

# Monday

Monday, January 22, 2018 4:33 PM

Why natural disasters aren't so disastrous. What is a natural disaster? A hurricane? Typhoons are the same phenomena, just the different part. This is the picture of what one looks like. This is a meteorological chart. To define document and track a hurricane. Understand something about it's strength purely through meteorological charts. But when it hits like a city; it hits lands, what happens? All those natural forces and dynamics of a hurricane remain essential to understanding it. When it hits a city, it becomes something more than natural. To understand its progress through the city, we need to understand more than the sum of the forces of that hurricane. Understand about the cultural, social boundaries that divide the city by economic status because that would effect which groups are more effected. Understand natural disasters in all these terms. To show how the meteorological effects become interconnected with histories coming to a natural disaster.

We look at heat waves, the earthquakes destructions, tsunami waves transform the history of a certain country. I want to look at hurricanes as an example.

A hurricane is defined as a rapidly rotating storm system characterized by a low-pressure center, a closed low-level atmospheric circulation, strong winds, and a spiral arrangement of thunderstorms that produce heavy rain. We go to Hurricane Katrina. Hurricane Katrina formed off of Bermuda, hit Florida and became a Category 5 which is the most severe possible. This is defined by wind speed, and what is the impact is, but the impact is variable. Say deserted cities, it won't hit anything. It's not just the wind speed that will affect the impact. By the time it hit New Orleans, the wind speeds gone way down, no longer a Category 5, the impact on the city was not purely on those wind speeds.

## MOVIE SCREENING

When the levees broke: A requiem in four parts.

That part of the southern US. It has many accents.

What was unnatural about the Hurricane Katrina disaster?

- Poor workmanship of the levees
- Federal government was intentionally manipulating the effects
- The levees are themselves are a man-made structure; the levees are a dramatic reshaping of how the water flows through that area. Different arrangement of the levees in that area force the waters to cause floods, whereas if there were natural embankments, the hurricane and the waters it had would have been dispersed more naturally.
  - o How the dynamics of the levees system changed the path of the hurricane
- These are all ways in which social-human involvement really changed the way that the disaster occurred

The people involved:

- They were angry not about the hurricane but the effect of what had happened as a result of what had happened due to other mistakes. The way that people are reacting is that their anger is not on the hurricane but towards various institutions like the federal government.
  - o This is a blame game, or attempts to attribute responsibility; the way that people are responding and dealing with the disaster. The way they are attributing it to human causes, institutions.

Methods: How do we study disasters? Trying to incorporate social science methods into the understanding of unnatural disasters. It's more about how can we going about divining methods, taking insights from different methods. Within the social sciences, we would be looking at different fields. We studied Durkheim, Max Weber, Freud, Karl Marx, Adam Smith. We would be reading things from this different fields. I'm going to make it explicit how each of these arguments are valid. We would be looking at anthropology, and then sociology (Durkheim) and then to Marx (and that kind of political economy).

What I mean by an autopsy of a disaster: What I want you to do is to take a specific disaster, go through all the dimensions of it. If we are talking about meteorological disasters, we can say the wind speeds, but also all of the social cultural dimensions of why the disaster became so severe. There are dimensions of the disaster, and determine what are the responsible parties of the disaster. You will have to demonstrate it. These are the dimensions that made this disaster so serious. It's more specific, where are the specific dimensions. Choose what is the most convincing and present that to the class.

Can use different kinds of media to represent it. The material that you present, whether video, pictures, audio, it shouldn't be the work what it is supposed to be doing. It can provide evidence, for example a video where the levees are breaking, here's the example of how the levees were poorly built. It's usually connected to the concepts of that class, but that's not what you have to present. You have to present an autopsy of the thing.

Any questions about that? All the readings would be up on edimension. For this, there's one short reading due. So that we can get started for the class. The first topic is going to be from Week 1 to Week 3, it's about the origin of the idea of a natural disaster. We kind of started with the intuitive idea that has to be a natural phenomena. It's rooted in the birth of modern science. The study of China's natural disasters, disasters were understood as moral calamities. The second week we read a classic anthropology text, how blame becomes a reaction. Then we talk about the Lisbon earthquake, in the late 18th century, the time of shift from a moral to a scientific understanding of disasters.

? What is a unnatural disaster? We won't look at social phenomena, we won't look at financial earthquakes. Titanic was a technological disaster.

# Thursday

Thursday, January 25, 2018 4:37 PM

Give you a brief idea of what Anthropology is about. This is made out of two greek words: Anthropos + logos. Anthropos is human, while logos is study/knowledge/science. Anthropology is the study of the humans. What began as the premise of the anthropology is that what humans are is very diverse; and it is not the same as science. If you think of Newtonian physics, you're producing all phenomenon to universal laws. We will not reduce humanity to universal laws. Taking the humanity as part of the premise necessary to understanding what humans are.

So that's the starting point of anthropology. I will provide you a way of thinking about anthropology, by providing you tools for how anthropology works. The first tool is comparison. This is something that you are going to be doing comparison. It's a response to the idea of diversity and difference. So what I want to do now with the assigned reading. Bring it out and take about it. I want you to compare what moral meteorology, with how people react to disasters with them in late imperial China and the film (Requiem for Katrina) that I showed you.

First comparison: Similar in the way that they look for moral failings around them. The Americans felt that it was the moral hazard of the federal government for not looking out on their interests, for prolonging the time spent on the construction of the levees. And the conspiracy myth that it was the deliberate action by the US federal government in dynamite/levees. Property prices.

China's moral meteorology: They justify the disaster and conduct finger pointing, redirect the blame. For China, they point to the common populace while in Katrina, they point at the government. This could be the difference where the Katrina survivors blamed the federal government. By justify, it's to find some kind of a reason, and that it is not a chance; such that there is a way to control the natural disaster.

In China's moral meteorology, they blame on the government, because where the emperor has the greatest impact on the weather, followed by the higher officials, rather than the people. In China, it's the moral conduct of the people, while for Katrina, it's proper conduct of the government. It's not just the technical aspects of the government; Katrina survivors blame corruption, intentional collusion and prioritization of some areas over others.

The use of the weather for political ideology: the authority of the emperor is bolstered by the correct predictions. If they come to a correct decision, the weather would be benevolent and benefit the people. In Katrina, it was how it was handled, but Chinese focus was on the cause. In other words, the moral failings are the cause of the weather in China. But in Katrina, the moral failings are the response to the weather. (Because Katrina wasn't actually so bad.

There's a difference in the way moral failings and disasters are being handled. Government was one of the main groups. Who else was being blamed? Engineers. What does it tell us about this situation; because that's not the case in China. On top of the response factor, there was also a preparation factor. Like the levees. So that relates to the government.

If we compare who's being accused, there's something we can say about the society. In China, the people and the emperor would be blamed for the disasters. In Katrina, it's only a select few who are blamed. The people making the accusations feel that they have no obligations, that they were not responsible for the disaster. In China, there was a shared responsibility concept. So they are not blaming the localised people explicitly. There's really linkages in how the people in the area. If there's more people, then there would be more disasters, even if there were some really good people.

So how would you see these trees? Now that we see this new image, how would you change the way you see the first image of a tree. We become more explicit in our description of a tree, whether

if it is coloured, whether it has roots and branches. When you first saw this tree, then you think that it is this tree. In comparison to the one in color, you recognize this tree in black and white. There's this extra layer of detail. Then you see the third picture, a tree that is real. The type of tree is different. You will start characterizing what that kind of tree is.

When we first talked about Katrina on Monday, this is initially the response: blame and comparison. But now with the Chinese comparison, we see that both of these are issues where morality is linked to disaster. We can recognize in more detail we can specify what kinds of moral issues there are. It is by placing it in juxtaposition that we are able to recognize moral aspect. That is probably the fundamental aspect of how anthropology works; by placing moral works in juxtaposition, it allows us to learn more about each one.

When it is about our own society, it's quite difficult to think about our society. By taking something distant in history and cultural, we think about our own society in comparison.

Now let's look at the second tool. From the native's point of view. One of the key practices in anthropology is that we tend to understand a cultural or social view from the native's point of view. Rather than simply visiting a place and looking at how people interact and describe it. The point of anthropology is to try to understand what a cultural practice from the point of view of the people doing that practice. How do you see from that point of view? There are different aspects to that: it includes things like empathy. Participation, trying to participate in the activity that are going on rather than observing them. A third aspect that's related to this is trying to identify the logic or rationality that is embedded in a different way of thinking it. Instead of when you counter a way of thinking that is different from your own, instead of saying it doesn't make sense, it's not logical, the effort is to try to understand what the logic is. If the logic doesn't abide by the laws of physics, and it seems like fantastical, doesn't make any sense. So you try to find out what the logic is.

Pg 223: emperor has a lot of men. There was a drought, but after he started praying, it started to rain. The idea is that people show reverence to the emperor because he succeeded in asking a favor in terms of getting rain. In Chinese society, people who have respect for those in a higher position than them. There are two aspects to this: the closeness between emperor and heaven. And the second: the hierarchy passed down by Confucianism. Their responsibility is different based on their ranking. So technical experts and government officials are the elite, and are responsible for the society in the Katrina disaster. You can think about the relationship to heaven.

Pg 217: He refutes the claim that disasters occur in places where people erected temples. He claims with prayers, there's also the moral aspect whereby the chief officials in the area, unable to serve the state in the fashion, they are obliged to stay and reflect on the correction of their faults. So the moral values of the people and government are responsible in some way for disasters. It makes clear that the disaster is not just about you, but is arguing against the view that prayers and temple constructions are the key to preventing disasters. It's not about rituals and temples are key to prevent disasters. It's more about the broader moral values and state of conduct.

Pg 232: It's very similar to how moral good is seen as favourable, and that the heavens will treat you well in the weather. There is a direct relationship in how the people behave and how people treated them. It's the example where morality leads directly to good weather.

There was a pretty consistent logic of determining who was responsible for disasters, all of these is to say that these are not just random; false statements about the weather, but that they have internal logic to them. We can identify points where it doesn't make sense, it's not because the people are morally good that the weather good, we can identify that it is different and where it is logical. The idea of tien in Chinese. Tien is not just heaven, but the sky as well. Qi is translated as energy.

You can see the way that the concept is being used, encompasses moral things, liked the aggrieved energy-vitality of the people, we might classify things as moral conduct, but can be encompassed with natural phenomena. We will look into how precisely it is being used, the semantics it has, why

moral things is linked together. It is not the same radical vision that we have discovered. Our morality is not part of the natural world. We'll have the chance of trying this exercise again with the next text, which is about an African culture called the Azande and their ideas about witchcraft. The idea that witches don't exist. The author starts with that sentence. Witches don't exist to us, then what are they talking about and how to understand the logic. You can try to see what they're doing when they talk about witches. That's what we'll look at next week, continuing the idea of blame and accusation.

# Monday Blame

Monday, January 29, 2018 4:40 PM

What is 'witchcraft' as the Azande conceive it?

The use of witchcraft - substance to inflict harm. The physical basis (witchcraft substance) and intent to inflict harm. They claim witchcraft substance is a physical substance that can be found in the body. It's not fleshed out in Azande society, but rather a particular intention to inflict harm. Social marking is happening here. It could be deployed in particular situations easily and without problems.

It's only passed on from fathers to sons, mother to daughters. If anyone in his lineage is a witch, then he has the possibility of being a witch. Then to avoid this discussion, the person would accuse that confirmed witch to be a bastard. People don't go out of their way to accuse, and make excuses to claim otherwise. Even though you have this inherited phenomena, this will not lead to social exclusion in practice. In theory witchcraft is inherited, it's never actually sparked a witch hunt on its own.

The whole concept of witchcraft works in Azande works with religion: they find justification for little things. It's traditional and comes from long time ago, where there are still faults, and they can't rebut it and still blindly follow it. This can be compared to our society. It's part of the intention of the book; to draw justification about our society. In one way, it is to religion, to explain things that they can't explain. Unfortunate things. It has to be unfortunate events, and usually something that has to be coincidences.

Witchcraft: one way they define witchcraft as a concept is in the general sense. For example, they might say I am worried about being bewitched or worried about witchcraft. I'm doing certain areas before doing a certain areas. In other situations, they would identify someone as a witch. So it is definitely somebody that is part of the natural world; you can find it within the body.

The immediate reaction is that they don't understand the real cause behind it. Due to witchcraft, they might not really understand what cause it. But they do understand it and draw it out as well. They see it why the granary collapses, is because termites, and people were harmed because they were looking for shade. But at that moment? The coincidence, the chance in causation, the empirical causation is by others. So there are other causes as well, which is witchcraft. Why did it fall, when that person is underneath.

Similarly, does that mean that the Azande think as a supernatural phenomenon or not? They do not have conception of our natural causation. In their view, causation includes witchcraft as part of the ordinary world. It is either present or not present. They also understand these kinds of unnatural causes, and witchcraft is part of their critical ontology. It's not something that breaks the natural order, but part of the real world as they understand it.

This is a book of cultural translation. Pritchard is really careful in translating the Azande point of view to our point of view. We can look at this in the world 'Mangu' as witchcraft. So we can see that this is an appendix, what he did is to take the Azande words and concepts and match them to an English concept, and constantly use them in exactly the same way as they would be used in the Azande language. That means that: there's going to be some problems in the way he did this. We have ideas like nature, religion, supernatural, and something he wasn't trying to do is classify things in our categories. Rather he wants to just translate the categories that the Azande use.

This book is called witchcraft, oracles and magic. Depending on various theories of what magic is, the way it works is to fit into our theory of what magic is. Azande would never say what magic is trying to be. He is trying to keep the key concepts the Azande use and feed it into our language. You can see the problems with this, probably inevitable.

We already have our ideas of what witchcraft is, and this confuses us with our preconceived notions. There are a lot of embedded ideas of what witchcraft would be. There's a lot of embedded ideas in the concept of witchcraft, hard to understand what the Mangu concept is.

Based on what we have said, concretely say what Mangu or witchcraft is. Can you potentially come up with a better translation.

Astral projection : witch projects out of a person's body, travels as a bit of light. It's only done for bad, no use of good intentions in the Azande culture. In a way, the concept of misfortune is the concept of mangu itself. We take evil, in the widest sense of that, because in English, a thing was an evil, which meant misfortune or a bad thing. Another possibility is that it is just bad. What's interesting about this is that bad could describe a thing, and could describe a person. So encompasses a lot of the domain, where it is trying to describe the unfortunate aspect of an event. It might be a concept as well. What might be problems with these translations?

Compare Azande witchcraft beliefs with China's moral meteorology:

Both are explaining misfortune. In Moral meteorology: there may be good things as well. They would issue edicts if something good happened, because this might be attributed to good conduct in that area. Because it is caused by somebody, and there is the indirect pathway through heaven. Where good conduct or bad conduct is kind of producing an indirect effect through that response of heaven. Whereas witchcraft is directly caused from the witch to the heaven.

The sociology of the blame. If both were about attributing responsibility to unfortunate events, how are they socially different. How is the social structure involved in both of these cases. The blame is a larger burden the higher they are in moral meteorology, and elites are more responsible. With the emperor being the most responsible. The responsibility increases as you go down the hierarchial level. Witches: only the commoners are involved, and how are the accusations worked. They are kind of biased towards the upper class. They don't want to have any seem like they are in the upper class. They are kind of an assessment, oracles are accusing those of the same class of themselves. Royalty are not accused but those lower themselves are not accused either.

Here, where hierarchial blame, the consequences are where you are reasserting the prestige, and the importance of being linked to reassertment to this hierarchial responsibility. Witches are not ostracized and persecuted. Whereas

Frontal	Lateral
Comparing us versus other	Comparing A to B (To C)to D etc
Defamiliarize the familiar, and/or familiarize the unfamiliar	Each new case adds new material, new perspectives new viewpoints
Can reveal things we didn't know about ourselves, look at ourselves in a new way.	Danger: there's no end to details, but do they add up to anything
Danger: Risk of distorting the 'other' because reference point is ourselves	

I.e. People flying on broomsticks, being very bizarre. Helps us understand. What could be called lateral causes. Not necessary our own society. The ideas about Azande, in late imperial China. Neither of these are ideas we share ourselves, but we can develop a comparison in between. We can see new things. There's a kind of indirect process attributing responsibility versus indirect process. You are not clear of what the end point of doing it is. You just get more and more details.

Witches as the Azande conceive them, clearly do not exist. Why does Evans-Pritchard think it is important to write about them. The way he structured the book is why am I talking about witchcraft? It is to introduce the many other ideas that I want to talk about.

Beliefs and Rites: beliefs and rites are abstract concepts, and what we talked about today

exemplifies that. There are a lot of beliefs on what witchcraft is, and there are rites; procedures that they do in response to accusations of witchcraft. It is essentially like vengeance. A large part of why this book is written in this way is to develop the relationship like a natural philosophy which is a crucial goal in life. This is to look at the relationships that we use to perceive reality and the social beliefs that we use to perceive society. Try to draw the link between perceptions and the responses we make to this reality.



# Thursday

Thursday, February 1, 2018 4:41 PM

There's a relationship between the Azande ideas about witchcraft and the social order of society. Pritchard follows a mode of thought and a mode of behavior, at the beginning of Chapter 3.

