Environment and Politics

Project

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As a student of environment and politics, how would you look at the novel coronavirus pandemic? What does it tell you about the nature of human-nature relationships?

Introduction

- A common thread of conversation around the coronavirus pandemic has been of "humans being the virus"
- This has its basis in a lot of occurrences people see happening around them as (the ones privileged enough to say this) rot slowly away in the comfort of their homes:
    - The air-quality index of cities around the world notorious for their otherwise terrible air quality has improved immensely. Refer: China, Kolkata, Delhi[1] [2] [3].
    - Relentless posts about "wildlife reclaiming the earth"[4].
    - Everyone is aware of the problems overpopulation may pose eventually (at least, according to the models taught at the school level) and the general opinion that the population should not increase by much, has lead to people claiming the coronavirus as a way of "natural" population control.
- These are ((not good)) theories, with glaring flaws at multiple levels, at least if we are to take a perspective on this as students of Environment and Politics.
    - There is the obvious basis of some of them in Malthusian Ideas, which have been refuted by multiple writers across [5] [6] [7] the years.

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[1] Watts, J., & Kommenda, N. (2020, March 23). Coronavirus pandemic leading to huge drop in air pollution. *The Guardian*. https://www.theguardian.com/environment/2020/mar/23/coronavirus-pandemic-leading-to-huge-drop-in-air-pollution

[2] project, The World Air Quality Index. "Rabindra Bharati University, Kolkata, India Air Pollution: Real-Time Air Quality Index." aqicn.org. Accessed May 2, 2020. http://aqicn.org/city/india/kolkata/rabindra-bharati-university/.

[3] Ellis-Petersen, Hannah, Rebecca Ratcliffe, Joe Parkin Daniels, Sam Cowie, and Lily Kuo. "'It's Positively Alpine!': Disbelief in Big Cities as Air Pollution Falls." *The Guardian*, April 11, 2020, sec. Environment. https://www.theguardian.com/environment/2020/apr/11/positively-alpine-disbelief-air-pollution-falls-lockdown-coronavirus.

[4] Animals. "Fake Animal News Abounds on Social Media as Coronavirus Upends Life," March 20, 2020. https://www.nationalgeographic.com/animals/2020/03/coronavirus-pandemic-fake-animal-viral-social-media-posts/.

[5] Shermer, Michael. "Why Malthus Is Still Wrong." Scientific American. Accessed May 2, 2020. https://doi.org/10.1038/scientificamerican0516-72.

[6] "Overpopulation: Where Malthus Went Wrong." Accessed May 2, 2020. http://www.socialstudies.org/sites/default/files/publications/se/6106/610608.html.

[7] Hadas, Edward. "7 Billion Reasons Why Malthus Was Wrong." *Reuters Blogs* (blog), November 2, 2011. http://blogs.reuters.com/edward-hadas/2011/11/02/7-billion-reasons-why-malthus-was-wrong/.

- The arguments are often misanthropic, and often uttered by people who have little awareness of the consequences of their statements[citation needed]. The environmental ideas we have focused on in class are essentially human-centric at the end of it, even though we are aware of romantics and whatnot.

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Dwight Schrute, The Office, Season 3 Episode 15 [8]

