

Last week: Roots of modern day “environmentalism”..

<https://www.youtube.com/watch?v=JL9S0J8-4k>

Beginning with the idea of “spiritual fulfillment” “autonomy”,
yet identifying with “nature” and the “collective” well-being of his society..
-> “**preservationists**”..

Contrast that with the dominant North American emphasis on:
the idea of economic development and economic growth:
considering “nature” as a “resource for economic gain”.,
-> **Utilitarian (conservationist: proper resource management)**

Start at 1min 20 sec:

https://www.youtube.com/watch?v=mYaLE3S_H2g

South of the border:

<https://www.theguardian.com/environment/video/2018/oct/15/show-me-the-scientists-trump-reiterates-his-climate-change-doubts-video>

“Rejecting environmental regulation as a barrier to economic progress”

Andrew R. Wheeler

Andrew R. Wheeler (born December 23, 1964) is an American attorney and serves as the deputy administrator from April to July 2018, and served as the acting administrator from July 2018 to February 2019. He previously worked in the law firm Faegre Baker Daniels, representing coal magnate Robert E. Murray and lobbying against the Obama Administration's environmental regulations.^[1] Wheeler served as chief counsel to the United States Senate Committee on Environment and Public Works and to the chairman U.S. Senator James Inhofe, prominent for his rejection of climate change.^[2] Wheeler is a critic of limits on greenhouse gas emissions and the Intergovernmental Panel on Climate Change.^[3] He is a former coal industry lobbyist.^[4]

In October 2017, Wheeler was nominated by President Donald Trump,^[5] renominated in January 2018^[6] and confirmed as Deputy Administrator of the EPA in April 2018.^[7] On July 9, 2018, Wheeler became the Acting Administrator following the resignation of Scott Pruitt.^[8] On November 16, 2018, President Trump announced he would nominate Wheeler to serve as the EPA's permanent administrator.^[9] He was confirmed for the position by a 52-47 vote in the Senate on February 28, 2019.^[10]

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- 1 Early life and education
- 2 Career

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How is it this possible, that so many people downplay “environmental risks”?

Ch 6: Risks and Hazards



Social research points out that our “psyche”, “values”, and “social networks” can have an important impact on how we perceive and react to “**environmental risks**”..



Environment as hazard

- **Hazard** – a thing, a condition, or a process that threatens individuals and society in terms of production (making a living) or reproduction (being alive)
- “Natural” vs. “anthropogenic”

Clear example of a “natural” hazard?



Space-watchers are already keeping a close eye on [1999 RQ36](#), a 1,837-foot giant that has a one in a thousand chance of hitting Earth on its next close encounter in 2182. (100 nuclear bombs)?

Clear example of an “anthropogenic” hazard?



Toxic wastes

Natural Hazards? Earthquakes; hurricanes; etc.

Many hazards are caused or exacerbated by human activities

<https://www.youtube.com/watch?v=JWXvqvvvKX8>



We seem to be increasing the risk of “major storm” & “extreme weather”...

The IPCC (International Panel on Climate Change) has confirmed that extreme weather events are increasing in frequency (storms; hurricanes; drought; floods, heat waves, etc.).

The **Intergovernmental Panel on Climate Change (IPCC)** is a scientific and **intergovernmental body** under the auspices of the **United Nations**, set up at the request of member governments, dedicated to the task of providing the world with an objective, scientific view of **climate change** and its political and economic impacts.

Covid 19 (Coronavirus) - a natural hazard (biological)

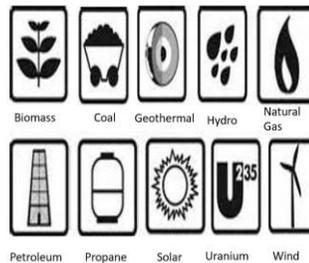
<https://experience.arcgis.com/experience/685d0ace521648f8a5beeeee1b9125cd>

Where do Ontarians get their electricity?

•2015 estimates:

- nuclear 61%
- hydroelectric 24%
- natural gas 9%
- wind 6%
- solar <1%
- bioenergy <1%

What makes electricity ?



