problems should be dealt with. The recognition of differing perspectives within policy making was reflected in the Dodds/Dover lecture.

#### (2) Connection with another course

Polarising debate often occurs over wicked problems. This can happen for a variety of reasons, but perhaps the main explanation lies with humankind's inherent desire to simplify complex problems. Consequently, policy makers usually frame debate as 'for' or 'against' because it is usually easier to explain a complex issue in such terms. This type of debate framework is often unhelpful because it does not allow for a broad range of perspectives to be brought into the fold. This issue was extensively discussed in my Politics in the Middle East course in relation to the Israeli/Palestine conflict. Many commentators have observed that the framework of the debate is unhelpful to finding a sustainable outcome to the conflict.

#### (3) Connection with a contemporary issue

The unhelpful nature of a polarising framework is also evident in the abortion debate. Within this debate, there are two camps: pro-choice and pro-life. This divide is unhelpful because it encourages people to look at the abortion debate within a black and white framework, rather than consider the complexities of the entirety of the debate. One of many complexities is where pro-lifers should stand

when a pregnancy is a product of rape. The current framework of the debate does not encourage a discussion of this 'grey' area.

*Toolbox*

1. Seek to normalise an issue so the debate framework changes in your favour
2. Recognise that there are differing levels of appropriate regulation when trying to control undesirable behaviour.

### *Ticket*

At the Copenhagen conference, the group consisting of government actors and policy makers had one single priority – to reduce the impact of climate change. Consequently, this created a number of differing and sometime conflicting priorities. At the conference, government actors and policy makers were essentially divided into two sub-groups: the global north and the global south. The global north consisted of industrialised nations such as the U.S., U.K. and Australia, while the global south included developing countries like China and India.

By drawing on the international relations concept of ‘realism,’ it is evident that the approach used by these two sub-groups, largely focused on their common self-interest. This self-interest was based on their desire to demand that the other group reduced emissions a higher rate. The global north demanded deep cuts in emissions by the global south – which consists of the fastest growing economies in the world. While the global south argued that the industrialised world must make deeper emissions cuts because the industrialised world caused climate change.

Both sub-groups used the same approach, coalition building bound by national self-interest, in an attempt to reach the same goal – a reduction in global emission. But neither group was willing to compromise. This in turn, created a stalemate in international negotiations on climate change.

## Week 9

# Maths of Complex Problems

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### *Introduction*

This week demonstrated that complexity in mathematics, like most other disciplines we have studied, is based on the unpredictability of an outcome. Mathematicians often call this chaos. The themes for this week centred on the fact that mitigating chaos is difficult because even if systems or formulas are simple, output can be chaotic; simple systems can be sensitive to 'initial conditions,' thus providing complex outcomes.

This week's panel also dispelled the myth, that maths has the unique ability to always simplify complex problems through formulaic or graphical representations. This week I learnt that fractal mathematics demonstrates that even if some complex systems are magnified, they will never simplify.

*Mitigating chaos is difficult because simple systems or formulas, can produce a chaotic output*

Simple systems often produce chaotic outcomes for a variety of reasons. However, the panel in particular focused on one reason. Michael Barnsley explained that feedback functions often create chaotic outcomes, particularly in relation to the 'black box' where there are unknown quantities in the feedback loop which in turn affect the outcome.

During the tutorial the facilitator, Tom Stayner, provided a very interesting example of this phenomenon with a cup of tea and milk. He poured milk in the tea and they reacted with each other. The tea acted as a 'black box' because we could not predict precisely which sections of the tea and milk would react with each other first. Thus the unpredictable nature of the experiment demonstrated the chaotic nature of it.

*Simple systems can be sensitive to 'initial conditions,' thus providing complex outcomes*

The concept behind this theme is inextricably linked to the chaos theory. Stephan Kellert in his book *In the Wake of Chaos: Unpredictable Order in Dynamical Systems*, stated that 'Small differences in initial conditions (such as those due to rounding errors in numerical computation) yield widely diverging outcomes for chaotic systems, rendering long-term prediction impossible in general. This is also known as the 'butterfly effect,' where initial conditions may be seemingly so ineffectual – like a butterfly flapping its wings – that they are discounted from the equation. As these factors compound, the effect of the 'initial conditions' become apparent. These outcomes are unpredictable and as the name suggests 'chaotic.'

### *Panel Question*

If given the opportunity, I would ask 'In terms of complex problem solving with maths, which discipline best compliments this endeavour?'

I would ask this question because it has become apparent, through out the course that some disciplines work better together than others.

### *Connections*

#### (1) Connections within the course

The uncertainty of outcomes can be mirrored with the themes evident in the law week.