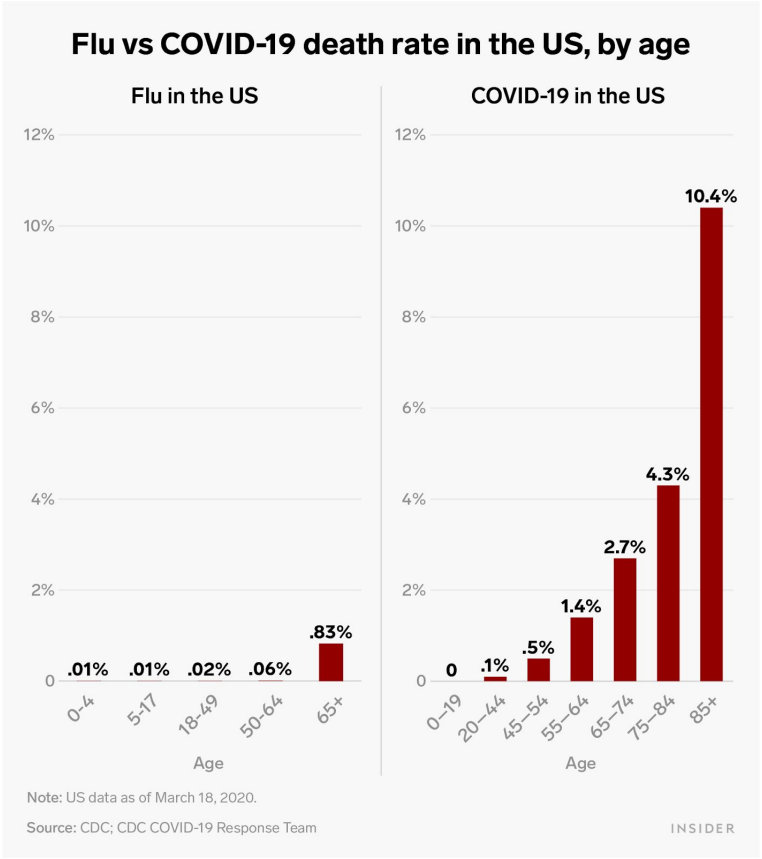
  - It is also unlikely[citation still needed, I'm just name calling at this point] that most people sharing these are aware that the (specific variation of) change they ask for would likely dismantle their entire way of living
  - It is a very classist statement. "The best safeguard against the novel coronavirus is the ability to voluntarily withdraw oneself from capitalism"[9]. A pandemic invoked as a solution for population control just disproportionately affects the poor, and further widens the gap between the working classes who cannot afford to leave the market to keep themselves safe and those who can.
- We will try to take a more "balanced" environmental view of the pandemic. As such, we will cover the following topics, eventually getting to the point in a somewhat roundabout way to fill the word cap

[8] IMDb. "Quotes from 'The Office: Phyllis'' Wedding".'" Accessed May 2, 2020. http://www.imdb.com/title/tt0962460/quotes/qt0437613.
[9] "'Chinese Virus,' World Market | Online Only | N+1." Accessed May 2, 2020. https://nplusonemag.com/online-only/online-only/chinese-virus-world-market/.

What makes COVID-19 so special?

- It is a seemingly innocuous disease, having none of the immediate life-threatening nature of previously known pandemics, such as SARS, Ebola, the Nipah virus.
- Out of the millions of diseases affecting humans and animals over the years, what makes COVID-19 so special? The answer is in its:
    - Infectiousness, the incredible ability to spread from person to person through common activity
    - The fatality rate, which at an estimated 2-3% [10] is higher than that of most common seasonal flues[11] [12].

[10] "Coronavirus Mortality Rate (COVID-19) - Worldometer." Accessed May 2, 2020. https://www.worldometers.info/coronavirus/coronavirus-death-rate/.
[11] Business Insider. "The Coronavirus Death Rate in the US Is Far Higher than That of the Flu - Here's How the Two Compare across Age Ranges." Accessed May 2, 2020. https://www.businessinsider.in/science/news/the-coronavirus-death-rate-in-the-us-is-far-higher-than-that-of-the-flu-heres-how-the-two-compare-across-age-ranges/articleshow/74902939.cms.
[12] "Coronavirus Disease 2019 vs. the Flu." Accessed May 2, 2020. https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/coronavirus-disease-2019-vs-the-flu.



Source: Business Insider [11]

- It is a hitherto unknown disease, a rather "novel" one as some would say, so there are no known treatments or vaccines or pre-existing immunity within humans, all treatment efforts go into symptomatic care

- The fact that it spread from a marketplace in China to all over the world lay testament to the fact.
- But it's still a rather peculiar spread of a disease, going from a place few can claim to have known before to basically every single spot in the world.
- Why did it spread like this? That can be answered by the next section.
- It is worth noting that it is zoonotic, [like 60% of human infections](#) [13]. Why worth noting? Because one would expect such a disease to flare up once, maybe twice near the hotspot of human-animal interaction, run amok within the community, and then die out. But this particular one has made it well beyond the pangolin-serving wet markets of Wuhan, but how?

