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#### The medical industry is colonial and biocapitalist in its structure – any attempt to reform the system misses the root cause

Chaudhuri et al 7/8/21 (Monica Mitra Chaudhuri, Orillia Soldiers' Memorial Hospital in Ontario, Canada. Laura Mkumba, Science Facilitation in North Carolina, Yadurshini Raveendran, Clinical Operations, FHI Clinical Inc, Robert D Smith Department of Anthropology and Sociology, Graduate Institute of International and Development Studies), “Decolonising global health: beyond ‘reformative’ roadmaps and towards decolonial thought”, BMJ Global Health, http://dx.doi.org/10.1136/bmjgh-2021-006371, <https://gh.bmj.com/content/6/7/e006371.full> NT

It is important to explicitly address white supremacy, racism, sexism, capitalism and other oppressive ideologies in the process of decolonisation. These concepts exist(ed) as rationalising centres in the formation of colonial epistemologies. **Scholars have noted how the global health industry’s predecessors, tropical medicine and international health, existed as tools to extract resources for capitalist agendas.** The industry was grounded on the premise of protecting colonisers from rampant, tropical illnesses as they pillaged land and resources around the globe. For example, the Gorgas campaign to eradicate yellow fever in Cuba in the early 1900s was concerned more with the health of foreign white Americans than the indigenous population. Many of whom were immune and did not consider it to be a priority health issue. Although such campaigns may have been successful in eradicating disease, they tended to be unwanted and enforced by military authority.5 The global health industry continues to be colonial in its structure, and this power dynamic is even more pronounced in the field now than in the past. The ongoing oppression and exploitation of racialised people, particularly black and indigenous have constructed modern medicine and public health and contributed to the economic gain of colonial powers. **In addition, enslaved and colonised people were used as test subjects for medical experimentation and medical and scientific advancement.** This is evidenced by J. Marion Sims, the ‘father of modern gynaecology,’ who experimented on unanesthetised, enslaved black women without their consent.6 Scholars have theorised how today we have entered an era of ‘biocapitalism;’ specifically, before health equity can be discussed, **the health of a body must first be made available to capitalism** as an object of intervention for monetary extraction.7 Today, the global health industry’s priorities are determined by and for the richest and most powerful nations. This has been demonstrated by the current COVID-19 pandemic and the inequities in the production and distribution of vaccines. Pharmaceutical monopolies and intellectual property restrictions have caused significant shortages and restrictions. A waiver of such intellectual property restrictions has been opposed by large pharmaceutical companies and rich nations. At the time of writing, the vast majority of vaccine doses have been purchased by wealthy nations, while poorer countries have been forced to wait their turn; or, depend on the ‘benevolence’ and ‘generosity’ of richer countries as they donate unused doses.8 The COVID-19 pandemic has again illustrated how white supremacy, racism, sexism and capitalism still remain tied as central, rationalising logics for the global health industry. For example, ‘lower-ranking’ healthcare workers such as custodial staff and nurses, who tend to be women of colour, have been disproportionately affected by the disease. While these workers have been essential in the medical response to the pandemic, they often received less institutional protection by not being provided adequate personal protection equipment.9 Examples of the contemporary global health industry indicate that colonial power was not merely a one-off event, but has persisted in a continuum that has reallocated these dimensions of power to new forms of health administration. This also indicates that, while the contours of capitalism are blatantly clear in some examples of COVID-19, they also become hidden within further structures such as **philanthro-capitalism**. At present, the Institute of Health Metrics and Evaluation (IHME)—largely funded by the Bill & Melinda Gates Foundation as well as pharmaceutical companies and the oil industry—has become a trusted source of global health data, eclipsing governments and the WHO.10 The IHME produces data that is based on complex modelling that cannot be replicated or adequately peer-reviewed due to a lack of transparency and the large capacity required to do so.11 Further, the Gates Foundation intervened in Oxford’s COVID-19 vaccine trial funding to mandate a commercial patent and at the time of writing continues to oppose intellectual property waivers.12 The concepts of white supremacy, racism, sexism and capitalism were not addressed in Khan et al’s commentary; yet, we believe these should be the centre of the discussion. Equity and justice were not, and currently are not, the aim of global health; despite the wide ranging utopic brandings of health equity programmes within the global health industry, **the underlying determinants produced by the conditions of possibility of white supremacy, racism, sexism and capitalism are still ever present, creating a power which forecloses the ability to realise health equity.** To realise a decolonised global health, if ever, we suggest these are the concepts to address. Now, we turn to Khan et al’s roadmap to review what this roadmap can and cannot do to the coloniality of the global health industry. Deconstructing the decolonising global health roadmap Khan et al propose a three-step roadmap which calls to (1) ‘identify specific ways in which organisations active in global health play interlinked roles in perpetuating inequity,’ (2) ‘publish a clear list of reforms required to decolonise global health practice’ and (3) ‘develop metrics to track the progress of organisations.’ To analyse this roadmap, we will work backwards from the third recommendation to analyse first what this may do to the practice of global health, and later to the distribution of power within global health. Our aim is to provide a grounded perspective that more thoroughly recognises the possibilities and limitations of these tools. Historically, the global health industry has prioritised the importance of health metrics since they were appropriated to ‘colonial health programmes that gave birth to statistics practices’.13 Because metrics work to create a ‘wide range of phenomena (that) are pushed inside and outside of visibility,‘ metrics become ‘a form of politics in their own right.’ As evidenced by the example of the IHME above, the definition of metrics can remain malleable to the ‘administrative and worldly aspirations’ of the coloniality of the global health industry to this day. Therefore, the colonial logics of capital are immediately inscribed into the epistemology and analysis of global health metrics. With capitalism providing the outlines of metrical logic, metrics become a paradoxical and inherently flawed tool to address the concept of coloniality. While we acknowledge that there is a role for metrics, **we worry that such quantification risks being coopted to preserve power structures in the name of decoloniality.** More so, we firmly believe that colonial histories and their intersections within the contemporary global health industry cannot be quantified and as such metrics cannot fully lead to a process of decolonisation.

#### Any attempt to work with the WTO ensures a revitalization of capitalism and prevents effective revolution against the state – they’ve misunderstood the root cause of their impacts.

Bachand 20. Remi Bachand is Professor of International Law at the University of Quebec. “What’s Behind the WTO Crisis? A Marxist Analysis” European Journal of International Law, Volume 31, Issue 3, August 2020, Pages 857–882, <https://doi.org/10.1093/ejil/chaa054//vg>

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To offer our own explanation, we must recall two aspects of our theoretical framework. The first is Robert Cox’s claim113 that the function of international organizations is to ensure the creation and reproduction of hegemony. To be more accurate, they serve, if we follow his argument, to defend and to expand the ‘mode of production’ (we elected to substitute this term for the concept of ‘regime of accumulation’ that appears to be more appropriate for our means) of the dominant social classes of the dominant state. Joining this idea with the école de la régulation and social structure of accumulation theory writing114 according to which a regime of accumulation needs some regulation institutions to help resolve its contradictions (and ensure profits and capital accumulation to dominant social classes), we can conclude that the Geneva organization’s function in the US hegemonic order is to make sure that neoliberalism works well enough to provide a satisfying rate of profit for US capitalists. Going in that direction, Kristen Hopewell shows that the WTO’s creation participated in a shift in global governance from ‘embedded liberalism’ to neoliberalism115 and was slated to be an important part of that governance. Using the conceptual framework developed earlier, we can infer that the WTO was thus given a regulation function that was to ensure the operationalization of counteracting factors to the fall of the rate of profit for US capitalists. Now, as we have seen, the US rate of profit has been extremely unstable in the last two decades and Chinese expansion (and that of other ‘emerging countries’) allows one to predict that the situation could easily worsen in the future. Consequently, it should come as no surprise that the crisis that has been striking neoliberalism for the last 20 years may also result in a crisis of the organizations that are supposed to manage its contradictions, especially the WTO. Concretely, this organization seems unable to fulfil its regulatory function anymore, which is to ensure US capitalists a good rate of profit and opportunities to operationalize enough counteracting factors to negate its fall. To go further, we now need to return to Stephen Gill’s claim that the function of an international organization is to limit political and economic possibilities. It is to exclude, in other words, options that are incompatible with the social order promoted by the hegemon from what is possible and achievable.116 Effectively, the WTO was created to play such a role. Indeed, promoting liberalization of goods and services, protecting (notably intellectual) property rights and attacking subsidies (in non-agriculture sectors), just to give a few examples, all serve to severely reduce state interventions into the economy and to circumscribe or at least to strongly impede the turn towards an alternative model to neoliberalism. In conformity with this, when China adhered to the WTO in 2001, there was a strong hope from other Members that it would adopt important economic reforms. A single example should be enough to show this optimism. Since other WTO Members feared that the Chinese economic structure gave it advantages in the short term, its protocol of accession included some particular ways to determine price comparability under anti-dumping rules,117 as well as to identify and determine the subsidy benefit under the Agreement on subsidies and countervailing measures.118 Interestingly though, these provisions were expected to end the moment China could establish itself as a market economy or, ‘[i]n any event […] 15 years after the date of accession’.119 After that delay, China was expected to have sufficiently changed its economy so that such a rule would not be needed any more. Yet, and unfortunately for these other Members, the changes were not what they expected. To quote Andrew Lang: the expectation of its most important trading partners was evidently that its economic system would evolve in the direction of marketization, perhaps at an accelerated rate. However, economic reform in China has in fact taken place in an experimental and unexpected manner, with the result that the emergent form of market capitalism appears to Western eyes as an unfamiliar hybrid, often termed ‘State Capitalism’.120 Actually, their discontent comes not only from the objective and observable fact that the WTO has been unable to force China to radically change its regime of accumulation the way it wanted; it is also related to some (controversial) AB rulings concerning the implication between state and economy.

