Trump and Climate Catastrophe

by John Bellamy Foster

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John Bellamy Foster is the editor of *MR* and a professor of sociology at the University of Oregon. He is coauthor, with Paul Burkett, of *Marx and the Earth* (Haymarket, 2017).

This very expensive GLOBAL WARMING bullshit has got to stop. Our planet is freezing, record low temps, and our GW scientists are stuck in ice.

—Donald Trump, January 2, 2014 1

The alarm bells are ringing. The climate-change denialism of the Trump administration, coupled with its goal of maximizing fossil-fuel extraction and consumption at all costs, constitutes, in the words of Noam Chomsky, “almost a death knell for the human species.” As noted climatologist Michael E. Mann has declared, “I fear that this may be game over for the climate.” 2

The effects of the failure to mitigate global warming will not of course come all at once, and will not affect all regions and populations equally. But just a few years of inaction in the immediate future could lock in dangerous climate change that would be irreversible for the next ten thousand years. 3 It is feared that once the climatic point of no return—usually seen as a 2°C increase in global average temperatures—is reached, positive-feedback mechanisms will set in, accelerating warming trends and leading, in the words of James Hansen, former director of NASA's Goddard Institute for Space Studies and the foremost U.S. climate scientist, to "a dynamic situation that is out of [human] control," propelling the world toward the 4°C (or even higher) future that is thought by scientists to portend the end of civilization, in the sense of organized human society. 4

Although the United States currently contributes only about 15 percent of global carbon-dioxide emissions, a failure on its part to act to reduce emissions would push the world more decisively toward the 2°C tipping point. 5 Moreover, in the apparently likely event that the principal per-capita global emitter and the hegemonic global power chooses to bow out, any worldwide effort to reduce carbon emissions will be severely jeopardized. For this reason, climate scientists are increasingly turning from the United States to China as the main hope for leadership in combatting climate change. 6

At this critical moment in history, three questions need to be answered: What does the latest scientific evidence tell us about the approach of climate catastrophe? How is today's monopoly-finance capitalism—with Donald Trump as its authentic representative—contributing to this impending planetary catastrophe? And what possibilities remain for humanity to avert an Earth-system calamity?

Toward a "Fatal Imbalance"

The latest evidence on climate change is jaw-dropping. On November 8, 2016, the day of the U.S. election, the World Meteorological Organization reported that global average temperatures have risen to about 1.2°C above preindustrial levels (dangerously close to the initial 1.5°C

boundary set by the 2015 Paris Climate Agreement), with 2016 the hottest year on record, surpassing 2015 and 2014, both of which were themselves record-breaking years. 7

The annual *Arctic Report Card* of the National Oceanic and Atmospheric Administration, released in December 2016, showed that Arctic temperatures are rising at rates twice the global average, with an average increase of 3.5°C since the beginning of the twentieth century. Arctic sea ice is critical for climate stability because of the albedo effect, in which white ice reflects the sun's rays. The disappearance of sea ice and its replacement with a heat-absorbing "dark ocean" thus represents a major climate feedback. In September 2016, Arctic sea ice dropped to its second lowest level ever recorded. The Greenland ice sheet, meanwhile, continues its rapid loss of mass, further contributing to sea level rise. The *Arctic Resilience Report*, published in November 2016 by the Stockholm Environment Institute, emphasized that Arctic temperatures had peaked at around 20°C warmer than normal for that time of year, and warned of nineteen impending tipping points affecting the stability of the Arctic region, some of which could "tip" the entire global climate, including much higher releases of methane—a far more potent greenhouse gas than carbon dioxide—due to the thawing of the tundra. 8

Over the last two years, the scientific community has nearly doubled its projections for sea level rise during the course of this century. Already it has increased 8 inches, threatening island communities and low-lying coastal areas throughout the world. The ocean could rise by close to two meters (more than six feet) by 2100, while, over a couple of centuries, the increase could reach six meters (twenty feet). By 2500, according to one study in *Nature*, sea level rise could be as much as 15 meters (over 49 feet). 9

Trillionthtonne.org, a climate-tracking website associated with scientists at the University of Oxford, currently indicates that if present trends continue unchecked, the world will hit the trillionth-metric-ton mark in total carbon emissions—that is, the amount of total carbon emissions thought to generate 450 ppm in global carbon concentration, and a 2°C increase in global temperatures—in just over twenty years. Over 600 gigatons (billions of metric tons) of carbon have been emitted into the atmosphere so far. The closer the world gets to the trillionth metric ton, the more drastic the effort needed to avoid breaking the planetary carbon budget. At present, this would require planet-wide carbon-emissions reductions of around 3 percent a year, and as much as three times that number in rich, high per-capita carbon-emitting nations, who account for more than a quarter of the world's present emissions as well as the vast majority of its historic emissions—and whose wealth offers them ample material means to address the problem. 10

As Mann, best known for developing the famous “hockey-stick” chart showing the sharp rise in global average temperatures, concisely explains in his 2016 book *The Madhouse Effect*:

A tipping point is, of course, a point of no return. In the context of climate change, it would mean that we have warmed the planet enough to set in motion an unstoppable process. In reality, there is no single tipping point in the climate system; there are many. And the farther we go down the fossil fuel highway, the more tipping points we will cross. Many observers have argued that a warming of the planet of 3.6°F (2°C) relative to preindustrial levels (something that will likely happen if we allow CO2 levels to climb to just 450 ppm) would almost certainly create dangerous, potentially irreversible changes in our climate. As a reminder, we have already warmed around 1.5°F (1°C), and another 0.9°F (0.5°C) is likely in the pipeline. Another decade of business-as-usual fossil fuel emissions could commit us to that 3.6°F (2°C) “dangerous warming” threshold….