The human structures enabling a pandemic

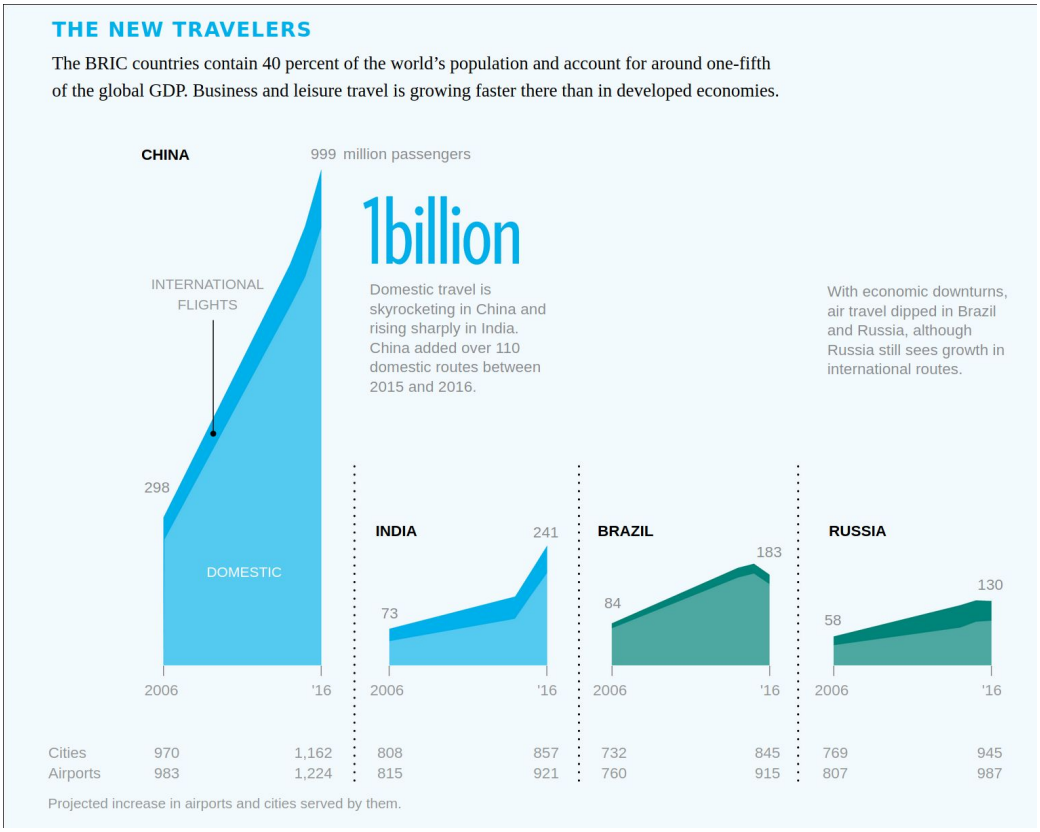
- "But this particular one has made it well beyond the pangolin-serving wet markets of Wuhan, but how?": answering that here.

[13] "Zoonotic disease: emerging public health threats in the Region." Accessed May 2, 2020. http://www.emro.who.int/about-who/rc61/zoonotic-diseases.html

- I'll be talking about the two broad aspects I think have led to this disease being a pandemic in the first place, but the second is more relevant to climate change and general environmental questions.

Global air travel networks

- This is a disease requiring close human contact to spread. And to go beyond its otherwise geographically bound limits it needs infected humans to travel to other parts of the world; where enough people of the one or two newly infected will travel further to spread the disease even more.
- This is a phenomenon that would not be possible in a less air-travel heavy time. Imagine the same spread happening in a cruise ship from the coasts of China to South Africa. The entire crew of the ship may suffer huge losses (which is still a bad thing™), but it does not spread beyond that, because this disease is somewhat short-term relative to the duration of travel. Efficient travel makes for a good distributor.
- Some statistics on air traffic internationally provided by the National Geographic [14]



- Keep in mind we are not (yet) saying "shut down air travel to reduce global pandemics". Human desire to socialise and travel is not something that should be blanket-banned; it's the same argument as "cholera is caused by unclean water so let's just stop drinking water altogether instead of treating it".

