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#### Our thesis is that the collapse of capitalism is inevitable, it is a question of now or later: you should frame your decision through an anti-capitalist lens by centering the valorization of productivity that aff’s logic is founded upon.

Kuang 20 [Da Kuang and Changyi Huang are professors at the Huazhong University of Science and Technology, College of Marxism in Wuhan 430074, China. A Study of Marx’s Thought on the Speed of Capital Accumulation, Presented at the 2020 International Conference on Social Science, Economics and Education Research (SSEER 2020), Atlantic Press: Advances in Social Science, Education and Humanities Research Volume 455, 8-22-21, amrita]

III. CONTEMPORARY ENLIGHTENMENT: **CAPITALISM IS BOUND TO DIE OUT IN THE LONG-TERM STAGNATION OF CAPITAL ACCUMULATION** As we all know, Marx and Engels reached a most important scientific conclusion in the Manifesto of the Communist Party: **the death of the bourgeoisie and the victory of the proletariat are equally inevitable.** This is the famous “Two Necessities” principle of Marxism. If we study **Marx’s thought of the speed of capital accumulation, we will come to the conclusion that capitalism is bound to die out in the long-term stagnation of capital accumulation.** Wallerstein believes that **although the production for the purpose of pursuing profits has a history of thousands of years, this mode of production has never occupied a dominant position in these historical systems. Only capitalism regards the endless accumulation of profits as the fundamental feature of its own system**. Wallerstein pointed out that the capitalist system has been maintained for more than 500 years, and the fundamental policy of endless capital accumulation has been quite successful. However, **the historical stage based on this has come to an end, and the late capitalism is coming to an end.** Andrew Kleiman made **an empirical study on the change trend of American profit margin from 1929 to 2009. He believed that after the boom period of World War II, the capital profit margin of the whole economic system was indeed declining irreversibly.** Robert Brenner calculated the declining trend of manufacturing profit margin in the United States and Japan since the 1950s. Among them, **the average profit margin of manufacturing industry in the United States has more than doubled, and the average profit margin of manufacturing industry in Japan has more than tripled**. These empirical studies **confirm Marx’s idea that the rate of capital profit keeps falling and the rate of capital accumulation tends to stagnate.** The global financial crisis that broke out in 2007-2008 is the most serious crisis of capitalism since the great depression in the 1930s. **Although the crisis is presented in the form of finance, the underlying law is still “relative overproduction”, that is, trying to expand credit consumption to alleviate the contradiction between the expansion of production and the relative reduction of consumption capacity, accelerating the real estate and finance** The development of bubbles. But **this contradiction is only temporarily covered by bubbles, and after a long period of accumulation and fermentation, the crisis finally broke out**. After 10 years of evolution**, the capitalist world has not recovered from crisis and stagnation, but has expanded into a structural crisis of capitalism along the path of financial crisis → economic crisis → financial crisis → debt crisis.** At the same time, **contemporary capitalism also faces the absolute limit of capital accumulation caused by the crisis of population aging and ecological crisis**. According to statistics, in 2014, the total population of 28 countries in the EU was 508 million, of which 18.5% were aged over 65, 19.9% were aged between 50 and 64, and 38.4% were aged between 50 and 64. **The trend of population aging will inevitably lead to the extreme shortage of labor force, increase labor cost, and further reduce the profit margin of capital; and the ecological crisis will gradually become the same or even more serious problem as the economic crisis.** As the existing capital accumulation models all go bankrupt, **the speed of capital accumulation will inevitably further decline. The economic cycle theory of western mainstream economics interprets the capitalist economic crisis as a kind of normal economic fluctuation, and holds that capital can always overcome the crisis and stagnation, and then accelerate the accumulation again. This kind of circular movement, which only attributes capital accumulation to quantitative change, conceals a historical fact: the final result of the crisis and stagnation of capital accumulation is the qualitative change of capitalist ownership, which is an irreversible linear process**. Over the past 200 years, **the world economic crisis has occurred more than 20 times, some of which directly triggered the proletarian revolution**, some of which first broke out in war and then triggered the proletarian revolution. **For example,** the result of **the capitalist economic crisis in 1847 was the final explosion of the French Revolution in June;** The capitalist economic crisis of 1867-1868 first triggered the Franco Prussian War, and finally triggered the Paris Commune Revolution; the capitalist economic crisis of 1907-1908 first triggered the first World War, and finally triggered the October Revolution of Russia which opened a new era of human history in 1917; the capitalist economic crisis of 1929-1933 gave birth to the second World War, and finally the war As a result, Eastern European countries including East Germany, Yugoslavia, Poland, Hungary, Romania and other countries, as well as China, North Korea, Vietnam, Cuba, Albania and other countries have embarked on the socialist road. **In addition to the proletarian socialist revolution caused by the economic crisis, the capitalist internal system of ownership has also made major adjustments in response to the economic crisis.** From individual private capital to stock system, this is the first adjustment of capitalist ownership; from stock system to monopoly, this is the second adjustment of capitalist ownership; from private stock monopoly to capitalist state monopoly, this is the third adjustment of capitalist ownership; from capitalist state monopoly to international monopoly, this is the fourth adjustment of capitalist ownership. As a result, the capitalist ownership of means of production is becoming more and more like public ownership rather than private ownership. It is getting further and further away from the original private ownership and closer to public ownership. It can be predicted **that capitalism will inevitably die out in the long-term stagnation of capital accumulation. The ultimate fate of capitalism is to be replaced** by socialism.

#### COVID-19 is a symptom of the disease that is late-stage capitalism— it represents the intrinsic contradictions that have arisen within capitalist economies and the inevitable collapse.