At the current rate of 30 gigatons a year, we’ll burn through our [carbon] budget in about three decades. To remain within the budget, we have to reduce emissions by several percent a year, to bring them down to 33 percent of current levels within twenty years. That’s an average worldwide carbon footprint similar to what prevails in the developing world. By midcentury, emissions must approach zero. *That’s* the black double-diamond slope.

One recent analysis determined that achieving these reductions would require that 33 percent of all proven reserves of oil, 50 percent of all natural gas, and 80 percent of all coal reserves must remain in the ground. That means we have to phase out coal and leave most if not all of the Canadian tar sands in the ground (that is, no Keystone XL pipeline). 11

The issue before us, as Mann emphasizes, is therefore not a minor one. It is a matter of a “fatal imbalance” in the human relation to the planet: the crisis of the Anthropocene. 12

Capitalism versus the Climate

If natural science has taught us that the rapid pace of anthropogenic climate change threatens to destroy the planet as a home for humanity, then we must turn to social science to understand the actual social causes of climate change, and the necessary solutions. However, as a rule, the social sciences are compromised from the start. As shown in particular by the

discipline of economics, they are ideologically compelled to answer all concrete issues in terms set by capitalism, excluding any perspective that seriously challenges that system or its boundaries. Social scientists are thus discouraged from questioning—or indeed even naming—the fundamental structures and workings of the historical system in which we live.

It follows that the social-scientific contributions most relevant to our understanding of the causes and imperatives of climate change have originated outside the mainstream of academic social science, in critical analyses of capitalism. [13] At issue, as decades of research have demonstrated, is the disjuncture between, on the one hand, the increasing demands put on the environment by a process of ever-expanding capital accumulation, rooted in class, competition, and inequality, and on the other, the capacity of the environment to withstand this assault. [14] The growing pressure on the climate, moreover, is currently taking an especially acute form, due to the system's heavy reliance on fossil-fuel production as a proven engine of capital accumulation worldwide—together with the vested interests of wealth and power that block any transition to renewable forms of energy.

In logical-historical terms, capitalism is a system of capital accumulation, a juggernaut in which each new level of economic growth becomes the mere means to further growth, *ad infinitum*. In the course of its history, capital has been able to "shift" the rifts that it has created in the natural metabolism, displacing them elsewhere, often by imposing such externalities on the most vulnerable populations. The capital-accumulation system, however, has now expanded its operations to encompass the entire planet, disrupting the biogeochemical processes of the Earth system itself, most dramatically in the form of climate change. Even though a conversion to renewable energy is hypothetically conceivable within the system, capital's demand for short-term profits, its competitive drive, its vested interests, and its inability to plan for long-term needs all militate against rational energy solutions. [15]

The imperatives of capital accumulation, as analyzed in radical social-science research over the last century and half (beginning in 1867 with the publication of Karl Marx's *Capital*), are further complicated by the advent, near the end of the last century, of monopoly-finance capital. In this phase the system is characterized by higher levels of global economic concentration, an accumulation regime dominated by financial-asset accumulation and the globalization of production, and a neoliberal political order—giving rise, in some cases, to neo-fascism. Structurally related to this, as an underlying cause, is the stagnation of accumulation in the advanced capitalist economies, and the world economy as a whole. [16]
Under this new financialized capitalism, neoliberal policies have sought to remove all regulations on the free flow and amassing of wealth, siphoning more and more of total income

into the financial sector, and creating a system of global labor arbitrage or worldwide unequal exchange, the latest phase of imperialism. [17]

All of this is connected in the present historical conjuncture to the declining hegemony of the United States, the rise of China, and attempts to maintain imperial control via the triad of the United States, Europe, and Japan. Elements of the U.S. ruling class—garishly personified by Trump and his advisers—and of the triad as a whole are striving in these circumstances to resurrect national and imperial power through fossil fuels (and nuclear power), military buildups, financial control, and the repression of immigrants and racially defined "others"—enlisting in this new but retrograde imperial project parts of a downwardly mobile and demoralized white working class.

This countervailing reaction of a system in peril shows the limits of reform in the epochal crisis—both economic and ecological—in which the world is now entrapped. Reform is only ever viable under the regime of capital to the extent that it does not come close to threatening the fundamental conditions that govern accumulation as a whole—and well before that point is reached, vested interests normally intervene to stop substantive reforms. [18] The social transformations demanded today by the reality of climate change (as well as economic stagnation) are of such a scale and significance that large sections of these entrenched interests perceive such necessary changes as a danger not only to the immediate prospects for accumulation, and to their own positions of power, but also to the very existence of capitalism—whose importance, in their accounting, outweighs that of the climate itself. [19]

Under these conditions, environmental reforms tend to be too limited to achieve their goals, and even then face unrelenting opposition from fossil-fuel companies and their investors and allies—a category that covers much of the global ruling class. Meanwhile, the almost total failure of centrist-liberal parties and governments, along with their counterparts in the academy, to remove their self-imposed blinders and perceive the reality of capitalism's war on the earth reflects a major moral and ideological default of establishment social science. The result is climate policies that have proven substantially ineffective, and whose implementation represents little more than a loss of precious time amid a rapidly worsening planetary emergency.