#### (2) Connection with another course and contemporary issue

For my Arts degree, I completed the Government and Politics in the USA course. The first theme, 'mitigating chaos is difficult because systems or formulas can be simple, but output can be chaotic' essentially describes the structure of the US political system. That is, the system has a fairly simple structure with clearly demarcated institutions: the Office of the President, Congress and the Supreme Court. Even though the structure of this system is simple, once an issue like healthcare reform is brought into the mix, these institutions soon become unpredictable 'black boxes.' They become 'black boxes' because it is impossible to measure all of the differing influences which impact upon the outcome.

### *Toolbox*

1. Modeling complex systems can, but not in the case of fractals, provide an insight into how systems can be broken down into manageable components, and help us to understand how they function.
2. Mathematic systems can be used to predict the outcome of complex problems.

### *Ticket*

I have chosen the section, "Oscillations between stability and chaos."  
In the article 'Using Chaos Theory to Revitalize Fisheries,' Robert M. May of the University of Oxford stated that 'predictability' was the "the flip side of chaos." A logical conclusion from this definition is that 'unpredictability' is chaos. Drawing from my political science discipline, a complex system that oscillates between stability (predictability) and chaos (unpredictability) is the Israel/Palestine conflict.

At this very moment, there are predictable elements to the relationship, which creates a sense of stability. At present, it seems fairly predictable that while in negotiations, the two camps will not declare war on each other tomorrow. But the outcome of these negotiations is unpredictable. The negotiations could disintegrate.

If negotiations disintegrated, the actions of the two sides would be unpredictable. For all we know, the two sides could be at war with each other next week. It is clear that the oscillating nature of this relationship between predictability (stability) and unpredictability (chaos) adds to its complexity.

## Week 10

# Health and Development

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### *Introduction*

The area of health and development is based heavily on ethics. Before I embarked on this topic, I had a rough understanding of what ethics were, but did some further research to gain a more insightful comprehension. Oxford online, has included three definitions of 'ethics':

“Schools of ethics in Western philosophy can be divided, very roughly, into three sorts. The first, drawing on the work of Aristotle, holds that the virtues (such as justice, charity, and generosity) are dispositions to act in ways that benefit both the person possessing them and that person's society. The second, defended particularly by Kant, makes the concept of duty central to morality: humans are bound, from a knowledge of their duty as rational beings, to obey the categorical imperative to respect other rational beings. Thirdly, utilitarianism asserts that the guiding principle of conduct should be the greatest happiness or benefit of the greatest number.”<sup>3</sup>

It seems that the concept of 'justice' is a central element that ties these definitions of ethics together. It is clear that there are many differing interpretations on what is 'just' in the medical and scientific profession. As such, a number of ethical dilemmas arise which in turn create a number of complex problems. These problems include the global distribution of funding for disease cures and prevention as well as gene and medicinal patents. Thus healthcare related ethical dilemmas and the role of 'moral suasion' in the healthcare debate are the main themes of this reflection.

### *Ethical Dilemmas in health*

The panel clearly demonstrated that there is an ethical dilemma over the distribution of funding for curing diseases. The panel questioned whether it was ethical that there has been higher investment in trying to cure the Hendra virus that has killed approximately 16 Australians as opposed to Lassa fever which has killed thousands overseas? It is clear that the perspective one brings to this ethical dilemma will determine how they interpret it. For instance, from a parliamentarian's perspective, they may believe that the government's main ethical priority should be to find a cure for Hendra virus because there was an outbreak in their electorate. From the perspective of a UN official on the Africa Desk, they would see the main ethical priority as finding a cure for Lassa Fever.

The fact that ethical perspectives determine outcomes was aptly demonstrated in the tutorial. In the tutorial we were asked to interpret a problem from an assigned ethical perspective. The question was: 'If you had the opportunity to take \$ 1 million knowing someone in the world would die, would you take it?'

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<sup>3</sup> [http://oxforddictionaries.com/view/entry/m\\_en\\_gb0275070#m\\_en\\_gb0275070](http://oxforddictionaries.com/view/entry/m_en_gb0275070#m_en_gb0275070)

Those on the utilitarian side argued that they would take the money because they could use the money to benefit a 'greater good.' While those from the Kantian side argued that assuming that everyone was a rational being, they should not take the money because they are bound by the belief that they must respect other rational beings.