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The official narrative of COVID-19 states that the pandemic has caused the global capitalist economy to collapse, or at least to enter a deep recession and possibly a great depression, but is that correct? **A more accurate interpretation is that the pandemic has triggered a collapse that was going to happen anyway. For many years, the global capitalist economy has been crisis-ridden, unstable**, and “bubbly...subject to blowups.”1 **In August 2019, the interest yield on a 10-year US Treasury bond fell below that of a twoyear bond.** This inversion, indicating a **marked decline in investors’ confidence in long-term earnings, has preceded every recession since the 1950s.** These and other economic trends led the editors of Monthly Review to predict: “**There is now little doubt that the world economy is on the verge of a recession after a long sluggish recovery from the Great Financial Crisis of 2007– 09**.... In this instance, however, there lurks a bigger fear, the possibility of a financial Armageddon on the level of the Great Financial Crisis of 2008—or worse.”2 Conveniently, **the COVID-19 narrative assigns blame for the economic crash to a virus, taking attention away from the structural contradictions and instabilities that would have led to a crash in any case, as predicted for many months before the pandemic began.** The global capitalist **economy has switched to the expansion of finance capital and away from production of useful goods and services.** Financialization now creates “fictitious capital” such as packages of risk, derivatives, and futures. These fictional financial instruments involve gambles on the future valuation of an imaginary reality that does not correspond to any concrete economic good, service, or property. Global markets in financial instruments therefore become a more elite version of gambling that traditionally takes place in poker games, casinos, and racetracks. Creation of fictitious capital and **accumulation of capital through gambling create a vulnerability to burst financial bubbles and crashes like that of 2008.** That particular crash derived from the collapse of collateralized loan obligations: financial instruments that bundled housing loans for investment in global financial markets. **As the COVID-19 pandemic worsened, large investors spurred the rapid decline in prices of stocks and fictional financial instruments, as they rapidly sold off holdings that had become overvalued.** Later, **global stock markets have become more volatile while economic recession has deepened, throwing millions of people into unemployment, housing insecurity, and hunger. Blaming a virus for the crash mystifies the economic contradictions actually responsible for the abrupt end of the latest capitalist bubble**.3

#### The affirmative resets the cycle and rejuvenates short-term capitalist accumulation in two ways.

#### First, is false liberalism. The plan is representative of the idea that capitalism can be saved- eliminating “intellectual property protections” is a scheme that aims to boost falling rates of profit and improve rates of capital accumulation.

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As Lawrence Summers, economic adviser to the Clinton and Obama administrations, points out, the GATT/WTO free trade regime has been so successful that today’s free trade agreements aren’t even about the traditional obstacles to free trade, as these obstacles are already effectively eliminated in most countries. **Instead, today’s agreements involve protecting the property rights (especially the intellectual property rights) of multinationals and harmonizing the regulatory regimes across countries with which multinationals must comply. In other words, today’s free trade agreements are about enforcing the unequal economic relationships that global North corporations have continued to enjoy since the times of colonialism. The most egregious example of global North countries using the WTO to codify their colonial unequal economic relationships is the Trade-Related Aspects of Intellectual Property Rights (TRIPs), an agreement that is part of the WTO. TRIPs extend patent, copyright and trademark protections to all WTO members — effectively the entire world economy.** However, **the global North is a net intellectual property producer and the global South is a net intellectual property consumer. TRIPs’ intellectual property protections extend to goods like pharmaceuticals**, digital technology hardware and software, and most art and media entertainment**. Intellectual property protections allow the global North corporations that own the patents, copyrights and trademarks for these products to maintain monopoly control over them. Global North corporations can charge high prices for pharmaceuticals and digital technology to global South consumers, transferring wealth to global North corporations. Further, intellectual property protections make it impossible for global South corporations to compete with global North corporations to produce these goods, meaning that global North corporations can continue to monopolize the profits**. Since the post-WWII restructuring of the international economy, global South countries have needed to find capital to develop their own industries. **The GATT/WTO free trade framework bars global South countries from creating policies that can help their own industries develop their own surplus capital, as described above, so global South countries have resorted to borrowing money from the financial sector**. The IMF and the World Bank have promoted and subsidized global North banks lending to global South countries, and have only made capital available to global South countries if they accept the conditions of the North’s free trade policies, as well as privatization of any state-owned businesses and deregulation of their economies. **Through the work of GATT/WTO, the IMF and the World Bank, global South governments and corporations have been kept in the unequal economic position developed during colonialism.** As Vijay Prashad explains, US and Western militaries have also helped to expand free trade throughout the world by supporting military dictators and military coups throughout Asia, Africa and Latin America. **This economic and military violence is the visible hand the global North governments and corporations have used to concentrate the world’s wealth**. This visible hand explains how global North, and especially US, corporations continue to own and control a disproportionate amount of the most profitable industries in the global economy.

#### Second is WTO legitimacy. The plan is a colonialist revision that re-packages the WTO as a legitimate organization that can overcome its insidious past towards a future of equal free trade—that decks class consciousness.

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Free Trade Imperialism: **Continuing the Unequal Trade of Colonialism With mass global South resistance to colonialism increasing in the early 1900s and intensifying in the aftermath of the world wars, global North corporations and governments no longer needed colonialism.** From their perspective, moving toward the international economic model that would become free trade was much more cost-effective. As the US sociologist Johanna Bockman writes of US government and business elites in the aftermath of the second world war, **“[They] supported neither free trade nor globalization imagined as a level playing field with flows moving evenly around the globe. Instead, they supported the international neocolonial system through the [General Agreement on Tariffs and Trade (GATT)], while using the rhetoric of free trade and modernization to support US national interests.”** Roughly 70 years after the global North created the post-second world war international order, global North corporations continue to own and control a disproportionate amount of the most profitable industries in the global economy. Though many US commentators warn of the rise of Brazil, Russia, India and China, US corporations, in 2013, still had leading positions in 18 of the 25 most profitable industries. Moreover**, US corporations are dominant in the most profitable advanced industries, including banking and financial services, aerospace and defense, chemicals, computer hardware and software, insurance, pharmaceuticals, heavy machinery, and oil and gas.** While the US has roughly 5 percent of the world’s population and 25 percent of the global share of gross domestic product, US corporations likely control far more than 25 percent of the profit-producing capital in the world. **These profits are concentrated among the shareholders of multinationals incorporated in the US, which, according to one estimate, are at least 85 percent owned by US citizens. These profits are not being shared with vast majority of people in the world, most of whom do not own any wealth, let alone shares in corporations.** Global North and US multinational dominance of the world economy is not an accident, as global North governments and multinationals have used the international institutions they created following the second world war to continue to dominate the world economy. **These institutions include the United Nations; the GATT, which has since become the World Trade Organization (WTO); the International Monetary Fund (IMF); and the World Bank. The WTO is the main international institution that makes and enforces trade policies. The core GATT/WTO principles are “non-discrimination” and “national treatment.**” Non-discrimination means that countries will not use their trade policies to discriminate between goods that are produced in different foreign countries. National treatment means that countries will not use their trade policies to favor products produced in their own country over products produced in any other country. As described above, global North countries used their trade policies to promote the products of the corporations based in their countries for centuries. **The free trade principles of non-discrimination and national treatment deny the ability of any country to use those same policies today. This allows global North corporations to ensure that global South governments will not create policies that can help their own corporations develop the wealth they need to compete**. **Additionally, since the GATT/WTO free trade framework facilitates continued global North corporate control over advanced industries, global North corporations are far more likely to develop the high-tech industries of the future, as they own the profits from today’s advanced industries which they can invest in research and development.**