“anthropogenic”

- some hazards that are clearly human-made (100%), such as nuclear power

E.g. “Nuclear power”

In Canada, roughly 17 % of our nation’s total electricity generation;
In Ontario, roughly 61 % of our province’s electricity generation;

Bruce Power (Kincardine)
2nd largest nuclear power plant on this planet



Concerned??



Fukushima, Japan (hit by a Tsunami in 2011)

On 11 March 2011, a magnitude 9 earthquake occurred off the east coast of Japan, generating a tsunami that severely damaged coastal areas and resulted in 15 891 deaths and 2579 missing people.

As a consequence of the tsunami, the Fukushima Daiichi Nuclear Power Station (FDNPS), located along the shoreline, lost its core cooling capacity which caused severe damage to the reactor’s core and led to a nuclear accident rated as Level 7 (major accident) on the International Nuclear Events Scale (INES). Substantial amounts of radioactive materials (radionuclides) were released into the environment following explosions at the FDNPS on March 12, 14 and 15.

Some of the worst exposures: workers of the Tokyo Electric Power Co.



© Tokyo Electric Power Co. (TEPCO)'s tsunami-crippled Fukushima Daiichi nuclear power plants (L to R) No. 4, No. 3, No. 2 and No. 1 reactor buildings are seen in Fukushima prefecture. © Yonhru Ishizumi / Reuters

Over 400 Nuclear reactors around the world

China is currently building 24 of them..

Problem: Unstable geology (earthquakes)

Also: Where do we put the radioactive waste? (bunkers)

Can remain dangerous for 100,000's of years



Decisions as risk

- **Risk** – the known (or estimated) probability that a hazard-related decision will have a negative consequence.
- Can we “quantify the risk” of a nuclear disaster??
- E.g With nuclear power:
- There have been 3 major reactor accidents in the history of nuclear power (Three Mile Island, Chernobyl and Fukushima)
- Chrenobyl: 1000s of deaths & the area to this day continues to be highly hazardous and dangerous.
- 3 accidents over 17,000 “cumulative reactor years” of commercial nuclear power generation over 33 countries..
- So far, can we estimate that the risk of a major accident for any nuclear reactor in any given year to be roughly: $3/17,000$ or $.00017647$)??
- Is this reasonable? Or is the risk actually much higher, and we have merely been “lucky” so far....

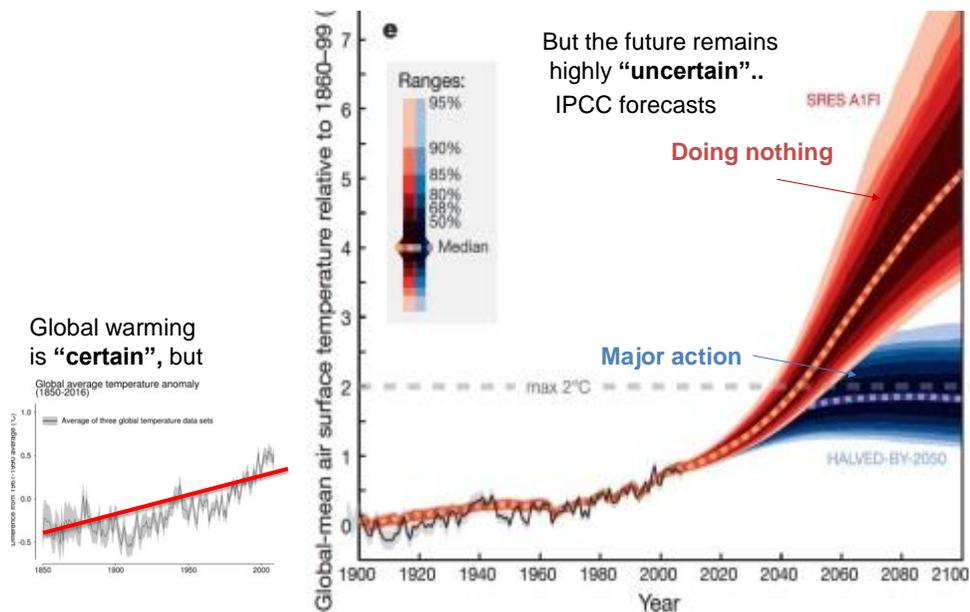
Key element of risk:

Decision (e.g. is the risk large enough to worry about?)
 What might be done to reduce the risk?