#### Best studies prove capitalism causes war, violence, decreased value to life, environmental destruction and extinction – it’s the greatest threat to society and is an a priori impact under any framework.

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The COVID19 pandemic has exposed a strange anomaly in the global economy. If it doesn’t keep growing endlessly, it just breaks. Grow, or die. But there’s a deeper problem. New scientific research confirms that capitalism’s structural obsession with endless growth is destroying the very conditions for human survival on planet Earth. A landmark study in the journal Nature Communications, “Scientists’ warning on affluence” — by scientists in Australia, Switzerland and the UK — concludes that the most fundamental driver of environmental destruction is the overconsumption of the super-rich. This factor lies over and above other factors like fossil fuel consumption, industrial agriculture and deforestation: because it is overconsumption by the super-rich which is the chief driver of these other factors breaching key planetary boundaries. The paper notes that the richest 10 percent of people are responsible for up to 43 percent of destructive global environmental impacts. In contrast, the poorest 10 percent in the world are responsible just around 5 percent of these environmental impacts: The new paper is authored by Thomas Wiedmann of UNSW Sydney’s School of Civil and Environmental Engineering, Manfred Lenzen of the University of Sydney’s School of Physics, Lorenz T. Keysser of ETH Zürich’s Department of Environmental Systems Science, and Julia K. Steinberger of Leeds University’s School of Earth and Environment. It confirms that global structural inequalities in the distribution of wealth are intimately related to an escalating environmental crisis threatening the very existence of human societies. Synthesising knowledge from across the scientific community, the paper identifies capitalism as the main cause behind “alarming trends of environmental degradation” which now pose “existential threats to natural systems, economies and societies.” The paper concludes: “It is clear that prevailing capitalist, growth-driven economic systems have not only increased affluence since World War II, but have led to enormous increases in inequality, financial instability, resource consumption and environmental pressures on vital earth support systems.” Capitalism and the pandemic Thanks to the way capitalism works, the paper shows, the super-rich are incentivised to keep getting richer — at the expense of the health of our societies and the planet overall. The research provides an important scientific context for how we can understand many earlier scientific studies revealing that industrial expansion has hugely increased the risks of new disease outbreaks. Just last April, a paper in Landscape Ecology found that deforestation driven by increased demand for consumption of agricultural commodities or beef have increased the probability of ‘zoonotic’ diseases (exotic diseases circulating amongst animals) jumping to humans. This is because industrial expansion, driven by capitalist pressures, has intensified the encroachment of human activities on wildlife and natural ecosystems. Two years ago, another study in Frontiers of Microbiology concluded presciently that accelerating deforestation due to “demographic growth” and the associated expansion of “farming, logging, and hunting”, is dangerously transforming rural environments. More bat species carrying exotic viruses have ended up next to human dwellings, the study said. This is increasing “the risk of transmission of viruses through direct contact, domestic animal infection, or contamination by urine or faeces.” It is difficult to avoid the conclusion that the COVID19 pandemic thus emerged directly from these rapidly growing impacts of human activities. As the new paper in Nature Communications confirms, these impacts have accelerated in the context of the fundamental operations of industrial capitalism. Eroding the ‘safe operating space’ The result is that capitalism is causing human societies to increasingly breach key planetary boundaries, such as land-use change, biosphere integrity and climate change. Remaining within these boundaries is essential to maintain what scientists describe as a “safe operating space” for human civilization. If those key ecosystems are disrupted, that “safe operating space” will begin to erode. The global impacts of the COVID19 pandemic are yet another clear indication that this process of erosion has already begun. “The evidence is clear,” write Weidmann and his co-authors. “Long-term and concurrent human and planetary wellbeing will not be achieved in the Anthropocene if affluent overconsumption continues, spurred by economic systems that exploit nature and humans. We find that, to a large extent, the affluent lifestyles of the world’s rich determine and drive global environmental and social impact. Moreover, international trade mechanisms allow the rich world to displace its impact to the global poor.” The new scientific research thus confirms that the normal functioning of capitalism is eroding the ‘safe space’ by which human civilisation is able to survive. The structures The paper also sets out how this is happening in some detail. The super-rich basically end up driving this destructive system forward in three key ways. Firstly, they are directly responsible for “biophysical resource use… through high consumption.” Secondly, they are “members of powerful factions of the capitalist class.” Thirdly, due to that positioning, they end up “driving consumption norms across the population.” But perhaps the most important insight of the paper is not that this is purely because the super-rich are especially evil or terrible compared to the rest of the population — but because of the systemic pressures produced by capitalist structures. The authors point out that: “Growth imperatives are active at multiple levels, making the pursuit of economic growth (net investment, i.e. investment above depreciation) a necessity for different actors and leading to social and economic instability in the absence of it.” At the core of capitalism, the paper observes, is a fundamental social relationship defining the way working people are systemically marginalised from access to the productive resources of the earth, along with the mechanisms used to extract these resources and produce goods and services. This means that to survive economically in this system, certain behavioural patterns become not just normalised, but seemingly entirely rational — at least from a limited perspective that ignores wider societal and environmental consequences. In the words of the authors: “In capitalism, workers are separated from the means of production, implying that they must compete in labour markets to sell their labour power to capitalists in order to earn a living.” Meanwhile, firms which own and control these means of production “need to compete in the market, leading to a necessity to reinvest profits into more efficient production processes to minimise costs (e.g. through replacing human labour power with machines and positive returns to scale), innovation of new products and/or advertising to convince consumers to buy more.” If a firm fails to remain competitive through such behaviours, “it either goes bankrupt or is taken over by a more successful business. Under normal economic conditions, this capitalist competition is expected to lead to aggregate growth dynamics.” The irony is that, as the paper also shows, the “affluence” accumulated by the super-rich isn’t correlated with happiness or well-being. Restructure The “hegemonic” dominance of global capitalism, then, is the principal obstacle to the systemic transformation needed to reduce overconsumption. So it’s not enough to simply try to “green” current consumption through technologies like renewable energy — we need to actually reduce our environmental impacts by changing our behaviours with a focus on cutting back our use of planetary resources: “Not only can a sufficient decoupling of environmental and detrimental social impacts from economic growth not be achieved by technological innovation alone, but also the profit-driven mechanism of prevailing economic systems prevents the necessary reduction of impacts and resource utilisation per se.” The good news is that it doesn’t have to be this way. The paper reviews a range of “bottom-up studies” showing that dramatic reductions in our material footprint are perfectly possible while still maintaining good material living standards. In India, Brazil and South Africa, “decent living standards” can be supported “with around 90 percent less per-capita energy use than currently consumed in affluent countries.” Similar possible reductions are feasible for modern industrial economies such as Australia and the US. By becoming aware of how the wider economic system incentivises behaviour that is destructive of human societies and planetary ecosystems critical for human survival, both ordinary workers and more wealthy sectors — including the super-rich — can work toward rewriting the global economic operating system. This can be done by restructuring ownership in firms, equalising relations with workers, and intentionally reorganising the way decisions are made about investment priorities. The paper points out that citizens and communities have a crucial role to play in getting organised, upgrading efforts for public education about these key issues, and experimenting with new ways to work together in bringing about “social tipping points” — points at which social action can catalyse mass change. While a sense of doom and apathy about the prospects for such change is understandable, mounting evidence based on systems science suggests that global capitalism as we know it is in a state of protracted crisis and collapse that began some decades ago. This research strongly supports the view that as industrial civilization reaches the last stages of its systemic life-cycle, there is unprecedented and increasing opportunity for small-scale actions and efforts to have large system-wide impacts. The new paper shows that the need for joined-up action is paramount: structural racism, environmental crisis, global inequalities are not really separate crises — but different facets of human civilization’s broken relationship with nature. Yet, of course, the biggest takeaway is that those who bear most responsibility for environmental destruction — those who hold the most wealth in our societies — urgently need to wake up to how their narrow models of life are, quite literally, destroying the foundations for human survival over the coming decades.