#### But capitalism can’t be saved. The short-term rejuvenation simply pushes back the long-term inevitable collapse which dooms us to death by climate change before the revolution can happen—this card is amazing and also preempts all their “cap solves climate change” answers. #amritaisthebest

Foster 18 [John Bellamy Foster, John Bellamy Foster is a professor of sociology at the University of Oregon and also editor of Monthly Review. He writes about political economy of capitalism and economic crisis, ecology and ecological crisis, and Marxist theory. “Making War on the Planet.” Monthly Review. September 1, 2018. <https://monthlyreview.org/2018/09/01/making-war-on-the-planet/> recut 8-22-2021 amrita]

A short fuse is burning. At the present rate of global emissions, the world is projected to reach the trillionth metric ton of cumulative carbon emissions, breaking the global carbon budget, in less than two decades.[1](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en1) This would usher in a period of dangerous climate change that could well prove irreversible, affecting the climate for centuries if not millennia. Even if the entire world economy were to cease emitting carbon dioxide at the present moment, the extra carbon already accumulated in the atmosphere virtually guarantees that climate change will continue with damaging effects to the human species and life in general. However, reaching the 2°C increase in global average temperature guardrail, associated with a level of carbon concentration in the environment of 450 ppm, would lead to a qualitatively different condition. At that point, climate feedbacks would increasingly come into play threatening to catapult global average temperatures to 3°C or 4°C above preindustrial levels within this century, in the lifetime of many individuals alive today. The situation is only made more serious by the emission of other greenhouse gases, including methane and nitrous oxide. The enormous dangers that rapid climate change present to humanity as a whole, and the inability of the existing capitalist political-economic structure to address them, symbolized by the presence of Donald Trump in the White House, have engendered a desperate search for technofixes in the form of schemes for geoengineering, defined as massive, deliberate human interventions to manipulate the entire climate or the planet as a whole. Not only is geoengineering now being enthusiastically pushed by today’s billionaire class, as represented by figures like Bill Gates and Richard Branson; by environmental organizations such as the Environmental Defense Fund and the Natural Resources Defense Council; by think tanks like the Breakthrough Institute and Climate Code Red; and by fossil-fuel corporations like Exxon Mobil and Shell—it is also being actively pursued by the governments of the United States, the United Kingdom, China, and Russia. The UN Intergovernmental Panel on Climate Change (IPCC) has incorporated negative emissions strategies based on geoengineering (in the form of Bio-energy with Carbon Capture and Storage, or BECCS) into nearly all of its climate models. Even some figures on the political left (where “accelerationist” ideas have recently taken hold in some quarters) have grabbed uncritically onto geoengineering as a deus ex machina—a way of defending an ecomodernist economic and technological strategy—as witnessed by a number of contributions to Jacobin magazine’s Summer 2017 Earth, Wind, and Fire issue.[2](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en2) If the Earth System is to avoid 450 ppm of carbon concentration in the atmosphere and is to return to the Holocene average of 350 ppm, some negative emissions by technological means, and hence geoengineering on at least a limited scale, will be required, according to leading climatologist James Hansen.[3](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en3) Hansen’s strategy, however, like most others, remains based on the current system, that is, it excludes the possibility of a full-scale ecological revolution, involving the self-mobilization of the population around production and consumption. What remains certain is that any attempt to implement geoengineering (even in the form of technological schemes for carbon removal) as the dominant strategy for addressing global warming, subordinated to the ends of capital accumulation, would prove fatal to humanity. The costs of such action, the burden it would put on future generations, and the dangers to living species, including our own, are so great that the only rational course is a long ecological revolution aimed at the most rapid possible reduction in carbon dioxide and other greenhouse gas emissions, coupled with an emphasis on agroecology and restoration of global ecosystems, including forests, to absorb carbon dioxide.[4](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en4) This would need to be accompanied by a far-reaching reconstitution of society at large, aimed at the reinstitution on a higher level of collective and egalitarian practices that were undermined by the rise of capitalism. Geoengineering the Planet Under the Regime of Fossil Capital Geoengineering as an idea dates back to the period of the first discoveries of rapid anthropogenic climate change. Beginning in the early 1960s, the Soviet Union’s (and at that time the world’s) leading climatologist, Mikhail Budyko, was the first to issue a number of warnings on the inevitably of accelerated global climate change in the case of industrial systems based on the burning of fossil fuels.[5](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en5) Although anthropogenic climate change had long been recognized, what was new was the discovery of major climate feedbacks such as the melting of Arctic ice and the disruption of the albedo effect as reflective white ice was replaced with blue seawater, increasing the amount of solar radiation absorbed by the planet and ratcheting up global average temperature. In 1974, Budyko offered, as a possible solution to climate change, the use of high-flying planes to release sulfur particles (forming sulfate aerosols) into the stratosphere. This was meant to mimic the role played by volcanic action in propelling sulfur into the atmosphere, thus creating a partial barrier, limiting incoming solar radiation. **The rationale he offered was that capitalist economies, in particular, would not be able to curtail capital-accumulation-based growth, energy use, and emissions, despite the danger to the climate**.[6](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en6) Consequently, technological alternatives to stabilize the climate would have to be explored. But it was not until 1977 when the Italian physicist Cesare Marchetti proposed a scheme for capturing carbon dioxide emissions from electrical power plants and using pipes to sequester them in the ocean depths that the word “geoengineering” itself was to appear.[7](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en7) Budyko’s pioneering proposal to use sulfur particles to block a part of the sun’s rays, now known as “stratospheric aerosol injection,” and Marchetti’s early notion of capturing and sequestering carbon in the ocean, stand for the two main general approaches to geoengineering—respectively, solar radiation management (SRM) and carbon dioxide removal (CDR). SRM is designed to limit the solar radiation reaching the earth. CDR seeks to capture and remove carbon to decrease the amount entering the atmosphere. Besides stratospheric aerosol injection, first proposed by Budyko, another approach to SRM that has gained influential adherents in recent years is marine cloud brightening. This would involve cooling the earth by modifying low-lying, stratocumulus clouds covering around a third of the ocean, making them more reflective. In the standard scenario, a special fleet of 1,500 unmanned, satellite-controlled ships would roam the ocean spraying submicron drops of seawater in the air, which would evaporate leaving salty residues. These bright salt particles would reflect incoming solar radiation. They would also act as cloud condensation nuclei, increasing the surface area of the clouds, with the result that more solar radiation would be reflected. Both stratospheric aerosol injection and marine cloud brightening are widely criticized as posing enormous hazards on top of climate change itself, while simply addressing the symptoms not the cause of climate change. Stratospheric aerosol injection—to be delivered to the stratosphere by means of hoses, cannons, balloons, or planes—would alter the global hydrological cycle with enormous unpredictable effects, likely leading to massive droughts in major regions of the planet. It is feared that it could shut down the Indian monsoon system disrupting agriculture for as many as 2 billion people.