Competing risks (which is preferable?) e.g. nuclear versus fossil fuels?

Decisions in a context of “risk” are complicated by the simple idea that environmental conditions can be highly uncertain

- **Uncertainty** – the degree to which the outcomes of a decision or situation are unknown
- **“Scientific” uncertainty** .. the degree to which the outcomes of a decision or situation are unknown by science..
- E.g. Scientists in the 1960s and 1970s did not foresee the cod fishery collapse.. & when they finally documented the problem, politicians ignored them..
- <http://www.cbc.ca/archives/entry/cod-fishing-sounding-the-alarm>



IPCC, 2015 forecasts

2 degrees over 100 years? (UN target) or 3 degrees? or even 5 degrees?

Why the uncertainty here?

Climate change is remarkably complex (i.e. **the physical determinants**)..

but perhaps even more difficult to forecast:

the human response (political) to the risks of climate change..

REALM OF SOCIAL SCIENCE:

WHY DOES MODERN SOCIETY NOT ACKNOWLEDGE FULLY THE RISKS ASSOCIATED WITH CLIMATE CHANGE (AMONG OTHER HAZARDS), AND SUBSEQUENTLY ACT!

The problem of risk perception

- **Risk perception** – the tendency of people to evaluate the hazardousness of a situation or decision based on biases, culture, or human nature
 - Interdisciplinary research on such tendencies

Have you noticed that we tend to have quite a few “exaggerated” fears whereas others are largely ignored? Our perceptions of risk are not always “rationale” or “informed”

E.g. “Violent Crime/Terrorism” versus “air pollution”

(600 murders in Canada in 2015; 0 deaths due to terrorism)...

(many many more deaths, annually, due to environmental pollutants)

Air pollution results in 7,700 premature deaths in Canada each year, report says

Air pollution cost Canadians \$36B in 2015 due to premature death and illness

The Canadian Press Posted: Jun 01, 2017 12:37 AM ET | Last Updated: Jun 01, 2017 12:38 AM ET



New research in 2015 suggested the number of premature deaths caused by air pollution is close to 7,700 people a year. (File Photo)

1000 shares



Facebook

Air pollution cost Canadian families an estimated \$36 billion in 2015 due to premature death and illness, a new research report says.

The report, Costs of Pollution in Canada, is a compilation of scientific data on all aspects of pollution, from smog to oil spills and fertilizer use. It is

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Note: some would consider this estimate as rather high,..
A 2008 Canadian Medical Association study concluded that about 1,500 people die prematurely every year because of air pollution.

Risk communication

- Experts want to know how to convince people that certain risks do or do not exist so that people will change behaviors

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Text book asserts:

The most feared “hazards” are those that are: “involuntary” & “uncontrollable” (plane crash; terrorist attack)



The least feared “hazards” are those that we perceive to be “under our control” (car accident)



Odds of dying in a plane crash: **one in 11 million**.

Your chances of dying in a car on an annual basis, is about **1 in 18,000** ..

If the risk of accidents did not vary by age, this would leave for roughly **1 in 225 chance**, over a lifetime of dying in a car crash (note:.. **Serious injury in a car crash: 1 in 3200, or roughly 1 in 40 over a lifetime**)

People around the globe identify climate change as among the leading threats to national security, according to a new Pew Research Center survey. The survey asked about eight possible threats. While the level and focus of concern varies by region and country, international climate change and climate change clearly emerge as the most frequently cited security risks across the 38 countries polled.

Angus Ried Poll: a majority of Canadians are “concerned, or very concerned” over climate change.

So, why don't Canadians demand more immediate and dramatic action on climate change?

What would an economist argue?

We continue with fossil fuels because it is “economically rational” to do so.. (cheaper)..

In contrast,..

How can other social sciences contribute to our understanding of why there is so little action on this front??

A few examples?

<https://www.youtube.com/watch?v=y2euBvdP28c>

Psychology's emphasis in understanding “risk perception”

We in a very primal way (part of our very psyche) tend to overstate risks that are particularly “personal” & “immediate” (e.g. risk to one's personal safety; eg. violence) **while underestimating other types of risks that are not as obvious to us in an immediate manner** (e.g. risk to one's health due to a complete lack of exercise) .