It is in the face of this failure of centrist climate policy that Naomi Klein, issuing a wake-up call for the left, famously declared that, at least on this crucial issue, "the right is right." That is, the right is correct in believing that this is a case of "capitalism versus the climate"—though wrong

in choosing the former over the latter. So far, in its war on the climate, Klein acknowledges, “capitalism is winning.” 20 The system shows no sign of applying the brakes as the runaway train of the profit system hurtles toward the climate precipice. The world’s people in these circumstances are mere hostages—unless they should choose to mutiny.

The Failure of Carbon Reform

Over the last few decades, the chief aim of establishment climate-change policy has been the ecological modernization of capitalism—but only within limits that remain conducive to capital accumulation. This approach is represented at the international level by the Paris Climate Agreement, in which 193 nations came together to sign onto a “plan” to address climate change that, when measured against the present global emergency, is hardly worth the paper on which it is written. The commitments made by individual nations are entirely voluntary and nonbinding, and thus unlikely to be fulfilled, given that there is no overall mechanism for implementation and no worldwide sanctions—and even then, if implemented, these independent national commitments would push the climate well beyond the 2°C barrier, into a world condemned to as much as a 3.7°C increase in global average temperature. 21

The centerpiece of the Obama administration’s climate policy, which formed the basis of the U.S. contribution to the Paris Agreement, was the Clean Power Plan (CPP). Though the plan is currently locked up in the courts, its proponents claim that it is designed to reduce U.S. carbon emissions by 26–28 percent from 2005 levels by 2025. The CPP consists chiefly of a set of executive orders extending the Clean Air Act to the regulation of carbon dioxide emissions in electrical power plants, to be implemented by the Environmental Protection Agency (EPA).

Whatever its ambitions, Obama’s climate initiative falls far short of the emission reductions that wealthy states would need to have introduced if humanity were to maintain a safe and secure relation to the climate. The year 2005 was chosen as the baseline for emission reductions precisely because it represented the peak level of U.S. carbon emissions. As Mark Hertsgaard has pointed out in the *Nation*, the stipulated cuts in U.S. carbon-dioxide emissions, although ostensibly exceeding 25 percent according to the 2005 baseline by 2025, would nonetheless be only 7 percent if measured against the original 1990 baseline of the Kyoto Protocol. The latter agreement mandated that U.S. carbon-dioxide emissions should drop by 7 percent *by 2012*. This original reduction target, which the United States was supposed to have put in place under the Kyoto Protocol but ended up abandoning, was initially conceived in the 1990s as merely a first step in reducing carbon emissions. The CPP’s seemingly large projected emissions reductions are thus primarily an outcome of moving the goal posts, with the result that the actual cuts in emissions would still be at a level grossly inadequate to protect humanity from catastrophic climate change, with time fast running out. Further, these prospective

reductions would rely primarily on market-friendly carbon-trading schemes that have previously proven ineffective.
22

The weakness of Obama's centrist-capitalist approach is thrown into stark relief in the *Economic Report of the President*
for 2017, where one finds such statements as: "The economic literature suggests that some impacts of climate change, particularly the rise in extreme temperatures, will likely be partly offset by increased private investment in air conditioning, and that movement to avoid temperature extremes, either spending more time indoors in the short run, or relocating in the long run, could also reduce climate impacts on health." Such "Let Them Buy Air Conditioners, Let Them Stay Indoors, and Let Them Move" stances can hardly be considered serious—or ethical—responses to climate change.
23

Already in 2015, Hansen declared that because the actions outlined in the CPP would "do nothing to attack the fundamental problem," they were "like the fellow who walks to work instead of driving, and thinks he is saving the world." Such measures, he stressed, were "practically worthless." Instead, steps must be taken both nationally and globally to ratchet up the price of carbon and to keep it in the ground. "As long as fossil fuels are allowed to (appear to be) the cheapest energy," and no intervention is made to increase their cost, he continued, "someone will burn them." 24 Ironically, measures that are designed simply to reduce the demand for carbon in one locale tend only to lower fossil-fuel prices elsewhere (assuming a constant supply of such fuels) thereby ensuring that they will find a market somewhere in the global economy. 25

It is therefore highly significant that even the meager efforts represented by the Paris Climate Agreement and Obama's Clean Power Plan—which have avoided addressing the fundamental problem, and can scarcely be said to pose, at this level, a threat to the system as a whole—have nonetheless provoked enormous resistance from the vested interests of fossil-fuel capitalism. Not only did Obama have to circumvent Congress to enact the CPP (and to sign the Paris Agreement, which was possible without congressional approval only because it contained no binding requirements), the whole climate initiative was immediately blocked in court, since the twenty-four states closest to the fossil-fuel industry launched a lawsuit—aided by the U.S. Supreme Court's order that the EPA suspend enforcement of the CPP until a lower court could arrive at a decision. Even this may all be a dead letter, however, since the Trump administration has vowed to rescind or otherwise dismantle the CPP and to withdraw from the Paris accords. 26