[8](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en8) There are also worries that it might affect photosynthesis and crop production over much of the globe.[9](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en9) The injection of sulfur particles into the atmosphere could contribute to depletion of the ozone layer.[10](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en10) Much of the extra sulfur would end up dropping to the earth, leading to acid rain.[11](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en11) **Most worrisome of all, stratospheric aerosol injection would have to be repeated year after year. At termination the rise in temperature associated with additional carbon buildup would come almost at once with world temperature conceivably rising by 2–3°C in a decade—a phenomenon referred to as the “termination problem.”**[12](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en12) As with stratospheric aerosol injection, **marine cloud brightening would drastically affect the hydrological cycle in unpredictable ways**. For example, it could generate a severe drought in the Amazon, drying up the world’s most vital terrestrial ecosystem with incalculable and catastrophic effects for Earth System stability.[13](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en13) Many of the dangers of cloud brightening are similar to those of stratospheric aerosol depletion. Like other forms of SRM, it would do nothing to stop ocean acidification caused by rising carbon dioxide levels. The first form of CDR to attract significant attention from economic interests and investors was the idea of fertilizing the ocean with iron, thereby boosting the growth of phytoplankton so as to promote greater ocean uptake of carbon. There have been a dozen experiments in this area and the difficulties attending this scheme have proven to be legion. The effects on the ecological cycles of phytoplankton, zooplankton, and a host of other marine species all the way up to whales at the top of the food chain are indeterminate. Although some parts of the ocean would become greener due to the additional iron, other parts would become bluer, more devoid of life, because they would be deprived of the nutrients—nitrate, phosphorus, and silica—needed for growth.[14](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en14) Evidence suggests that the vast portion of the carbon taken in by the ocean would stay on the surface or the intermediate levels of the ocean, with only a tiny part entering the ocean depths, where it would be naturally sequestered.[15](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en15) Among the various CDR schemas, it is BECCS, because of its promise of negative emissions, which today is attracting the most support. This is because it seems to allow nations to overshoot climate targets on the basis that the carbon can be removed from the atmosphere decades later. Although BECCS exists at present largely as an untested computer model, it is now incorporated into almost all climate models utilized by the IPCC.[16](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en16) As modeled, **BECCS would burn cultivated crops in order to generate electricity, with the capture and underground storage of the resulting carbon dioxide. In theory, since plant crops can be seen as carbon neutral—taking carbon dioxide from the atmosphere and then eventually releasing it again—BECCS, by burning biomass and then capturing and sequestering the resulting carbon emissions, would be a means of generating electricity while at the same time resulting in a net reduction of atmospheric carbon. BECCS, however, comes into question the moment one moves from the abstract to the concrete.** The IPCC’s median-level models are projected to remove 630 gigatons of carbon dioxide from the atmosphere, around two thirds of the total emitted between the Industrial Revolution and 2011.[17](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en17) This would occur on vast crop plantations to be run by agribusiness. **To remove a trillion tons of carbon dioxide from the atmosphere as envisioned in the more ambitious scenarios would take up a land twice the size of India (or equal to Australia), about half as much land as currently farmed globally, requiring a supply of freshwater equal to current total global agricultural usage.**[18](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en18) The costs of implementing BECCS on the imagined scales have been estimated by climatologist James Hansen—who critically notes that negative emissions have “spread like a cancer” in the IPCC climate models—to be on the order of hundreds of trillions of dollars, with “minimal estimated costs” ranging as high as $570 trillion this century.[19](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en19) The effects of BECCS—used as a primary mechanism and designed to avoid confrontation with the present system of production—would therefore be a massive displacement of small farmers and global food production. Moreover, the notion that the forms of large-scale, commercial agricultural production presumed in BECCS models would be carbon neutral and would thus result in negative emissions with sequestration has been shown to be exaggerated or false when the larger effects on global land use are taken into account. BECCS crop cultivation is expected to take place on vast monoculture plantations, displacing other forms of land use. Yet, biologically diverse ecosystems have substantially higher rates of carbon sequestration in soil and biomass than does monocrop agriculture.[20](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en20) An alternative to BECCS in promoting carbon sequestration would be to promote massive, planetary ecological restoration, including reforestation, together with the promotion of agroecology modeled on traditional forms of agriculture organized around nutrient recycling and improved soil management methods.[21](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en21)This would avoid the metabolic rift associated with agribusiness monocultures, which are less efficient both in terms of food production per hectare and carbon sequestration. Another commonly advocated technofix, carbon capture and sequestration (CCS), is not strictly a form of geoengineering since it is directed at capturing and sequestering carbon emissions of particular electrical plants, such as coal-fired power plants. However, **the promotion of a CCS infrastructure on a planetary scale as a means of addressing climate change—thereby skirting the necessity of an ecological revolution in production and consumption—is best seen as a form of planetary geoengineering due to its immense projected economic and ecological scale**. Although CCS would theoretically allow the burning of fossil fuels from electrical power plants with no carbon emissions into the atmosphere, **the scale and the costs of CCS operations are prohibitive.** As Clive Hamilton writes in Earthmasters: The Dawn of the Age of Climate Engineering, CCS for a single “standard-sized 1,000 megawatt coal-fired plant….would need 30 kilometers of air-sucking machinery and six chemical plants, with a footprint of 6 square kilometers.”[22](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en22) Energy expert Vaclav Smil has calculated that, “in order to sequester just a fifth of current [2010] CO2 emissions we would have to create an entirely new worldwide absorption-gathering-compression-transportation-storage industry whose annual throughput would have to be about 70 percent larger than the annual volume now handled by the global crude oil industry, whose immense infrastructure of wells, pipelines, compressor stations and storage took generations to build.”[23](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en23) **Capturing and sequestering current U.S. carbon dioxide emissions would require 130 billion tons of water per year, equal to about half the annual flow of the Columbia River. This new gigantic infrastructure would be placed on top of the current fossil fuel infrastructure—all in order to allow for the continued burning of fossil fuels**.