[14] "Air Travel Projected to Double Over Next 20 Years." Accessed May 2, 2020. https://www.nationalgeographic.com/environment/urban-expeditions/transportation/air-travel-fuel-emissions-environment/.

Economics favouring short-term efficiency over sustainability

- This is more about general sustainability goals and environmental impact than specific to the pandemic and its spread, but an important point to note. Will be using this as a background/overview, and eventually refer to specifics within this.
- Left unregulated, companies can favour short term benefits [15] over long term sustainability goals. These can be seemingly innocuous, such as taking the 0.01$ per-unit price deduction over using materials not up to standards[made up example cannot give references], or devastatingly obvious, such as eradicating entire forests in order to maximise profitability. A market favouring short-term, quick growth will push companies to explore such options. Even if there are clear long-term benefits, given the volatility of the entrepreneurship scene organisations might favour turning in the quick buck [16] to escape any losses that are most likely.
- The situation can get much worse in 'developing countries' which are
    - Trying to grow more to 'catch up'. Poor regulation would mean anything showing promising results - particularly in the short term - would get favoured over solutions that offer similar results with longer-term goals and sustainability in mind.
    - Standards set in place by already developed countries (that have already exploited natural and human resources a fair bit) can act as an active deterrent to such developing countries, who have shown tendencies to regard environmental movements as such - and thus often disregarded sustainability as a goal.
    - The Global South is often used as dumping grounds for the wastes of other nations. Termed as Garbage Imperialism[17], this Not In My Backyard approach taken by multiple corporations in developed nations serves a cosmetic purpose of appearing to be within regulations[18], when all they are doing is offloading the cost of sustainability to poorer countries that have no such regulations in place.
    - But that's just what's regulated. Regulations can often not take in account actions that have rather a severe impact on the ecosystem; and this is seen in full effect in developed nations as well - if not more.
- Specific to the pandemic: factory farming is a bad idea. This refers to the farming of both crops as genetic monocultures, and of the raising and killing of popular meat products (chickens, pigs, mutton, beef) in factory environments. While we will look into the specifics in just a bit, this is a prime example of maximising current profits at

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[15] Knott, Anne Marie. "The Real Reasons Companies Are So Focused on the Short Term." *Harvard Business Review*, December 13, 2017. https://hbr.org/2017/12/the-real-reasons-companies-are-so-focused-on-the-short-term.

[16] "The Long-Term Benefits Of Short-Term Thinking." Accessed May 2, 2020. https://www.fastcompany.com/3003670/long-term-benefits-short-term-thinking.

[17] Stebbins, K. R. "Garbage Imperialism: Health Implications of Dumping Hazardous Wastes in Third World Countries." *Medical Anthropology* 15, no. 1 (November 1992): 81–102. https://doi.org/10.1080/01459740.1992.9966083.

[18] Blumm, Michael. "The Fallacies of Free Market Environmentalism." *Harvard Journal of Law and Public Policy* 15 (January 24, 2006).

the cost of global pandemics. "In other words, agribusiness is so focused on profits that selecting for a virus that might kill a billion people is treated as a worthy risk."[19]

Popular messaging at this time that we will dismiss

- A quick rebuttal of some common topics that tend to keep popping up in this discussion
- I must note here that I'm only taking the 'strong forms' of these claims, because proponents of weaker forms of most of these still have a point. We will talk about this a bit later, but in summary some responses to these are also resulting in some major environmental issues that could have more long-standing effects at the end of things after all.

Misanthropic philosophies

- Misanthropy is the general hatred, dislike, distrust or contempt of the human species or human nature[wikipedia].
- The basis for these rebuttals (all that will follow) is essentially that environmentalism (as I know it) is still based on an anthropocentric view of the world. "How will the environment deteriorating affect us?" is the question, and if it so happens that the extermination of a species would benefit us as a whole, it may legitimately be considered, if heavily debated due to the "inhuman"-ness of eliminating a species.