#### Solving warming is not all-or-nothing – every additional fraction of a degree is irreversible and costs millions of lives—prefer IPCC assessments that are the gold standard for warming consensus

David Wallace-Wells 19 [National Fellow at New America. He is deputy editor of New York Magazine, where he also writes frequently about climate and the near future of science and technology, including his widely read and debated 2017 cover story on worst-case scenarios for global warming], *The Uninhabitable Earth: A Story of the Future* (Kindle Edition: Allen Lane, 2019), pg. 8-30, beckert

* Every degree key – each bit 🡪 hundreds of millions of lives
* IPCC🡪 best ev b/c conservative estimate + still really big impact
* Now key – not reversible, feedback loops 🡪 speeds up later

There is almost no chance we will avoid that scenario. The Kyoto Protocol achieved, practically, nothing; in the twenty years since, despite all of our climate advocacy and legislation and progress on green energy, we have produced more emissions than in the twenty years before. In 2016, the Paris accords established two degrees as a global goal, and, to read our newspapers, that level of warming remains something like the scariest scenario it is responsible to consider; just a few years later, with no single industrial nation on track to meet its Paris commitments, two degrees looks more like a best-case outcome, at present hard to credit, with an entire bell curve of more horrific possibilities extending beyond it and yet shrouded, delicately, from public view.28 For those telling stories about climate, such horrific possibilities—and the fact that we had squandered our chance of landing anywhere on the better half of that curve—had become somehow unseemly to consider. The reasons are almost too many to count, and so half-formed they might better be called impulses. We chose not to discuss a world warmed beyond two degrees out of decency, perhaps; or simple fear; or fear of fearmongering; or technocratic faith, which is really market faith; or deference to partisan debates or even partisan priorities; or skepticism about the environmental Left of the kind I’d always had; or disinterest in the fates of distant ecosystems like I’d also always had. We felt confusion about the science and its many technical terms and hard-to-parse numbers, or at least an intuition that others would be easily confused about the science and its many technical terms and hard-to-parse numbers. We suffered from slowness apprehending the speed of change, or semi-conspiratorial confidence in the responsibility of global elites and their institutions, or obeisance toward those elites and their institutions, whatever we thought of them. Perhaps we felt unable to really trust scarier projections because we’d only just heard about warming, we thought, and things couldn’t possibly have gotten that much worse just since the first Inconvenient Truth; or because we liked driving our cars and eating our beef and living as we did in every other way and didn’t want to think too hard about that; or because we felt so “postindustrial” we couldn’t believe we were still drawing material breaths from fossil fuel furnaces. Perhaps it was because we were so sociopathically good at collating bad news into a sickening evolving sense of what constituted “normal,” or because we looked outside and things seemed still okay. Because we were bored with writing, or reading, the same story again and again, because climate was so global and therefore nontribal it suggested only the corniest politics, because we didn’t yet appreciate how fully it would ravage our lives, and because, selfishly, we didn’t mind destroying the planet for others living elsewhere on it or those not yet born who would inherit it from us, outraged. Because we had too much faith in the teleological shape of history and the arrow of human progress to countenance the idea that the arc of history would bend toward anything but environmental justice, too. Because when we were being really honest with ourselves we already thought of the world as a zero-sum resource competition and believed that whatever happened we were probably going to continue to be the victors, relatively speaking anyway, advantages of class being what they are and our own luck in the natalist lottery being what it was. Perhaps we were too panicked about our own jobs and industries to fret about the future of jobs and industry; or perhaps we were also really afraid of robots or were too busy looking at our new phones; or perhaps, however easy we found the apocalypse reflex in our culture and the path of panic in our politics, we truly had a good-news bias when it came to the big picture; or, really, who knows why—there are so many aspects to the climate kaleidoscope that transforms our intuitions about environmental devastation into an uncanny complacency that it can be hard to pull the whole picture of climate distortion into focus. But we simply wouldn’t, or couldn’t, or anyway didn’t look squarely in the face ﻿of the science. This is not a book about the science of warming; it is about what warming means to the way we live on this planet. But what does that science say? It is complicated research, because it is built on two layers of uncertainty: what humans will do, mostly in terms of emitting greenhouse gases, and how the climate will respond, both through straightforward heating and a variety of more complicated, and sometimes contradictory, feedback loops. But even shaded by those uncertainty bars it is also very clear research, in fact terrifyingly clear. The United Nations’ Intergovernmental Panel on Climate Change (IPCC) offers the gold-standard assessments of the state of the planet and the likely trajectory for climate change—gold-standard, in part, because it is conservative, integrating only new research that passes the threshold of inarguability. A new report is expected in 2022, but the most recent one says that if we take action on emissions soon, instituting immediately all of the commitments made in the Paris accords but nowhere yet actually implemented, we are likely to get about 3.2 degrees of warming, or about three times as much warming as the planet has seen since the beginning of industrialization—bringing the unthinkable collapse of the planet’s ice sheets not just into the realm of the real but into the present.29, 30 That would eventually flood not just Miami and Dhaka but Shanghai and Hong Kong and a hundred other cities around the world.31 The tipping point for that collapse is said to be around two degrees; according to several recent studies, even a rapid cessation of carbon emissions could bring us that amount of warming by the end of the century.32 The assaults of climate change do not end at 2100 just because most modeling, by convention, sunsets at that point. This is why some studying global warming call the hundred years to follow the “century of hell.”33 Climate change is fast, much faster than it seems we have the capacity to recognize and acknowledge; but it is also long, almost longer than we can truly imagine. In reading about warming, you will often come across analogies from the planetary record: the last time the planet was this much warmer, the logic runs, sea levels were here. These conditions are not coincidences. The sea level was there largely because the planet was that much warmer, and the geologic record is the best model we have for understanding the very complicated climate system and gauging just how much damage will come from turning up the temperature by two or four or six degrees. Which is why it is especially concerning that recent research into the deep history of the planet suggests that our current climate models may be underestimating the amount of warming we are due for in 2100 by as much as half.34 In other words, temperatures could rise, ultimately, by as much as double what the IPCC predicts. Hit our Paris emissions targets and we may still get four degrees of warming, meaning a green Sahara and the planet’s tropical forests transformed into fire-dominated savanna.35 The authors of one recent paper suggested the warming could be more dramatic still—slashing our emissions could still bring us to four or five degrees Celsius, a scenario they said would pose severe risks to the habitability of the entire planet. “Hothouse Earth,” they called it.36 Because these numbers are so small, we tend to trivialize the differences between them—one, two, four, five. Human experience and memory offer no good analogy for how we should think of those thresholds, but, as with world wars or recurrences of cancer, you don’t want to see even one. At two degrees, the ice sheets will begin their collapse, 400 million more people will suffer from water scarcity, major cities in the equatorial band of the planet will become unlivable, and even in the northern latitudes heat waves will kill thousands each summer.37, 38 There would be thirty-two times as many extreme heat waves in India, and each would last five times as long, exposing ninety-three times more people.39 This is our best-case scenario. At three degrees, southern Europe would be in permanent drought, and the average drought in Central America would last nineteen months longer and in the Caribbean twenty-one months longer. In northern Africa, the figure is sixty months longer—five years. The areas burned each year by wildfires would double in the Mediterranean and sextuple, or more, in the United States. At four degrees, there would be eight million more cases of dengue fever each year in Latin America alone and close to annual global food crises.41 There could be 9 percent more heat-related deaths.40 Damages from river flooding would grow thirtyfold in Bangladesh, twentyfold in India, and as much as sixtyfold in the United Kingdom. In certain places, six climate-driven natural disasters could strike simultaneously, and, globally, damages could pass $600 trillion—more than twice the wealth as exists in the world today. Conflict and warfare could double. Even if we pull the planet up short of two degrees by 2100, we will be left with an atmosphere that contains 500 parts per million of carbon—perhaps more. The last time that was the case, sixteen million years ago, the planet was not two degrees warmer; it was somewhere between five and eight, giving the planet about 130 feet of sea-level rise, enough to draw a new American coastline as far west as I-95.42 Some of these processes take thousands of years to unfold, but they are also irreversible, and therefore effectively permanent. You might hope to simply reverse climate change; you can’t. It will outrun all of us. This is part of what makes climate change what the theorist Timothy Morton calls a “hyperobject”—a conceptual fact so large and complex that, like the internet, it can never be properly comprehended.43 There are many features of climate change—its size, its scope, its brutality—that, alone, satisfy this definition; together they might elevate it into a higher and more incomprehensible conceptual ﻿category yet. But time is perhaps the most mind-bending feature, the worst outcomes arriving so long from now that we reflexively discount their reality. Yet those outcomes promise to mock us and our own sense of the real in return. The ecological dramas we have unleashed through our land use and by burning fossil fuels—slowly for about a century and very rapidly for only a few decades—will play out over many millennia, in fact over a longer span of time than humans have even been around, performed in part by creatures and in environments we do not yet even know, ushered onto the world stage by the force of warming. And so, in a convenient cognitive bargain, we have chosen to consider climate change only as it will present itself this century. By 2100, the United Nations says, we are due for about 4.5 degrees of warming, following the path we are on today.44 That is, farther from the Paris track than the Paris track