[24](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en24) A Planetary Precautionary Principle for the Anthropocene If today’s planetary ecological emergency is a product of centuries of war on the planet as a mechanism of capital accumulation, fossil-capital generated geoengineering schemes can be seen as gargantuan projects for keeping the system going by carrying this war to its ultimate level. Geoengineering under the present regime of accumulation has the sole objective of keeping the status quo intact—neither disturbing the dominant relations of capitalist production nor even seeking so much as to overturn the fossil-fuel industry with which capital is deeply intertwined. Profits, production, and overcoming energy poverty in the poorer parts of the world thus become justifications for keeping the present fossil-capital system going, maintaining at all cost the existing capitalist environmental regime. The Promethean mentality behind this is well captured by a question that Rex Tillerson then CEO of Exxon Mobil Corporation asked—without a trace of irony—at an annual shareholders meeting in 2013: “What good is it to save the planet if humanity suffers?”[25](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en25) The whole history of ecological crisis leading up the present planetary emergency, punctuated by numerous disasters—from the near total destruction of the ozone layer, to nutrient loading and the spread of dead zones in the ocean, to climate change itself—serves to highlight the march of folly associated with any attempt to engineer the entire planet. The complexity of the Earth System guarantees that enormous unforeseen consequences would emerge. As Frederick Engels warned in the nineteenth century, “Let us not…flatter ourselves overmuch on account of our human victories over nature. For each such victory nature takes its revenge on us. Each victory, it is true, in the first place brings about the results we expected, but in the second and third places it has quite different, unforeseen effects which only too often cancel the first.”[26](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en26) In the face of uncertainty, coupled with an extremely high likelihood of inflicting incalculable harm on the Earth System, it is essential to invoke what is known as the Precautionary Principle whenever the question of planetary geoengineering is raised. As ecological economist Paul Burkett has explained, the strong version of the Precautionary Principle, necessarily encompasses the following: (1) The Precautionary Principle Proper, which says that if an action may cause serious harm, there is a case for counteracting measures to ensure that the action does not take place. (2) The Principle of Reverse Onus, under which it is the responsibility of those supporting an action to show that it is not seriously harmful, thereby shifting the burden of proof off those potentially harmed by the action (e.g. the general population and other species occupying the environment). In short, it is safety, rather than potential harm, that needs to be demonstrated. (3) The Principle of Alternative Assessment, stipulating that no potentially harmful action will be undertaken if there are alternative actions available that safely achieve the same goals as the action proposed. (4) All societal deliberations bearing on the application of features 1 through 3 must be open, informed, and democratic, and must include all affected parties.[27](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en27) It is clear that geoengineering promoted in a context of a capitalist regime of maximum accumulation would be ruled out completely by a strong Precautionary Principle based on each of the criteria listed above. There is a near certainty of extreme damage to the human species as a whole arising from all of the major geoengineering proposals. If the onus were placed on status quo proponents of capitalist geoengineering to demonstrate that great harm to the planet as a place of human habitation would not be inflicted, such proposals would fail the test. Since the alternative of not burning fossil fuels and promoting alternative forms of energy is entirely feasible, while planetary geoengineering carries with it immense added dangers for the Earth System as a whole, such a technofix as a primary means of checking global warming would be excluded by that criterion, too. Finally, geoengineering under the present economic and social system invariably involves some entity from the power structure—a single multi-billionaire, a corporation, a government, or an international organization—implementing such action ostensibly on behalf of humanity as a whole, while leaving most affected parties worldwide out of the decision-making process, with hundreds of millions, perhaps billions, of people paying the environmental costs, often with their lives. In short, geoengineering, particularly if subordinated to the capital accumulation process, violates the most sacred version of the Precautionary Principle, dating back to antiquity: First Do No Harm. Eco-Revolution as the Only Alternative As an extension of the current war on the planet, a regime of climate geoengineering designed to keep the present mode of production going is sharply opposed to the view enunciated by Barry Commoner in 1992 in Making Peace with the Planet, where he wrote: “If the environment is polluted and the economy is sick, the virus that causes both will be found in the system of production.”[28](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en28) There can be no doubt today that it is the present mode of production, particularly the system of fossil capital, that needs to change on a global scale. In order to stop climate change, the world economy must quickly shift to zero net carbon dioxide emissions. This is well within reach with a concerted effort by human society as a whole utilizing already existing sustainable technological means—particularly when coupled with necessary changes in social organization to reduce the colossal waste of resources and lives that is built into the current alienated system of production. Such changes could not simply be implemented from the top by elites, but rather would require the self-mobilization of the population, inspired by the revolutionary actions of youth aimed at egalitarian, ecological, collective, and socialized solutions—recognizing that it is the world that they will inherit that is most at stake. Today’s necessary ecological revolution would include for starters: (1) an emergency moratorium on economic growth in the rich countries coupled with downward redistribution of income and wealth; (2) radical reductions in greenhouse gas emissions; (3) rapid phase-out of the entire fossil fuel energy structure; (4) substitution of an alternative energy infrastructure based on sustainable alternatives such as solar and wind power and rooted in local control; (5) massive cuts in military spending with the freed-up economic surplus to be used for ecological conversion; (6) promotion of circular economies and zero-waste systems to decrease the throughput of energy and resources; (7) building effective public transportation, together with measures to decrease dependence on the private automobile; (8) restoration of global ecosystems in line with local, including indigenous, communities; (9) transformation of destructive, energy-and chemical-intensive agribusiness-monocultural production into agroecology, based on sustainable small farms and peasant cultivation with their greater productivity of food per acre; (10) institution of strong controls on the emission of toxic chemicals; (11) prohibition of the privatization of freshwater resources; (12) imposition of strong, human-community-based management of the ocean commons geared to sustainability; (13) institution of dramatic new measures to protect endangered species; (14) strict limits imposed on excessive and destructive consumer marketing by corporations; (15) reorganization of production to break down current commodity chains geared to rapacious accumulation and the philosophy of après moi le déluge; and (16) the development of more rational, equitable, less wasteful, and more collective forms of production.[29](https://monthlyreview.org/2018/09/01/making-war-on-the-planet/#en29) Priority in such an eco-revolution would need to be given to the fastest imaginable elimination of fossil fuel emissions, but this would in turn require fundamental changes in the human relationship to the earth and in the relationship of human beings to each other. A new emphasis would have to be placed on sustainable human development and the creation of an organic system of social metabolic reproduction. Centuries of exploitation and expropriation, including divisions on the basis of class, gender, race, and ethnicity, would have to be transcended. The historical logic posed by current conditions thus points to the necessity of a long ecological revolution, putting into place a new system of sustainable human development aimed at addressing the totality of needs of human beings as both natural and social beings: what is now called ecosocialism.