Trump, in a version of the “big lie,” has repeatedly called climate change a “hoax.” 27 Accordingly, he has filled the ranks of his transition team and cabinet with climate science denialists and fossil-fuel industry shills. Myron Ebell, director of energy and environmental policy at the Competitive Enterprise Institute and a leading climate contrarian, headed up Trump’s transition team. He publicly accused the respected scientist Kevin Trenberth, a senior climate researcher at the National Center for Atmospheric Research (famous for accounting for the apparent hiatus in global-warming acceleration, using evidence of increased below-surface-level ocean heating) of being “part of a gang” guilty of “cooking the data” on the climate. Financier Anthony Scaramucci, a Trump adviser and an executive member of his transition team, compared the notion of anthropogenic climate change to geocentrism, the belief that the sun revolves around the earth. In Scaramucci’s own words: “I’m saying people have gotten things wrong throughout
the 5,500-year history of our planet
” (italics added). David Schnare, who left the EPA to start an oil-industry-funded non-profit that specialized in suits against the EPA and attacks on climate science, was named to the transition team and charged with revamping the EPA. Schnare gained special notoriety as the attorney who, while working for the right-wing American Tradition Institute (now the Environmental and Energy Legal Institute), targeted both Hansen and Mann, along with other climate scientists, seeking to force them to release private documents and emails. Thomas Pyle, head of the American Energy Alliance, a group with strong links to the oil industry—including Koch Industries, for which he worked as a lobbyist—was chosen to lead the transition team for the Department of Energy. A leaked memo by Pyle lists the immediate goals of the Trump administration’s climate policy: (1) withdrawing from the Paris Climate Agreement, (2) dismantling the Clean Power Plan, and (3) expediting approval of pipeline projects.

Trump’s choices of nominees for major cabinet posts follow the same pattern. Oklahoma Attorney General Scott Pruitt, his pick to lead the EPA, is still another lawyer who has fought the EPA on behalf of the fossil-fuel industry, and is also an outspoken climate-change denier, who wrote in 2016 that the debate on climate change was “far from settled.” Ignoring the 97 percent consensus among scientists on the anthropogenic sources of climate change, Pruitt claimed that “scientists continue to disagree about the degree and extent of global warming and its connection to the actions of mankind.” Former Texas Governor Rick Perry, Trump’s nominee to head the Department of Energy—a department that, as a Republican presidential contender, Perry promised to eliminate altogether—is a stalwart ally of the fossil-fuel industry. He went so far as to declare in his 2010 book that “we have been experiencing a cooling trend.” His administration in Texas deliberately removed all references to climate change in a report addressing rising sea levels. Congressman Ryan Zinke, from coal-producing Montana, Trump’s nominee for secretary of the interior, likewise asserts that climate change has no firm scientific basis. Attorney General nominee Jeff Sessions has repeatedly insisted, against all evidence, that carbon dioxide is not a pollutant.

Ironically, Trump's pick for secretary of state, Rex Tillerson, the CEO of ExxonMobil, stands out in the new administration for his acknowledgement of the reality of climate change. However, as recently as 2013, Tillerson declared that any alternative-energy movement was doomed to fail, and predicted that renewables such as "wind, solar, biofuels," would supply only 1 percent of total energy in 2040. Faced with the demands of environmentalists and protests against the Keystone XL Pipeline, Tillerson simply stated his capitalist creed: "My philosophy is to make money." ExxonMobil under his leadership not only funded climate denialism, but fought to remove all obstacles whatsoever to the increased extraction and burning of fossil fuels. 28

Most alarming for climate scientists in the first weeks of the Trump transition was a 74-question survey issued in early December to employees in the Energy Department, designed to determine which scientists and officials had been most involved in advancing Obama's Clean Power Plan and other measures to contain climate change. This was widely regarded as the warning shot of a new McCarthyite inquisition against climate scientists, prompting a frantic effort by scientists across the country to archive their data, placing it on widely accessible nongovernmental data bases, lest climate data in government hands be disappeared under Trump. The incoming administration soon disavowed the questionnaire, but the damage was done. 29

In addition to singling out scientists who advanced Obama's climate initiatives, the questionnaire had a more specific target: the social cost of carbon (SCC), currently estimated at $40 per metric ton of carbon, a category used by the Obama administration to quantify the economic impact of climate change and thus to justify the regulation of carbon emissions in cost-benefit terms. The SCC is by now part of established case law and cannot simply be undone. The Trump administration, however, has made it clear that it will alter basic premises used to calculate the SCC, such as the discount rate that relates present dollars to future dollars, thereby shrinking the calculation of the costs. Employing a higher discount rate could make the economic costs of climate change appear to vanish, even turn negative—so that climate change appears not only economically benign, but beneficial. In this way the numbers can be manipulated so that any restrictions on greenhouse-gas emissions fail the economic cost-benefit test required by law. 30