### *Moral Suasion*

Another theme evident in the topic of health is the negative impact of moral suasion in relation to healthcare ethics. It is often perceived by broader society, through the influence of drug companies, that patenting genes and medication is positive because it encourages innovation. This moral framework establishes patenting as a positive implement in the world of science. The panellists comprehensively challenged this concept. They argued that patenting does not facilitate an environment of innovation. Buddhima Lokuge provided statistics from the US Congressional Budget Office which stated that 75% of the registration of new drugs had 'no therapeutic benefits.' This figure suggests that the idea of patents creating innovation is a 'cargo cult:' the 'belief that a utopian future will be delivered by spiritual agents if certain rituals are performed.' Essentially Buddhima argued that the idea of patenting facilitating large-scale innovation is a fallacy.

### *Panel Question*

Is it feasible to reform the patenting system to ensure that it becomes more effective at facilitating innovation?

I would have asked this question because it is clear that the system is an ineffective system and highly unjust as Andrew Fowler pointed out in his Four Corners program on the patenting of the breast cancer gene.

### *Connections*

#### (1) Connections within the course

There can be a connection made between the idea of a 'narrative arc' (week 4) and moral suasion because they both seek to ensure that a dominant perspective, usually favourable to the status quo or a powerful voice in society, is heard above all else.

#### (2) Connection with another course and contemporary issue

This topic has a connection with Security and Strategic studies. The connection is that Australia faces an ethical dilemma over where it should allocate its aid funding. Should money be given to the most needy countries, those in Africa, or countries that are strategically important to Australia, in the Asia-Pacific?

### *Toolbox*

- (1) When analysing outcomes, understand that decisions are usually made from differing ethical perspectives. This is a useful tool because it contextualises the outcome of decision-making processes.

(2) Identify weaknesses in the system, and target solutions for those weaknesses.

## *Ticket*

**A)** To answer this question in relation to the four corners story, I think that patents should only be legitimate when something has been created rather than discovered. This means that patents should only apply to new ideas or physical object etc, rather than naturally occurring things like gene sequences. As economist Joseph Stiglitz stated: "They are a part of all of our bodies and contain the most fundamental information about humanity—information that should be available to everyone. The researchers and private companies that applied for these gene patents did not invent the genes; they only identified what was already there.'

**B)** Tool 1: Analyse a problem through observing how it fits into a certain system or framework.

Tool 2: Remember that 'narrative arcs' permeate each discipline, so don't be tricked into thinking that the dominant way of approaching a problem is the most effective.

Tool 3: Always remember the 'Black Swan' phenomenon! Expect the unexpected.

**C)** The ethics of whistle blowing is a complex issue that inhabits my discipline (political science). At what point is the revelation of information helpful or harmful? How can the revelation of information for 'the greater good' be measured? Wikileaks is an example of an ethical hot spot because it is an organization that centers its activity around 'blowing the whistle.'

## Week 11

# The Law and Complexity

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### *Introduction*

The relationship between values and the legal system, as well as the role of uncertainty in the law are the main themes for this week. Simon Rice focused on the process of law making in the parliament and the importance of understanding the values and intent behind the law when wanting to amend it. Ben and I facilitated this week's tutorial, so we decided to focus on law creation in the courts through value-laden judicial interpretation.

### *The Relationship Between Values and the Law*

#### *(i) Parliament*

Simon Rice demonstrated the importance of understanding the values and intent behind the law through a tutorial exercise. For the exercise, he asked us to amend a classroom rule 'no-one is permitted to use a mobile phone when they are in class' to allow a student to answer his mobile phone to contact his sick mother.

When we started making exceptions to the rule, we had to consider the intent behind the rule. As the exceptions to the rule list became longer and more obscure and largely irrelevant to the initial values and intent behind the rule, we needed to consider when it would be appropriate to create a completely different rule to incorporate changed needs and values. The intimate and subsequently complex relationship between values and lawmaking was clearly demonstrated through this exercise.

#### *(ii) The courts*

Judicial activism, both in the liberal and conservative sense, as well as legal formalism demonstrate the fundamental connection between values and the law. Ben and I devised an exercise to demonstrate the impact of value-influenced judicial decision making on a judicial outcome. It was important to demonstrate this relationship because interpreting judicial decisions can be a complex process made easier by understanding the judicial philosophy of a decision.

### *Uncertainty in the law*

Uncertainty in the law is a source of complexity because it is often impossible to predict how Justices will interpret a common law decision later on down the track. However, in the tutorial we sought to emphasise that this uncertainty and subsequent complexity was not solely negative. This is because the uncertainty surrounding how a judicial decision will be interpreted in the future, is a tool that can be used by Justices to reflect changing values and norms in society. As such, the complexity and consequent uncertainty of the law can actually be a useful tool for solving complex problems.

### *Panel Question*

If Simon Rice took questions, I would have asked whether he favoured judicial activism or legal formalism. I would have asked him this question because he would have provided a unique perspective on what the role of the Justice's personal values should play when interpreting the law.