is from the two-degree threshold of catastrophe, which it more than doubles. As Naomi Oreskes has noted, there are far too many uncertainties in our models to take their predictions as gospel.45 Just running those models many times, as Gernot Wagner and Martin Weitzman do in their book Climate Shock, yields an 11 percent chance we overshoot six degrees.46 Recent work by the Nobel laureate William Nordhaus suggests that better-than-anticipated economic growth means better than one-in-three odds that our emissions will exceed the U.47N.’s worst-case “business as usual” scenario. In other words, a temperature rise of five degrees or possibly more. The upper end of the probability curve put forward by the U.N. to estimate the end-of-the-century, business-as-usual scenario—the worst-case outcome of a worst-case emissions path—puts us at eight degrees. At that temperature, humans at the equator and in the tropics would not be able to move around outside without dying.48 In that world, eight degrees warmer, direct heat effects would be the least of it: the oceans would eventually swell two hundred feet higher, flooding what are now two-thirds of the world’s major cities; hardly any land on the planet would be capable of efficiently producing any of the food we now eat; forests would be roiled by rolling storms of fire, and coasts would be punished by more and more intense hurricanes; the suffocating hood of tropical disease would reach northward to enclose parts of what we now call the Arctic; probably about a third of the planet would be made unlivable by direct heat; and what are today literally unprecedented and intolerable droughts and heat waves would be the quotidian condition of whatever human life was able to endure.49, 50, 51, 52 We will, almost certainly, avoid eight degrees of warming; in fact, several recent papers have suggested the climate is actually less sensitive to emissions than we’d thought, and that even the upper bound of a business-as-usual path would bring us to about five degrees, with a likely destination around four.53 But five degrees is nearly as unthinkable as eight, and four degrees not much better: the world in a permanent food deficit, the Alps as arid as the Atlas Mountains.54 Between that scenario and the world we live in now lies only the open question of human response. Some amount of further warming is already baked in, thanks to the protracted processes by which the planet adapts to greenhouse gas. But all of those paths projected from the present—to two degrees, to three, to four, five, or even eight—will be carved overwhelmingly by what we choose to do now. There is nothing stopping us from four degrees other than our own will to change course, which we have yet to display. Because the planet is as big as it is, and as ecologically diverse; because humans have proven themselves an adaptable species, and will likely continue to adapt to outmaneuver a lethal threat; and because the devastating effects of warming will soon become too extreme to ignore, or deny, if they haven’t already; because of all that, it is unlikely that climate change will render the planet truly uninhabitable. But if we do nothing about carbon emissions, if the next thirty years of industrial activity trace the same arc upward as the last thirty years have, whole regions will become unlivable by any standard we have today as soon as the end of this century. ﻿A few years ago, E. O. Wilson proposed a term, “Half-Earth,” to help us think through how we might adapt to the pressures of a changing climate, letting nature run its rehabilitative course on half the planet and sequestering humanity in the remaining, habitable half of the world.55 The fraction may be smaller than that, possibly considerably, and not by choice; the subtitle of his book was Our Planet’s Fight for Life. On longer timescales, the even-bleaker outcome is possible, too—the livable planet darkening as it approaches a human dusk. It would take a spectacular coincidence of bad choices and bad luck to make that kind of zero earth possible within our lifetime. But the fact that we have brought that nightmare eventuality into play at all is perhaps the overwhelming cultural and historical fact of the modern era—what historians of the future will likely study about us, and what we’d have hoped the generations before ours would have had the foresight to focus on, too. Whatever we do to stop warming, and however aggressively we act to protect ourselves from its ravages, we will have pulled the devastation of human life on Earth into view—close enough that we can see clearly what it would look like and know, with some degree of precision, how it will punish our children and grandchildren. Close enough, in fact, that we are already beginning to feel its effects ourselves, when we do not turn away. ﻿It is almost hard to believe just how much has happened and how quickly. In the late summer of 2017, three major hurricanes arose in the Atlantic at once, proceeding at first along the same route as though they were battalions of an army on the march.56 Hurricane Harvey, when it struck Houston, delivered such epic rainfall it was described in some areas as a “500,000-year event”—meaning that we should expect that amount of rain to hit that area once every five hundred millennia.57 Sophisticated consumers of environmental news have already learned how meaningless climate change has rendered such terms, which were meant to describe storms that had a 1-in-500,000 chance of striking in any given year. But the figures do help in this way: to remind us just how far global warming has already taken us from any natural-disaster benchmark our grandparents would have recognized. To dwell on the more common 500-year figure just for a moment, it would mean a storm that struck once during the entire history of the Roman Empire. Five hundred years ago, there were no English settlements across the Atlantic, so we are talking about a storm that should hit just once as Europeans arrived and established colonies, as colonists fought a revolution and Americans a civil war and two world wars, as their descendants established an empire of cotton on the backs of slaves, freed them, and then brutalized their descendants, industrialized and postindustrialized, triumphed in the Cold War, ushered in the “end of history,” and witnessed, just a decade later, its dramatic return. One storm in all that time, is what the meteorological record has taught us to expect. Just one. Harvey was the third such flood to hit Houston since 2015.58 And the storm struck, in places, with an intensity that was supposed to be a thousand times rarer still. That same season, an Atlantic hurricane hit Ireland, 45 million were flooded from their homes in South Asia, and unprecedented wildfires tilled much of California into ash.59, 60 And then there was the new category of quotidian nightmare, climate change inventing the once-unimaginable category of obscure natural disasters—crises so large they would once have been inscribed in folklore for centuries today passing across our horizons ignored, overlooked, or forgotten. In 2016, a “thousand-year flood” drowned small-town Ellicott City, Maryland, to take but one example almost at random; it was followed, two years later, in the same small town, by another.61 One week that summer of 2018, dozens of places all over the world were hit with record heat waves, from Denver to Burlington to Ottawa; from Glasgow to Shannon to Belfast; from Tbilisi, in Georgia, and Yerevan, in Armenia, to whole swaths of southern Russia.62 The previous month, the daytime temperature of one city in Oman reached above 121 degrees Fahrenheit, and did not drop below 108 all night, and in Quebec, Canada, fifty-four died from the heat.63 That same week, one hundred major wildfires burned in the American West, including one in California that grew 4,000 acres in one day, and another, in Colorado, that produced a volcano-like 300-foot eruption of flames, swallowing an entire subdivision and inventing a new term, “fire tsunami,” along the way.64, 65, 66 On the other side of the planet, biblical rains flooded Japan, where 1.2 million were evacuated from their homes.67 Later that summer, Typhoon Mangkhut forced the evacuation of 2.45 million from mainland China, the same week that Hurricane Florence struck the Carolinas, turning the port city of Wilmington briefly into an island and flooding large parts of the state with hog manure and coal ash.68, 69, 70 Along the way, the winds of Florence produced dozens of tornadoes across the region.71 The previous month, in India, the state of Kerala was hit with its worst floods in almost a hundred years.72 That October, a hurricane in the Pacific wiped Hawaii’s East Island entirely off the map.73 And in November, which has traditionally marked the beginning of the rainy season in California, the state was hit instead with the deadliest fire in its history—the Camp Fire, which scorched several hundred square miles outside of Chico, killing dozens and leaving many more missing in a place called, proverbially, Paradise.74 The devastation was so complete, you could almost forget the Woolsey Fire, closer to Los Angeles, which burned at the same time and forced the sudden evacuation of 170,000. It is tempting to look at these strings of disasters and think, Climate change is here. And one response to seeing things long predicted actually come to pass is to feel that we have settled into a new era, with everything transformed. In fact, that is how California governor Jerry Brown described the state of things in the midst of the state’s wildfire disaster: “a new normal.”75 The truth is actually much scarier. That is, the end of normal; never normal again. We have already exited the state of environmental conditions that allowed the human animal to evolve in the first place, in an unsure and unplanned bet on just what that animal can endure. The climate system that raised us, and raised everything we now know as human culture and civilization, is now, like a parent, dead. And the climate system we have been observing for the last several years, the one that has battered the planet again and again, is not our bleak future in preview. It would be more precise to say that it is a product of our recent climate past, already passing behind us into a dustbin of environmental nostalgia. There is no longer any such thing as a “natural disaster,” but not only will things get worse; technically speaking, they have already gotten worse. Even if, miraculously, humans immediately ceased emitting carbon, we’d still be due for some additional warming from just the stuff we’ve put into the air already. And of course, with global emissions still increasing, we’re very far from zeroing out on carbon, and therefore very far from stalling climate change. The devastation we are now seeing all around us is a beyond-best-case scenario for the future of warming and all the climate disasters it will bring. ﻿What that means is that we have not, at all, arrived at a new equilibrium. It is more like we’ve taken one step out on the plank off a pirate ship. Perhaps because of the exhausting false debate about whether climate change is “real,” too many of us have developed a misleading impression that its effects are binary. But global warming is not “yes” or “no,” nor is it “today’s weather forever” or “doomsday tomorrow.” It is a function that gets worse over time as long as we continue to produce greenhouse gas. And so the experience of life in a climate transformed by human activity is not just a matter of stepping from one stable ecosystem into another, somewhat worse one, no matter how degraded or destructive the transformed climate is. The effects will grow and build as the planet continues to warm: from 1 degree to 1.5 to almost certainly 2 degrees and beyond. The last few years of climate disasters may look like about as much as the planet can take. In fact, we are only just entering our brave new