They will go to the oracle. Multiple different kinds of oracles.

Rubbing board oracles: not very specific, and gives you the names. Then poison oracle is asked with the five poisoned chickens, and then as each chicken is sacrificed, they ascertain who the witch is. This poison does not always work. If you give this medicine to the chicken, and then it'll die after the person grabs it. In many cases, they don't. So they will ask many names and decide on one name. You declare that you know the name. The witch is supposed to stop his curses out of honour. There is a public announcement that you know who the witch is and is the witch doing something evil, and asking the witch to stop. There will be blowing water on the wing onto the witch.

There's a formal procedure, that is traditional and done in particular ways. So we know what witchcraft relates to mode of behavior. If witchcraft serves as a social function; if Evans Pritchard is saying witches don't exist from his point of view, but he talks about witchcraft as it demonstrates a certain kind of social function. What do you think that social function is? There's a way that you have to follow rather than outright killing. It's a peaceable resolution to wrongdoings. This is in contrast to a direct violent response.

This is the crucial point of Pritchard; although we look at witchcraft belief as highly irrational, it serves an important thought in the society, it imposes a procedure whereby you do not respond to ill intent through violence but through intermediaries, public announcements, just asking for people to move their ill intent back.

Who is attacked by a witch? Which kinds of people are afflicted by witchcraft? Because witchcraft is motivated by jealousy specifically, as well as anger; we have who is bewitched? With people who have many enemies, and people who are better off than others. He talks about one of his own servants, while he was there, he was a colonial type guy, he was treating that servant a bit better than the others, the servant was worried that he was going to become vulnerable to witchcraft. This is having a social function: to regulate moral behavior.

The first is a malicious person, and it promotes equality. This is something that you can see in many people. You don't want to stand out as being especially well off, or especially greedy, because that kind of behavior will make you vulnerable to witchcraft. Try to identify one institution: Police: Judicial System: Like oracles, they identify the wrong doer which we call criminal. It metes out punishment, and peaceful conflict resolution. It prevents us from directly taking vengeance. This is an idea of justice in a way.

Progressive taxation. Church: if you deviate from the path, you fear from the institution. Moral regulation function. Witchcraft requires moral judgement, Pg 48: It requires moral judgement as opposed to sentiment. If witchcraft is an opportunity to judge the morality of other people. We have the church, judicial system. Taxation in a way. We only apply it in certain institutions, certain kinds of wrongs that we believe are within the range of human responsibility.

The range of possible suspects (Financial Crisis) is quite open at the beginning here. Their purpose of this congressional inquiry is to identify possible suspects. They are trying to seek recourse for the victims (of the finance crisis). And they are trying to prevent another financial crisis from happening again. The whole thing is public. The Azande desire to seek human responsibility though it's difficult to identify. There are interesting comparisons where all disasters are moral. How to recognize moral responsibility?

# Monday

Monday, February 5, 2018 4:41 PM

It's probably the case that in every culture and in every tradition, there must be an explanation for evil:

1. In the Azande, we see witch craft. In Pritchard's witchcraft, it may often be translated as being moral bad, and extended far beyond the realm of human moral responsibility.
2. Witchcraft is misfortune. If you look at an etymology dictionary: evil was the word Anglo-Saxons used where we would use bad, cruel, unskillful, defective or harm, crime, misfortune, disease. In current terms, we use evil to signify both misfortune and moral wickedness. You could say that if you stubbed your toe, that's an evil. While now, if you get hurt, you won't associate it with evil. Those that were moral or physical, that could cause injury could be called an 'evil'. Diseases or maladies in particular were considered evils.

Only in the eighteenth century do we associate it with extreme moral evils. While sicknesses and diseases are not. Natural and moral evils are separated within this time. What was happening in this century, where people were beginning to divide between natural and moral.

The enlightenment: quote from Kant's essay: He defines enlightenment as emergence from self-incurred immaturity. Immaturity is the inability to use one's understanding without the guidance of another".

The disposition of enlightenment is no longer acknowledging those who used to say that this is how we should think. We should put it into question what we should think.

Another major thing going on was colonialism. Portugal; Spain; England France and the Netherlands, were sending ships to Asia, Africa and America, often violently taking over this areas and claiming and extracting resources. Another thing is that there's a lot going on within Christianity. There was recently a reformation and lots of religious wars between protestants and catholics. The violent aspects were mostly over but the background was still going on.

That partly explains why the conversation we will be looking at today in terms of the Lisbon Earthquake is coming from a Christian background. Within Christianity, you go on to explain how to understand evil. It gets phrased as a good God could create a world full of innocent suffering. If we accept that God is all-powerful and created the universe, and there is innocent suffering in the universe, is the God evil?

One explanation is to Blame the sufferers. If people are suffering from some kind of harm and disaster, it's because they might have deserved it. Sin and moral evil would lead to the suffering from natural evils. As a kind of punishment or retribution. If we compare this to the witchcraft idea, what is similar or different about it. They both are trying to connect moral and natural evil, but the Azande says so, it means that someone else is evil and trying to harm you. But in this case, if you are suffering, you have some kind of moral evil. There's a different way in which natural evil and moral evil are connected.

This philosophy, Leibiniz, responding to the same question if there is evil if there is a good god, created this book called Theodicy, which is to defend God. It is a philosophical defense of God against the accusation that God could be evil. It explains why there is evil if God is good? He developed a couple of explanations.

First Defense: interconnection of causes

There is the idea that every cause is interconnected. Even this event is very unfortunate, that unfortunate event might be necessary for other good events to occur. Suffering in one place and one person is necessary for the good of the world as a whole. Then things that seem might be suffering or unfair on a small scale might be good for the whole on a larger scale. Say you go out for picnic, and it is raining. You might think it horrible. Leibiniz might say that the rain would help in the harvest of the crops for the next year. You should look at the crops growing instead of being selfish. It's very difficult to ever say that something that seemed very bad or unfortunate, is it something good or important.

Rain on a picnic is actually important because it causes the crop to grow. You can imagine worlds that would be even worse than the world that we are in.

Second defense: Good for who?

What kind of perspective are you taking if there is an evil for the world.

This event is unfortunate for humans overall, but that's not saying if that's the cause for all sentient beings and other living things. The Lisbon earthquake was devastating so that it challenged this assumption.

We must believe in the best of all possible worlds. Although evil things do happen, we must strive for the greater good.

So what was going on Lisbon in the 18th century? It was one of the most flourishing cities of that time. It's not like London or Paris or Rome or many of the other cities that are more flourishing today. But at that time, that was the center of one of the wealthiest cities and a lot of international trade. It's kind of a comparable type, you have a lot of ships going through. On 1755, all Saint's Day, the day after Halloween. It is a festival with the connection between the dead and the heaven and there were many candles.

How were people responding to this? There were people who responded in that first wave. This must be because there were some: Lisbon was an especially sinful city, was caught up in religious wars; so Protestants were saying that Lisbon were following the wrong faith. Then there were those who say that it was devastating and we must survive, but how do we know that this isn't the best plan for the rest of the world?

The first is the poem by Voltaire. His known as satirical works against hierarchical authorities. What are the justifications of the critical kinds of evils. What does he think of the problem of evil. He agrees with both the two explanations.

He mentioned that there are people who are innocent who are also suffering. So he is accusing God of committing blanket punishment even if there was innocent suffering. Who in particular is he unsure of? Infants. He questions whether Lisbon is really more sinful than other cities in the region, like Paris and London. Seems it is hard to justify the idea that Lisbon is especially sinful. He questions whether the event in Lisbon was necessary and would the universe be worse without this event. Emphasizing the puniness in relation to the whole and suffering. Why would you say that this is a claim about existence? Whichever sentient being about all, what you are saying is that he's really saying 'you're suffering'. You shouldn't cry about your suffering. There's always suffering for benefit, and the core of our human sentience is our potential to understand each other's suffering. As you go further down, after 259, he's talking about the vulture/prey/eagle/human, and everyone's getting killed by everybody else. It doesn't sum up to good overall, it sums up to suffering overall.

The idea about this particular earthquake. He's trying to say that suffering is the core of human sentient being existence. As in religious connotations or any linkage? How does that shape the way of interpreting the Lisbon Earthquake. If there was some point of view of what kind of existence we are in. It might emphasize the news that there might be no god at all. He's not concerned about criticising god, but those who were making justifications to them. This kind of disaster: This is what happens to us. We are inflicted by suffering whatever.

He is trying to rationalize suffering by point out people was meeting. For anyone day that if you don't like this kind of authentications, he says that we should respond with hope. He thinks that these disasters are kind of faith, and he decided that though the human all of you santed, but it escaped hope.

Hope is the thing that might happen, so if god. This is the best of all worlds if this is all the best of possible worlds.

If we tried to rationalize the disaster, there is someone who

It emphasized that we should face disasters honestly, there is some horrible suffering. We can't

understand why it happened, but we have to recognize this suffering and hope that things could get better. After he published this poem, Rousseau, another French philosopher, had his own thoughts about it.

What does Rousseau think is wrong with Voltaire's poem. Rather than accepting suffering, people should do something about it. Blaming the sufferers, for living in the city and part of the disaster. Even more they want to stay there because they want to keep their possessions, which for Rousseau the fact that people care about their possessions. People are very materialistic. It is not fate that we need to accept. It is not our fate to accept suffering, the fact that people live in cities and are materialistic and the way that cities were being built.

It has its roots in the old ideas that sufferers were to blame for their suffering. In the past, he has sinned so there is a punishment from god. But here, rather than sin leading to punishment and thus to suffering, we can compare this to moral meteorology, now with Rousseau, there is something very direct between human action and suffering that it caused for them. He still sees disaster as being moral in a way. He strongly argues that it is a moral problem that led to this suffering. It is a moral question about what kind of life you want to live. It fits clearly with his broader philosophy about the rise of human society and civilization being a corruption of the good of humans. Humans is naturally good, but the rise of cities has led to the growth of inequality and about caring about your own possessions that may take your own life.

You start to have scientific investigation, intertwining of responsibility and causality. And after that, we would go to contemporary disasters.

# Thursday

Thursday, February 8, 2018 4:38 PM

In the case of Lisbon, the correct response to the disaster was something that was intensely debated. On the one hand by philosophers as well as actors locally involved in the earthquake. There was a lot of disagreement about what was responsible for the earthquake and what it should be do now.

The King was in a carriage in the countryside, but was too terrified, could not return to Lisbon castle, and stayed in the garden of his countryside veranda. He gave most of his governing power to the Marquis de Pombal, the prime minister. This Marquis had been the ambassador to England, was impressed by the Early Industrial Revolution and was trying to implement economic reform in Portugal. He was famous for saying "Let us bury the dead and heal the living". What might you think is characteristic of this sentence as a response to the earthquake. It was practical. But shortsighted: it was immediate but does not tell us how to avoid. He needed a short-sighted solution in the beginning after all.

Immediately he says we have to deal with this situation; the king doesn't want to do anything. He developed more long term plans. It wasn't the end of what he was going to do, and he developed a lot of plans how he wanted to develop Lisbon. It resembled medieval times, tiny alleyways, buildings built haphazardly. Marquis made a plan to build the city completely regular, gridlike. So all the buildings would be built with the same kind of materials, streets were very wide. And this was still held till today. Cities in Europe were not like this, they were not a grid like pattern that we associate with modern cities.

They built the buildings with a wooden frame structure that was essentially to mitigate the effects. There is a lot of this in contemporary infrastructure. Taiwan: huge ball in taipei 101, such that the huge ball counterweights the effects of this earthquake. The Marquis de Pombal was practical.

This Jesuit missionary to Brazil: Gabriel Malagrida: I'm going to hand out a passage that he wrote and you can compare how he was judging the responsibilities for the earthquake.

Thoughts: He makes use of theologic language like "are your abominable sins" (responsible for the earthquake) and "necessary to devote all our strength and purpose to the task of repentance". From this point of view; the rebuilding plans was totally wrong, it was just exacerbating the sin and sort of refusing to repent to god, being arrogant. So from those point of views; it is even too difficult to agree on. In his point of view, physical rebuilding is not moral rebuilding; it is not addressing the root cause of the problem.

The Spanish Inquisition; the Portuguese Inquisition: investigated sinners and put them on trials. The Auto-da-fe. These could be for all kinds of sins like heresy, like denying god, like adultery, or for crimes like being Jewish. So this Pombal: the King gave him total power over Portugal, and he takes over control over the Inquisition. This Pombal was so angered by Malagrida who was writing moral texts that he put Malagrida on the stake and burnt him. Pombal was implementing autocracy at the stake of liberty because Malagrida was raising opposition about his rebuilding plans. This was a bad side-effect of the enlightenment.

So take a step back to the more philosophical questions that we had on Monday: The idea of nature and how the emerging idea of natural sciences changes the way in which moral responsibility for disasters is contributed. We read that letter where he said that It wasn't nature that was responsible for the way that cities were built or for the way that people returned to the city.

Kant was trying to incorporate early natural science in his understanding of the Lisbon earthquake. He collected reports on what phenomena was happening. There were huge jets of waves, and from our point of view there may not be evidence of the earthquake, but he was building empirical evidence on how the earthquake came about. So there were thinkers at this time who were facing the natural causes from the sciences but still have the idea that god was at the center of nature.

There was a certain set of causal link; Lisbon went against all of that. The underlying true nature is determined through phenomena that went against philosophy in the past, allowing us to build up knowledge on the true nature of things; but it is not known to us because of the true Lisbon earthquake. There was previously kind of a confidence that we knew something about the divine order. And that there would be some relationship between morality and natural events. Essentially, we know something about what the order should be. Whereas this earthquake was so devastating and went against many of those beliefs that it challenges the idea that we know what the divine order is. Kant is not an atheist, but his point is that what is the natural order? On the one hand, we can't just assume we already know the whole thing. Yet we have the ability to investigate it. We can pursue knowledge about the underlying natural order, but we have to pursue it through the evidence available to us.

He was very interested in the various phenomena that were recorded such as strange waves; some bubbles coming out of the ground in different places. He became interested in such events. Those have no relation to the earthquake, but from the philosophical point of view that the order was something that we already knew to we don't have any idea what the natural order is but these events are the symptoms of that order so we have to study that events.

He had this idea that "We are in the best possible world" but also the world is slowly growing towards the idea of a perfect world. There would be some things that go wrong along the way, but he had this idea that things would grow wrong, and something that was not supposed to happen. The earthquake contradicted that, because it curbed the idea of a world growing increasingly perfect. In general; the world is getting better and better, but the Lisbon earthquake challenged that belief.

Human creativity and recognition was not limited by god but by human freedom. What was happening to moral responsibility here. Shifting the responsibility to human action or human freedom basically. If you look at the author here: Kant's point is that although we are not responsible for the natural processes themselves; we are responsible for the hu  
We are not responsible for nature as such but for our practical and intellectual relation to it. If we see that the natural order and the moral order being divided, we can't blame those natural causes for the harm that they cause to humans.

Another way of thinking about this is: here we have causes, but those causes aren't the reason why it happened, or why it is causing harm for doing so. If we have the emerging sciences, the science is more and more knowledge about the natural world: what is the role of science and technology in identifying moral responsibility for disasters?

We have the potential to know and we have the potential to predict and prevent natural disasters. So prediction and prevention: human responsibility. We need to assume responsibility in relation to natural events. You open yourselves up to prediction in the future, and the detection of things unknown. Kant's philosophy tells us to observe natural phenomena and tells us to get our own explanations. So it is a development of technology and so on. Sometimes you have to weigh what you are going to say, given that we have science and technology. Now that we have a chance to make a choice. Somebody has to make a decision, and that person is making a moral responsibility.

Now that we know that there are underlying causes, certain areas are prone to floods or whatever: Those people who choose to stay near an active disaster, they are also responsible: They depend on those who predict. You could blame different levels of the hierarchy. If it is not within your capacity to make a choice or to move out of your location; you are not to blame. We have the idea of human freedom, and we are returning to Rousseau where human freedom has produced inequality. In effect, you have slavery as an extreme example. It is not a complete elimination of freedom while some people have much more freedom. How that effects the responsibility of certain vs others because some people are not going to move out.

We are going to raise the idea of what could be called the social and classic sociology of determining the different classes and statuses of society: who is going to be more affected, who is going to move

out of the way of harm of a disaster. In no situations is there social forces where people are restricted, unable to move out of the way of a disaster. So we can look at the another level where there are humans in general. If it is social class that determines who is affected by a heat wave, who dies and who lives; who is responsible for that.

Climate Change science makes us all responsible. It is in equal because some countries pollute a lot more than others. That has raised awareness about how humans in general. It also traces to a certain area as being more vulnerable and responsible.

# Monday

Monday, February 12, 2018 4:36 PM

Durkheim: The methodology that he is presenting here is closely related to him. Suicide: The social structure shapes who commits suicide and who does not. It is not something he traces out in individual stories, but mostly through statistics and what we could call the structure of the society. The way that society is organized.