In a parallel development, Trump aerospace policy adviser Bob Walker, a former congressman from Pennsylvania (a coal state), informed the *Guardian* that the new administration would seek to defund NASA's Earth-system research, the most important single source of global climate data, compelling the agency to focus instead on deep-space exploration. Walker accused NASA of engaging in "politically correct environmental research" in its climate-change investigations. "The models that the scientists have used on global warming," he declared, "have been extremely flawed." 31

As Hansen usefully pointed out a decade ago, the problem is not the climate denialists as such—since such contrarians, in or out of government, are mere “court jesters” whom no one in the end will take seriously. The problem is “the court” itself—that is, capital:

> the captains of industry, CEOs in fossil fuel companies such as Exxon/Mobil, automobile manufacturers, utilities, all of the leaders who have placed short-term profit above the fate of the planet and the well-being of our children. The court jesters are their jesters, occasionally paid for services, and more substantively supported by the captains’ disinformation campaigns…. The captains of industry are smarter than their jesters. They cannot pretend that they are unaware of climate change dangers and consequences for future generations. [32]

In the new Trump administration, however, fossil-fuel courtiers like Tillerson and their court jesters are now in power, sitting side by side.

It would be wrong, then, to see this administration as simply a cabal of ignoramuses, beginning with the climate-change-denier-in-chief himself. Rather, these efforts to undermine even modest regulations and to discredit sound science are necessary parts of an attempt by carbon capital to proceed undeterred with burning of fossil fuels, as if this did not constitute a dire threat to the human species. The motive here is quite simply the institutionalized drive for ever *more*, at virtually any cost to society as a whole. It is analogous, but on a much larger scale, to the decades-long campaign of misinformation by tobacco companies claiming that their products were not killing their customers—even though their own internal scientific research, which they kept hidden, showed the opposite. [33]

Not surprisingly, it is fossil-fuel capital that has already benefitted most from Trump’s election. The stocks of oil and gas companies spiked the moment the 2016 election results were announced. Peabody Energy, the leading U.S. coal company, was pulled from the brink of bankruptcy by an immediate 70 percent increase in the value of its shares. Harold Hamm, the billionaire fracking mogul and Trump adviser, expects Trump to slash oil and gas drilling regulations: “Every time we can’t drill a well in America,” Hamm threatens, “terrorism is being funded.” For the alt-right website Breitbart News, whose chairman, Stephen Bannon, masterminded the later stages of the Trump 2016 presidential campaign, there is no global warming, only global cooling. Breitbart greeted Trump’s election with the headline: “The Left Just Lost the War on Climate Change.” [34]

Significantly, Trump’s promise to “build a wall” along the border with Mexico to block “illegal

immigration" can be read at least in part as a reaction to climate change, even as the latter is being denied—just as sea walls are hypocritically being proposed by climate deniers in parts of the South as a means to protect coastal real estate. The Trump plan for a more militarized border involves the building of a thousand-mile wall (most of which already exists, in the form of security fences), with the rest of the nearly two-thousand-mile border largely impassable due to natural barriers. The wall would be tightly guarded, monitored by a fleet of aircraft and drones. Here it is impossible not to be reminded of a 2003 Defense Department report, *An Abrupt Climate Change Scenario and Its Implications for United States National Security* —written for the Pentagon by Peter Schwartz and Doug Randall of the Global Business Network—which argued that the catastrophic effects of abrupt climate change would compel wealthy nations like the United States and Australia to construct "defensive fortresses" along their perimeters to shut out climate refugees. "Military confrontation," the report warned, "may be triggered by a desperate need [particularly in the global South] for natural resources such as energy, food and water," creating new national security threats to which the "have" nations would need to respond—militarily.
35

The Fire This Time

"Revolution," in the words of Malcolm X, "is like a forest fire. It burns everything in its path. The people who are involved in a revolution don't become a part of the system—they destroy the system, they change the system. The genuine word for a revolution is *Umwälzung* which means a complete overturning and a complete change…. The only way to stop a forest fire from burning down your house is to ignite a fire that you control and use it against the fire that is burning out of control."
36
This controlled backfire is the meaning of counterrevolution. Today virulent anti-environmentalism, tied to a broader neo-fascist politics linked to white supremacy, is the backfire being ignited against both efforts to combat climate change and the larger movement for social and environmental justice.

The urgent task before us in these dire circumstances was explained by Eric S. Godoy and Aaron Jaffe in an op-ed piece for theNewYorkTimes in October 2016, headlined "We Don't Need a 'War' on Climate Change, We Need a Revolution." "Following Marx, contemporary [radical ecological] theorists," Godoy and Jaffe note, are investigating "our changing and dangerously unstable metabolic relationship with nature. Humans are a unique species in that we form complex relationships to regulate this metabolism as we produce our food, water, shelter and more robust needs." But the larger reality of class and social inequality identified with capitalism, means that "the affluent can afford an increase in food prices, ship in bottled water during droughts and relocate businesses and homes when the seas rise, while those without access to such privileges have fewer options and disproportionately suffer." The same logic applies to access to basic technologies and other means of environmental defense. For

these and other reasons, climate change endangers the oppressed and underprivileged first—both within nations and globally.