Daniel Kahneman (psychologist):

Suggests that when we are told that something might impact us, some uncertain time in the distant future (abstraction), we have a tendency come up with all sorts of excuses so that we do not act on it today.. Particularly true, if it means considerable personal sacrifice/inconvenience..

Psychologists also suggest that we tend to be “**hard wired**” toward inaction on this risk.. “**Optimism**” bias? It will impact others, not me personally..

Also: Do we have a “**finite pool of worry**”? i.e. only so much energy, such that we end up ignoring some of these big issues? Does this explain our “apathy”?

Other factors?

Moving into the realm of sociology (??)

What about the idea that we all work out of our own limited

“frame” (as shaped by our own political/religious/economic philosophy)

& this “frame” might merely lead us not to be concerned with the issue..

Sociologists often speak of the importance of one’s personal “social network”, fundamental in defining this “frame of reference”, one’s values, perception of risk, etc.

A **social network** is a **social structure** made up of a set of **social** actors (such as individuals or organizations), sets of **dyadic** ties, and other **social interactions** between actors.

Your friends, relatives, neighbors, social contacts at work, school, Facebook friends, etc.



Can have an:

-> impact on physical, emotional well-being

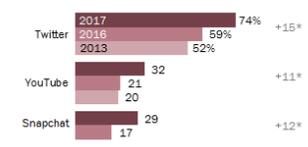
-> yet also, can be considered an important

determinant of political ideology/perceptions of environmental/political risks

Twitter, YouTube and Snapchat have grown since 2016 in portion of users who get news on each site

% of each social media site’s users who get news there

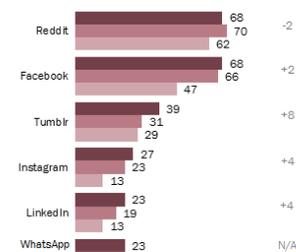
Sites where news usership increased since 2016 *16-17 CHANGE



Are they not set up to “reinforce” your personal interests/preferences/tastes biases??

Programmers using “algorithms” to target your “demographic”?

Sites where news usership did not change since 2016



*Change from 2016 to 2017 is statistically significant.
 Note: Snapchat not asked about in 2013. WhatsApp not asked about in 2013 or 2016.
 Source: Survey conducted Aug 8-21, 2017.
 *News Use Across Social Media Platforms 2017”

Conformity to your social network..
To what extent do persons you know rely upon the same sources of information/
media?

The New York Times

Heat Waves in Europe Will Increase, Study Finds

The findings suggest that once every five years, Europe is likely to experience "a very hot summer," up from a probability a decade ago that such events would occur once every 52 years.

By DAVID JOLLY

Quick Analysis Finds Effect of Climate Change in French Floods

Using data and computer simulations, researchers say warming temperatures increased the likelihood of a deluge like the one that affected Paris.

By HENRY FOUNTAIN

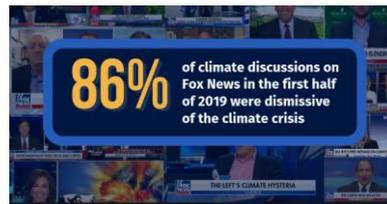
U.N. Panel Issues Its Starkest Warning Yet on Global Warming

Failure to reduce emissions could threaten society with food shortages, refugee crises, major flooding and mass extinctions, the group of scientists and other experts found.

By JUSTIN GILLIS



or?



-> fundamental in understanding our political choices, and how Americans (Canadians?) perceive environmental risk..

Consistent with this idea that our "frame" leads us to potentially ignore serious risks:

the textbook's discussion of "**Risk as Culture**"..