Malthusianism

- Malthusianism is the idea that population growth is potentially exponential while the growth of the food supply or other resources is linear[wikipedia]
- Modern proponents tend to believe a 'weaker' version [20] [21], which is a rather common belief, it is something we are exposed to multiple times at the school level, especially when studying environmental movements in geography classes. We are not considering this under Malthusianism, and will talk about it a bit later.
- To begin with the original version: it makes no consideration for advances in food production, blah blah
- People representing this idea often call for global pandemics as a means of population control[re-find the references].
- Like said earlier, this is a response without consideration for the disproportionate impact it has on various classes.
- It's also advocating killing people instead of, like, birth control. Pretty ecofascist.

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[19] "What Are the Causes of the Coronavirus? | Marx21." Accessed May 2, 2020. https://www.marx21.de/coronavirus-agribusiness-would-risk-millions-of-deaths/.
[20] "Still Ticking - The Scientist - Magazine of the Life Sciences." Accessed May 2, 2020. https://web.archive.org/web/20110101172056/http://www.the-scientist.com/2010/12/1/26/1/.
[21] "Green Revolution Could Still Blow up in Our Face." Accessed May 2, 2020. https://www.theage.com.au/national/green-revolution-could-still-blow-up-in-our-face-20080203-ge6oid.html.

The Gaia theory

- The Gaia hypothesis... proposes that all organisms and their inorganic surroundings on Earth are closely integrated to form a single and self-regulating complex system, maintaining the conditions for life on the planet [22]
- It is a common theory used by advocates of "natural healing" and anti-vaxxers.
- We reject this as it (the original one without refinements) has little scientific basis and is not well backed up by experiments. Several critiques[23] have also been made as to the teleological nature of the arguments of it.

Veganism is The Solution

- It is true that this particular crisis, and swine flu, and perhaps 60% of human infections that are zoonotic may have been averted if people didn't consume meat. It is also a pitch made for climate change in general, referring most often to the emissions per animal consumed, versus that for an equivalent amount of vegan food.
- It is not, however, *The Solution*. Diseases - even those trapped in animal reservoirs - can be transmitted without animal consumption, albeit it is rarer. Consider the Nipah virus, that has spread through contaminated fruit and palm sap[24] [25].
- On a more conventional climate change perspective, the mass production of even non-animal products can have a severe impact on the ecology. Avocados are a recent example [26], with the impact it has had on local food security and the water table of locales where the fruit is grown.
- It is also a statement that ignores the conditions of several rural family ecosystems, for whom a ban on meat consumption can affect their nutrition intake and lifestyles by significant amounts, without any real impact on pandemic-like situations or the overall climate.

How does the environment factor into the crisis then?

- With all the talk of generic factors and refutals of popular theories, we now come specifically into how we can look at the current pandemic in an environmental lens.

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[22] https://courses.seas.harvard.edu/climate/eli/Courses/EPS281r/Sources/Gaia/Gaia-hypothesis-wikipedia.pdf

[23] "The Gaia Hypothesis: Fact, Theory, and Wishful Thinking | SpringerLink." Accessed May 2, 2020. https://link.springer.com/article/10.1023/A:1014237331082.

[24] Luby, Stephen P., Emily S. Gurley, and M. Jahangir Hossain. *TRANSMISSION OF HUMAN INFECTION WITH NIPAH VIRUS*. *Improving Food Safety Through a One Health Approach: Workshop Summary*. National Academies Press (US), 2012. https://www.ncbi.nlm.nih.gov/books/NBK114486/.

[25] The News Minute. "6 Nipah Virus Deaths in Kerala: Bat-Infested House Well of First Victims Sealed," May 21, 2018. https://www.thenewsminute.com/article/6-nipah-virus-deaths-kerala-bat-infested-house-well-first-victims-sealed-81650.

[26] "Why Our Love for Avocados Is Not Sustainable - Sustainable Food Trust - Sustainable Food Trust." Accessed May 2, 2020. https://sustainablefoodtrust.org/articles/why-our-love-for-avocados-is-not-sustainable/.