world, one that collapses below us as soon as we set foot on it. Many of these new disasters arrived accompanied by debate about their cause—about how much of what they have done to us comes from what we have done to the planet. For those hoping to better understand precisely how a monstrous hurricane arises out of a placid ocean, these inquiries are worthwhile, but for all practical purposes the debate yields no real meaning or insight. A particular hurricane may owe 40 percent of its force to anthropogenic global warming, the evolving models might suggest, and a particular drought may be half again as bad as it might have been in the seventeenth century. But climate change is not a discrete clue we can find at the scene of a local crime—one hurricane, one heat wave, one famine, one war. Global warming isn’t a perpetrator; it’s a conspiracy. We all live within climate and within all the changes we have produced in it, which enclose us all and everything we do. If hurricanes of a certain force are now five times as likely as in the pre-Columbian Caribbean, it is parsimonious to the point of triviality to argue over whether this one or that one was “climate-caused.” All hurricanes now unfold in the weather systems we have wrecked on their behalf, which is why there are more of them, and why they are stronger. The same is true for wildfires: this one or that one may be “caused” by a cookout or a downed power line, but each is burning faster, bigger, and longer because of global warming, which gives no reprieve to fire season. Climate change isn’t something happening here or there but everywhere, and all at once. And unless we choose to halt it, it will never stop. Over the past few decades, the term “Anthropocene” has climbed out of academic discourse and into the popular imagination—a name given to the geologic era we live in now, and a way to signal that it is a new era, defined on the wall chart of deep history by human intervention. One problem with the term is that it implies a conquest of nature, even echoing the biblical “dominion.” But however sanguine you might be about the proposition that we have already ravaged the natural world, which we surely have, it is another thing entirely to consider the possibility that we have only provoked it, engineering first in ignorance and then in denial a climate system that will now go to war with us for many centuries, perhaps until it destroys us. That is what Wally Broecker, the avuncular oceanographer, means when he calls the planet an “angry beast.”76 You could also go with “war machine.” Each day we arm it more. The assaults will not be discrete—this is another climate delusion. Instead, they will produce a new kind of cascading violence, waterfalls and avalanches of devastation, the planet pummeled again and again, with increasing intensity and in ways that build on each other and undermine our ability to respond, uprooting much of the landscape we have taken for granted, for centuries, as the stable foundation on which we walk, build homes and highways, shepherd our children through schools and into adulthood under the promise of safety—and subverting the promise that the world we have engineered and built for ourselves, out of nature, will also protect us against it, rather than conspiring with disaster against its makers. Consider those California wildfires. In March 2018, Santa Barbara County issued mandatory evacuation orders for those living in Montecito, Goleta, Santa Barbara, Summerland, and Carpinteria—where the previous December’s fires had hit hardest. It was the fourth evacuation order precipitated by a climate event in the county in just three months, but only the first had been for fire.77 The others were for mudslides ushered into possibility by that fire, one of the toniest communities in the most glamorous state of the world’s preeminently powerful country upended by fear that their toy vineyards and hobby stables, their world-class beaches and lavishly funded public schools, would be inundated by rivers of mud, the community as thoroughly ravaged as the sprawling camps of temporary shacks housing Rohingya refugees from Myanmar in the monsoon region of Bangladesh.78 It was. More than a dozen died, including a toddler swept away by mud and carried miles down the mountainslope to the sea; schools closed and highways flooded, foreclosing the routes of emergency vehicles and making the community an inland island, as if behind a blockade, choked off by a mud noose.79 Some climate cascades will unfold at the global level—cascades so large their effects will seem, by the curious legerdemain of environmental change, imperceptible. A warming planet leads to melting Arctic ice, which means less sunlight reflected back to the sun and more absorbed by a planet warming faster still, which means an ocean less able to absorb atmospheric carbon and so a planet warming faster still. A warming planet will also melt Arctic permafrost, which contains 1.8 trillion tons of carbon, more than twice as much as is currently suspended in the earth’s atmosphere, and some of which, when it thaws and is released, may evaporate as methane, which is thirty-four times as powerful a greenhouse-gas warming blanket as carbon dioxide when judged on the timescale of a century; when﻿ judged on the timescale of two decades, it is eighty-six times as powerful.80, 81 A hotter planet is, on net, bad for plant life, which means what is called “forest dieback”—the decline and retreat of jungle basins as big as countries and woods that sprawl for so many miles they used to contain whole folklores—which means a dramatic stripping-back of the planet’s natural ability to absorb carbon and turn it into oxygen, which means still hotter temperatures, which means more dieback, and so on. Higher temperatures means more forest fires means fewer trees means less carbon absorption, means more carbon in the atmosphere, means a hotter planet still—and so on. A warmer planet means more water vapor in the atmosphere, and, water vapor being a greenhouse gas, this brings higher temperatures still—and so on. Warmer oceans can absorb less heat, which means more stays in the air, and contain less oxygen, which is doom for phytoplankton—which does for the ocean what plants do on land, eating carbon and producing oxygen—which leaves us with more carbon, which heats the planet further. And so on. These are the systems climate scientists call “feedbacks”; there are more.82 Some work in the other direction, moderating climate change. But many more point toward an acceleration of warming, should we trigger them. And just how these complicated, countervailing systems will interact—what effects will be exaggerated and what undermined by feedbacks—is unknown, which pulls a dark cloud of uncertainty over any effort to plan ahead for the climate future. We know what a best-case outcome for climate change looks like, however unrealistic, because it quite closely resembles the world as we live on it today. But we have not yet begun to contemplate those cascades that may bring us to the infernal range of the bell curve. Other cascades are regional, collapsing on human communities and buckling them where they fall. These can be literal cascades—human-triggered avalanches are on the rise, with 50,000 people killed by avalanches globally between 2004 and 2016.83 In Switzerland, climate change has unleashed a whole new kind, thanks to what are called “rain-on-snow” events, which also caused the overflow of the Oroville Dam in Northern California and the 2013 flood of Alberta, Canada, with damages approaching $5 billion.84 But there are other kinds of cascade, too. Climate-driven water shortages or crop failures push climate refugees into nearby regions already struggling with resource scarcity. Sea-level rise inundates cropland with more and more saltwater flooding, transforming agricultural areas into brackish sponges no longer able to adequately feed those living off them; flooding power plants, knocking regions offline just as electricity may be needed most; and crippling chemical and nuclear plants, which, malfunctioning, breathe out their toxic plumes. The rains that followed the Camp Fire flooded the tent cities hastily assembled for the first disaster’s refugees. In the case of the Santa Barbara mudslides, drought produced a state full of dry brush ripe for a spark; then a year of anomalously monsoonish rain produced only more growth, and wildfires tore through the landscape, leaving a mountainside without much plant life to hold in place the millions of tons of loose earth that make up the towering coastal range where the clouds tend to gather and the rain first falls. Some of those watching from afar wondered, incredulously, how a mudslide could kill so many. The answer is, the same way as hurricanes or tornadoes—by weaponizing the environment, whether “man-made” or “natural.” Wind disasters do not kill by wind, however brutal it gets, but by tugging trees out of earth and transforming them into clubs, making power lines into loose whips and electrified nooses, collapsing homes on cowering residents, and turning cars into tumbling boulders. And they kill slowly, too, by cutting off food delivery and medical supplies, making roads impassable even to first responders, knocking out phone lines and cell towers so that the ill and elderly must suffer, and hope to endure, in silence and without aid. Most of the world is not Santa Barbara, with its Mission-style impasto of infinite-seeming wealth, and in the coming decades many of the most punishing climate horrors will indeed hit those least able to respond and recover. This is what is often called the problem of environmental justice; a sharper, less gauzy phrase would be “climate caste system.” The problem is acute within countries, even wealthy ones, where the poorest are those who live in the marshes, the swamps, the floodplains, the inadequately irrigated places with the most vulnerable infrastructure—altogether an unwitting environmental apartheid. Just in Texas, 500,000 poor Latinos live in shantytowns called “colonias” with no drainage systems to deal with increased flooding.85 The cleavage is even sharper globally, where the poorest countries will suffer more in our hot new world. In fact, with one exception—Australia—countries with lower GDPs will warm the most.86 That is notwithstanding the fact that much of the global south has not, to this point, defiled the atmosphere of the planet all that much. This is one of the many historical ironies of climate change that would better be called cruelties, so merciless is the suffering they will inflict. But disproportionately as it will fall on the world’s least, the devastation of global warming cannot be easily quarantined in the developing world, as much as those in the Northern Hemisphere would probably, and not to our credit, prefer it. Climate disaster is too indiscriminate for that. In fact, the belief that climate could be plausibly governed, or managed, by any institution or human instrument presently at hand is another wide-eyed climate delusion. The planet survived many millennia without anything approaching a world government, in fact endured nearly the entire span of human civilization that way, organized into competitive tribes and fiefdoms and kingdoms and nation-states, and only began to build something resembling a cooperative blueprint, very piecemeal, after brutal world wars—in the ﻿form of the League of Nations and United Nations and European Union and even the market fabric of globalization, whatever its flaws still a vision of cross-national participation, imbued with the neoliberal ethos that life on Earth was a positive-sum game. If you had to invent a threat grand enough, and global enough, to plausibly conjure into being a system of true international cooperation, climate change would be it—the threat everywhere, and overwhelming, and total. And yet now, just as the need for that kind of cooperation is