Here, Eric Klinenberg, he's talking about a heat wave in the 1990s. As he says, after this heat wave, a lot of people got sick and died. What was this heat wave that was so significant. One way is by looking at the meteorological phenomena. It was a 'slow-moving, hot and humid air mass produced by the chance occurrence at the same time of an unusually strong upper-level ridge of high pressure and unusually moist conditions'. What Klinenberg asks if this sufficiently explains why this heat wave turned to a human catastrophe. You can't ascribe it to conditions; there were conditions necessary but not sufficient in making it a human catastrophe.

So one way we can look into this is through one of the sociological tools he is using in the book, which is excess death. What do I mean by excess death? Basically, this is something produced by epidemiologists to chart comparative death rates between particular days versus what you expect to see in that day. It can be used in a number of ways. On the one hand, it allows researchers to identify when an event takes place.

This chart is showing that compared to the expected number of deaths compared to the 14th of July, you have this excess number. And you'll notice that this is a separate chart with heat-related deaths, which correlate with that but not completely identify someone who died of heat as compared to other causes. It's better to use excess death rather than a specific indicator because it is hard to identify the specific indicator.

Like flu. There would be an excess cases of pneumonia or deaths. The other more interesting thing you can do with excess death is to identify relative risk and vulnerability: use the deaths as a comparative sense between two different groups. That is what Durkheim does in Suicide. What he shows is that Protestants in many different countries had a higher rate of suicide than Catholics. People with higher education have suicide, more men than women. He doesn't assume anything about the reasons; but compared statistically who had excess deaths or mortality. Educated people more than lower-educated people. He goes from there to identify what the causes that might be. So that's the move from statistics to the structure of the society.

What is in the sense common in Protestants, white collared workers and higher educated people. All of them are what he calls egoistic structure: it means that not integrated in a society (the more bonds you have with other people, like a small village has high levels of integration and a city has low levels of integration) and regulation (low means there's not so much rules). The difference between white and blue collar workers have blue collar workers working in a factory, with regulated work and many colleagues. White collar workers tend to work in their own office. They have a lot of freedom to set their parameters as to where they were working. So white collar workers would have low integration and low regulation.

The main point here is the method. The method could be used in the same way to talk about natural disasters like a heat wave. Beginning from a statistical standpoint, asking which of those groups have higher death rates. We try to understand about the structure of those two groups that would explain why the death rates are so different.

Klinenberg summarizes by describing the impact of the heatwave as being the biological reflection of social fault lines. It means that the difference in death rates between these two groups. And when the heat wave comes, the part of group dies and another doesn't die, that's a biological reflection of that social fault lines. What is a particular fault lines.



Elderly: Those who are elderly tend to die more excessively compared to younger counterparts.

Race: African Americans die more often than whites and latians

Gender: Men suffered more deaths than women.

We've already indicated that isolation plays a role here, especially for the elderly. African Americans live in a more violent part of the city, and violence and crime led them to stay in their single room flats. For cultural reasons, men lead isolated lives with few social networks.

In particular, with the elderly and race dimensions; that there are specific conditions of the society there. My question to you is that if there is a heat wave in Singapore, what would be the regions. Older generations. Geography. Income groups. If we are thinking of a heat wave, how would that play out? Gender?

If you have this concept of social fault lines, you can also look at which social faultlines exposed depending on the kind of even that biological disasters happen.

Second sociological tool is the social autopsy. They are taking a recently deceased person and trying to identify what the cause of death was. A social autopsy is using the opportunity of a disaster, trying to investigate what is it about the society that contributed to making it a disaster. He's drawing from Durkheim here in the end. It means treating society like an organism.

Why should we study extreme events like natural disasters? Aren't they atypical or abnormal and therefore we should ignore them? A social autopsy is more useful in an unnatural death because if there was a natural death, there is not as much digging. Why might it be important for autopsies because most people don't do autopsy in those who die naturally. Often actually, we learn about how things function when they dysfunction. It might be clearer to see how an organ fails from the situation.

You need to identify what made it a crime. Was it natural or illegal. In terms of attributing responsibility to death. In a natural death, we can go to our conversation last week. The Azande calls death to be unnatural. But for us natural deaths we don't try to find moral responsibility. But we identify unnatural deaths to ascribe blame. There was more deaths expected. What methods could be used in a social autopsy. Klinenberg is quite disciplinary. He did some field work where he goes to the neighborhood, and uses methods from several disciplines. So going back to that how social autopsy aims to identify and is particularly important in the case of an unnatural death. Let's take a step back and discuss for a few minutes would Kant or Rousseau agree with the social autopsy? Why does it do so?

If social autopsy able to identify conditions which led to these unnatural deaths. So who or what is responsible.

Blame:

1. Frauds Taking advantage of elderly
2. Media: crime society leads to fear
3. State of local government: SROs: a lot of them were taken down and those that were state-supported and non state-supported. A lot of them were taken down under government pressure. If you look at that kind of situation from the normal times rather than the disaster times. The older SROs were pretty bad condition, run down. They were privately runnin. Often they are closed before they can say anything else.
4. People who used air con
5. Poor planning: reduced the pressure in the hydrants. Some people were using portable society.

They want to seek out help.

Here's what he said on Page 11: The deaths are biological reflections of social faultlines> For which we ensured that we are not possible, whereas these deaths were not feasible to look at. Different aspects of the local response was not very accurate. The media supports certain kinds.

What is the implication if we are responsible: how can we built up the logic? It's not really me because you live in a certain way. Even if we are not participating in a specific way. The premise that he is basing this on, is that society is a human made phenomena. Society is not being born. The way

society organizes is made by us. How society is organized it. It's not just one person who needs to set this aside.

Pg 33: He mentions about this symbolism. Another actual specific area of societies that identifies. Why are letters obscure? It has to be understanding that certain methodologies of researching, it will disregard all situations of this

Pg 32: There's no specific person. This event is a sign of social breakdown. There's somebody wrong with society which cannot be blamed by one person like the mayor. IT is too short-sighted.

What are the factors of isolation:

Change of community (aging in place) : policy goal is to age in place rather than moving to old age homes. This is an interesting case because the neighborhood is changing so much that it doesn't maintain any community.

Trap of crime: She arbitrarily imposed isolation because of the media reports of crime. These are both social things.

The building which is a walk-up to the third floor. There is some material aspects of the environment.

Health problems like incontinence.

Social Case Worker: She has no reasons to leave the house. Some elderly support services but in that case that's also increasing her isolation because she is not going downstairs. People who rarely visit her. The children are the main link for elderly people. They are probably not living in that city if anything else. There is a culture about autonomy. People live with their parents as they grow much older until recently. There is a culture about wanting to be autonomous.

There was no redesign of the building to facilitate bonding. Furthermore, there was safety reasons for staying on the third floor.

Klinenberg said that there were many books about aging positively but he criticised them as the exception rather than the norm. He says that women like the above tend to leave isolated lives instead.

# Monday

Monday, February 19, 2018 4:34 PM

What were the most crucial factors: Isolation of the elderly. Social isolation was something we identify in the Paris heat wave and the Chicago heat wave. We are refining our understanding what it means by social in social autopsy. Klinenberg starts this chapter with risk factor survey. There are a lot of epidemiologists: who went to Chicago after the heat wave to try to understand the factors. The method that they use was that they paired decedents with survivors who lived on the same street.

Case-control study design: which risk factors distinguish those who died. Cases of people who had their condition; controls that those who did not. So can look at the factors that can be associated with factors and not with controls. For example, people who would be diagnosed with cancer and those who were not, and compare the two to find the different kind of risk factors; like smoking or workplace environment. Alcohol, genetics and which are more common in the people who have that cancer. So you can see that those that are familiar from our conversation: risk factors.

These risk factors were people who did not leave daily; had a medical problem, were confined to bed, lived alone; or lacked air conditioning, lacked access to transportation and lacked social contacts nearby. But Klinenberg makes an interesting point here; what is this population study blind to. Of course it bounds this risk factor; things like having a medical problem, people who don't walk well, who don't leave everyday; creates the social conditions that people who die and who do not. But what are population studies blind to?

What about its design? People who compare against those who live on the same street. He doesn't account for different streets. Because of the way it was pairing people in the very design; it bracketed out certain differences which lend to different interpretations; it makes it impossible to look at spatial differences in its subjects. Why would this lead to not studying the 'social'. What he's arguing that these population risk studies gives information about risk factors that are attributed to individuals. Those individuals who own air conditioning or not; individuals who go out each day; all those risk factors are attributed to the individual; it brackets out the differences between streets and individual and these are attributes of the social environment.

He does his own case study but compares two neighborhoods instead of studies. North and South Lawndale. This is north and south Lawndale. They are close together but one had high death rates and one had low rates. One that speaks out differently is that North Lawndale is 96% African-American, and South is 85% Latino. North had 19 heat-related deaths (40 per 100,000) while South had 4 per 100,000.

Maybe Latinos had biological difference. More suited to hot weather. But there was no scientific difference to back this up. There is no scientific metabolism. Both Africans and Latinos came from very hot climates. Southern US was also very hot there. In addition, Latino isn't even a race. Many anthropologists argue that race is not real biologically, and Latino is not a race. There are black Latinos; they immigrated from a Latin American country. Maybe there's a cultural difference. So people argue family ties are closer due to their culture.

So the same African Americans had very strong family ties. So people talk about southern culture which is very family oriented.

So Klinenberg argues that it comes from the social environment (Ecological characteristics of the neighborhoods and the social morphology of the neighborhood). Ecological: spatial and temporal relations of human beings as affected by the selective, distributive and accommodative forces of the environment. Social morphology is the social environment, the form they assume in settling across the land, the volume and density of their population, the manner in which it is distributed.

He argues that social ecology of a community area is the foundation for local social life, the soil out of which social networks grow and develop, or alternatively, wither and devolve. He's trying to argue that social isolation is a characteristic of the neighborhood which makes social networks grow or unable to exist. What are the differences between North Lawndale and South Lawndale?

North had low population density while in the South there was a high population density and heavy commercial activity. He mentioned the majority of the owners in the South being home owners while in the North, they had tenants as the primary residents. In the north, there are abandoned spaces while the South had no space for anything. There are no vacant lots there (linked to high commercialization). There's a lack of decent food stores; a nutritional problem. Crime exists in the South but constrained in certain areas; but drug dealing and high crime rates in the North. Because there are abandoned buildings, streets are bustling with activities. You don't need to have heavy policing or survey cameras.

There are larger churches in South but churches in the North are more dispersed. It is an outcome of the fact that this is a Catholic area while the North is a Protestant area, with many different ones and in the US, many of them can get to be very small. Because they divide off into smaller religious groups. Many who are equally religious in the North may be participating actively but in small churches which are not economically linked. The Catholic churches are interconnected and able to mobilize resources easily. The existence of people with high level of social networking; Klinenberg are arguing that these are not individual features so much; it's not that people were really good at making friends versus people are more isolated or abrasive; but actually grows out of these neighborhoods; that the ecology of the neighborhood shapes condition where you can have a lot of social networks or conditions where you can be very isolated.

How did it get to be like this? Why is it North Lawndale is so devastated where you have overgrown roads while South Lawndale is such a vibrant place? People tend to rewrite that back to the population; where Latinos have this neighborhood while Blacks have this isolated neighborhood? Klinenberg says that North used to be what South is like that now, and we can look at how it became "bombed out".

Initially, North was booming, but people started leaving. But because people had left the neighborhood without replacement of population, by 1970, 75 per cent of the businesses that had been in the area were gone since 1950, little to no economic growth.

We went beyond looking at the isolated risk factors as well as displaying the two differences between the neighborhoods (isolated risk factors) and gone beyond explanations due to race (biology) or culture. We have also gone beyond simple explanations due to poverty alone. If it is not like race or culture in those individual factors, what makes the difference in between these neighborhoods. So the interpersonal relations in the neighborhoods. But he is arguing that this is some sense an outcome. So that is like the outcome of the social ecology. So the structure of the neighborhoods is social; the sense of social he's getting at is different from the social networks. Social networks is the outcome of it; maybe you can say that the structure of the neighborhoods are shaped by the people who live there. Like in the North; they had the economic livelihood; that made the environment what it is today, and affects the current community.

Structure of the neighborhood is the social process. Change of the economy which involve the movement of whites to the suburbs, business owners moving to the suburbs and gave opportunities to the blacks there but over time, the factories were moving away. It had something going on with the cities on the larger scales, and changing opportunities where wealth is moving around, and that produces the ecology of the neighborhoods.

The social ecology is made up of these features, but these features are that way are because of larger changes in the society.

# Thursday

Thursday, February 22, 2018 5:03 PM

The core concepts that we will be looking at today is Social Ecology. What were some examples that were considered crucial about the North Lawndale neighborhood that contributed to the impact.

Vacant lots and unkept streets where there was higher crime.

Lack of decent nutrition which was contributing to people being more unhealthy.

Unemployment leads to increasing crime, decreasing number of younger people, and increasing isolation

Religious: South has Catholics and dispersed small communities with less interaction in the Protestant North

The kind of vibrancy in the neighborhood.

It has so many shops and street vendors. So the argument he was making was that these aspects underpin the social networks. That gives rise to the shapes of the social networks. A community is either integrated or isolated. So that's how we understand the elderly were isolated in that neighborhood. That is what leads to the heat wave yes. It's not enough to go to the structure of the social network, you need to go back to the social ecology.

One of the main points he makes is about government services. He suggests that there's a lot of focus on response to this kind of disasters. Governmental response, aid provided after disasters, those things are important and not incidental to contributing to heat wave deaths. We can also look at what happened to government services long before the heat wave. The biggest one being that Puerto Rico is a territory of the US, it is not a state. They may have representatives, but they don't have senators and can't vote for the President. Their political power is low.

If we go back to Chicago now, what are some ways that government may have contributed. There were budget cuts to the government services including the emergency services and the kind of social workers in the neighborhoods. They want the police to be the ones taking care of the elderly aside from their policing work, and they were too busy. The police were arresting people all the time, they didn't have time for anything else. So there was immense stress put on the police work. The police were taking on that role of social work. It is framed as community policing, but the problem is that most police are trained for crime control; not for extending to social services. In the neighborhood with a high rate of crime, there are people occupied with crime control.

In my own experience; police are quite scared because a lot of people have guns. The police are the only ones who have guns, but with countries with everyone had guns, police are afraid. Government services in the way that government services are designed contributed to the social ecology, the isolation of the elderly. Given this social ecology, government services should be designed to moderate the effect of social ecology. There's two things emphasized about the budget: Singapore becoming like a smart nation, so what is a smart nation? Adaptable and technologically advanced. It is able to incorporate drastic changes that are happening like robotics, and slightly less science fiction things. There's a real push to rebuild the city as a smart city, through technological change. There's a huge emphasis on the aging society. Demographically, Singapore is now increasing the population of Singapore over 65. They've reached some critical point.

# Monday/ Normal Accidents

Monday, February 26, 2018 3:20 PM

He's looking at this technological systems and catastrophes. He will be looking at it from a sociological point of view. It's not so much a question of this part or that part breaking down.

## Accidents are normal

"No matter how effective conventional safety devices are, there is a form of accident that is inevitable." You can't make better safety devices it doesn't matter. So what I would like you to do now is to define a 'normal accident' and identify one example.

A **system accident** is an "unanticipated interaction of multiple failures" in a [complex system](#). This complexity can be technological, organizational, and is frequently both.<sup>[1]</sup> A system accident can be very easy to see in hindsight, but difficult in foresight because there are simply too many different action pathways to seriously consider each of them.

From <[https://en.wikipedia.org/wiki/System\\_accident](https://en.wikipedia.org/wiki/System_accident)>

Charles Perrow also termed system accidents as **normal accident**, because given the current level of technology, the occasional such accident is highly likely in the long term. In 2012 he wrote, "A normal accident is where everyone tries very hard to play safe, but unexpected interaction of two or more failures (because of interactive complexity), causes a cascade of failures (because of tight coupling).

From <[https://en.wikipedia.org/wiki/System\\_accident](https://en.wikipedia.org/wiki/System_accident)>

What are the features that we can use to highlight: Reduce chances but never eliminate [ non-zero ] The reason that you can't affect it is because of the multiple components that interact, and you cannot predict how they would interact. It is the property of a system, and the introduction says that we can call "system accidents". The other terms he talks about is the complexity of the interactions and the coupling. A normal accident is not the property that breaks down, but system that causes the accident. What are some examples people can see: MRT (individual operator, they have someone remotely operating it. Or was it the french software design that simulates system. But no one could identify who was solely responsible. If it's something you can't really say. If this person is really responsible then it is not a system accident. In those kind of situations, it is inaccurate to pin the responsibility on the designer.

There's a degree of severity that it must hit, affecting the end goal

This example is the Three Mile Island Meltdown. Which happened in 1979. In that case, who is blamed. The president's commission to look into what caused the accident to take place. The three operators had made a mistake by leaving the valves open. At the first level, we can't blame the designers or the operators, but the complexity of the system as well. The coupling and the catastrophic potential. Later at the end of the class, we will discuss who is responsible for an accident to take place. Not immediately clear to blame the actors involved; it is not the whole answer for Perrow because you can't isolate responsibility that way. Is there responsibility at all then? We can question.

The illusion. Gestalt image.