#### Seize the means of production and endorse a centrally planned economy- only the neg can offer an alternative model that sidesteps productivity focused mindsets while allowing for innovation. No perms- view this as a methods debate: they have endorsed free market ideology which was the link level.

Nieto 20 [Nieto, Maxi & Mateo Tomé, Juan. Maxi Nieto is a doctoral candidate at Universidad Miguel Hernández de Elche. Juan Mateo Tome is a professor at Complutense University of Madrid (2020). Dynamic Efficiency in a Planned Economy: Innovation and Entrepreneurship Without Markets. Science & Society. 84. 42-66. 10.1521/siso.2020.84.1.42. 8-28-2021 amrita]

#### This is, without a doubt, one of the most characteristic misapprehensions of the critics of communism. The first clarification required here is that economic planning (like social ownership) does not in any way require a single level or instance of decision-making which programs an economy down to the last detail, but rather that the distribution of skills among the numerous areas, levels, and agents (ICs, authorities, businesses, users and consumers, etc.) proves coherent and ensures that the overall decision-making process be organic (Laibman, 2002, 2011; Campbell, 2002; Cockshott and Cottrell, 1993). The planning agency does not make all decisions and need not be omniscient. Economic planning merely constitutes an institutional device that allows the principle of conscious, rational, and democratic control of the global productive process to be operational. As such, the socialist model is the economic basis of self-government in a society in which decisions are made and their implementation conducted by those who are affected, in two fundamental aspects: production (workplace, company, sector, national economy) and territory (locality, region, country). Based on current information and communication technologies, a democratically planned economy would function as a distributed system, simultaneously centralized and decentralized, not unlike the internet. Such a system would permit the management of information flows in real time, articulating knowledge and local decisions within the framework of a general plan. As a centralized system it would benefit from coherence, with access to all resources and the efficiency to mobilize them quickly toward democratically chosen objectives. As a decentralized system, it could articulate initiative and local knowledge (including autonomous relationships among companies to agree on the specific inputs required in each case) as well as independence from systemic failure (that is, burden sharing so that if a certain component fails, others can continue to operate). The need for coherent coordination and strategic vision requires centralization, while the need for detailed information and the promotion of free and local initiative require some degree of decentralization. Decisions would be made at one or another level depending on the nature of the decision in question. Thus, decisions that require broad coordination to achieve an optimal result would have to be sufficiently centralized (to avoid parallel decisions or blind dynamics), while decisions requiring detailed local information and which are free of coordination problems (for example, the variety and specific characteristics of the means of consumption) would necessarily be decentralized. Here decentralization adopts a non-commercial form, because in no case would there be private control over resources or investment.6

#### We allow for innovation but better—our Marxist dictatorship still provides the incentive for innovating without the profit and productivity based mindset that pushes us to overconsumption and death. Lol no

Nieto 20 [Nieto, Maxi & Mateo Tomé, Juan. Maxi Nieto is a doctoral candidate at Universidad Miguel Hernández de Elche. Juan Mateo Tome is a professor at Complutense University of Madrid (2020). Dynamic Efficiency in a Planned Economy: Innovation and Entrepreneurship Without Markets. Science & Society. 84. 42-66. 10.1521/siso.2020.84.1.42. 8-28-2021 amrita]

4. Innovation and Entrepreneurship in a Planned Economy 4.1. Innovation and social property. **Innovation occurs as a result of a long and complex accumulation process of knowledge and creativity, where very rarely is a single individual solely responsible. This is an essentially social process in which a plurality of actors and institutions contribute in very different spheres and circumstances.** The Austrian School presents an idealized image of innovation in capitalist economies, attributing it exclusively to the figure of the enterprising entrepreneur — whether in a disruptive sense (Schumpeter), or in a strictly coordinating sense (Kirzner). In fact, the entrepreneurial function develops within specific institutional frameworks and organized structures, both at the micro and macro levels. In this sense, **a socialist economy has significant advantages for developing technological and business innovation, as opposed to a capitalist economy: i) socialism allows for greater and more efficient allocation of resources to R&D&I activities, thanks to centralized control of the surplus and the absence of sumptuous consumption and a rentier population; ii) there are no obstacles (property rights) to the free dissemination of new products and techniques; iii) the equal distribution of resources (which guarantees that no basic needs go unmet) allows for discovery and fuller development of talent, which likewise occurs when work is undertaken through tasks that are more balanced for the majority and less routine; iv) in allocating investment, more information is available and the criteria are more varied than mere expectation of profit; v) social ownership is more inclusive and participatory than capitalist enterprise in terms of generating and mobilizing knowledge (tacit or not) and encouraging innovation; vi) socialism does not impose short-term innovation cycles looking to generate products that can be commercialized in, say, four to six months, as is typical in capitalist economies.** Under these favorable general conditions, the development of innovation in a socialist economy would unfold in three fundamental areas: G4774.indd 59 11/26/2019 10:34:47 AM 60 SCIENCE & SOCIETY i) **Strategic planning: this traces the main lines of scientific, technological, and innovation research**. Here would enter programs for the development of new technologies and infrastructures, as well as visionary projects that explore eventualities and future scenarios. This sort of research is carried out in universities, scientific academies, technological institutes, and other specialized centers in coordination with the business world. The process would consist in testing different alternative productive projects or techniques in order to verify results, in connection with the companies and sectors being served. ii) **Companies: research, design, and innovation departments**. iii) **Business entrepreneurship: individuals and teams put forward proposals in hopes of securing financing.** For any of these three areas, material incentives would exist that reward the degree to which the freely programmed objectives are achieved, in addition to purely social or moral incentives such as social recognition or professional and personal fulfilment. In the next section, we focus on how socialist entrepreneurship — something that the Austrian School considers impossible — would ostensibly work.