Douglas and Wildavsky (1982)

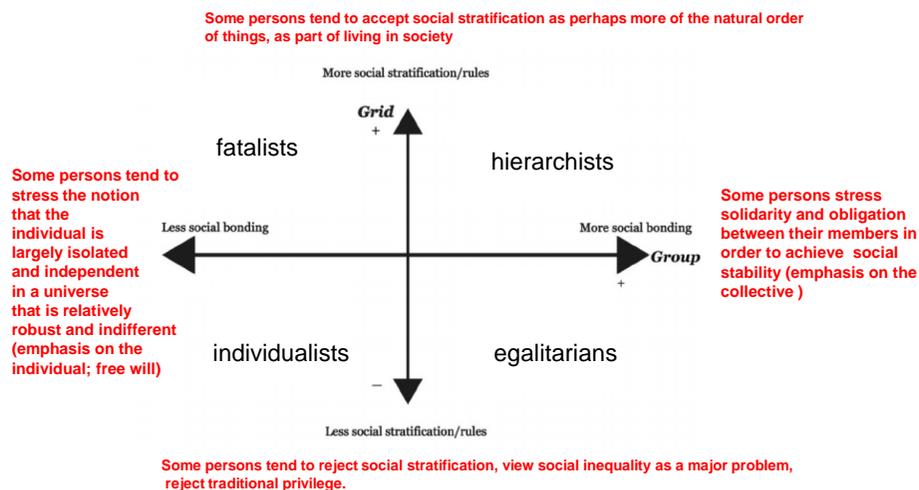
"the argument that our sense of risk is shaped by our basic values (or society's values), conditioned by our experiences in school and work, from family, from our communities, from the media, among a range of other factors.

These networks can then reinforce our:

"Confirmation bias" (cherry pick evidence consistent with one's world view, in justifying inaction or action.... often, yet not always, consistent with the broader values of one's society).

Cultural theory

- Douglas and Wildavsky (1982)
 - The way people think about risk is related to how society is organized & some rather important “sets of values”..
 - How do we view “**social stratification**”?
 - **Social stratification** is a kind of **social** differentiation whereby a society groups people into socioeconomic strata, based upon their occupation and income, wealth and **social** status, or derived power (**social** and political).
 - To what extent do you value “**social bonds**”:
 - “Elements of social bonding include attachment to families, commitment to social norms and institutions (school, employment), involvement in activities, and the belief that these things are important”
-
- According to Mary Douglas and Aaron Wildavsky, Risk and Culture (1982)
 - Cultural Theory of Risk
 - In speaking of risk & the environment, part of the explanation of how individuals perceive risk relates to how societies organize & view themselves



Egalitarians (low grid & high group)

People should not be constrained by circumstances (e.g. poverty), and should act to maintain social solidarity.

**Here you might find activists that target both “inequality” and “environmental problems”
- Individuals acting together (as a community) to address these problems
(e.g. Environmental activists: Canada?)**

Individualists (low grid & low group)

People should not be constrained by circumstances (e.g. by government regulation), yet be free to act out of “self-interest” (low emphasis on group solidarity)

**Little faith in the ability of governments/large institutions to address environmental risk -
- Individuals acting autonomously might address these problems..
(e.g. libertarian; anti-government)**

Fatalists (high grid & low group)

People are inevitably constrained by circumstances, but we are under no great obligation to others.

**Emphasis on “individual autonomy” yet with an acceptance of “hierarchy”
A faith in government authority & free markets to solve problems? (e.g. Republican Party?)**

Hierarchists (high grid & high group)

Rules and group solidarity are of foremost importance.

**A faith in government/ institutions to solve environmental problems; regulation of markets &
higher levels of taxation (e.g. a faith in government planning/policy to address problems)**

Mary Douglas attributed political conflict over environmental and technological risks to a struggle between adherents of competing ways of life associated with the group–grid scheme: the **“egalitarian types”** (“low grid”, “high group”) one, which gravitates toward fear of environmental disaster as a justification for restricting commercial behavior productive of inequality; and the **“fatalist types”** (“low group, high grid”), which resist claims of environmental risk, and in so doing, serve (intentionally or not) to shield private orderings from interference, and to defend established commercial and governmental elites from subversive rebuke.

Fatalist (does that capture American culture right now)?

Control of decisions

- Often those at risk are not the ones in control of decisions
 - **Externalities** – costs to those who do not make the decisions
 - Example: toxic pollution in poor and minority communities

VIDEO ON THE NEW ORLEANS DISASTER>>>
<https://www.youtube.com/watch?v=VjFCv6JvZnU>