"Seeing is not believing": In complex industrial space, and military systems, the normal accident generally (not always) means that the interactions are not only unexpected, but are incomprehensible for some critical period of time. We see what we expect to see: difficult to see what you don't expect to see. Our perception is shaped by social cultural factors. What we see happening in the control room of a nuclear power plant, it is difficult to see what is completely unexpected to see. We must believe before we can see (social/cultural perception).

The roots of what Perrow is doing in this book is using the idea of systems and arguing that what we see as large technological systems incorporate both social-technological aspects. A nuclear plant,

you can't just think of it as being hardware, but of the whole organization like the technical hardware. So as you can see, this is the field that it began, began with studies of factory workers and again looking at how a factory is a technology that was designed to input parts and make output. There's machine involved, and human labour; so how do you organize human labour in relation to machines to make output.

Taylorism was this theory of dividing humans into this motion and analyzing which motions are to make a product with a tool you have, how you make this motion efficient as possible. Essentially it was analysing humans into components, which of these are you trying to achieve. The broader concept is what is the interaction between this machinery and technological organization. So also in this idea of systems, you can think about how using the concept of systems, there are different scales and properties, we can use similar ideas to talk about these kind of things. For example, a feedback loop, we can talk about the human heart works how politics work. These have different skills and different kind of things are involved in them. You see that that is crucial to how normal accidents work. You can define the scale as being a city or a automobile.

They can be understood as these social technological systems.

### Perrow developed three key concepts

These concepts are like the tools that analyze what operating systems are. What are the properties of systems that will give rise to these normal accidents. Why don't we divide up what are key.

Complexity: Linear subsystem. Like a Fordist production line. In those pictures of the early 20th century, people are moving in a linear action and people are doing it in the same order.

Complex: Each of the operating systems is acting concurrently and interactively. One component is attached to many other cooling systems as well as other subsidiaries such as motor. There are feedback loops with interconnectivity. It comes with a degree of complexity. For example a coolant for the nuclear power plant function in multiple ways at the same time. A university is complex because the research part and the teaching part are different functions yet they interact all the time.

Water is pumped around the reactor. The heat generated is used to generate energy. That generation of energy encompasses some cooling. There are multiple things happening at once. What about the second really direct part of the system which is the coupling. Coupling can be tight or loose. The degree of one component with another; with tight components, the failure of one will reverberate throughout the system while a loose one has changes in one part that may or may not affect other parts. What is an example of tight coupled system.

They are tightly coupled (bus strike and taxi) because when one happens, it will be hard to get a taxi. What about a loose coupled system? How about projects. Grades in a class that will impact things later on.

How about catastrophe. He doesn't really define this term. But he talks about different levels of victims Like the first stage is those directly involved in the system, second level is those who are involved but are not involved in the operation. Say first are the crew, second are the ship. Involved in system but not in operation. Third level is the bystanders; ship crashes into beach. Fourth are future generation. Unborn future generation affected by the ship crashing. What are these different levels of environment? How are they involved?

Now they are considering the fourth level like scale of disasters can affect beyond the first three levels of victims. They are able to impact down to level 4, future generations whereas older technologies maybe cannot. What about different terms of involvement? They are less and less involved, but what are the consequences. What I'm getting at is that there are some knowledgeable participation in the risk. The risk is greater and gets lesser and lesser. They know about the risk and have to be taking on that risk as part of their practice or work. Those who are on a boat flying a plane as passengers, they are accepting a risk. Future generations have no ability to be involved in the world while bystanders have no idea.

To Perrow (didn't say what are others) but to him, accidents three and four, they are the kind of

systems that are worth discussing and debating about. Safety devices add a new layer that in addition to having this process happen, you are monitoring this process, that monitoring device is producing a signal. This device is both monitoring, and any of these systems going on. Characteristic of the accident that will lead to these kind of normal accidents.

Important point: Not one chance in a million, but one chance in a decade. It reduces the chances but can never eliminate. It will never reduce to zero. He praises this in an interesting way: The occurrence is not one in a million but one in a decade. The first is a probability characteristic, a calculated risk assessment and this incident might happen. That some part will break down and you try to reduce the probability. Last week when we were looking at the sociology of the heatwave. We go from probability to what are risky situations. Risk factors are statistically associated with deaths in heat wave. To reduce heat wave deaths you try to reduce those probability.

Perrow says we shouldn't think about statistical ways. By saying once in a decade, although the chance at any moment is very low, we have to think about this incident occurring?

Chernobyl happened in 1986. Fukushima was maybe bigger? But Russia was in 7 years. The complexity of interactions: the water that is being used for pumping through the turbines and being used for other purposes in the same time. So not enough steam being produced, so they raise the temperature, not enough water, so there was complexity of the parts that they were trying to manage. The explosion affecting innocent bystanders. The timing of all those parts and causing those signals and we react in a linear fashion. What is highlighted in the Three Mile Island had all those things going on at the same time and how would you interact to that? We should have reacted; but it is quite difficult to kind of react in a linear fashion to all those things reacting in a complex fashion. It's a good example where a lot of people say it is operator error, and maybe the Soviet system was getting run down at the same time. A lot of people attribute conditions to it.

Last thing to talk about: Are there technologies which, even though we can develop them, we shouldn't use them? How would we determine if this is the case?

Whether its operators or designers or builders; instead, the responsibility for these incidents is to take a step back and consider if we should develop these technologies or not. In a group, can you discuss that we can develop them, but we should not



# Thursday

Thursday, March 1, 2018 4:39 PM

Tohoku Earthquake: Fukushima Daiichi: Commissioned in 1970s. 6 Reactors, 3 operating at full power

After the quake, the reactors began a controlled shutdown and reduced any chance of there being disaster. Off-site power were lost due to earthquake destroying power lines. The power plant was dependent on Emergency Diesel Engines for power. One hour later, the Tsunami came. Fukushima Daiichi had only 10m breakwater as they were only expecting typhoon. Emergency generators were destroyed by Tsunami. Fukushima Daiichi unable to determine reactor system failure.

How we see the triple disaster as the normal accident? What is the system making up of. We have the surrounding communities, Fukushima and external forces. The complexity of the system involves the Nuclear Power Plant. It had highly complex technological and social systems. It requires a huge network of communication. And this network is used to manipulate high level of input. The management of all these loops and inputs requires this huge amount of complexity in the system. On the map, we see that there are quite a few towns located in this radius. What this radius defines is an area which should be evacuated if there is an energy accident. We can see that quite a few towns would be affected and will need to be evacuated.

This is the link between the nuclear power plant and the surrounding communities. Then we see the seismic activity of the earthquake itself. Despite having a huge impact on nuclear power plant, other areas were affected by the combined earthquake and tsunami. We see that not only will all levels across the system would be affected by Tohoku, other components of system would have a complex network of communication lines to handle the situation. In addition to their already complex nature: leading to higher chances of error happening.

We look at the coupling of the system. Fukushima is situated near open waters, and the surrounding communities were located around the power plant. There were chances of the earthquake and tsunami happening at the same time and very high. There was little room for error.

Triple Disaster as a catastrophe. For nuclear disasters we have the INES Pyramid. Logarithmic scale determining the degree of disaster, ten times more dangerous than the previous one. To give you a bench mark, level 4 is the release of radioactive materials with one person being affected by material output. Anything below level 4 is incident, above level 4 is an accident. 0 is the deviation from the norm but not affecting operation.

There were 0 radiation deaths (short-term) and miscarriages/stillbirths and physical disabilities. The projected cancer deaths were estimated from 130 - 640. The Evacuation condition deaths is the major contributor. Japan has an aging population, and when the elderly were uprooted from sedentary lifestyles and they succumb due to death. 50000 homes were displaced by contaminated area evacuation.

The ironic thing was that relocation was unjustified for the 160 000 people relocated after Fukushima had everyone instead stayed at home and remained under cover. NAIIC (accident investigation) chairman said that it cannot be considered a natural disaster.

Assigning blame: TEPCO denied (plant operators and owners of the plant) blame as they took sufficient measures. NAIIC saw three failings: Poor management of drills and basic safety, slow reaction to disaster and poor adherence to international rules.

Link to the Lawndale Heat Wave. Ecological Characteristic: Amakudari: senior bureaucrats retire to seek out best companies from the people they are overseeing. You will be biased to those companies you might join afterward. There was anti-nuclear sentiment around that time. Tepco

feared implementing accident measures would exacerbate public anxiety and add momentum to anti-nuclear movements. Their stubbornness led to more fallout as more anti-nuclear sentiment spread across the world.

The world: set up new safety standards. PARS: a system at the end of your process: does not increase complexity but reduces degree of danger because discharge not as great as before. FCVS reduce danger from hydrogen explosion during nuclear disaster. The first point measures does not increase complexity but reduce catastrophe  
Shift to alternative energy: Offshore floating windfarms. Robotic advancements: work with US to reduce human.

## Teacher

Many people have no idea how it works, unlikely to make it very accurate decision on whether it is safe or not. Not to say disagree, but also have to think on the fact that there are many in the country who are exposed to the risk. If a bunch of scientists who are deciding, but the guys who don't know about and didn't decide would be exposed to higher level of risk than others. There's also about who is being exposed.

There's not a very easy answer to this question but is crucial to high risk technologies as there is a discrepancy between those who are knowledgeable about the technology and the decision-makers who want to use this technology and those who are accepting the risks of using this technology.

Everybody thought Japan had the safest equipment, that they were not going to have a meltdown. Their operation standards are really high, the Japanese would be better than the US. They were proud of the fact that there were small, few accidents that the Japanese knew about. This is a quote from a sociologist professor "We generally believe that nuclear power plants (especially Japan's) are robust) .

They had tried to design it to be very unresponsive to changes that would create variability. So the plans were very consistent. So what went wrong?

The complexity that you were indicating : what's really interesting is how the earthquake affected this system at different levels and caused the disaster to happen. Earthquake led to the Plant Shutdown (procedure in response to this disaster) and it takes a long time for the reactor to shut down. It takes a long time to go down and need to keep cooling it in the time period. But the main power system had a blackout; due to the conventional system down, their emergency generators killed by tsunami.

So usually when you think about a system, there is like a system and the environment of the system. How would the system work in relation to the environment. One major vulnerability is that they are reliant upon the ocean as the major heat sink and coolant. It had to be built close to the ocean to keep the water going through the plant, but that was the main vulnerability. One thing that we are interested to think about how to plan and design the environment to itself, so how to integrate the environment and risk of catastrophe to that design.

Nothing could happen here, right? Petrochemical industry is the interesting thing. There was a small chemical leak, nobody was harmed, and then there was this Tuas explosion in the chemical facility. Air quality was in normal range. There was no toxic release in that incident. So Singapore was the 7th largest exporter of chemicals in 2015, 1.5 million barrels of oil refined per day. 34% of our industry.

The next week's reading is about the Risk Society. That book is talking about how in many societies like Singapore, we are wiggling in close proximity to high risk technologies. It is not just technological change but change in society, that is accompanying that issue.

The questions to think about is:

How is risk distributed in the risk society?

How does this distribution differ from how harm was distributed in the Chicago heat wave, i.e. distributed by what Klinenberg calls the 'social ecology'? Who is responsible for disaster in the risk society?

Who was not vulnerable and vulnerable may not be distributed in the same way. How does this change the form and structure of our society. We can return to how that responsibility is being changed to this risk.

# Risk Society: Monday

Monday, March 12, 2018 4:36 PM

Modern Social politics: we can't talk about the beginnings of modernization. A lot of modernization has happened, and that's what we would need to think about through social theory. All of modern social politics was defined with the problem of scarcity: there wasn't enough production and food for society.

The objective of modern society was growth. For production. However, you can see that it seems like not sufficient for understanding the situation. Second objective was about distribution of wealth. There were political struggles over failures to achieve fair distribution of wealth; or the lack of wealth.

Science and technology allow mastery and control of nature to increase growth and productivity. We talk about how the new kind of mastery over nature through science led to a relationship between human nature. And we could give you an example of the 'Green Revolution'. What the green revolution was a couple of different grains and rice, scientific research was done on improving the cultivation and yield of rice. IR 8 produces a lot of rice per plant and very short because plants that are shorter don't collapse so much. Now they were focusing on these seeds, but not just about seeds because they did in a university setting. They use fertilizers, certain kinds of irrigation and pesticides to remove tests. The uptake of productivity from fertilizer is very high for rice, but not necessarily true with other crops.

So you can see someone tending the field. Spraying pesticide. Using science and technology, human artificial techniques replace the natural context; what are the things plants can get from the soil? You can substitute with technologically produced fertilizers. You can make it a space with no pests with certain kind of chemicals. Again, this is important because with these high yielding varieties, they need fertilizers. They are lower compared to traditional crops with no fertilizers.

There are other things that came with the green revolution that worked. We have increased production in terms of goods and other kinds of goods. But there had been other consequences that came with that. 'We are not now in advanced modernity, where the social production of wealth is systematically accompanied by the social production of risks. Accordingly, the problems and conflicts related to distribution in a society of scarcity brings about greater risks" Pg 19, Beck.

There were a lot of consequences for human health, environment and other things. Certain pesticides have been linked with certain kinds of cancers. Each group identify one characteristic of the new "risks". What distinguishes it from older problems of scarcity or poverty.

Health Problems

Greenhouse Warming

Reliance on Economically strong countries

Personal Risks vs Global Dangers

Perceptible vs Chemicals that you can't see (imperceptible)

Undersupply of hygienic technology vs overproduction (using up resources) overconsumption of resources

Local vs All forms of life at risk

What characterized this risk that is different from the society of scarcity? E.g. Toxic air, which can be invisible. Transboundary: Those that are rich as well as poor. Transgenerational as well. Evidence that it is toxic is not known until many generations later.

Point 1: The risks are consequences of modernization

The past, the hazards could be traced back to an undersupply of hygienic technology. Today they have their basis in industrial overproduction...They are risks of modernization. They are a whole sale

product of industrialization and are systematically intensified as it becomes global.

Criticism: you want to go back to chamberpots! Now when we drink the water, we know that it isn't poisonous.

Distribution of the risks does not follow the poor, the powerful and the non-powerful.

Point 2: Poverty is hierarchic, smog is democratic (36)

1) Globalization of risks

- a. Smog doesn't stop at political boundaries
- b. When food is contaminated with pesticides, everyone eats it
- c. A policy of making the Earth uninhabitable"

It doesn't matter if you are rich or poor, you have access to the water and anyone who is drinking is exposed. It would not be just the poor. Poverty separates the two classes of rich and poor. Smog is democratic; who is affected is not based on this kind of class hierarchy. This is the counter-argument: One is that the rich can escape and their exposure is going to be less. The rich may have access to better health care. NIMBY: Rich can influence the government to move a toxic waste dump away from a wealthier community. It shifts the risk back to the poor. Or move it into another country.

What are the ways that you might say that it is not so clear that the rich can escape. If it is a nuclear fallout, you are still exposed to radiation. The short amount of time you are exposed. We have to think about the types of risk. That make it such that they have a democratic risk effect. That's why you are looking at nuclear radiation disasters. Hazard differently from like a famine. A famine is a traditional disaster that might happen and the poor are more affected, but the nuclear radiation disaster is more effective, the rich are as likely to escape.

There is a globalization of risk, some of these things like climate change which are in the short term: rich are not affected by pollution but may be affected by global disruption. It means that the rich cannot escape ultimately. Many things that we now know today are risk. One is DDT.

No one knew that DDT was harmful to health. Of course rich people are going to avoid it. Another is asbestos. They were prestigious things to have and rich people wanted these technologies; then it turns out that it is bad for your health. We produce them in very recent times. And knowledge we collected is less than the amount of things around there. What I am trying to show here, with this Fukushima chart is the way that the radiation spread. How hazards were actually distributed didn't follow rich vs poor or any kind of regularity of different zones of risk beforehand. Which are circles from that site. These areas were ready to have impact. The kind of risks distribution, when he says democratic, but how the risk is distributed is horizontal, not hierarchical.

He often describes the boomerang effect. How can we compare with Marx's theory of capitalism and inequality of wealth. "Sooner or later the risks also catch up with those who produce or profit from them". In the manifesto, Marx actually says that the bourgeoisies are their own grave diggers, because they create the proletariat that overthrow them. But Beck is saying that there would be a revolution, but the risks that are produced by this kind of toxic things, that would come back to you.

Many people criticize Beck over this. The rich are able to escape and there are more effects on poor people. He mentions a few of these examples: The location of very polluting factories in poor parts of the world. There was the Bhopal chemical factory disaster, which was a case of where the kind of production happening was located there because of the local operating costs.

Point 3: Risk perception and definition

One of the main sociological consequences of the invisibility of risk is the "conflictual pluralization and multiplicity of definitions of civilization's risk" Different people have different perceptions of what is going on. Some people think that vaccinations might cause autism. There may be a causal relationship. Most scientists say that that is not true. Still, there is a very serious risk and will keep their children from getting vaccinated.

Debate: In modernization, science and technology are tools to increase growth and production,

improve life and society. Technological design to make technology more specific. Duty of people to understand if the risks were there. People have to study things more carefully to understand the risks.