# Case

#### Using “evergreening” in the plan makes it too vague.

Erika Lietzan 20, the William H. Pittman Professor of Law and Timothy J. Heinsz Professor of Law at the University of Missouri School of Law. This is condensed from her forthcoming article in the University of Akron Law Review. CATO, FALL 2020 • REGULATION. “The Evergreening Myth” <https://www.cato.org/regulation/fall-2020/evergreening-myth> brett

Although the term “evergreening” is a metaphor and signifies an extension of something, proponents of reform proposals do not agree on the particulars of the term’s use. Some say the company has evergreened its invention, its drug, or its product. Others say the company has evergreened the drug’s patent or patent life, or its exclusivity. Some say it has extended the drug’s patents, or the drug’s patent coverage or patent life, or the drug’s exclusivity period. Some say the company has evergreened the drug’s price, or its own profits or monopoly, or the company has extended its market power. Many argue that through evergreening — whatever the term means — the innovator has improperly blocked other firms from competing with it. On this basis, they seek government intervention. For instance, one recent proposal would allow the Federal Trade Commission to bring antitrust actions against innovators who introduced newer products to replace their older products.

#### That makes the plan meaningless---negate on presumption.

Erika Lietzan 20, the William H. Pittman Professor of Law and Timothy J. Heinsz Professor of Law at the University of Missouri School of Law. This is condensed from her forthcoming article in the University of Akron Law Review. CATO, FALL 2020 • REGULATION. “The Evergreening Myth” <https://www.cato.org/regulation/fall-2020/evergreening-myth> brett

In the end, use of the “evergreening” term is problematic. It is a sloppy metaphor that conceals not only descriptive failures but also a failure to own and defend a radical — and important — normative claim. Serious writers about this topic should avoid the shorthand and focus on what matters: an actual description of the law and facts in play and the real normative claim being made. The term’s meaninglessness makes it impossible for audiences to distinguish among situations that may be different, as a legal, theoretical, or normative matter, and that may call for differing policy solutions. Using the metaphor does a disservice to policymakers and the public.

#### Turn—

Mullainathan 17 Sendhil Mullainathan [professor of economics at Harvard], 6-30-2017, "High Drug Prices Are Bad. Cutting Them Could Be Worse. (Published 2017)," The New York Times, https://www.nytimes.com/2017/06/30/upshot/high-drug-prices-are-bad-cutting-them-could-be-worse.html, accessed 7/19/2021 EH

It’s easy to be outraged by high drug prices. Yet under current circumstances, simply slashing them could make matters worse. That may be hard to see at first. After all, the case against soaring drug prices is being widely and persuasively made. Even the prestigious biology journal Cell recently published a commentary with the provocative title “How Much Longer Will We Put Up With $100,000 Cancer Drugs?” Donald J. Trump once railed that drug companies are “getting away with murder.” What’s more, while high drug prices evoke strong emotions — with lives at stake — sober economic analysis also reaches a similar conclusion. Drug pricing appears to violate basic cost-benefit principles: The cost of new drugs is often higher than the health benefit they provide, compared with the alternatives that are already on the market. Taking action to rein in high drug prices seems to be a slam-dunk: a chance to do something that is both fair and fiscally prudent, not to mention wildly popular. ADVERTISEMENT Despite all of these compelling arguments, cutting prices for novel new drugs would exacerbate another problem: the government’s shrinking role in biomedical research. According to a recent article in the Journal of the American Medical Association, private sources accounted for 58 percent of medical research funding in 2012, up from 46 percent in 2004. Public resources for such research would drop much further if President Trump’s budget proposal to slash National Institutes of Health funding by nearly 25 percent were adopted. Because industry pays for a large share of research, high drug prices do not just generate profits; they also become a funding source for important scientific work. In some cases, the experimental drugs that provide meager benefits to the patients taking them are indirectly providing a much broader public good. Take Inclisiran, a drug that recently completed Phase 2 trials in which it showed remarkable reductions in LDL cholesterol levels. Since cholesterol levels are only a marker for disease, more trials are needed to determine how the drug actually affects more consequential outcomes such as heart attacks and strokes. It’s possible that these future trials will yield disappointing news: Cholesterol reductions may simply not translate into particularly impressive health benefits. Yet whatever its ultimate health benefits turn out to be, Inclisiran is anything but incremental. To the contrary, it is cutting edge in one important way. It relies on a novel mechanism for producing its effects, directly targeting genes that are known to increase cholesterol levels via a mechanism known as RNA interference. Biologists have known about RNA interference for some time: Andrew Z. Fire and Craig C. Mello shared the 2006 Nobel Prize for their 1998 work on it. But translating these insights into medical advances is an arduous process. The Inclisiran effort is not only one of the largest drug trials that exploits this mechanism, but it also manages to target an ailment that afflicts a broad swath of the population. In short, the drug’s ultimate value cannot be measured in its immediate benefits to patients alone. The research that went into this drug — from basic science all the way through to the clinical trial — can have ripple effects. Work like this expands our understanding of how to harness a biological mechanism into a practical therapeutic. Who knows how many unexpected therapeutics based on RNA interference will build on the lessons learned in the process of producing this and other drugs like it? Research is not just about what is discovered but facilitating others’ discovery. Groundbreaking work is needed to lay the foundation for someone else’s skyscraper: The wonder drugs of today are built on previous failures and marginal successes. Perversely, curbing prices risks squeezing out this kind of innovation. The consequences will not be felt today, but it could be a disaster in years to come. Constrict that research pipeline, and we reduce our chance of future breakthroughs. Of course, research that benefits many others, not just the researcher, is exactly what government should be funding. Such research is a public good, yet we are relying largely on the private sector to provide it. Huge pharmaceutical profits from overpriced drugs are an extremely indirect way to fund the foundational research

#### Squo solves antibiotic resistance

Keller and Sheen 2-17-15 [Rebecca, Ben, Stratfor Global Intelligence, “Conversation: The Resurgence of Antibiotic Research”, https://www.stratfor.com/video/conversation-resurgence-antibiotic-research]