paramount, indeed necessary for anything like the world we know to survive, we are only unbuilding those alliances—recoiling into nationalistic corners and retreating from collective responsibility and from each other. That collapse of trust is a cascade, too. ﻿Just how completely the world below our feet will become unknown to us is not yet clear, and how we register its transformation remains an open question. One legacy of the environmentalist creed that long prized the natural world as an otherworldly retreat is that we see its degradation as a sequestered story, unfolding separately from our own modern lives—so separately that the degradation acquires the comfortable contours of parable, like pages from Aesop, aestheticized even when we know the losses as tragedy. Climate change could soon mean that, in the fall, trees may simply turn brown, and so we will look differently at entire schools of painting, which stretched for generations, devoted to best capturing the oranges and reds we can no longer see ourselves out the windows of our cars as we drive along our highways.87 The coffee plants of Latin America will no longer produce fruit; beach homes will be built on higher and higher stilts and still be drowned.88 In many cases, it is better to use the present tense. In just the last forty years, according to the World Wildlife Fund, more than half of the world’s vertebrate animals have died; in just the last twenty-five, one study of German nature preserves found, the flying insect population declined by three-quarters.89, 90 The delicate dance of flowers and their pollinators has been disrupted, as have the migration patterns of cod, which have fled up the Eastern Seaboard toward the Arctic, evading the communities of fishermen that fed on them for centuries; as have the hibernation patterns of black bears, many of which now stay awake all winter.91, 92, 93 Species individuated over millions of years of evolution but forced together by climate change have begun to mate with one another for the first time, producing a whole new class of hybrid species: the pizzly bear, the coy-wolf.94 The zoos are already natural history museums, the children’s books already out of date. Older fables, too, will be remade: the story of Atlantis, having endured and enchanted for several millennia, will compete with the real-time sagas of the Marshall Islands and Miami Beach, each sinking over time into snorkelers’ paradises; the strange fantasy of Santa and his polar workshop will grow eerier still in an Arctic of ice-free summers; and there is a terrible poignancy in contemplating how desertification of the entire Mediterranean Basin will change our reading of the Odyssey, or how it will discolor the shine of Greek islands for dust from the Sahara to permanently blanket their skies, or how it will recast the meaning of the Pyramids for the Nile to be dramatically drained.95, 96, 97 We will think of the border with Mexico differently, presumably, when the Rio Grande is a line traced through a dry riverbed—the Rio Sand, it’s already been called.98 The imperious West has spent five centuries looking down its nose at the plight of those living within the pale of tropical disease, and one wonders how that will change when mosquitoes carrying malaria and dengue are flying through the streets of Copenhagen and Chicago, too. But we have for so long understood stories about nature as allegories that we seem unable to recognize that the meaning of climate change is not sequestered in parable. It encompasses us; in a very real way it governs us—our crop yields, our pandemics, our migration patterns and civil wars, crime waves and domestic assaults, hurricanes and heat waves and rain bombs and megadroughts, the shape of our economic growth and everything that flows downstream from it, which today means nearly everything. Eight hundred million in South Asia alone, the World Bank says, would see their **living conditions sharply diminish by 2050** on the current emissions track, and perhaps a climate slowdown will even reveal the bounty of what Andreas Malm calls fossil capitalism to be an illusion, sustained over just a few centuries by the arithmetic of adding the energy value of burned fossil fuels to what had been, before wood and coal and oil, an eternal Malthusian trap.99, 100 In which case, we would have to retire the intuition that history will inevitably extract material progress from the planet, at least in any reliable or global pattern, and come to terms, somehow, with just how pervasively that intuition ruled even our inner lives, often tyrannically. Adaptation to climate change is often viewed in terms of market trade-offs, but in the coming decades the trade will work in the opposite direction, with relative prosperity a benefit of more aggressive action. Every degree of warming, it’s been estimated, costs a temperate country like the United States about one percentage point of GDP, and according to one recent paper, at 1.5 degrees the world would be $20 trillion richer than at 2 degrees.101, 102 Turn the dial up another degree or two, and the costs balloon—the compound interest of environmental catastrophe. 3.7 degrees of warming would produce $551 trillion in damages, research suggests; total worldwide wealth is today about $280 trillion.103, 104 Our current emissions trajectory takes us over 4 degrees by 2100; multiply that by that 1 percent of GDP and you have almost entirely wiped out the very possibility of economic growth, which has not topped 5 percent globally in over forty years.105 A fringe group of alarmed academics call this prospect “steady-state economics,” but it ultimately suggests a more ﻿complete retreat from economics as an orienting beacon, and from growth as the lingua franca through which modern life launders all of its aspirations.106 “Steady-state” also gives a name to the creeping panic that history may be less progressive, as we’ve come to believe really only over the last several centuries, than cyclical, as we were sure it was for the many millennia before. More than that: in the vision steady-state economics projects of a state-of-nature competitive scramble, everything from politics to trade and war seems brutally zero-sum. For centuries we have looked to nature as a mirror onto which to first project, then observe, ourselves. But what is the moral? There is nothing to learn from global warming, because we do not have the time, or the distance, to contemplate its lessons; we are after all not merely telling the story but living it. That is, trying to; the threat is immense. How immense? One 2018 paper sketches the math in horrifying detail. In the journal Nature Climate Change, a team led by Drew Shindell tried to quantify the suffering that would be avoided if warming was kept to 1.5 degrees, rather than 2 degrees—in other words, how much additional suffering would result from just that additional half-degree of warming. Their answer: 150 million more people would die from air pollution alone in a 2-degree warmer world than in a 1.1075-degree warmer one. Later that year, the IPCC raised the stakes further: in the gap between 1.1085 degrees and 2, it said, hundreds of millions of lives were at stake. Numbers that large can be hard to grasp, but 150 million is the equivalent of twenty-five Holocausts. It is three times the size of the death toll of the Great Leap Forward—the largest nonmilitary death toll humanity has ever produced. It is more than twice the greatest death toll of any kind, World War II. The numbers don’t begin to climb only when we hit 1.5 degrees, of course. As should not surprise you, they are already accumulating, at a rate of at least seven million deaths, from air pollution alone, each year—an annual Holocaust, pursued and prosecuted by what brand of nihilism? This is what is meant when climate change is called an “existential crisis”—a drama we are now haphazardly improvising between two hellish poles, in which our best-case outcome is death and suffering at the scale of twenty-five Holocausts, and the worst-case outcome puts us on the brink of extinction.109 Rhetoric often fails us on climate because the only factually appropriate language is of a kind we’ve been trained, by a buoyant culture of sunny-side-up optimism, to dismiss, categorically, as hyperbole. Here, the facts are hysterical, and the dimensions of the drama that will play out between those poles incomprehensibly large—large enough to enclose not just all of present-day humanity but all of our possible futures, as well. Global warming has improbably compressed into two generations the entire story of human civilization. First, the project of remaking the planet so that it is undeniably ours, a project whose exhaust, the poison of emissions, now casually works its way through millennia of ice so quickly you can see the melt with a naked eye, destroying the environmental conditions that have held stable and steadily governed for literally all of human history. That has been the work of a single generation. The second generation faces a very different task: the project of preserving our collective future, forestalling that devastation and engineering an alternate path. There is simply no analogy to draw on, outside of mythology and theology—and perhaps the Cold War prospect of mutually assured destruction. Few feel like gods in the face of warming, but that the totality of climate change should make us feel so passive—that is another of its delusions. In folklore and comic books and church pews and movie theaters, stories about the fate of the earth often perversely counsel passivity in their audiences, and perhaps it should not surprise us that the threat of climate change is no different. By the end of the Cold War, the prospect of nuclear winter had clouded every corner of our pop culture and psychology, a pervasive nightmare that the human experiment might be brought to an end by two jousting sets of proud, rivalrous tacticians, just a few sets of twitchy hands hovering over the planet’s self-destruct buttons. The threat of climate change is more dramatic still, and ultimately more democratic, with responsibility shared by each of us even as we shiver in fear of it; and yet we have processed that threat only in parts, typically not concretely or explicitly, displacing certain anxieties and inventing others, choosing to ignore the bleakest features of our possible future and letting our political fatalism and technological faith blur, as though we’d gone cross-eyed, into a remarkably familiar consumer fantasy: that someone else will fix the problem for us, at no cost. Those more panicked are often hardly less complacent, living instead through climate fatalism as though it were climate optimism. Over the last few years, as the planet’s own environmental rhythms have seemed to grow more fatalistic, skeptics have found themselves arguing not that climate change isn’t happening, since extreme weather has made that undeniable, but that its causes are unclear—suggesting that the changes we are seeing are the result of natural cycles rather than human activities and interventions. It is a very strange argument; if the planet is warming at a terrifying pace and on a horrifying scale, it should transparently concern us more, rather than less, that the warming is beyond our control, possibly even our comprehension. That we know global warming is our doing should be a comfort, not a cause for despair, however incomprehensively large and complicated we find the processes that have brought it into being; that we know we are, ourselves, responsible for all of its punishing effects ﻿should be empowering, and not just perversely. Global warming is, after all, a human invention. And the flip side of our real-time guilt is that we remain in command. No matter how out-of-control the climate system seems—with its roiling typhoons, unprecedented famines and heat waves, refugee crises and climate conflicts—we are all its authors. And still writing.