Modernization risks are "knowledge dependent" You need to prove that this chemical is harmful or not to human health. The modernization risks require the sensory organs of science--theories experiments, measuring instruments -- in order to become visible or interpretable as hazards"

Why do you think Beck argues that there are no experts on risk. You said that if one clarifies that risk, people can understand. Why do you think scientists can usurp the title of risks. We assume that everything is broken down to scientific assessments, but some might be not relevant. It may not prevent risks in the future. You are unable to prepare for future risks, but remedy the problem that is occurring now. There is the social rationality portion, where babies don't die from drinking this milk and you are trying to ignore that. That is a whole like, very non-socially rational way. Things are just statistics. Eventually, those that are small probabilities may not happen in the future.

Two points that we can follow up

- 1) Tangible data sets: not looking at the future but just remedying what's going on.
  - a. When new things are being created, the scientists are the only ones to have the potential to know what it is but at that point they do not know. Because in that sense, they have a limited set of historical experience to identify if it is causing any harm. This is something we will continue to look at in terms of the archive experience to identify risk and the future that might happen.
- 2) No social objectivity in monitoring the risks. If it is all just numbers, we can say that it is not significant.
  - a. The statistics can only give you average causes. I would even say that you were emphasizing where on average it is very low, and you might have an accident. Here we may add that where you draw the line as an acceptable risk is something that statisticians can't identify
  - b. Without the data, we have no knowledge of what the risk actually is but we can make the identification.
- 3) From a non statistic perspective, the concept of risk is all very subjective. Because there are so many kinds of art, how do we clarify what is the best? No one person can know everything
- 4) And it may be linking to the previous meeting about risks between different systems. If you interact with others, of components and systems, it can cause something much more.

He uses the example of: we do a lot of scientific tests, so we can't know it is translatable to humans. But those experiments are done on single chemicals, but what happens if multiple chemicals interacted. Because there are infinite amount of complexities that makes it hard to visualize.

This is summarizing some of these points: In definition of risks the sciences' monopoly on rationality is broken" There is no expert on risk:

- Acceptable vs not acceptable risk
- How do we wish to live? What is human kind
- Uncertainty is real (scientists cannot be certain)

D The not-yet event as stimulus to action: So he is interested in the future aspect of risks as well. What is interesting about is the idea of risk. The idea of risk is the relationship to something in the future that is causing us harm. It is the future potential of the harm. So we are trying to understand something about our society today. Our society is very oriented towards the potential of events. We are acting about it today. The future of risks.

We start thinking about Marx and the politics of scarcity. Where he was thinking about a hierarchical society, with certain kinds of politics. There would be different kinds of politics about the risk society. This is a picture from Japan, about the nuclear thing

We can summarize this way:  
Industrial Society

Proletariat, exploited working class was going to be political  
Because the proletariat were affected by industrialization, they were going to have solidarity  
that would lead to the revolution  
Modernization

#### In a Risk Society

You have a community of danger: you are potentially affected by the risks. Those who believe that they might. There is always some kind of objective. Those who believe that there would be a kind of community of danger. This would be the anxiety.  
Reflexive modernization

Who is blamed for risks. If you think about pesticides that cause health effects. Say some people who are in the community of danger, affected by this pesticide, who is at fault that they should blame for this effect. Designer of pesticides? The industry? The pests. How about cigarette smokers? Cigarette industry and the smokers.

# Thursday

Thursday, March 15, 2018 4:41 PM

Costs of Haze: 27,000 km<sup>2</sup> of Indonesian forest burnt in 2015

Produced a carbon emission of Japan does in 1 year in five months

We have 500,000 of acute respiratory infection cases in Kalimantan

Eye, nose throat irritation

Asthma Lung Infection

Jusuf Kalla: Clean air that we've enjoyed for 11 months. Thank us instead. Singapore shouldn't be like children.

Economy: USD 16,000,000 worth of losses incurred 2x cost of 2004 Indonesian Tsunami. 1.8% of Indonesia's total GNP.

- Affected land, sea and air transport

- Cancelled tourist flights

- Decreased consumer activity

- Businesses shut down

ASEAN Agreement on Transboundary Haze Pollution created in 2002.

Eventually we see that Transboundary Haze in 2013. Why did our haze problem resurfaces?

Weaknesses of the agreement: 2002: One country that did not ratify the agreement in 2002. They only signed in 2012.

Due to ASEAN regulation on no intervention, Indonesia knew that there was no legal punishment against them.

Eventually, we will analyze the causes of the Haze.

Individuals: We have land investors: illegally operate outside the government systems for self-profits. Bring in their own labour without permits. Unknown half of the hot spots in Riau.

These illegal activities are conducted in areas for conservation.

Farmers: Slash and burn method. Sell their crops to big cooperations to earn money

If one hectare patch of land was to be cleared legally by chopping the vegetation, it would produce nearly 500 tonnes of bio-mass. It would take almost 3 years for the bio mass to biodegrade and the land to become usable for agriculture.

Peat Fires: Dry and easy to burn.

Asia Pulp and Paper:

Singapore and Malaysia are using to their advantage.

You can draw a link between the hotspots and illegal land use in Kalimantan.

Government stepping in?

- Local wisdom: slash and burn methods legalised

- Indonesia does not categorize the spread of haze from forest burning as a disaster

- Policies implemented are reactive rather than preventive

- Coordination: This acting head of central Kalimantan agreement does not know about the transboundary haze pact

Environment:

- Remoteness of the area in Kalimantan makes it difficult to sell produce in city areas

- Usage of heavy machines limited

- Burning more economically viable

Climate:

- El Nino Southern Oscillation: Prolonged dry periods over Kalimantan in the positive phase

- Warm water in Western Indian Ocean in Indian Ocean Dipole: less rainfall

- Southwest monsoon causes dry conditions which fan the flames



We have corporations, individuals and government: There's a self-profit mindset. That cause them to act in response to this risk.

Combination of environment conditions and self-profit. You might say that wouldn't the environmental conditions provoke haze? No it is the mindset and manmade actions based on our decisions.

Beck: Third world countries driven to use slash and burn method because of emphasis on material world as compared to European Western countries.

Social Ecology: There is a social and natural history to Kalimantan: There's an institution of State control over Forest 1967. Gives free reign over Indonesia's forests by government and businesses. Encourages exploitation of forests for industry, foreign intervention played a part.

Man-made environment: tonnes of forests free for use, and Kalimantan heavily wooded and isolated Because of the remoteness of this and the ease of being to utilize such technologies, this kind of coincides with social ecology.

### From Instructor

What were the issues related to risk perception? Invisibility? The position of scientific knowledge in our society and how science goes about evaluating this.

The assessment about the health risks; can't make a judgement alone on medical statistics. What does that mean when two people die in Singapore. Consequences on what we prepare to do. What kind of mitigation measures are we prepared to put in place.

But on the other hand

"In definition of risks the sciences' monopoly on rationality is broken". "There is no expert on risk"

The index of PM2.5 and other PSI are made by scientists on an estimation to health.

Because PSI's are indicates to decide whether to go out or not

But they are determined by some scientific group, we don't know what it means

Beck has been arguing for this idea is that what's going on with our society is demonopolization of science. It is not that we are demeaning science, but the assessment of acceptable risk, science cannot offer it on its own. Beck and other sociologists, and people in this area are interested in: there's a lot of new organizations where scientists are working with like political agencies to try to adapt to the scientific knowledge to what is relevant for. Science is no longer to be a laboratory type situation, it has worked with people in society to make the most use out of it.

The next meeting is about the next future and the pairingness of natural disasters

There's going to be a paper assignment. Paper would be about the last two: normal accidents and risk society

# Monday

Monday, March 19, 2018 4:43 PM

What is the problem with the risk assessment? Even though one chance in a million seems low, it doesn't mean that it cannot happen. That part can be attested, some argue that it can be inevitable, but the most important that a risk assessment assuming on the probability that would happen may not be the best way to prepare for accidents

History of Risk Analysis itself: If you go back to the middle ages, where the idea of risk became used as a technology. If you think about it, it connects to our earliest readings about the Lisbon Earthquake. When shipping captains start to think about whether their ships are going to come back or not. There would be ideas about fate or fortune. There might be some moral meteorology determining certain ships going back or not. But risk is a different kind of technique.

How does risk actually work? This is a chart of cholera mortality. The idea of risk is that the future, we don't know what's going to happen, but there are certain kinds of probability we can assess and engage with certainty of the future. How much do you pay for that? We have insurance for many different kind of things. Health, medical and shipping insurance on the cargo of their ships. Does anybody know how insurance works in terms of calculating risk.

The insurance companies are creating different costs for different individuals based on their risk factors. In terms of age, previous medical conditions. You are talking more from our point of view. Something bad might happen, I would protect myself, so I will get this payout. How can an insurance company charge different premiums? Risk is distributed.

They balance the risk by distributing among the population. So the population is key to distributing risk. Think about the chance of a ship sinking or person getting the disease; you are shifting from the individual to the population. Whether a ship sinks or doesn't get sink isn't about fate but has certain kinds of regularities. That means that if we go back to the middle ages and shipping, what people start to realise if this ship doesn't come back or not, but we know the percentage on average that ships can sink. Everyone can be protected against the cost of the ship sinking by distributing risk.

There are certain kinds of limitations into that kind of risk assessment. The first is that it relies on historical or archival. Risk relies on certain probabilities of incidents to calculate future events. Lakoff "The past contains the elements of what is to come". It just means that the only way we can calculate the probability that next year's ship is going to sink or not. We can only do that based on the archive of all of the years and the events and how many ships sank. That can become very sophisticated on types of ships, the conditions of the environments, times of the year. They would always be historical.

Jasanoff "Cannot prevent harm, but promises that no one will have to face them alone and destitute, without any resources to compensate for injury and loss". Second is population, not individual: spreads risk, but doesn't prevent it from happening.

How is risk different from danger? Risk is the chance that some harm might happens, and danger is the level of harm.

Risk is the chance that something will happen, and people talk about how risk is the relationship of something to. You have to be taking an action to take the risk in relation to something, to create the chance that something would happen. It helps to measure different levels of harm. Something that is actually out there could be a danger. For example, Polar bears could be a danger, but not a risk. If I'm taking a trip to the arctic. Risk puts you into harm's way. So there would always be a chance that something would happen. Harm is the thing that might happen.

Pandemic: unexpected

Natural Death : Probability  $\sim 1$

What can we do about uninsurable risk?

What he focuses on in his article is that whereas in the early 20th century, risk and insurance are ways of dealing with uncertainty of the future; we are using techniques that revolve around preparedness. How is preparedness different from insurance. It is prevention (vaccines). How does preparedness work with insurance? You are trying to manage the fallout, by distributing the risk. But how about pandemics?

How is it that, when people try to deal with that in terms of preparedness. Maybe insurance has the same idea of preparedness? Because you prepare for it, you don't lose as much? That's true; insurance is a kind of preparedness. What about preparedness for uninsurable risks. If there are certain kinds of mechanisms against it, it is unlikely to be affected.

The idea is things like training. In how to respond. In the earlier mode; they were using vaccines in the idea of insurance. The idea was to distribute the vaccines to prevent a pandemic. But the pandemic never happened and the side effects of the vaccines were somewhat severe. Elderly people died from the vaccine. Why is stockpiling different from just mass vaccination.

A: Because when you are stockpiling, you assess the risk of the pandemic actually happening. So you kind of prepare for the chance that the pandemic happens but you acknowledge it doesn't happen. So you save cost on implementing the vaccines in this case. We have no idea to identify whether it will happen. You can stock pile in any kind of events. We use the word generic because we don't have enough archival experience to make an assessment that event will happen so there are things we can do now that are useful for all of those things.

In the case of preparedness, the idea he talks about for dealing with the future is imaginative enactment. He uses the scenario of a simulation. A scenario based exercise. You use the idea of what kind of events might happen in the future to produce things like training and how to respond and knowledge on what might be useful as techniques for preparing for the future. So we are going to do one of these.

# Thursday

Thursday, March 22, 2018 4:36 PM

SARS: has flu like symptoms but high chance of pneumonia. China is the most badly hit with 5327 cases. Singapore is the fifth case with 33 deaths. According to the implementing Regulations on the State Secretes Law regarding he handling of public health-related information, any occurrence of infectious disease should be classified as a state secret before they are "announced by the Ministry of Health or organs authorized by the ministry.

The government played down the risk of the disease. As a result, while the panic was temporarily allayed, the public also lost vigilance about the disease. News Blackout ran all the way till April. The governors in power did not take pandemic disease as important. Thought that the disease news could cause panic. So the first hand information was neither passed to the executives nor the public. In Feb 2003, in the rise in severity of the disease, some actions were made . Only in April were there actions taken.

Center of Disease and Control(CDC): samples were taken in February 2003. They had conflicts between laboratories and caused a delay until 2003 April did they decide that main cause was SARS-CoV.

Hospital Response: Medical staff did not wear proper protections, family visits with SARS patients were allowed. SARS patients were not directly isolated from other patients. The virus spread out in hospitals. 917 medical staff got infected. Systematic isolation was done, special hospitals was set up to contain and cure SARS patients.

Overapplied medicine: 5 - 10 times the dosage. Causes side effects like IPF and DNFH. Created depression.

Assess the concept of blame in this disaster: The Chinese Government, Health Agencies, Media and Individual/Society

They all involve the human aspect: The primary cause that we can blame for the severity was miscommunication and lapses in safety measures. There was miscommunication between MOH and Government as while MOH said that there was disease, there was poor delivery of information due to bureaucratic structure. Resulted in delay of crucial info and appropriate responses. WHO and Government: Delays in reporting an epidemic and statistics. Resulted in delayed advisory notices from WHO to international community.

We decided to assess how the media interacted. Media delayed the reporting of SARS. They were under political control. Local authorities dismissed claims, suppressed media from reporting SARS. Resulted in cover up of actual infections and lack of precautionary responses.

Media and Society: Spreading of rumours about purported cures and precautionary measures. Resulted in many improper practices and public unrest as prices escalated.

Lapses in Safety measures: Chinese laboratory/Individual: Failed to follow guidelines when researcher fell ill yet was allowed to work for a month undetected. Resulted in her getting other lab workers and her family infected.

Individual/Society: Poor hygiene practices such as spitting or failure to use proper tools to prevent infection. Arguably resulted in higher infection rates as practices permitted spreading of diseases. Hospitals: Improper practices in medical setting such as lack of masks.

Legal loopholes: Provincial governments are obliged to publicize epidemics in a timely and accurate manner *only after* being authorized by MOH. There was no obligation to report atypical pneumonia. It does not specify how to renew the law. These were disincentives to response to the disease.

Reasons behind the Coverup: Political situation: happened during a transition of political leadership.

Considered economic development impacts of publicity. Stability a prerequisite for economic development. Fragmented government led to slow information. Each official tries to reassure he can manage the problem. Information did not convey full illness on the ground.

From scarcity to risk (Risk society) : Economic Growth was goal to maintain high rate of GDP growth. But Post SARS: response to disease was paramount to stability of country. So they created contingency plans to react to all kind of disease. They held officials responsible for disasters.

### Proper Lesson

No one could have known about that virus because it didn't exist before. We were arguing that preparedness was so essential. The exercise that we did on Monday was about a Flu pandemic, but there could be other pandemics. There would be preparedness in the future.

The limits of preparedness. If you prepare for a disaster that is not realistic, taking resources for something else (the opportunity cost). Can you think about an example of that? Orchard Road ponding.

What you aim for is a generic preparedness. Doesn't matter if that specific event happens, but if that generic event would happen in any kind of event. One example would be the stockpiling of antiviral medicines. Stockpiling things. Those would work against them.

Influenza pandemics are caused by new flu viruses. The one that causes pandemics spread rapidly over the world. Seasonal flu are not like that, they have global outbreaks but they don't have this spread.

In 1970s, research on viruses demonstrated that viruses spread from animals to humans. And the way that humans get these new viruses is not from the virus mutating but the transmission from animals to humans. In conjunction with that, in the late 1970s researchers argue that southern China was the epicenter for that source.

"The diversity of avian influenzas that circulate in the domestic poultry of this region suggests that it is the source of pandemic." It's the way it could cause a human pandemic but there is no idea whether it will take place. It is about the future that is totally unknown at this point. Because of plans for preparedness, if there is an outbreak of these disease, a huge amount of government investment has gone into controlling viruses. Mostly by killing all of the birds on that farm or neighboring farms. We have no idea if this would cause a human pandemic, but because of the possibility it might, it gets culled.

Farmers who are under a lot of stress and risk are having more things added to them. For example, from some research I have done; prices in market would go down, diseases that is effective would make them lose money. They also face all kind of problems when there is an outbreak of potential pandemic flu. If there is anywhere in China, because of government control that would close down trade, then the prices drop and they would lose a lot of money. So for example, these is some of these

"Most of our informants told us that they were far more afraid of hearing any news related to the possible spread of the virus than they were of dealing with the threat of actual disease.

They explained that any bad news aired on TV would result in a significant drop of prices since nobody would dare to eat or raise chickens while such news reports were in circulation".

Similar to the sense; because they falsely reported the news of the disease, a lot of people were going for the wrong treatment. This is one of the many impacts of false news; when they were required to inform everyone of what they had learnt, for family and society.