Rebecca Keller: We're actually starting to see a resurgence of antibiotic research recently. It's a field that had been pretty stagnant for decades. And over the course of the past year or so, we've seen several exciting developments in terms of new methods for discovering potential targets as well as a few new candidates for antibiotics in the future. Ben: So what do you think the wide reaching implications of this will be? Because clearly it's something, we are developing resistance to as a species. So how can this actually improve treatment in the future? Rebecca: So we have to keep ahead of the bacteria. Bacteria are going to evolve. They're going to develop resistance to the current existing treatments. So, when you think about antibiotics, they're all the same scaffold. So it's kind of like building a house, you build it on the same frame, but the outside of the house looks different. But the bacteria learned to adapt that scaffold. So you're looking for a whole new scaffold. You're looking at a skyscraper versus a house of something like that. And so looking at these new scaffolds, you want to look for ones that can't develop resistance. So teixobactin, which was, the paper on that was published last month that targets an entirely different part of the cell. So it doesn’t have the potential to develop resistance the same way current antibiotics do. So you're looking for a whole new solution. You're thinking outside of the box. And in doing so, that allows you to sort of stay ahead of the bacteria as they evolve as well. They're just trying to survive. Ben: So what do you think of the broader geopolitical implications of this? And how we're going to see this expand in the world? Rebecca: So when looking at disease, we're not always going to see a geopolitical impact. There is certainly the potential. Tuberculosis costs $12 billion globally every year, and malaria certainly hinders the economic development of a continent like Africa or parts of Asia. But there's not always an implication. Drug development is still expensive and these new techniques that have come out in the last several months, whether it be computer screening to look at a whole bunch of different candidates or growing them specially in the lab like we couldn’t before, it does open a wider array of possibilities, but it's still under the same old system where it's academic research or pharmaceutical research. It's still very expensive and still very hard to distribute, so it doesn’t have the potential to reach the multitudes that would be needed to have a really serious geopolitical impact from the drug itself. But when we think about the spread of disease and why we're worried about the development of antibiotic resistant bacteria, its, we're looking at trade restrictions. We're looking at reduced productivity of countries. Those all could have geopolitical impacts in the future. It's just not known. So everyone goes, the big geopolitical disease that everyone comes back to is the 1918 Spanish Flu. And that was a huge epidemic that had serious implications across the globe. And that could happen again. It's not necessarily that it will happen again, but that's the fear, whether it's through a virus or whether it's through drug resistant bacteria, preventing that is the ultimate goal. And this is, these new antibiotics do go a long way to help that, but there are still hurdles to overcome in terms of distribution and in terms of development. Ben: And it's always tricky to gain finding for a potential threat that may or may not manifest. With something like Ebola, the most recent outbreak we saw in Africa, that fact alone sparked a lot of funding and research and prompted people to actually give money to the cause. Whereas preparing for some future plague it's a difficult thing in some ways. What do you think the future applications will actually be? How are we going to see this develop? Rebecca: So that was part of the reason there was such stagnation in the antibacterial development. There was just no incentive for the pharmaceutical companies to invest money when they knew that the bacteria were just going to continually evolve and beat the new drug. The incentive is antibacterial resistance growing. It's becoming a growing problem as people misuse antibiotics. It allows for development of resistance faster. So it’s a growing problem. We're seeing more cases in hospitals of drug resistant staph infections. Drug resistant tuberculosis is a huge problem in poorer areas like Former Soviet Union. And so it is an emerging problem. There is that incentive to now invest in ones that won't develop resistance. So there's still not the financial incentive to invest in the old model because you'd just be fighting a losing battle. But there is an incentive to come up with these new methodologies, these computer screens, these new methods of growing microbes in the lab that allows you to access more potential targets. That’s where the financial incentives is. That’s where the field is moving, in terms of finding new targets.

#### Infectious diseases don’t cause extinction

Owen Cotton-Barratt 17, et al, PhD in Pure Mathematics, Oxford, Lecturer in Mathematics at Oxford, Research Associate at the Future of Humanity Institute, 2/3/2017, Existential Risk: Diplomacy and Governance, https://www.fhi.ox.ac.uk/wp-content/uploads/Existential-Risks-2017-01-23.pdf

For most of human history, natural pandemics have posed the greatest risk of mass global fatalities.37 However, there are some reasons to believe that natural pandemics are very unlikely to cause human extinction. Analysis of the International Union for Conservation of Nature (IUCN) red list database has shown that of the 833 recorded plant and animal species extinctions known to have occurred since 1500, less than 4% (31 species) were ascribed to infectious disease.38 None of the mammals and amphibians on this list were globally dispersed, and other factors aside from infectious disease also contributed to their extinction. It therefore seems that our own species, which is very numerous, globally dispersed, and capable of a rational response to problems, is very unlikely to be killed off by a natural pandemic.

One underlying explanation for this is that highly lethal pathogens can kill their hosts before they have a chance to spread, so there is a selective pressure for pathogens not to be highly lethal. Therefore, pathogens are likely to co-evolve with their hosts rather than kill all possible hosts.39

#### Diseases won’t cause extinction – burnout and geographical isolation check

Consiglio 17 [Dave, Community College Professor of Chemistry and Physics, 12/7/17, “Could a Disease Wipe Out Humans Entirely?”, <https://www.forbes.com/sites/quora/2017/12/07/could-a-disease-wipe-out-humans-entirely/#387c2f308203> Accessed 2/8/28] BBro

What scenarios seem like they should kill everyone but actually won't? Disease. Everyone seems worried about a killer disease, be it HIV or Ebola or Flu or some unknown pathogen. But humans are going to be really hard to wipe out via disease. Why? Well, we have several things going for us: We have a massive population. **We are geographically widespread**. We are capable of eating nearly anything. We are reasonably diverse as a species. **There are geographically** and genetically **isolated** pockets of our **population. Diseases require** a **vector** to spread. Let’s say the perfect disease arose tomorrow: It kills two weeks after you get it, shows no symptoms until the last minute, is really easy to transmit, and we have very little immunity to it. It still doesn’t kill everyone. Native Greenlanders and the people in Antarctica and people on Navy submarines and the few random people who are immune, and park rangers all either never come into contact with an infected person or else are spared by a genetic fluke. We even have the International Space Station as a potential place to hide and wait for the epidemic to die down. In fairness, nearly everyone is dead in short order, but **once** the **disease has run its course, the pathogen** that causes it **is also** likely to be **dead.** The vast majority of pathogens don’t survive for long outside of their hosts. As such, once nearly everyone is dead and the survivors wait a bit, they’re **unlikely to encounter live pathogen**. As an added bonus, the few surviving people include many of the most naturally immune members of the (now mostly dead) population. Now, don’t get me wrong, this scenario would be catastrophic for humanity. 99.9% of us could die in this way. And it’s possible that the remaining humans would be so isolated as to be unable to find one another for the purposes of reproduction. But I doubt it. Humans are nothing if not fecund, and we have those submarines, boats, airplanes, etc. We will eventually come out from hiding, find that special someone, and breed our way out of trouble. It’s why we’re still around as a species - nothing stops us from making more humans.