The only conceivable answer today to cascading planetary catastrophe is a broad-based ecological and social revolution, in which the population mobilizes to protect the future of humanity: a revolutionary war for the planet. For Godoy and Jaffe, the "crucial" goal in this respect "is gaining social control over the private, exploitative and even irresponsible direction of the human-nature metabolism," which has generated a metabolic rift in society's relation the planet. Overcoming this rift requires a majoritarian revolt on a global scale, the like of which the world has never seen. A "green revolution," they argue, "would center the human-nature metabolism over and against the drive for profits." The goal would be to "transform the relationships that regulate our metabolism with nature, relationships that now allow some to profit by denying this right to others." From this perspective, "Exxon and its climate science obfuscation is not so much an enemy as a paradigmatic symptom of the worst kinds of behavior generated by profit-driven systems. The enemy is the violence perpetrated by [the] racial, gendered, political, juridical and existing economic metabolisms with nature." 37

Godoy and Jaffe's stance aligns closely with Klein's argument in *This Changes Everything*. Behind the right's climate denial is the economic reality that seriously combatting capitalism's war on the planet, requires the defeat of the system. Thus the only alternative for the right and its until-death-do-us-part defenders of capitalism is to invert reality and abandon science. Like Dostoevsky's Underground Man, the right "vomits up reason," rejecting "the laws of nature" and "two times two is four."
38

The right must deny science and reason precisely because they point to the need for radical social, economic, and ecological transformation. Klein quotes leading British climate scientist Kevin Anderson of the Tyndall Institute for Climate Change Research, who writes that, "today, after two decades of bluff and lies, the remaining 2°C budget demands revolutionary change to the political and economic hegemony." As Klein argues, "revolutionary levels of transformation to the market system" are "now our best hope of avoiding climate chaos." 39

A world climate movement aimed at countering climate change, Klein states, can be a "galvanizing force for humanity," a "People's Shock, a blow from below," compelling us to create at last the world of social and economic equality that is so much needed in the world today. She rightly stresses the radical groundswell itself, placing her faith in the leading edge of climate activism, in the form of what she and others call "Blockadia"—a "roving transnational conflict zone" in which climate and environmental-justice activists, indigenous peoples,

workers, socialists, and other groups throw up barriers to resist the system. 40

An example of Blockadia in this sense is the courageous struggle of Native American “water protectors” and their allies—including two thousand military veterans who arrived in the final days to provide a “human shield”—at Standing Rock in North Dakota in the summer and fall of 2016. The Standing Rock water protectors endured weeks of state violence in the form of water cannons in freezing temperatures, non-lethal bullets, and tear gas, and succeeded in stopping, at least for the time being, the construction of the $3.8 billion Dakota Access Pipeline, intended to stretch over a thousand miles from the Bakken and Three Forks production areas in North Dakota, through South Dakota and Iowa, and into Illinois, with the aim of transporting up to 570,000 barrels of oil a day. The pipeline required drillng under the Missouri River, threatening water supplies due to possible pipeline leakages. The drilling permit was rejected in early December by the Army Corps of Engineers, but the battle will likely soon erupt again, since the Trump administration has made no secret of its determination to see the pipeline completed. 41

A Two-Stage Ecological Revolution

The primary efforts of radical climate activists in the present historical conjuncture have focused on blocking coal and unconventional fossil fuels, such as oil sands, tight oil, shale gas, oil shale, and oil from ultra-deep-sea wells. 42 This approach is based on a complex climate-change exit strategy articulated most definitively by Hansen, who has argued that in order to limit the consumption of fossil fuels in today’s society while promoting the switch to non-fossil-fuel energy sources, it is necessary to increase the price of fossil fuels substantially through a carbon-fee-and-dividend system. Under such a plan, a fee on carbon, imposed and ratcheted up in stages, would be levied at the mine shaft, wellhead, or point of import, and 100 percent of the funds collected would be redistributed as dividends to families on a per capita basis. The result would be that the vast majority of individuals, with lower carbon footprints at lower income levels, would come out ahead, even under the assumption that the corporations would pass on the full cost of the fees—since the costs net of dividends would fall on those with higher carbon footprints and higher income levels. The beauty of Hansen’s scheme is that it would help mobilize humanity as a whole on a class basis with regard to carbon footprints.

However, a higher price for carbon, Hansen insists, is not itself sufficient. It is also necessary to focus on the more dangerous carbon fuels, proscribing their use. Hansen has argued that a key to any exit strategy has to prioritize direct action aimed at shutting down existing coal plants, as well as a moratorium on any new coal plants, and the blocking of the Alberta tar sands—since coal and tar sands oil represent the dirtiest fossil fuels, which could quickly break the global carbon budget. True to his strategy, Hansen has put himself on the line and has been arrested in protests against both coal and tar sands oil. 43

Nevertheless, the Hansen exit strategy, though influential within the movement—particularly in its call for direct action to block coal and unconventionals—is weakened by its overemphasis on carbon prices. Anderson has argued that the affluent, who have the highest carbon footprints, can always afford to pay higher carbon prices. More effective would be direct governmental intervention to establish stringent maximum-emissions standards for high-energy consuming devices. This is not a technological problem, he points out, because the energy-saving and alternative-energy technologies already exist, and in many cases can be immediately substituted at little long-term cost to society as a whole. It does mean, however, confronting the "political and economic hegemony" of the system, including neoclassical economics, which is subservient to the capitalist order. 44