#### The alternative is to embrace non-reformist reform and undermine the colonial, capitalist logics of global health industry

Chaudhuri et al 7/8/21 (Monica Mitra Chaudhuri, Orillia Soldiers' Memorial Hospital in Ontario, Canada. Laura Mkumba, Science Facilitation in North Carolina, Yadurshini Raveendran, Clinical Operations, FHI Clinical Inc, Robert D Smith Department of Anthropology and Sociology, Graduate Institute of International and Development Studies), “Decolonising global health: beyond ‘reformative’ roadmaps and towards decolonial thought”, BMJ Global Health, http://dx.doi.org/10.1136/bmjgh-2021-006371, <https://gh.bmj.com/content/6/7/e006371.full> NT

In this final section, we suggest different conceptual frames for decolonisation. Thus far in the decolonising global health literature, decolonisation often appears to insinuate white supremacist, racist, sexist and capitalist structures of oppressive power. If this is the case, in addition to Fanon, it may be helpful to engage other social theorists in their attempts to analyse oppression and power. However, we caution that our explanation of these theories in this commentary is simplified; to fully comprehend and make use of these theories within the global health industry would require time spent carefully reading, and processes of institutional and self-introspection alongside this theory. First, Michel Foucault’s analyses of power may be useful to think with to understand how power functions within the global health industry. Specifically, Foucault speaks of the emergence of ‘biopower’ in the ability of governments—national or otherwise —to make worthy populations live and let unworthy populations die.14 Further, Achille Mbembe speaks of necropower, in the ability of governments to kill unworthy populations while making worthy populations live.15 Calling on these theories, with the analytical lens of the aforementioned concepts of white supremacy, racism, sexism and capitalism, organisations must comprehend where they exist within these structures of power, and how they contribute to them. As opposed to a selective or industry wide check-list, this would push for a necessary analysis of power embedded within individuals and organisations. Analysing the intersections of power within particular organisations may provide more scope for ‘reform.’ However, it is essential to avoid reconstructing existing systems of power and as such failing to remove colonial power. Instead, it would be more useful to **embrace concepts such as ‘non-reformist reform.**’ As defined by Gorz, these are reforms that aim ‘**to break it up, to restrict it, to create counter-powers** which, instead of creating new equilibrium, **undermine its very foundations**.’16 To put non-reformist reforms into practice Paulo Freire’s The Pedagogy of the Oppressed suggests environments of radical openness to alterity, whereby a diverse group of individuals are engaged in decision making processes and voices are provided with equal merit and consideration regardless of the form of presentation.17 Through this lens, the Global Health industry must open up further spaces for voice, and shift away from the Eurocentric cultures insisting on ‘professional’ dress, presentation of speech, modes of argumentation and ‘correct’ formats and literature to be used when disseminating ideas. To create such environments of radical openness, representation must be brought forth through reparations, repatriation of indigenous land, abolition of oppressive systems and more. The conceptual frameworks of (post)colonial theory, power and oppression must be incorporated into discussions about decolonising global health if the movement is serious about its aims. Each of the frameworks detailed here can begin to guide the global health industry in undergoing the process of decolonisation to realise Fanon’s moment of colonial departure. Fanon’s reference to the ‘thing,’ today perhaps best recognised in the global health industry’s ‘beneficiary,’ can be analysed through the concepts of biopower and necropower that detail how a population comes to be seen as (un)worthy. Using Fanon’s language, ‘to completely call into question the colonial situation,’ dismantling the colonial logics of the global health industry may be productively thought of by ‘undermining its very foundations’ in Gorz’s non-reformist reform. Finally, to ‘transform spectators into privileged actors’ as Fanon calls for, the Global Health industry can think with Freire to create environments of radical openness to alterity. **The danger of not being responsive to these theories is that ‘reform’ will remain confined to the epistemologically familiar—more often than not in the form of the reappropriation of violent colonial technologies.** Nonetheless, even when calling on these theories, we still urge for a form of continuous reflection of the intersections of power. What may succeed in reducing oppression somewhere may further it elsewhere, and must be continuously reflected on throughout any attempted decolonial process. With the haste of hopeful optimism, we might also begin to imagine that a fully decolonised global health is when there is no global health industry at all—perhaps this could be the ‘moment’ of departure.

## Case

### FW

#### The ROTJ is to break down neoliberal systems of power. Debate should be a pedagogical space in which to produce emancipatory education and nurture radical agency—our framing is a pre-requisite to ethical political engagement, necessary for anti-capitalist solidarity, and determines whether the project of the 1AC is a good idea.

**Giroux 20.** [Henry Armand Giroux is an American and Canadian scholar and cultural critic. One of the founding theorists of critical pedagogy in the United States, he is best known for his pioneering work in public pedagogy, cultural studies, youth studies, higher education, media studies, and critical theory. 6-19-2020. Accessed 12/30/2020. “Racist Violence Can’t Be Separated from the Violence of Neoliberal Capitalism” <https://socialistproject.ca/2020/06/racist-violence-neoliberal-capitalism//vg>

It should be clear that questions of economic and social justice cannot be addressed by a neoliberal pedagogy that enshrines self-interest and privatization while converting every social problem into individualized market solutions or regressive matters of personal responsibility. Under neoliberalism’s disimagination machine, individual responsibility is coupled with an ethos of greed, avarice, and personal gain. One consequence is the tearing up of social solidarities, public values, and an almost pathological disdain for democracy. This radical form of privatization is also a powerful force for the rise of fascist politics because it depoliticizes individuals, immerses them in the logic of social Darwinism, and makes them susceptible to the dehumanization of those considered a threat or disposable. Just as the spread of the pandemic virus in the United States was not an innocent act of nature, neither is the rise and pervasive grip of inequality. What is clear is that neoliberal support for unbridled individualism has weakened democratic pressures and eroded democracy and equality as governing principles. Moreover, as a mode of public pedagogy, it has undercut social provisions, the social contract, and support for public goods such as education, public health, essential infrastructure, public transportation, and the most basic elements of the welfare state. As a form of pedagogical practice, neoliberalism has morphed into a form of pandemic pedagogy that sacrifices social needs and human life in the name of an economic rationality that values reviving economic growth over human rights. As a lived system of meaning and values, self-reliance and rugged individualism are the only categories available for shaping how individuals view themselves, and their relationship to others and to the planet. The individualization of everyone and the reduction of social problems to private troubles is paralleled by sanctioning a world marked by borders, walls, racism, hate, and a rejection of government intervention in the interest of the common good. Most importantly, neoliberal individualization personalizes power, creating a depoliticized subject whose only obligation as a citizen is defined by consuming and living in a world free from ethical and social responsibilities. In many ways, it does not just empty politics of any substance, it destroys its emancipatory prospects. The neoliberal strategists use education not only to mask their abuses and the effects of their criminogenic policies, they also – in a time of crisis, when dissatisfaction of the masses might lead to chaos, revolts, and dangerous levels of resistance – move dangerously close to creating the conditions for a fascist politics. The noted theologian Frei Betto is right in stating that under such conditions, “…they cover up the causes of social ills and cover up their effects with ideologies that, by obscuring causes, fuel mood in the face of the effects. That’s why neoliberalism is now showing its authoritarian face – building walls that divide countries and ethnic groups, executive power over legislature and judiciary, disinformation about digital networks, the cult of the homeland, the brazen offensive against human rights.” Neoliberalism and its regressive notion of individualism and individual responsibility has undermined the belief that human beings both make the world and can change it. The pandemic has ushered in a crisis that undermines that belief and opens the door for rethinking what kind of society and notion of politics will be faithful to the creation of a socialist democracy that speaks to the core values of justice, equality, and solidarity. Under such circumstances, private resistance must give way to collective resistance, and personal and political rights must include economic rights. If inequality is to be defeated, the social state must replace the corporate state, and social rights must be guaranteed for all. There can be no adequate struggle for economic justice and social equality unless economic inequality on a global level is addressed along with a movement for climate justice, the elimination of systemic racism, and a halt to the spiraling militarism that has resulted in endless wars. **This can only take place if the anti-democratic ideology of neoliberalism, with its collapse of the public into the private and its institutional structures of domination, are fully addressed and discredited.** Étienne Balibar is right in stating that the triumph of neoliberalism has resulted in the “death zones of humanity.” Following Balibar, what must be made clear is that neoliberal capitalism is itself a pandemic and a dangerous harbinger of an updated fascist politics. Overcoming Pandemic Pedagogy The kinds of societies that will emerge after the pandemic is up for grabs. In some cases, the crisis will give way to authoritarian regimes such as Chile, Hungary, and Turkey, all of which have used the urgency of COVID-19 as an excuse to impose more state control and surveillance, squelch dissent, eliminate civil liberties, and concentrate power in the hands of an authoritarian political class. As is well documented, history in a time of crisis also has the potential to change dominant ideologies, rethink the meaning of governance, and enlarge the sphere of justice and equality through a vision that fights for a more generous and inclusive politics. It is crucial to rethink the project of politics in order to imagine forms of resistance that are collective, inclusive and global, and capable of producing new democratic arrangements for social life, more radical values, and a “global economy which will no longer be at the mercy of market mechanisms.” This is a politics that must move beyond siloed identities and fractured political factions in order to build transnational solidarities in the service of an alternative radically democratic society. Making the pedagogical more political means challenging those forms of pandemic pedagogy that turn politics into theater, a favorite tactic of Trump. In this case, the performance works to suspend disbelief, hold power accountable, and unravel one’s sense of critical agency. Pandemic pedagogy does more than undermine critical thinking and informed judgments; it dissolves the line between the truth and lies, fantasy and reality, and in doing so, destroys the foundation for understanding, engaging, and promoting that social and economic justice. The endgame under the rubric of a pandemic pedagogy is not simply the destruction of the truth, but the elimination of democracy itself. Central to developing an alternative democratic vision is development of a language that refuses to look away and be commodified. Such a language should be able to break through the continuity and consensus of common sense and appeal to the natural order of things. At stake here is the need to reclaim both critical and redemptive elements of a radical democracy in order to address the full spectrum of violence that structures institutions and everyday life in the United States. This is a language connected to the acquisition of civic literacy, and it demands a different regime of desires and identifications to enable us to move from “shock and stunned silence toward a coherent visceral speech, one as strong as the force that is charging at us.” Of course, there is more at stake here than a struggle over meaning; there is also the struggle over power, over the need to create a formative culture that will **produce informed critical agents who will fight for and contribute to a broad social movement that will translate meaning into a fierce struggle for economic, political, and social justice**. Agency in this sense must be connected to a notion of possibility and education in the service of radical change. **Reimagining the future only becomes meaningful when it is rooted in a fierce struggle against the horrors and totalitarian practices of a pandemic pedagogy that falsely claims that it exists outside of history.** Václav Havel, the late Czech political dissident-turned-politician, once argued that politics follows culture, by which he meant that changing consciousness is the first step toward building mass movements of resistance. What is crucial here in the age of multiple crises is a thorough grasp of the notion that critical and engaged forms of agency are a product of emancipatory education. Moreover, at the heart of any viable notion of politics is the recognition that politics begins with attempts to change the way people think, act, and feel with respect to both how they view themselves and their relations to others. There is more to agency than the neoliberal emphasis on the “empire of the self,” with its unchecked belief in the virtues of a form of self-interest that despises the bonds of sociality, solidarity, and community. The US is in the midst of a political and pedagogical crisis. This is a crisis defined not only by a brutalizing racism and massive inequality, but also by a constitutional crisis produced by a growing authoritarianism that has been in the making for some time. The recent attacks by the police on journalists, peaceful protesters, and even elderly people marching for racial justice, echoes the violence of the Brownshirts in the 1930s. Let’s stop the futile debate about whether or not the US is in the midst of a fascist state and shift the register to the more serious question of how to resist it and restore a semblance of real democracy. Under such circumstances, education should be viewed as central to politics, and it plays a crucial role in producing informed judgments, actions, morality, and social responsibility at the forefront not only of agency, but politics itself. In this scenario, truth and politics mutually inform each other to erupt in a pedagogical awakening at the moment when the rules are broken. Taking risks becomes a necessity, self-reflection narrates its capacity for critically engaged agency, and thinking the impossible is not an option, but a necessity. Without an informed and educated citizenry, democracy can lead to tyranny, even fascism. Trump represents the malignant presence of a fascism that never dies and is ready to re-emerge at different times in different context in sometimes not-so-recognizable forms. The COVID-19 crisis and the pandemic of inequality and racism have revealed elements of a fascist politics that are more than abstractions. The struggle against a fascist politics is now visible in the rebellions taking place across the United States. While there are no political guarantees for a victory, there is a new sense that the future can be changed in the image of a just and sustainable society. There is a new energy for reform taking place in the aftermath of the killing of George Floyd. Massive protests for racial, economic, and social justice are emerging all over the globe. As I have argued in The Terror of the Unforeseen, at stake here is the need for these protests to transition from a pedagogical moment and collective outburst of moral anger to a progressive international movement that is well organized and unified. Such a movement must build solidarity among different groups, imagine new forms of social life, make the impossible possible, and produce a revolutionary project in defense of equality, social justice, and popular sovereignty. The racial, class, ecological, and public health crisis facing the globe can only be understood as part of a comprehensive crisis of the totality. **Immediate solutions such as defunding the police and improving community services are important, but they do not deal with the larger issue of eliminating a neoliberal system structured in massive racial and economic inequalities**. David Harvey is right in arguing that the “immediate task is nothing more nor less than the self-conscious construction of a **new political framework for approaching the question of inequality**, through a deep and profound critique of our economic and social system.” This is a crisis in which different threads of oppression must be understood as part of the general crisis of capitalism. The various protests now evolving internationally at the popular level offer the promise of new global anti-fascist and anti-capitalist movements. In the current moment, democracy may be under a severe threat and appear frighteningly vulnerable, but with young people and others rising up across the globe – inspired, energized and marching in the streets – the future of a radical democracy is waiting to breathe again. •