# Thursday

Thursday, March 29, 2018 4:34 PM

What happened: it just died. Most of the people didn't know what was happening and just died. This Indian Ocean Tsunami (Boxing Day 2004 and had a 9.2 magnitude earthquake) Epicenter close to Indonesia. Affected 14 countries. Affected till Somalia, South Africa. It was believed to be the deadliest Tsunami in history. 1.7 million made homeless. Half a million were injured; more than 230 000 killed and about 5 million people were affected.

Only Thailand and Indonesia were part of the Pacific Ocean tsunami warning system.

The timeline happened at 00:59 GMT. There were some websites that say that the Tsunami warning center received in 15 minutes in Hawaii. 30 minutes later, Tsunami hits Indonesia -- wave height of 30 m. 2 hrs later, it hit Sri Lanka and India.

In the wake of the disaster, response was disorganized. 150 000 deaths in Indonesia, equivalent to 23 000 Hiroshima bombs. Top country affected was Indonesia, Sri Lanka, India and Thailand. Indonesia was like the closest as they were affected by it. The impacts: Economically, the damage was 4.4 billion. The whole town was flattened. 97% of Aceh's GDP and 2% Indonesia GDP's economic. Politically: GAM (Free Aceh Movement) the country didn't want to deal with internal problems, and signed a treaty to deal with insurgents and lifted ban on foreign journalists and people in order to receive foreign aid. Environmentally, there was water contamination and the spread of endemic diseases. Hospitals and stuff were missing, there wasn't much the staff could do. And Salt and silt covered farm fields. Planting Rice season; harvest was affected.

1/3 of population was living under poverty level, they were displaced from homes. Factors that worsened the effects. There was no preparedness and prevention, and there was a secessionist nationalist insurgency.

There was no preparedness, there was no tsunami Warning System within the Indian Ocean.

- Not all earthquakes cause tsunamis

- Nearly no major tsunami in the history of the Indian Ocean region

- The last major tsunami in the Indian Ocean was in 1883.

- Many of the countries in the area are relatively poor

Government's response is haphazard:

- Though they received warning from Pacific Tsunami Warning Center in Hawaii, the response was disorganized and lethargic

- Thailand and Indonesia had the warning, but from the wrong coast. They had no official warning of possible tsunami

- The sea receded temporarily and there were tourists who did not know and continued to be on the beach.

Secessionist Nationalist Insurgency

- Tamil Tigers (Liberation Tigers of Tamil Eelam) in Sri Lanka

- Free Aceh Movement (GAM) in Aceh. Aceh was the most affected province of Indonesia

- Governments have no control in that regions and no aid from government in insurgency area.

Government response was positive:

- The sought to deal with xenophobia against foreign operations: opposition parties were worried about the conflict in Aceh as they had false pretenses that humanitarian aid organizations may be providing aid to GAM in weapons and supplies instead.

- They were also worried that the people in Aceh may be converted to Christianity

- With the influx of non-government organizations in Aceh, Aceh was inundated with all this foreign entities which helped to act as a buffer between Indonesian defense forces and the opposing Gam. So this eased the conflict between the two parties and they became less involved in conflict and focused on the rebuilding of Aceh itself.

- President Susilo Bambang pushed for negotiation with the Free Aceh movement, and signed

an agreement to allow Aceh partial autonomy with their mostly muslim population  
There was also the weeding out of corruption, with 6 billion USD in humanitarian Aid  
From the International Humanitarian Aid

There was the outpouring of help from neighbouring country  
Response: Indian Ocean Warning and Mitigation System.

This was fully operational in June 2006, two years after the Tsunami  
However, its effectiveness is questionable. It was put to use during the Bandah Aceh  
Earthquake. This caused the Tsunami warning sirens delayed by 20 minutes due to failure of  
electrical power grid. Instead of moving to shelters, the people tried to leave the city, resulting  
in a massive traffic gridlock. Fortunately, the tsunami's effects were minor

What was the blame from disasters happening. Almost every disaster had the government:

They were not prepared at all. One of the things that they mentioned about was the Indian  
Ocean. There was one in the Pacific Ocean, none in Indian Ocean. The Pacific Ocean Warning  
System had detected the earthquake, but there was no Tsunami warning. So they didn't tell  
that it was from the Indian Ocean.

They had no drills or ideas on what to do; there was letters faxed to Indian minister's house  
and nothing happened. In terms of preparedness, the government didn't prepare the people.  
Fisherman collected fish, tourists went further down.

There was corruption: there was international aid going in but the money disappeared.

Clearing of mangroves for economic gain. Governments/people cleared because mangroves  
are strong non-erosion with roots, but they cleared for economic gain because they needed to  
chase economic growth.

Nature of the disaster:

9.2! This disaster is huge, first in 121 years (last tsunami in 1883). Epicenter of earthquake was  
very near to Indonesian coast. Last time they had earthquake + tsunami was 1400s. There was  
no instant warning. You take some time to process information. The Tsunami hit Bandah Aceh  
in 30 minutes. Not many people would have gotten out in time.

Who we blame for the main culprit:

This time it is really natural. "Out of sight, out of mind". If you look at the news, there are  
water-borne diseases, but there was limited cholera. Aside from initial deaths covered.

Indonesia was good in response, allowed journalists and foreign aid in.

When we said preparedness was dependent in imagination: it didn't occur to them that a  
Tsunami could happen in the Indian Ocean. The risk was very low. It is something that is  
unexpected and hard to prepare for the unexpected. Even if you did issue warnings, most in  
Indonesia would not have made it. Most of the people who lost their lives, they would still  
have lost because the epicenter was too close to Indonesia

Assuming that everyone managed to escape. The magnitude of disaster would have caused  
great damage even with preparedness. No wall is enough to prevent 30m. Out of magnitude of  
what you would have expected.

Cost of warning: to policy planners, they don't think about Tsunamis. One day it could happen  
with a Tsunami. Something that could have happened but hasn't. There was this messy fault  
line off the coast of Indonesia. There were suggestions in July about the warning system, but  
the government couldn't afford (hundred of millions of dollars) and had better things to worry  
about. No one wanted to fork out the money. There are all these factors of the disaster, that  
even if the people were more prepared, the damage would have been lessened. But it was just  
so huge and unexpected that there was not much that could have done to mitigate the effects.

Looking forward:

Tsunamis do happen, everyone is scared. So the UN agreed on the Indian Ocean Tsunami  
Warning System. Started operations in June 2006. There is also the intergovernmental  
Coordination Group for the Indian Ocean Tsunami. They think there was a Tsunami that

happened. They forward messages to this kind of countries. All these systems were put in place. We can no longer blame the systems of that disaster.

However, there was not just the system. So the onus is still on local governments to set-up proper infrastructure and educate local communities

Signs not too good: April 2012: Tsunami was small and response was not quite there: warning late, everyone came out at the same time. No one went to the shelters. And the warning towers (drill couldn't activate the alarm).

You can see that who knows they would be ready. If another big tsunami happens, we can't say that it is not the disaster's fault. That's very sad if it can be prevented.

## Disaster Nationalism

Think about this term. Of course, the most important concept is nationalism. And in dealing with that: what is a nation? What I want to use is Singapore to talk about this, but I found this interesting quote: "Every one of Singapore's founding fathers began their political careers believing there was no such thing as a Singaporean and that Singapore couldn't possibly be independent. They all believed Singapore was a part of Malaya. They stumbled, tripped into their identities as Singaporeans." Janadas Devan. Partly the meaning and the context of what he is saying that people today consider himself to be Singaporean.

So that Singaporean is an identity. It is a national identity. It tells us something about what the nation is and Singapore is a relatively extreme case and recently formed; but it is true of all nations. This is the current theory that is being used: nation and national identity. So first of all, they are cultural artifacts of a certain kind.

*"It is imagined because the members of even the smallest nation will never know most of their fellow-members, meet them, or even hear of them, yet in the minds of each lives the image of their communion".* Benedict Anderson. People who are the fellow members of the nation, could be Singaporean, could be American and could be French. These were all groups of people, and within that, no matter how small of a nation or how big of a nation, you would never be in a group with all these people.

So then we can get some ideas about key terms here. Nation is a collective identity and one that is imagined in that sense. But two other terms are nation-state. If you look at the world map here. In most cases, every political state/ sovereign identity is understood as being some nation, As a group or community is linked to a political form of sovereignty. All states have to be nation -states and if you are serious as a nation, you seek to become a state so that you are self-determined.

We've gone over what the disaster was, that struck Sri Lanka. Why is this a moment of disaster nationalism? According to the author, she described how the government prepared Disaster Risk Reduction mechanisms that were used in Sri Lanka? There's a dispute over the idea of a nation at stake in a disaster response. How does this preparedness and mechanisms: how did they achieve in the "logic of disaster risk management and control".

The civil war ended; they wanted to prevent it from being a huge disaster again, so there were regular military checks and it became authoritarian. They define preparedness in a generic way that included national disasters and civil wars, such that they had infrastructure important for the disaster response and could be use for the other purposes.

There were simulations: in the terms of disaster. They have drills and simulations and signaling systems, did not have. The article describes many alternative anticipatory practices. We've talked about previously risk and insurance. That's one kind, another kind is prevention. Kind of links in well with the plan for the way it is mobilized. Has a political function as well. There are other kinds of anticipation that are being used.

A lot of people have informal mechanisms to anticipate the disasters, more like tsunamis and most like military events like watching the sky, animals and communicating by networks. This



might receive information about Tsunami coming in. So she's making an argument about the different forms of anticipation. Have different logics which are more horizontal while these kind of signalling systems depend on this chain of communication coming from a very central; in fact it is in Hawaii. These were the main detection systems.

So most generally, I feel she's talking about how disasters become a political opening. How would we compare the Sri Lanka and Aceh case in how that Tsunami became a political opening. In Aceh, the government quelled the speculation that the foreign aid was helping out the insurgents while Sri Lanka made it harder for the insurgents to have. In Indonesia, it was peaceful resolution (peace treaty) while Sri Lanka used it as a way to hit the Tamil Tigers even more. In both cases, you have insurgencies going on and the unification of the whole territory in terms of one nation state. At least according to this article. There was a sincere attempt to negotiate peaceful operations, but there was a more militarised operation to take over the Tamil state.

How would you define the concept of nationalism: How about using disasters as an opportunities to shape how our nation is formed.

- Less will to continue fighting

- Puts everyone on a similar anticipatory states

- Make use of that to push forward for initiatives for nationalist agenda.

- If we look at nationalist movements; common enemy to unite a nation together. You can look at the infrastructure and techniques used by government to mobilise but the disaster also offered a common experience. There needs to be something there we can all connect to and all use as a site and we are all linked to that.

So in Benedict Anderson: He focuses a lot on literature and vernacular languages. His book is about the formation about Indonesia and emergence of literature that created a sense of identity. Disasters are also a visceral way for people to experience a common thing.

# Monday

Monday, April 2, 2018

4:41 PM

## Concept Work:

Discuss and define the concept

Can the concept be applied to Hurricane Katrina? How?

Find one example, case or story from Markets of Sorrow that shows how the concept can be applied to Katrina

## Concept

### Social Fault Lines

Divided to during the Hurricane and after the hurricane. Those during affected were those who were elderly, sick, and family with children. They relied on TV and friends for evacuation. Some are overly attached to their children. Then after?

During the recovery efforts: There is the poor which are predominantly affected. They do not process the paperwork. And secondly, for the African Americans were the ways they were disadvantaged because of the insurances.

They do not have enough savings. They are not sought after clients for insurance companies. They do not have the documentation. Which is the key submission for submissions

Homes were valued less than the white people homes.

How would you define social fault lines? A criteria which separates a group of people in a way to a disaster.

And I think your disasters: the major difference here is how we experience the disaster was different along these social fault lines. The recovery process was different.

### Moral Meteorology

No one seems to be taking responsibility.

### Manufactured Risk

A way of referring to the types of risk that Ulrich Beck was referring to in Risk Society.

The logic of wealth collection that accounted for this disaster. When that area of Katrina was affected; the developers actually repurpose that as residential area. This is given the knowledge that area would be flooded in case of any disaster.

There is a side effect where they are hoping that nothing happens, but something does happen, everything goes to shit. How profit causes the disaster to happen. It's not much a new kind of risk but the risk are distributed based on classical distinctions based on wealth. Targeted on people who have nowhere else to live.

The distribution of risk seems to be along lines of wealth. At the same time, you mention that part of building the levees and the different kinds of space. How can we incorporate them? The creation of levees as well as artificial channels. They had a shipping industry and having more channels be imports and created a new risk for most of the city. The storm surge will rush into city at a faster speed as the canal would promote speed of ships, promote silting and higher deposition. This brings both of it together.

For example, those who were most affected, the people affected were the poor. Classification of risk according to poverty. The scale of the vulnerability is changed because the construction of the shipping channels and levees made for a different kind of way that the hurricane is experienced. If you could see from the way they were described; the way the levees broke means that at one minute, it is like dry, and then the next hour it is like 10 feet of water. City space that was protected by levees, it produces the levees that would promote the second kind of disaster. It wouldn't be this kind of sudden catastrophic disaster.

The building are a protections against smaller scale disasters but not larger disasters. Even if everything was very well designed, the case is that they are holding back water. Up to a

certain point. If it breaks or goes over that there is a different kind of disasters. You won't have disasters as well. You have different ways of negotiating the rising tides.

#### Normal Accidents

How tightly coupled the public sector is with the private sector. Brings about conflicts of interest. One way is that the solution is to remove this conflict of interest by not allowing private sector to work on disaster response. This is as complex as politics itself. Even the core of engineers that rely on contractors to do the projects that they were supposed to do.

Another tightly coupled system is how hospitals are dependent on electricity. The hospital had to barter for fuel by illegally prescribing medicine. Maybe the officer takes the standpoint of what would be better. If you use the normal accident kind of analysis: what is the relationship. If they are too tightly coupled.

#### Uninsurable Risk

Natural disasters are uninsurable. You can't pay for every disaster that happens. FEMA is subsidies put aside for this disaster. Most of the money goes to private companies such as Blackwater. Treat the disaster like a profit venture, and place more emphasis on building make shift prisons rather than humanitarian efforts.

Told by FEMA that they have to purchase their trailers for 25000 or leave. If they had 229 k instead, they would have their homes back by now. There is a lot of capitalism going on in this company.

Although true in this case that the whole reason that the government agencies were set up in the first place. Built historically in the case of that disaster. It was always the case that the harm caused by the disaster would be more due to the private contractors.

The idea here is the concepts that you will study in the final exam. Section would involve reviewing, being able to define these key concepts and applying to this new information. The new concept we will be looking at for today.

She's trying to develop this concept of Disaster Capitalism.

These infrastructures should be for the people: should be built to protect people and that should be the government responsibility. By the time that money gets down to the level it should, most of the funds have been siphoned away for personal profits. There is something about the subcontracting process that has often meant that the funds are not getting there.

She has this concept of disaster capitalism. She's developing this in relation to the more important of concept of social science ( a particular kind of market economy that is based upon capitalism).

Reviewing a bit from the social course: We read three classical theorists in formulating what classical capitalism is.

Smith: invisible hand, division of labour, specialization. This is a certain kind of economy: a market economy. People are interested in exchanging for self interest. The effect is the division of labour specialization. Why is that? They become more productive, they have higher profits; assumption is that it would be distributed among the people. The higher income they have, they would have purchased higher quality goods and thus enjoy higher standard of living.

The idea is that this market situation encourages people to exchange goods. Because of the propensity to exchange to get more out of exchange process, they would work on what they can be better at. One way of describing that would be to say that markets actually increase efficiency.

Again if you use some of the examples like the division of labour in the factory, you are able to be more efficient, because instead of trying to make a car, one person is just doing the shell, engine. The increase in productivity is because the specialization increases the efficiency of the process.

Marx: alienation from the end product. Marx is concerned because the same process that

increases productivity but have some other negative effects such as alienation from the product and another would be exploitation of the worker. One way is to say the return to capitalism is greater than the return to labour always. What about Weber?

Weber: If everybody is following this practice, you would do the same thing to keep up. What does it lead people to do? To keep up with others: maximize their efficiency. Uses the term of rationalization, essentially it is about increasing efficiency. For Weber is more about how a process can be quantified or measured.

In all three cases, you basically see capitalism as a force that is increasing productivity, rationalization, efficiency. Marx and Weber are critical. But in terms of what he is observing is that of increasing efficiency.

In some cases there may be inefficiency of introducing capitalism to markets. The term is "inefficiency of profits". What creates this inefficiency: to help the people but when you ask the company whose objective is profit; it becomes a misalignment of the objective. Why does the misalignment happen? Because anything could be described as for the good of the people. The butcher cutting the meat is for me. Even in the classical theories there is where self-interest is for the good of others.

Shortfall of government around the world are inherently inefficient, so that they can ask them for cost savings. But private sector is to go for their own objectives. The very powerful logic is that governments want to good and do good for the people are not very efficient. Then that leads governments to want to outsource their services.

Why is it that profit seeking, which is the essence of capitalism, decrease in efficient distribution. The profits that the company makes are in contradiction to the services they need to provide. They don't make much profit off railways, so go for advertising. If they were to increase ticket revenue, they have to act against constraints for cheap MRT fares. So that could be another example.