Weak parallels with the climate change movement

- Several thinkpieces have been written on the coronavirus pandemic, and several of them link it to the ongoing climate change debate
- While the link is not without basis, a lot of them refer to *weaker* links that do not have much backing in the sense of backed by theory, or can actually be connected without falling apart in seconds.
- An essay in eurozine[27] - focusing primarily on the impact of the neoliberal economic model and how it funnels specific actions and reactions - also draws a parallel to climate change; in how the measures for preventing COVID-19 are also measures climate change activists have been asking for to "save the climate".
- Changes, such as requests for reduced emissions (less flight travel) as made by the climate change community, are in the statement assumed to be equivalent to the plea for reducing air travel to stop the spread of the virus.
- But "global trade networks bad" is not the (direct) claim of climate change activists, their claim is "carbon emissions bad". "Global flight bad" is a consequence, whereas for coronavirus it's a primary argument - without quick travel, there is far more limited spread (for the coronavirus).

What are the strong links? We explore this hereon

- Infection comes from an otherwise closed off animal reservoir, as is the suspicion right now.
- Disturbing long standing ecosystems without any understanding can be incredibly damaging. From report by WHO [13]:
  "The recent emergence of MERS-CoV exemplifies that the occurrence of these infections are unpredictable as they originate from animals, often these infections are caused by novel viruses and are only detected when outbreaks occur."
- The direct environmental link: if human activity directly increases the risk of such animal-to-human transfer of diseases, and said human activity is also considered environmentally unsound (which by equivalence means the infection is a consequence of said unsound activity), then we have a strong link.
- The environmentally unsound idea here: infringing on previously unexplored ecosystems without care for how activities will affect the ecological balance and impact the conditions of all living creatures around the area.
- The risk increasing activity: through this reckless abandon, humans are opening up more avenues for previously unknown diseases to leave their closed off systems and affect humans.
- The second environmentally unsound idea: factory-farming that favours genetic monotonicity can impact the health of the crop/animal and tear down biological barriers against pandemic-like situations in case of disease.
- The equivalent risk increasing activity: actively meeting that exact criteria
- Both of these are activities? conditions? that are met due to current developmental model

[27] "We Created This Beast." Accessed May 2, 2020. https://www.eurozine.com/we-created-this-beast/.

Unchecked growth as an ‘ecological watershed’

“Neoliberalism ...removes economics and markets from the discourse of social obligations and social costs. ...As a policy and political project, neoliberalism is wedded to the privatization of public services, selling off of state functions, deregulation of finance and labor, elimination of the welfare state and unions, liberalization of trade in goods and capital investment, and the marketization and commodification of society.”

Henry Giroux, Chair of Cultural Studies at McMaster University[28]

- All the parameters that are needed for global pandemics to occur with relative ease as discussed above are met in the existing development model of neoliberal growth.
- For some elaboration of what I specifically refer to here: the “quest for growth” is assumed to be the quest for short-term growth, as it seems to be the commonly touted goal in the model.
- When talking of this, an equivalent can be drawn to the British in India, specifically in how they, too, are considered to be an “ecological watershed”. It may not be necessary that the situation was necessarily environmentally friendly before they came, but the impact of their changes is far more widespread and impactful.
- So for this we have:
    - Resource exploitation without prior consideration
    - Use of common technologies on new scenarios that are similar to current ones but different enough that it is both not optimal and not sustainable
- There is also the lashback against this claim. We will look into that as well.
- The ideas in general are taken from “Big Farms make Big Flu”[29], a book by Rob Wallace.

A lack of ecological specificity

- We brought up the British. Referring specifically to their policy on canals, the first similarity is immediately obvious: a glaring lack of ecological specificity.
- It’s like the canals all over again. Bringing them in had an improvement in yields for a short period of time, but then everything went south.
- For an agricultural example: growing a more water-heavy crop over a staple sustainable one, due to an increased market demand for the water-heavy one. Over time, this affects the water table of the region, leading to rather significant impacts. Avocados in South America are a recent example[26]. (Instances can be found in colonial and pre-colonial states as well, with regions being forced to grow rice/wheat over the local staple due to the ease of taxation and yield per area)

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[28] Polychroniou, C. J. “Neoliberalism and the Politics of Higher Education: An Interview With Henry A. Giroux.” Truthout. Accessed May 2, 2020. https://truthout.org/articles/predatory-capitalism-and-the-attack-on-higher-education-an-interview-with-henry-a-giroux/.

[29] WALLACE, ROB. *Big Farms Make Big Flu: Dispatches on Influenza, Agribusiness, and the Nature of Science*. NYU Press, 2016. https://www.jstor.org/stable/j.ctt1b3h9f3.