#### The aff’s focus on the government is an act of deflection that sidelines the role of Capital and fails to recognize the centerlessness of global capitalism.

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Although excoriated by both neoliberalism and neoconservativism, the concept of the Nanny State continues to haunt capitalist realism. The specter of big government plays an essential libidinal function for capitalist realism. It is there to be blamed precisely for its failure to act as a centralizing power, the anger directed at it much like the fury Thomas Hardy supposedly spat at God for not existing. ‘Time and again’, James Meek observed in an LRB piece on water privatization in Britain, ‘Conservative and Labor governments have discovered that when they give powers to private companies, and those private companies screw up, voters blame the government for giving the powers away, rather than the companies for misusing them’. Meek was visiting Tewkesbury, one of the British towns that was the victim of serious flooding in 2007, a year after the disaster. On the face of it, the flooding and the consequent failure of services was the fault of privatized water companies and house builders, yet Meek found that this was not the way that most of the local residents saw it. ‘In Tewkesbury’, Meeks wrote, [block quotation starts] in general there is more hostility towards the government, the council and the Environment Agency for not stopping house builders than there is towards house builders for building houses, or buyers for buying them. When insurers raise their premiums, more blame is directed at the government for not spending enough on flood defences than at insurers for raising the premiums, or at people who choose to live in a flood-prone valley but don’t like paying extra for it. [block quotation ends] This syndrome was repeated on a much grander scale with a disaster of a different kind – the bank crisis of 2008. The media focus was on the excesses of individual bankers and on the government’s handling of the crisis, not on the systemic causes of the crisis. I don’t for a moment want to excuse New Labour for its part in such disasters, but it has to be recognized that focus on government, like the focus on immoral individuals, is an act of deflection. Scapegoating an impotent government (running around to clean up the messes made by its business friends) arises from bad faith, from a continuing hostility to the Nanny State that nevertheless goes alongside a refusal to accept the consequences of the sidelining of government in global capitalism – a sign, perhaps, that, at the level of the political unconscious, it is impossible to accept that there are no overall controllers, that the closest thing we have to ruling powers now are nebulous, unaccountable interests exercising corporate irresponsibility. A case of fetishist disavowal, perhaps – ‘we know perfectly well that the government is not pulling the strings, but nevertheless...’ The disavowal happens in part because the centerlessness of global capitalism is radically unthinkable. Although people are interpellated now as consumers – and, as Wendy Brown and others have pointed out, government itself is presented as a kind of commodity or service – they still cannot help but think of themselves as (if they were) citizens.

#### Pharma innovation is stagnant despite R&D expenditures

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The state of innovation in the pharmaceutical industry in recent literature, as well as the popular news, varies greatly with descriptions range from completely stagnant to rising. **Several analyses have concluded that while R&D expendi- tures have skyrocketed, innovation has slowed to an all-time low,** despite major scientific advances [2, 3]. Drews (1998) noted that **the top 50 pharmaceutical companies were only producing 0.5 to 0.8 New Molecular Entities (NME) per year, which is suggested to be too small to sustain neces- sary growth of the industry**. These reports point to time to discover lead candidates, attrition in development, changes within management, and rising costs to explain the decline, and claim that these must be fixed through major manage- ment overhauls and changes in development processes to decrease attrition [2–4].

#### IPR are key to sustaining innovation levels since they provide financial incentives for companies to invest in R&D

Mercurio 2/12/21 (Brian Mercurio, Chinese University of Hong Kong - Faculty of Law), “WTO WAIVER FROM INTELLECTUAL PROPERTY PROTECTION FOR COVID19 VACCINES AND TREATMENTS: A CRITICAL REVIEW”, Virginia Journal of International Law Online, pg. 7-9, <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3789820> NT

The IP system is designed to encourage and reward creativity and innovation while benefiting society as a whole. The idea is that IPRs stimulate innovation by “enabling innovators to capture enough of the benefits of their own innovative activity to justify taking considerable risks.” 23 Therefore, while in the short term waiving IPRs may arguably accelerate the distribution of goods and services – i.e. access to COVID-19 vaccines – in the long term **undermining IPRs would eliminate the incentives that spark innovation, thus hindering the discovery and development of knowledge for new products or technologies that the world needs**.24 An example that illustrates the significance of IP protection is the technology of synthetic mRNA, a genetic technology behind the COVID-19 vaccines of both Pfizer and Moderna. Synthetic mRNA is a genetic technology that has long held huge promise but has so far run into biological roadblocks. The concept of tweaking specific strands in synthetic mRNA to deliver desired results was first introduced in the 1990s, but at that time while it made sense in theory it often failed in the real world as synthetic RNA was notoriously vulnerable to the body’s natural defences and the synthetic RNA was very often destroyed before reaching its target cells. In some situations, the foreign materials even elicited an immune response that poses health risks for some patients. The solution, substituting one of the nucleosides (building blocks of mRNA) for a slightly tweaked version to bypass the body’s defence, was not discovered until 2005 and did not reach commercialization stage for another 15 years. Without the prospect of IP protection, it is simply unimaginable that scientists would devote the human and monetary resources into such R&D as there would have been no incentive to spend the time and effort on a promising but extremely challenging technology. Likewise, venture capitalists would refuse to invest billions of dollars into any research effort knowing that any other company could simply take the successful result and produce a medicine without paying for the R&D costs; in such a scenario, it would be virtually impossible to recoup the initial investment. **Thus, without the promise of IP protection the technology underpinning the most advanced and promising COVID-19 vaccines would likely never have been developed.** This point is of such importance that it is worth stating the obvious: IPRs have played a large role in the response to COVID-19; a response which has led to an incredible feat of humanity – the identification of the genome of a new pathogen and development of several treatments and promising vaccines within the space of a year. Without the promise of financial gain, the level of R&D into the novel coronavirus would have been greatly reduced and innovation hampered and delayed. In short, the IP system encouraged a robust response to the threat from innovator companies and worked as designed. It would be unwise (if not reckless) to place the innovation system which has delivered results in record time in jeopardy only in exchange for what is at best short-term benefits.