There is no free market competition: there are contracts that remove competition and encourage monopoly. This is very different from the contract model that Katrina contractors follow.

# Thursday

Wednesday, April 4, 2018 5:13 PM

Brief clip where people arose with the insurance system. The first lawsuit was insurance lawsuit. The insurance company were not going to pay the claims. There weren't many inclusions. They're not going to pay for lead, asbestos and water damage. Whether water damage is currently classified as flood or hurricane damage.

Was it insurable or uninsurable. "it's too big for anyone." It could be insurable if people had paid higher premiums. However in the absence of that, because it is instantaneous, catastrophic disaster, it would exceed the company. That was why they were putting all those exclusions. The first exclusion was nuclear war (instantaneous, catastrophic, something that would be an uninsurable). There won't be health effects that would be so instantaneous. At this moment of the uninsurable risk was where the government had to step in.

The Louisiana government to provide extra funds because of that situation. However, what about these exclusions. What do you think is the role, how can we deal with the exclusions you can put in. Obviously, where the companies can put this in the role, the greater is the better. The insurance company has to be fair. Even though they've been collecting over 50 years. They could have delayed payouts, some additional help to the other hand. They will find ways to screw it over.

They made the exclusions out, but when the incident hits and there wasn't such an exclusion, you won't find it in such a way. Another role for government could be about requiring insurance company to make sense. Non excludable insurance. Non excludable claims. Some part of the US is where they don't allow house home owners insurance to be purchased at all at some areas to be too high of a risk on the houses. Discourage people from building in those areas because in the long run it becomes very problematic for the government.

If you looked at the story of that one guy for having that house for 30-50 years. Question of whether he's paid more for the value of that house over that time. At the scale of the house, that may not mitigate because people might have bought it over a later time. The other thing I wanted to discuss is the last two weeks. We had discussed the idea of disaster nationalism and disaster capitalism.

Using disasters as an opportunity for something. That's the commonality. She described it as an opportunity. Disasters can be used as an opportunity. We looked at disasters as very negative. It was an opportunity at least for some actors. What about the crucial differences that we see? Disaster nationalism is a political opportunity while capitalism is concerned with economic policy. Nationalism is not necessarily unity, but the Sinhalese were united against the Tamil Tigers. But in a way it creates a divide. The article said that it was unifying the cultural areas into a unified territory, but it is not the case that people were pleased with that outcome. Because nationalism would be that unity, then people won't be unified. But at the same time, death and disaster nationalism could be using a disaster as an opportunity to unify. Some might be happy, some might not be happy to be unified within that political opportunity.

Disaster capitalism might be in that area. Some theories about capitalism is about producing class capitalism. Disaster is going to be used to increase that class. It was an intractable civil war where the Tsunami enabled the separatist group to seek a political situation rather than continuing a violent military situation. At least fairly happy with that outcome. Some autonomy bytes for that area.

Bombing of Hiroshima and Nagasaki. Fire bombing of Germany. Genocides are not one event, they are often a process. The concept of genocide is specifically described as the effort to eradicate the ethnic group. Genocides are a long term process. But that can't be called a disaster.

Uninsurable risk: Ruling on whether they should be made to pay would be the subject of debate. The decision in getting them to pay the bill. The victims were sending them were that they were convoluting the argument. The party who had the rights to protect the people were the judiciary in that area. They would try to protect the money they (insurance companies earned). The government should have been there to correct this situation, to ensure that the welfare of the people would have been effected. So when it comes to the organization that fails to do so. There's either a flaw in the judiciary company, and a flaw in the general system. There's a flaw in both areas.

I would say that the premiums didn't represent the risk they were paying for. The premiums were lower such that the insurance companies couldn't pay up. If too high, the premiums would discourage people from buying. To create premiums affordable and enticing to consumers, they did not adequately cover themselves.

There needs to be some kind of clear transparency that is clarified for this disaster. There were contracts being cleared. It is the insurance company's fault on what could be covered. The salesman might be at fault. The government could introduce something, where it might be clear. What kind of damage could be covered for the hurricane. There is some convoluted distinction between hurricane and flood because of the issue of the levees. If the levees don't break, there won't be much of the flood. That's why insurance companies say there is a strong case in legal terms. Whether there should be some oversight on how convoluted that have been made. Where earthquakes are likely to cause. That might be there.

Is it also fair to take the side that the consumers are the ones to blame. The onus is on the consumers to figure out what is being required. On top of the food, in a restaurant, they did not look at the customers. They did not have details on how the company likes to wiggle out of situations. Protecting themselves is their function.

One is that you look at what is being excluded. For example medical insurance excludes any incident from riots. People do not make the most. The time lag adds on to the market distortion.

# Essay

Monday, April 9, 2018

1:15 PM

Let us define a disaster. Most picture the aftermath of devastation, the social, political and economic consequences of either a tsunami, earthquake or something completely 'unexpected'. But disasters are not just the sum of their effects; they are a mixture of risks, of measures put in place to mitigate those risks or the lack thereof, and even the actions taken after the event of a disaster. We define a disaster as a sudden catastrophe that causes great damage or loss of life, and can be typified into two main areas: Natural: an event that occurs due to the earth's process; and Human/man-made: disasters caused by or could be prevented by humans.

Charles Perrow, author of *Normal Accidents*, defined the cause of accidents as not by a single element, but by unanticipated behaviors and interactions involving a huge number of components of various kinds. If accidents were normal, then they were inevitable due to the complexity of tightly coupled systems, such that the more complex and less linear a system was, the less slack or buffers there were such that a change in one subsystem could lead to another. This idea of the surrounding environment is shared by Ulrich Beck in his *Risk Society*. Beck believes that certain groups cause disasters because they enable support for a reality which certain organizational activities occur. Because organizations create man-made environment problems, his idea of our society is one driven by risk mitigation logic, such that social institutions like the welfare state address the hazardous side effects of wealth creation.

Now that we have summarized the two author's arguments, we shall describe how much they complement each other. Perrow sees that as technology develops, the complexity of a system increases, such that it becomes the source of unpredictability. Like a risk society, complex systems are inherently beyond control. Beck supports this argument as he claims that as our society shifts from industrial modernization, which focused on control, to reflexive modernization, we try to demand increased control. This led to integration as a key strategy to obtain more control, be it over our environment or over the work process. However, because we do not have perfect knowledge, our attempts at modernization means that there are unintended side effects. For example, we attempted to improve our pesticides with DDT, only to discover that the new chemical we have introduced is inherently harmful to our health. Because no one holds the monopoly of knowledge, we would not be able to account for the risk. We can only have more knowledge, and predict the effects of actions, but no one is sure that there would be no risk. The increase in complexity leads to a deviation from the straight path of reason and as we attempt to trace our way through the labyrinth of knowledge, we encounter more risks. Risks are a consequence of modernization. And modernization is the increasing integration of complex subsystems we have no perfect knowledge of.

Perrow criticizes how we create and organize hazards that we cannot effectively manage (p. 10). Because we cannot attribute disasters to one human factor alone, the blame gets passed back and forth, such that the members involved do not bear the blame of a disaster alone. This ties in with how Beck feels that organizations create man-made environmental disasters. Because different people have different perceptions of risk, there would always be an anxiety. When would the next accident occur? How would it happen? You can only remedy the risks that are occurring now, but you cannot claim that there will never be a next accident. Our modern systems are complex and tightly coupled, such that we have contradictory organizational requirements. Again the idea of an organization rather than an individual element ties in with how a disaster is a sum of what occurred before the event itself. In the Three Mile Island Accident, different stakeholders meant different goals. The media sought for one explanation, the operators attempted to shift the blame to the manufacturers, while the manufacturers pointed the guilty finger at the operators for not performing to Standard Operating Procedure. Organization is key to both their thesis, as they see the larger group as being more responsible than an individual element in the case of a disaster.

Disasters are never distributed equally. Externalities or social costs are ignored by the elites and borne by others (Perrow, P. 34) according to Perrow as depth of one's suffering cannot be

determined accurately. This is shared by Beck as he viewed the various definitions of risk as a form of uncertainty. If you do not know what is occurring to you is the effect of a disaster, then how do you claim recompensation? Because a disaster is so hard to define, those who are part of the cause often either shift the blame to others or deny their involvement. There is a “general lack of responsibility” (Beck, p. 33) shared by the upper classes. The hot potato of attributing the blame is passed around, such that there is an increasing isolation between the person responsible and the disaster itself. While it does bring social certainty and popularity to the concept of system, the distancing allows both the victims to blame the seemingly uncaring ‘perpetrators’ while those thought responsible comfort themselves in the knowledge that theirs was but the smallest part in the disaster.

We shall now move on to how accidents become ‘normal’, that is to say, a pre-existing part of our society. Perrow’s Theory insists that accidents in today’s high-tech societies are closely associated with complex structures with built-in risks and those risks are therefore inevitable in our lives. Beck argues that our modern society has risks all about, such that no single nation could cover it by itself. We can see this in examples such as the Southeast Asian Transboundary Haze, where one country’s hotspots led to its neighbors being affected despite the disparity in incomes. Here, the risks are obvious but at the same invisible. We know that the haze creates respiratory issues, and associate an increase in coughs and the rise in electricity bills as we attempt to mitigate the effects of the Haze. However, we cannot delineate the roles that guilty parties play, nor can we hold them accountable. We cannot judge responsibility when we are still undecided on the cost of a disaster. We prefer to deal with actual facts and figures rather than vague claims. Because Modernization risks are “knowledge dependent”, (Beck, pg. 26), we have to prove using the sensory organs of science. But if there is room for doubt, then other parties would shift the hot potatoes on others. In our earlier example, we have Indonesia, the main source of the hotspots. We have the Indonesian government unwilling to ratify an agreement on transboundary haze until 2012, even when there was no legal punishment. We have a remote environment which makes it hard to get statistics on the level of burning, and policies implemented are reactive rather than preventive. Because of the self-profit mindset shared between the natives, the corporations paying the natives and the government unwilling to derail their efforts, the haze becomes an everyday part of the Southeast Asian life. This catastrophe which we try to avoid becomes an expected occurrence because of the different goals of the culpable parties and the affected victims.



# Monday

Monday, April 9, 2018 4:34 PM

Maybe the distinction between slow and rapid-onset disasters is artificial". How is global warming a slow disaster? The disaster can be catastrophic but can also be due to certain points. Some argue some of the storms are by global warming. The huge impact of global warming is that it does have an effect at all. It's been building up since 1750, so it is pretty slow.

Let me tell you why this person-- Hazards certainly can be categorised in this way. Disasters on the other hand, are the product of hazards and human vulnerability to them." You can argue that all disasters are slow onset disasters because human vulnerability is built in a slow process. The actual disaster is partly a slow onset. It is a bit artificial, there is a useful helpful distinction between earthquakes vs something slow like global warming.

This is by Kai Erikson "the notion that chronic conditions as well as acute events can induce trauma, and this too, belongs in our calculations. A chronic disaster is one that gathers force slowly and insidiously, creeping around one's defenses rather than smashing through them. People are unable to mobilize their normal defenses against the threat, sometimes because they have elected consciously or unconsciously to ignore it, sometimes because they have been misinformed about it, and sometimes because they cannot do anything to avoid it in any case".

The article I assigned focused on antibiotic resistance and pesticide resistant, slow disasters that we are beginning to feel the effects of, antibiotic resistance like H2N2, and we only had antibiotics since the 1940s. It is really dramatic how we experience disease. Let's just take the 'tempo' of this disaster. We can classify this as a slow disaster, what kind of temporal processes that are happening, how did it develop, what were the causes and consequences. It is not a linear process. How did this become a disaster.

If it was the tempo of global warming, so it would be from 1750s. You start having the production of carbon in the disaster. You can indicate things on this chart. How does it start causing symptoms of the disaster.

Already a few cases that have happened where there was a multidrug. A case of tuberculosis. They tried multiple drugs that didn't work. They developed a term called extreme drug resistance where any drug doesn't work. The role of livestock in the industry. In nature, the bacteria was more likely to develop resistance. This might be because of interspecies communication, bacteria can spread. Resistance in humans are weakened. He mentioned here that resistance started immediately after 1945 but picked up after 1970s. This might be due to rise in the livestock industry. It's not used to treat disease only but overused because you don't have a bacterial infection. In the livestock industry, it is used routinely as a growth promoters. It might have been discovered accidentally, but if you give small doses to pigs and chickens, they grow faster and bigger and so they just basically continued used it till today. There are restrictions on it in the world, you can specify that products cannot be used, but in many cases you can't choose.

Also, the bacteria can actually exchange genes amongst each other. Even though the resistance might have developed in one bacteria, that same gene might be passed on to a tuberculosis bacteria. What do you think are the lessons from this slow disaster? Detection and recovery is better than paranoid prevention. Recovering from something might be better than preparing too much for something because you might end up with more than you want. Like bacterial diseases, we should focus more on detection and recovery rather than pre-emptive strikes. Using it prophetically is not the best.

What else can we look at this tempo. The futility of quick fixes. Pg 274. Antibiotics were a magic bullet in the health sector. All you need is this pill or pesticide, that would solve the problem

altogether. That is not really true; that over time other aspects of circumstances make it such that that magic bullet does not work as well.

Pesticide resistance: to control Malaria and mosquitoes. Massive spraying of mosquitoes kills off the population, but over time the mosquito population grows and increases resistant mosquitoes.

One problem with a slow disaster is that it is difficult to see, they're not just viscerally evident. This person on this book says that "in slow disaster, cameras and paint brushes are put aside for spreadsheets and timelines because they can show what is not detectable.

Potential slow disaster. Debate whether they are disasters are not. Like you to design a visualization system. Think about what kind of data you need to collect. How you would sample and analyze it and how you would provide it to the public. Like the rate of areas with low poverty, is low visits with asthma cases while those with higher poverty (built environment, air pollution) have higher cases per 10,000.

Presenting the data you have shown implies correlation, not causation. One was to show scientific papers, they're kind of boring. Using smaller scale experimental research on causal. Huge amount of plastic waste would happen, health effects. Concentration of plastic products in humans. Used in the production of plastic, Often in drinking water, body has no natural means of getting rid of it.

# Thursday

Thursday, April 12, 2018 4:34 PM

In 2013, patient 0 occurred. Developed an illness and died 2 days later. By second week of Jan 2014, several members of the child's immediate family developed similar illness and died. Following weeks, those who attended funerals also died.

WHO declared the outbreak on March 2014. It has a mortality rate of 50%. Dead body remained infectious. There is no vaccination against Ebola. There is only isolation from the patient. It is believed to involve direct contact with infected wild animals or fruitbats. Wild animals include fruit bats are hunted as bushmeat. Spread from human to human through close contact of blood and fluids.

Africa had poor health infrastructure. Liberia only had 50 practicing doctors in 400,000. Political instability. 2 civil wars, destruction of healthcare, Guinea was flooded with refugees from Liberia and Sierra Leone.

Outbreak: spread of Ebola was rapid and the death toll increased exponentially. Gueckedou was close to the border of Sierra Leone and Liberia. Affected Countries: Liberia, Sierra Leone, Senegal, Nigeria and Mali.

As of Feb 28 2016, 28,639 reported cases, 11,316 deaths. It's been around before 2014. 2,427 cases and 1,597 deaths in all other known cases.

There was a 2.2 billion in GDP lost in Guinea, Liberia, and Sierra Leone in 2015. The world bank made some estimations how it grew. It would have a lot more GDP growth if there was no Ebola. There was substantial loss in investment, decline in agriculture.

Let's dive into the health care within the three countries. Aside from the actual patients with the diseases, the people who took care were greatly affected. 881 confirmed health worker infections and 513 reported deaths. Liberia lost 8% of doctors, nurses and midwives. In Sierra Leone & Guinea, they lost 7% and 1% healthcare workers respectively 23% decrease of healthcare services delivery in Sierra Leone, leading to deaths from other diseases.

The main group affected were mainly in children. 20% of Ebola cases occurred in children under 15. Estimated 17 3000 children orphaned. Schools closed in 2014, only reopened in 2015. There was an 1848 hours of education lost. Routine immunizations decreased by 30%.

We will look at the response the countries took. What the African government had done. The African government had coordinated response of international aid. They established incident management System that coordinated the multiple partners that contributed to relief efforts. In Liberia, they established IMS in July 2014, supported by US CDC, WHO and other partners. They managed the daily activities through these emergency support centers.

Event-based Disease Surveillance System improved, and they expanded the laboratory capacity (previously went international.)

International Response: WHO received over US 459 million from governments and multilateral organizations. African Union pledged to send healthcare workers. United Nations launched first ever UN mission for public health emergency. World Health Organization (WHO) involved in different stages of outbreak.

In the initial stage: diagnosis. Final stages: surveillance. Try to identify who is left with that virus. They had an lack of a coordinated response. This H1N1 pandemic, led to WHO being hesitant in

declaring the Ebola Outbreak as a public health emergency of International Concern. It is a deterrence to come in.

Blame on the three parties: Blame on Society; they denied and disregarded the advice that they had. Their cultural burying practices, they do not have an effective response to the pandemic. (Preferred Hands on). The government had systematic corruption. The internal audit showed a third of the relief resources were not accounted properly. WHO: "This is relatively small still. The biggest outbreaks have been over 400 cases." WHO spokesman Gregory Hartl. They refused to step into pandemic initially, and emphasized on it being a noncommunicable disease. They ranked the Ebola outbreak 2 out of 3. And they only declared this a Global Emergency on 8 August 2014.