Impacts of the Green Revolution

- The Green Revolution is a great example of the ecological specificity problem.
- On the one hand, it is a celebrated feat that led to a global surplus of food production, massively cutting down on shortages and supply issues[wikipedia].
- On the other hand, it has consequences.
- Remember how Malthus was no longer valid due to improved food production? Well that may still be a problem. There's two major aspects to it: **genetic monocultures** and **water shortages**.
- While the yields across the world (where it was implemented) increased, there was a reduction in diversity due to the specifically generated variation of (rice) used - leading to genetic monocultures.
- Genetic monocultures are not great[30]. Any disease that spreads through the crop will devastate the yield entirely, across all geographic regions. Consider the effects of the Irish potato famine[31] and the southern corn leaf blight[32].
- We then come to the second impact: specifically referred to as water shortages, but more generally the non-specificity of the crops.
- Rice on its own has tons of variants, adapting to high or low natural rainfall levels in a region. What happens when a single variant takes over that farmers have to adopt to remain competitive, but the area does not provide enough water to irrigate it, or/and the soil isn't fertile enough? 1: over utilizing water, so the water table drops. 2: farmers need to buy fertilizers to make do, and become dependent on external economies for growing their produce - which can backfire in any situation where sustainability is priority.
- In not directly environmental terms, the green revolution had an impact on social structures - increasing the class gap between poor and rich farmers. We can then consider the increased disproportionate impact again, and how this means access to natural resources can be hindered specifically due to societal change, which is an agenda in poor environmentalism.

Factory Farming

- We now come back to the specifics of factory-based animal produce.
- The goal is to maximise the output of animal products and reduce the costs. To attain this, factory farming has two major components: the breeds of animals used, and the mode of operation. There are of course the social questions and implications but those can be ignored for this, I think.
- Breeds of animals used: specifically chosen/bred are animals that are easier to feed, quicker to grow, and fatter. This often leads to issues with poorer immunity in these specific breeds, that makes them more susceptible to diseases. On top of that, the

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[30] "The Dangers of Monoculture Farming - Challenge Advisory." Accessed May 2, 2020. https://www.challenge.org/knowledgeitems/the-dangers-of-monoculture-farming/.
[31] Editors, History com. "Irish Potato Famine." HISTORY. Accessed May 2, 2020. https://www.history.com/topics/immigration/irish-potato-famine.
[32] Tatum, L. A. "The Southern Corn Leaf Blight Epidemic." *Science (New York, N.Y.)* 171, no. 3976 (March 19, 1971): 1113–16. https://doi.org/10.1126/science.171.3976.1113.

genetic monoculture argument from the previous section holds: if one animal gets a disease, there is no natural genetic barrier in place to stop a wildfire spread.
- Mode of operation: these factories involve lots of animals packed very closely together. The population density makes it inevitable; If one gets sick, everyone gets sick.
- These conditions make these factories perfect breeding grounds for epidemics and pandemics, like the 2009 swine flu[33] pandemic originating in Mexican factory farms[34].

Consequences: the disproportionate impact of ecological crises

- "Ability to protect self from the virus is determined by personal ability to withdraw from the market"[9].
- The ecological crisis caused by those at the top of the ladder in the neoliberal developmental agenda impacts most heavily those that are at the lower rungs of it, and who have little role in the existence of the crisis in the first place.
- That statement has been made with the assumption that said agenda is responsible, there aren't too many articles claiming otherwise that I could find.

A rebuttal

- The claim of the rebuttal is: it is unfair to rail on the economic policy for damage caused by short term goals, as companies will see the changes happening, realise it is not good for them economically in the long term, and turn to more sustainable methods in order to increase their longevity. This makes sense, so the theory will not be immediately discarded.
- Even if they don't self-govern, regulations can exist in place to control them, as has happened with regards to air pollution in most first world countries. Compare the picture below of Los Angeles in 1975 to how it looks now (just before the pandemic though).