All of this reflects a narrowing of the options for humanity and the earth. In the current climate conjuncture, the historically necessary ecological and social revolution, in which humanity as a whole would seek to once again take history in its hands, this time to stave off the impending catastrophes of an irrational system, would have to take part in two stages. The first would involve the formation of a broad alliance, modeled after the Popular Front against fascism in the 1930s and '40s. Today's Popular Front would need to be aimed principally at confronting the fossil-fuel-financial complex and its avid right-wing supporters. In this first stage of the struggle, manifold demands could be made and broadly agreed on within the existing system—ways of eliminating carbon emissions and economic waste while also promoting social and environmental needs—which, although inimical to the logic of capital, and particularly to the fossil-fuel industry, would not call into immediate question the existence of the capitalist system itself. 45

However, in the long run, capitalism's threat to planetary boundaries cannot be solved by stopgap reforms, however radical, that leave the system's fundamental features intact while simply transcending its relation to fossil fuels. The danger to the planetary environment posed by the accumulation of capital is all-encompassing. 46 This means that the ecological revolution will have to extend eventually to the roots of production itself, and will have to assume the form of a system of substantive equality for all: racial freedom, gender and LGBTQ equality, a classless society, an end to imperialism, and the protection of the earth for future generations.

In the long run, the struggle is therefore synonymous with the movement towards socialism. The more revolutionary the struggle, the more it is likely to emanate from those whose needs are greatest, and thus from the global South. It is in the periphery of the system, rather than in the center, that humanity is most likely to mutiny against the existing order. Hope today therefore lies first and foremost in the revolt of "the wretched of the earth," opening up fissures

at the center of the system itself.

But even if all of this were to fail, and our present hopes were to go unrealized, with the world pushed to the planetary turning point, it would remain true, then as now, that the only answer is ecological and social revolution. There is no next time. *It is the fire this time.* 47

Notes

1. Donald J. Trump, Twitter post , January 1, 2014, 5:39 p.m., http://twitter.com/realDonaldTrump.
2. Leo Benedictus, " Noam Chomsky on Donald Trump: 'Almost a Death Knell for the Human Species,' "Guardian, May 20, 2016; statements by Michael E. Mann quoted in " US Election: Climate Scientists React to Donald Trump's Victory , " CarbonBrief, November 9, 2016, http://carbonbrief.org. Mann, in his statement, is quoting James Hansen, who several years earlier had used the phrase "game over for the climate" in calling for immediate action to address climate change. See James Hansen, " Game Over for the Climate ,"New York Times, May 12, 2012.
3. Shaun Marcott quoted in "Climate Scientists React to Donald Trump's Victory."
4. James Hansen,Storms of My Grandchildren (New York: Bloomsbury, 2009), 269; Kevin Anderson, " Climate Change Going Beyond Dangerous—Brutal Numbers and Tenuous Hope ," What Next Forum, September 12, http://whatnext.org; Heidi Cullen,The Weather of the Future (New York: Harper, 2011), 261–71.
5. Scott Waldman, " Rise in Global Carbon Emissions Slows ,"Scientific American, November 14, 2016.
6. See James Hansen, " China and the Barbarians: Part I ," November 24, 2010, http://columbia.edu ; Michael E. Mann and Tom Toles,The Madhouse Effect (New York: Columbia University Press, 2016), 139–40; Jean Chemnick, " China Takes the Climate Spotlight as U.S. Heads for Exit ,"Scientific American, November 18, 2016; Naomi Oreskes and Erik M. Conway,The Collapse of Western Civilization(New York: Columbia University Press, 2014).
7. World Meteorological Organization, " The Global Climate 2011–2015: Heat Records and High Impact Weather ," November 8, 2016, http://public.wmo.int; " Provisional WMO Statement on the Status of the Global Climate in 2016 ," November 14, 2016, http://public.wmo.int.
8. National Oceanic and Atmospheric Administration (NOAA), " Executive Summary ,"Arcti

c Report Card (Washington, D.C.: NOAA, 2016), http://arctic.noaa.gov; Henry Fountain and John Schwartz, “Spiking Temperatures in the Arctic Startle Scientists,”New York Times, December 13, 2016.

9. Brady Dennis and Chris Mooney, “ Scientists Nearly Double Sea Level Rise Projections for 2100, Because of Antarctica ,”Washington Post, March 30, 2016 (updated December 17, 2016); Michael Oppenheimer and Richard B. Alley, “How High Will the Seas Rise?”Science 354, no. 6318 (2016): 1375–76; Julia Rosen, “ Sea Level Rise Accelerating Faster than Thought ,”Science news blog, http://sciencemag.org; May 11, 2015; Robert M. DeConto and David Pollard, “Contribution of Antarctic to Past and Future Sea-Level Rise,”Nature 531 (2016): 591–97; Jeff Tollefson, “ Antarctic Model Raises Prospect of Unstoppable Ice Collapse ,” Nature, March 30, 2016, http://nature.com; Brian Kahn, “ Sea Level Could Rise at Least 6 Meters ,”Scientific American, July 9, 2015.