### *Connections*

#### (1) Connections within the course

The theme of the relationship between values and the law was also evident in week 7 (Indigenous disadvantage). The values that underpinned the interventional legislation, reflected some, but not all of society. The complexity of the matter is how to balance differing values in society.

#### (2) Connection with another course

Just as the outcome of the law is often uncertain, it was made clear from a course I did in International Relations that Australia's political relationship with China can be just as uncertain and unpredictable at times.

#### (3) Connection with contemporary issue

In Queensland, there was recently a debate over whether abortion was legal. This debate centered on a couple who were prosecuted for procuring medicine to have an abortion. There was a heated debate in Queensland on whether the law reflected the values of modern Queensland society; the law was ultimately interpreted in such a way that the prosecuted couple were not found guilty by the judge. At the end of the day, the uncertainty surrounding the clarity of the law, allowed the Justice to interpret a complex issue in the law in such a way as to reflect their interpretation of modern values in Queensland.

### *Public Lecture*

During the holidays I attended a debate on: 'Should the Pope be held to account?' at the Festival of Dangerous Ideas. Geoffrey Robertson advocated for the Pope to be tried under international law, while Alan Dersherwitz argued for the Catholic Church reprimand its priests through the use of 'canon law,' i.e. Vatican law. Dersherwitz argued that trying the Pope under international law undermined the legislation because the paedophilic behaviour of priests demeaned 'crimes against humanity' legislation. One of the many complexities in international law is that even if a decision on the Pope is handed down, the fact that he is a head of state provides him with legal immunity. Thus rendering the legislation ineffective.

### *Toolbox*

- (1) Uncertainty in the law can be used as a tool to implement decisions that reflect changing societal values
- (2) If one does not like agree with a precedent the has framed the outcome of a court case, it is often possible to change value framework of a problem and interpret the problem from that perspective.

(3) When approaching complex problems, it can be helpful to synthesise differing perspectives to create a solution.

### *Workshop Ticket*

#### Moot point: Can reductionist thinking help solve complex problems?

Classmates will be asked to call on the Jones reading.

Interpreters of the law use reductionist methods to solve complex problems such as court cases. As outlined in Judith Jones' article, Lawyers and Justices move through three stages to solve complex problems. The first is determination of the legal rules – the law. Secondly, they determine the facts. Thirdly, they apply the law to those facts.

#### Moot point: Does the precautionary principle help or hinder complex problem solving?

Classmates will be asked to call on the Roberto Andorno reading and the Cass Sunstien Reading.

Andorno advocates that the burden of proof lies with those who will potentially cause harm. Sunstien however argues that the precautionary principle is paralysing because nothing will be achieved if it is evoked.

#### Original suggestions on what you are going to get your class mates to read/view/listen to before the tutorial is held

Corporations vs. nature, the precautionary principle would be beneficial for students to view before they attend the tutorial

<http://www.youtube.com/watch?v=QKnbo9Kg4ME>

#### Evidence of original thinking on how to run the tutorial

Half the class will be asked to assume the role of Australian High Court justices while the other half will be asked to assume the role of Supreme Court justices from the US. The Australian High Court Justices will be expected to make a ruling on a constitutional issue. In keeping with common legal practice on the High Court, each justice in the group must provide different judgements yet come to the same decision. The other half of justices, in keeping with the tradition of the Supreme Court, must make a decision and provide a single judgement for their decision.

I will then ask the class which outcome was better for solving complex problems. Does having many judgements on the one ruling 'compound uncertainty' as Judith Jones? Does having one judgement for one decision risk reducing complex problems to 'black' and 'white' issues by ignoring that there can be many different interpretations of law?

#### Locating a relevant new recent journal reference and the quality of the 100 word summary explaining the relevance of this article to the tutorial topic

Harremoës, Poul, David Gee, Malcolm MacGarvin, Andy Stirling, Jane Keys, Brian Wynne, Sofia Guedes Vaz (October 2002). "The Precautionary Principle in the 20th Century: Late Lessons from Early Warnings — Earthscan, 2002. Review". *Nature* **419**: 433.

This article concerns the rise of the unintended consequences of science and the need for policy to curb its negative effects. The inability of scientists and policy makers to confidently predict the consequences of science will make the 'Black Swan' phenomenon even more prevalent in modern society. This article is relevant to the tutorial topic because it is written in light of the importance of the precautionary principle, enshrined in the Treaty of the European Union.

**Week 12-13**  
**Course Reflection**

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This will be submitted on Saturday October 30 as discussed with Richard Baker.