WHO had pushed responsibility. They think the government should be the first responders. WHO should not take the lead (political interference with member states. 51% spending cut by member states in 2013).

Example of an Uninsurable Risk: characteristics of a pandemic. Large scale and high death rate as there is no vaccinations against Ebola. Slow Disaster: Can this be considered a slow disaster? Disease acts quickly (and can kill within days. The disease spread to an epidemic over two years. Risk Society: Zmapp is a drug potentially capable to cure Ebola, not clinically proven. It is only from their task that they can cure.

They had to use this drug on the WHO man on the ground who contracted the virus. When they declared it an emergency, they used international organizations rather than grassroots activities. They chose to work with those who had branding but may not know grassroots work. Grassroots activities hostile and distrust result.

### From the horse's mouth

The first Ebola outbreak was in 1970s, but the huge concern about it grew after 1989. There was an outbreak of a disease in a primate transfer in Virginia. Ultimately, that virus is a slight variance of Ebola, did not affect humans. Sparked a lot of concern; became very influential among politicians and scientists. As they were developing an idea about the importance of emerging diseases, HIV was a new disease, and Ebola is another example, scientists became concerned about the new diseases that we don't have any drugs for.

This idea of preparedness became important part. In a lot of ways, you develop a contrast between fast versus slow disasters, between emerging diseases, the unexpected things that occur. Early warning surveillance. In contrast to all of these already occurring diseases out there.

Poor countries with dysentery and cholera, causing mortality every week, year.

USAID: predict what is the next disease if it breaks out. Sampling animals for viruses at these locations that might be the source of the next pandemic. The point here is there was a lot of concern about Ebola before this outbreak. There was a lot of preparation was for these early warning systems and surveillance. So just as you have the international agencies that are preparing for Ebola in that way, there was also the degraded health system in those countries.

Some argue that the pandemic preparedness "siphon off a large part of African health authorities' energies and resources, even as they are confronted with far more urgent health emergencies." Focusing so much on this potential future emergency. Do you think that we should abandon preparedness and focus on ongoing disease?

Port Dickson: fatal encephalitis: spread by Mosquito bites? MOH launched campaign to educate people about the dangers of JE and Culex mosquitoes. However some who were vaccinated were still getting this disease. It was a completely different disease (swine flu). Which no one had expected (emergent). And the competent health system didn't know what to do.

Singapore: culled 20 jungle fowl. AVA "received noise complaints". They later said that "our concern

is about public health and safety." WHO identified free ranging chickens as a risk factor for influenza. Therefore they recommend controlling chickens by securing them. "Risk of free-roaming chickens in Singapore being exposed to bird flu is real and significant, as we are one of the stopover nodes for migratory wild birds." Is this a legitimate risk?

What if you are infected? There is no way to cure you, you are put into quarantine, then it is guaranteed that you are going to die. So for humans, you quarantine but you cull animals straight? Do we even see animals as those with will? Some people suggested to move the chickens to another location. It is hard to control the chickens though?

# Climate Change

Thursday, April 12, 2018 4:34 PM

Human activity involved in bringing about conditions that affect the atmosphere. People are now using this term the Anthropocene; our geological era, is marked by the impact of human activity on the planet. You can measure that from 1750s, when you start to get certain increases, that you can see detectable in rock. When there is increased carbon in the atmosphere. The first atomic bomb test in the 1940s...Traces of chemicals of atomic bomb. No rocks from before that ever had that. You can think of that as the human geological age.

In addition to the climate change being hypothetically some kind of disaster. More specifically, the consequences of climate change are the increases in the kind of disasters. Such as hurricanes, where the increase in ocean temperatures make the storm more severe.

Are climate changes democratic? Beck argued that certain aspects of them are democratic? Why do you think they are democratic? Generally, one of the climate change could be temperature. Global average temperature rises every year. Everyone experiences that change as well.

Why is poverty hierarchic? It only affects certain people of certain classes. While risks would affect everyone equally regardless of social hierarchy. The new kind of risks do not necessarily divide their impact based on the class level of society, so all of society would be affected by this risk.

He is really taking this from the classical social theory (Marx and Durkheim). For Marx, the capitalist society, by definition is hierarchic because for some to be wealthy capitalists, there has to be the poor proletariat. Poverty by definition is hierarchic. Risks are distributed in a different way from that.

Or you can say that the risks are counteracted by wealth, but they are still there

Not democratic counter-argument: while the rich are able to escape in one way or another. Some may be trying to mitigate that risk. But invariably, you aren't able to put yourself into position where that risk doesn't fly into.

But what are the other reasons? Wealth is one of the factors. But it was counter-argued. The second one that wasn't affected was the national geographic location. Some risks are greater at some places than others. Some locations are more susceptible to certain risks. In certain areas of the world, the global warming is affected in certain regions. It is purely a natural effect.

Some basic aspects of the geography of the earth makes climate change undemocratic. So another point for democratic: it is a globalized risk; political boundaries and social boundaries are not really significant in who is being affected by the risk. Geography maybe is not democratic.

Can we say the privatization of space flight is an equalizer. Climate change, because of this geology in particular. Something that needs to be added in the risk. The risk is a democratic concept. It's not hierarchic, in just that of poverty. Maybe hierarchic principles are still out there. But the geographical concept is quite different.

In this article we've read about Singapore, the way the risks are distributed are not neatly democratic. There's a lot of interest in how a local area experiencing climate change. If climate change may have different impacts based on geography, or local economic development of the area, these global experiences are going to be quite different. Increasingly, people, in the relatively distant future that we can prepare for, there's going to be planetary changes. There is going to be recent events where climate change is happening locally.

Singapore has very effective climate change plans, but 'pluripotent', means some level of

unpredictability in how climate change affects localities. Global scale, we can develop models on how it would affect temperatures? And what kind of storms, would affect at the local level. In the article, he's arguing there could be more down for this kind of unexpected multiple changes to sustainability.

Can this challenge be addressed through urban or infrastructural design? How? Or why not?

What are the examples of climate Change they might have? Haze...Lack of natural resources, more susceptible population (larger) and extreme heat or rain. It is actually helpful to Singapore to have global warming? A lot of revenue comes from tourism, so people come here to escape the extreme weather? Northern Canada could become agricultural? We are in the tropics, so temperature is already high, and most of the land space is occupied. If you want to use this Urban Heat Island, we have to redesign our city.

Key challenge is Singaporeans? Everyday complain, waste this waste that...They are trying to encourage vertical farming, high-tech farming. They focus on green areas, like vegetables and fish.

Water management could be a potential problem? Once that contract is up, we'll be left alone. A large part of what Singapore depends on is the urban planning of the water catchment infrastructure. The unpredictable ability of potential problems might render catchment areas insufficient. But we are working on NEWater and desalination plants which are not dependent.

All of the rivers are closed in (you save that water), then there is NEWater and desalination. You can decrease your dependence on imported water.

Taking that same challenge you were thinking about, what are those challenges you have in mind, there is a theory that is most useful in how to prepare for that challenge besides the concept of challenge. Try to unpack the natural disaster concepts we have gone through, which are useful to prepare for these challenges.

Moral Meteorology + Social Ecology: Everyone has a part to play. (Saving water, recycling in terms of sustainability)

But we are trying to change the mind sets as well (change mind instead of physical changes of society)/

Disaster Nationalism( We must work together): To promote this mindset of saving things.

Social Fault Lines: Aging population. Which is not thought about too much in climate Change. The aging society has different kind of vulnerabilities. The same kind of event might actually affect us. Certain effects of planning would also affect us.

Uninsurable Risk: concept of pluripotent futures: has to do with uninsurable risk.

Risk society: Singapore incorporates science, works with government agencies. Needs to focus on the science of making policies.

Concept of Witchcraft: If you want to be seen as good, you don't want people debating. There is the mindset of social pressure. Let's say if we can turn people's head towards people who waste resources, there is social pressure exceeded by everyone around you. For risk society, there is economic, and public would have the say and exert for management of resources. Hopefully we are able to cultivate a mindset of responsibility? How to make people more responsible. Responsible realization. One approach is government programs. Different kind of campaigns, advocacy, that's one kind of direction. One is more horizontal (pluses and minuses I feel) social media STOMP Maybe the dwindling efficacy of campaigns, not as effective. Social media type campaigns like those are very effective.

Problem? Everyone becomes policemen. It could be quite bad for everyone else? Pressure. Losing the sense of individuality, because of social predicament. Everyone has to perform to a certain scale. What's the difference between campaigns and social media. It gets directed towards certain individuals. As opposed to someone catching you red-handed. It is a good deterrent but may be unethical way of dealing with it.

# Thursday

Thursday, April 19, 2018 4:36 PM

What he's saying kind of make sense is that there is a common struggle; they do not have enough technical knowledge to prepare for the future. Like Mark Zuckerberg, the senators questioning him did not really know; especially when you don't know much about it.

That's one of the main directions coming out of the risk literature: on the one hand, there is new risk, future and disasters. They cannot be limited to scientific rationalist approach. What we determine to be an effective risk cannot be made by scientists alone. All kind of groups and citizens might be involved in what is acceptable risk. Many of these risks are highly technical and there is consistently a problem about how those with scientific risk are able to understand them.

We can think about this like the end point of the class, what are the ways that science and society can be brought about in a way. A lot of people are doing research on this issue. I can make one case; this has been more developed; patient's advocacy groups for diseases. Muscular atrophy: people mobilize research about this disease and those who are completely not scientists get involved in developing research, the development of new technologies are in this area.

## Concept definition Review

Two things I'm looking for; Define it, which could be one to two sentences. Second is to explain the significance. Which would be two - to three sentences. Concepts will be the key terms that we've discussed about the class. Something that was brought up that may be in the slides, but we would have discussed in the classroom.

### Week 1:

Moral Meteorology: What disasters China had. What determines the weather. There is a shared responsibility among all who get the disaster.

Significance: tweak morals to appease the gods. Onus on the ruling class and their understudy people.

Contrast between Katrina and China

One point that can be made: good weather is caused by good behavior.

Comparison between: one of the reasons why we were discussing this was because we were thinking about a place where disasters were thought of as the cause; the cause of this disaster was due to moral roots.

If you are able to discuss in class, why was it relevant in class, then it's not so bad.

### Week 2:

Causality: reasoning between cause and effect, based on some elements being supernatural and mythical. Imperial, quantitative scientific means or more tangible views. Something like moral meteorology would be similar

Azande: helps us to understand why these things happen. Less logical but more natural in understanding why these happen. Helps us understand that while there was mythical causality, they did not dismiss rational causality.

He specifically says that it is not supernatural; the author calls it mystical causality; but he does say that mystical sense of causality but not supernatural. They don't make a difference between (specified idea of natural causality) and why strange things happen.

Emphasize that they don't dismiss chain of events, don't discuss those. Mystical causality is what we think about as bad luck or coincidence. It is not side to side. But more like they have an additional area. For us which is taken up by moral judgement or legal judgement. It makes us wonder that we don't have a way to pick that coincidence space.

### Week 3:

Problem of Evil: Innocent suffering; how does a good god cause world of suffering? Some think it is natural sins. They still suffer from the Lisbon Earthquake. Questions about how the innocent suffer



even without committing moral sins. What is the point of doing no evil if we are suffering anyway.

If god did not create evil, we can stop evil. Either god is evil but created evil, or he is good, but not able to stop evil. So he is not powerful in a sense. They used science to explain natural disasters; it marked a change in view. You could add that the scientific term, being that scientific understandings about the Lisbon earthquake emerged in this concept where there was debate about the problem of evil. It was in some response to this question.

How does the scientific response change this question? Moral evils are not related to natural evils. Rousseau: there is a new way to bring about morality. There are different ideas of human responsibility in relation to natural disasters.

Week 4:

Social Autopsy: list the comparative analysis, to show the difference between groups. It allows us to understand the social structure of the society and what major characteristics which led to a certain impact. Can analyze the social problems that racial classes may face due to the increased effects that they have.

More of how the social problems be more impactful on others. Rather than saying isolation is a problem, say elderly is more likely to be affected by isolation and thus the disaster.

The sentence that came from the phrase is the biological reflections of social fault lines. Statistical data on biological, health differences and trying to identify where these significant differences lie. So that excess mortality in one group. Underlying that is a social fault line. Different levels of isolation.

Week 5: social morphology: Material substratum of society; in settling across the land, the volume and density of population, and basis for collective life. The various things that make up the parts of society, and make up ensemble of things that serve as the basis for collective life.

Material forms of the neighborhood that determines if the neighborhood can flourish or not.

Place based vulnerability: risk factors that heightened the impact on the society; for example living in a impoverished and neglected neighborhoods.

Week 6:

Normal Accidents: Caused by too many unexpected interactions between highly interconnected systems. It's called normal not because it is common, but something you expect to happen. It helps us understand why nuclear faults will happen, and understand that it is an inevitable characteristic of the system.

Shifts how we understand the cause of disasters away from operator error or designer error to something about the system qualities. Can no longer blame a single entity, harder to draw lines. Because it is inevitable, hard to stop it. You are sure it is going to happen. No matter how many things you try to pull, it will still happen. So you can't say that you rely on probability, confident that a disaster won't happen. Can design safety to him, according to him, the more safety you try to have, the more likely that you have a normal accident as it becomes more complex.

Expect a preparedness logic, what can you do about aftermath; or the precautionary principle, where there are certain technologies that you might not have.

Week 8:

First one is manufactured Risk. It's a new form of risk developed post Industrial Revolution; These kind of risks are transboundary; has the property of being invisible.

Globalization of risk; poverty is hierarchic, haze is democratic.

Risk Distribution: boomerang effect, perpetrators receive effects of actions.

Risk Perception: how society perceives as an acceptable risk. And the role of science and technology in the concept of risk. It's how like the role of science and tech decides how the role is acceptable.

The risk are knowledge dependent, so you need to know.

Risk perception in this risk society has these two concepts: what is acceptable cannot be reduced to scientific test, and most risk are knowledge dependent; some technical assessments have to be made about the risk to determine if it is acceptable or not. Cannot be resolved in one direction or the other.

Week 9:

- 1) Risk: uncertainty: don't know what's going to happen.
- 2) Preparedness; response to normal accident, where we are saying that probabilistic risk assessment is not going to be good enough. Greater uncertainty cannot be reduced to probability assessment, so bring in preparedness.
  - a. But there was limits; turns out that their imaginative prediction, people were getting sick from the vaccine, so there are limitations
  - b. Opportunity cost ; use resources to get
  - c. We shouldn't invest in preparing? It's a debate that's out there. These new kind of risks out of the idea of normal accidents. Might have the probability of melt down in 1 in 10 billion. There might be catastrophic. Might be crucial for dealing with those kind of situations. Crucial to realize that there is this limitation, and preparedness should always be debatable.
  - d. Was the ideal for the vital systems security from this week? Yes. Different ages, there was a rise of population security which is the welfare state, insurance programs under that idea, vital systems security is when governments and society start to deal with nuclear power plant meltdowns, uninsurable risk of disasters.
    - i. Adds that; turns to focus on infrastructure. Part of how securing infrastructure I guess.
- 3) Imaginative re-enactment:
  - a. Regarding the imaginative reenactment; they identify present weaknesses. Because of this gap in the organizations, it result in this problem worsening. So imaginative reenactment can play two functions;
    - 1) Identify vulnerabilities, identify where there is a pandemic, we don't have enough vaccines, So we identify that by going through this enactment process
    - 2) Some of these vulnerabilities can be corrected. So develop mechanisms to have communications between these two agencies.
    - 3) Secondly, it is a practice to when an event might happen. Related to normal accidents; preparedness is a way. With those systems, the probability of a failure is low, but if you have an enactment, you can find where it may fail. It might help to redesign the system, be aware that this might be the case of failure.

Week 10:

Disaster Nationalism: disasters offer a political opening for new techniques of state power and projects of nation building. Significance is that it helps us to understand political aftermath of disaster and helps us understand the disaster play during nation building and helps us understand interaction between disasters and nation states.

More positive and negative forms, in how nations are included. It could be a inclusive nationalism or exclusive. Who is included and who is not included.

Develop more examples. Concepts for development. Not ruling out that these could be on the exam, there could be others.

Week 12:

Slow disaster is the main one.

Resistance. Antibiotic resistance, pesticide resistance.

Data visualization: how we can see a slow disaster; difficult to visualize it. It's like a response to it.

Might come out in essay? Slow disasters relate to many of those readings.

Slow disaster: long term degradation in those countries? That's taking argument to a second level. But basic definition of slow disaster would be antibiotic resistance, where it was taking almost 75 years to produce the situation and there's not going to be one event coming out of it. There are people sickening in different circumstances, but it is not a huge event that is happening.

Quote from someone: everything is a slow disaster. In a sense, there's a difference of tempo of hazards. Volcano is fast, antibiotics is slow. Disasters that happen are slow because they are consequences of long term of social problems, but at the more basic level between volcano erupting and antibiotic resistance.