Los Angeles in 1975, Getty Images[35]

[33] WHO. "WHO | Infection of Farmed Animals with the Pandemic Virus." World Health Organization. Accessed May 2, 2020. https://www.who.int/csr/disease/swineflu/notes/briefing_20091105/en/.
[34] ScienceDaily. "2009 Swine Flu Pandemic Originated in Mexico, Researchers Discover." Accessed May 2, 2020. https://www.sciencedaily.com/releases/2016/06/160627160935.htm.
[35] "Photos: L.A.'s Mid-Century Smog Was so Bad, People Thought It Was a Gas Attack." Accessed May 2, 2020. https://timeline.com/la-smog-pollution-4ca4bc0cc95d.

- Critics of this rebuttal[19] will point to the goal of neoliberal policies in eliminating the structures that could enforce this sort of restriction.

Considering primitivist reactions

- Let's say we now agree that the current model is not sustainable, a crisis will come, be it in the form of generally studied climate change or multiple pandemics like this one. How to respond? Looking at it from multiple perspectives to examine the long-ranging consequences, if a bit vaguely.
- The accounts that follow may be slightly biased.
- Recall that the primitivist model of conservation calls for a ban on the tilling of land as well; all tools are bad (I may have misinterpreted the slides).

Society-level changes

- Without surplus of food, there is no means for the government of large groups of people, that needs security of food, water, shelter, and the like.
- Things are likely to return to tribal groups of a few 100 people at most, if that.
- This is considering a utopic switch from current society overnight, and ignoring the purge that will break out if it ever actually does come to reality overnight.

What is health in a primitive society?

- No hospitals, nursing homes, or modern healthcare at all. Without the industrial production of medicines, people are limited to whatever cures they can get from nature around them. Life expectancy will likely drop, and while pandemics will probably be rare - no human vectors jet setting across the planet - epidemics wiping out entire groups are more likely.
- Limited scientific study. While the scientific method will continue to exist, no specialised tools to study anything beyond what can be seen by the eye. Sure, we're no longer trying to rule the world so you don't need to know the insides of black holes anymore, but you also don't know what viruses are

Considering agrico-centric reactions

- I continue to remain biased.
- Industry bad, agriculture good. We go ahead with these basic principles.

Society-level changes

- Cities cannot exist. Any non-agriculture centric living space is at odds with the goals
- Each village strives to be a self-sufficient unit, so there probably exists some surplus. As someone must control the surplus, class is likely to be a thing. To maintain 'self-sufficiency' people may opt to ensure people from the same family maintain professions so there is always a practitioner. Caste is likely to be a thing.
- Ralegan Siddhi is a good example of such a society in current day.

What is health in an agricultural society?

- Much like primitivism, healthcare has to be managed using solely local resources.
- The existence of surplus means, however, that there is the space for people with free time to figure out how to specifically take care of people - including early versions of surgeries.
- Crop devastation is likely to kill a few if it happens, but not risk wiping out all of humanity.
- Epidemics would continue to remain deadly.

Realistic measures that can be taken (this is opinion)

Stop-gap solutions

- **Cooking food properly**. It's not really something that is not done, but every now and then the line in front of the DLF vendor is too much and he undercooks something, risking infection. There is not much that can be done about this other than preaching.
- **Going vegan**. It isn't *The Solution* but is certainly a viable one. After all, the 60% zoonotic disease is a rather significant figure.
- Neither of the two, however, deal with roots of the problem affecting the climate as a whole, and avoid the structural overhaul needed to actually make an impact.

Slightly more permanent solutions

- **Developing standards for sustainable growth.** This is a multi-tiered requirement, ranging from emission control standards to waste disposal considerations, policies on land acquisition, and research requirements.
- **Educating the need for sustainable growth.** Standard will not help if those who are to implement them hold these in scorn.
- **Economic restructuring with sustainability in mind?** Maybe, I'm no expert unfortunately.

Utopic suggestions

- Become a utopia
- Reverse entropy[36]

Conclusion

- Popular environmentalism is still a very 'elitist' phenomenon, focusing on pretty birds and tigers
- An environmental study of the pandemic reveals all the issues inherent with current development models. It is also slightly disconcerting as no obvious solutions while maintaining growth are evident, much like climate change.

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[36] "The Last Question -- Isaac Asimov." Accessed May 2, 2020. https://www.multivax.com/last_question.html.