10. Kevin Anderson, “ Avoiding Dangerous Climate Change Demands De-growth Strategies from Wealthier Nations ,” November 25, 2013, http://kevinanderson.info/blog; JOs G, J, Olivier et al., Trends in Global CO 2 Emissions, 2016 Report (The Hague: PBL Netherlands Environmental Assessment Agency, 2016), 13, http://edgar.jrc.ec.europa.eu. The Netherlands Environmental Agency statistics include carbon from both fossil fuels and cement manufacture.

Hansen further calculates that in order to reduce carbon emissions by 80 percent by 2050, as current models minimally require, would necessitate an approximately 5 percent annual decline in emissions (on an exponential, or constant percentage rate basis). If a 6 percent annual reduction were to be achieved beginning in 2020, the world could get back down to the necessary 350 ppm of carbon in the atmosphere—if it were additionally to suck 150 gigatonnes of carbon from the atmosphere by means of improved forestry and agricultural practices. The rich, high per-capita emissions countries are those most able to achieve steep initial reductions in carbon emissions, because it is there that the “low-hanging fruit” are primarily to be found. James Hansen, “ Rolling Stones ,” January 11, 2017, http://columbia.edu.

11. Mann and Toles,The Madhouse Effect, 28, 132.

12. Mann and Toles, The Madhouse Effect, 10–11, 150; Ian Angus, Facing the Anthropocene (New York: Monthly Review Press, 2016).

13. The severity of the Anthropocene crisis prompted some major environmental thinkers to shift from mainstream to more radical views critical of capitalism. See, for example, James Gustave Speth,The Bridge at the Edge of the Time (New Haven: Yale University Press, 2008).

14. See Paul M. Sweezy and Harry Magdoff, “ Capitalism and the Environment ,”Monthly

Review 41, no. 2 (June 1989): 1–10; John Bellamy Foster, Brett Clark, and Richard York, The Ecological Rift (New York: Monthly Review Press, 2010); Christopher Wright and Daniel Nyberg,Climate Change, Capitalism, and Corporations (Cambridge, UK: Cambridge University Press, 2015).

15. The sociologist Max Weber was perhaps the first major thinker to argue that historical capitalism was inextricably intertwined with the fossil-fuel regime. See John Bellamy Foster and Hannah Holleman, "Weber and the Environment,"American Journal of Sociology 117, no. 6 (2012): 1646–60.

16. For analyses of these global trends of monopoly, finance, stagnation, and imperialism, see Samir Amin, The Implosion of Contemporary Capitalism (New York: Monthly Review Press, 2013); John Bellamy Foster and Robert W. McChesney, The Endless Crisis (New York: Monthly Review Press, 2012); Costas Lapavitsas,Profiting Without Producing (London: Verso, 2014); Utsa Patnaik and Prabhat Patnaik,A Theory of Imperialism (New York: Columbia University Press, 2017); and John Smith, Imperialism in the Twenty-First Century (New York: Monthly Review Press, 2016). The shift to financial-wealth accumulation over production and income generation is also captured, from a non-Marxian viewpoint, in Thomas Piketty,Capital in the Twenty-First Century (Cambridge, MA: Harvard University Press, 2013).

17. See Foster and McChesney,The Endless Crisis, 44–45, 125–54; Amin,The Implosion of Contemporary Capitalism.

18. Paul M. Sweezy,The Theory of Capitalist Development (New York: Oxford University Press, 1942), 348–52; "Capitalism and the Environment," 8–9.

19. The alt-right, riding high since Trump's election, has been defined byNational Review as a movement of "white nationalists and wanna-be fascists." Unfortunately, the "wanna-be" seems less and less warranted. David French, " The Race-Obsessed Left Has Released a Monster It Can't Control ," National Review, January 26, 2016. French tries to blame the rise of the alt-right and Trump on the left, rather than on the right's own "white identity politics."

20. Naomi Klein,This Changes Everything: Capitalism vs. The Climate (New York: Simon and Schuster, 2014), 22, 38–39.

21. See Oscar Reyes, " Seven Wrinkles in the Paris Climate Deal ," Foreign Policy in Focus, December 14, 2015, http://fpif.org; Kelly Levin and Taryn Fransen, " Why Are INDC Studies Reaching Different Temperature Estimates? " World Resources Institute, November 9, 2015, http://wri.org/blog.

22. U.S. carbon emissions had already fallen by 13 percent between 2005 and 2013, largely due to the shift away from coal during to the fracking boom, making Obama's plan even less ambitious than it appeared. See the 2017 Economic Report of the President (Washington, D.C.: U.S. Government Publishing Office), 423-–82; Mark Hertsgaard, "Climate Change,"Nation, January 2 and 9, 2017, 72; Brad Plumer, " A Guide to Obama's New Rules to Cut Carbon Emissions from Power Plants ," Vox, June 1, 2014, http://vox.com; David Biello, "

How Far Does Obama's Clean Power Plan Go in Slowing Climate Change?
" Scientific American, August 6, 2015.

23. 2017 Economic Report, 448, 472, 483. On the debate on the left over Obama's CCP and more radical strategies, see Christian Parenti, " Climate Change: What Role for Reform? " and the Editors, " A Reply to Parenti
,"Monthly Review 65, no. 11 (April 2014): 49–55.

24. Tony Dokoupil, " Obama's Climate Policy is 'Practically Worthless,' Says Expert ," MSNBC, August 4, 2015.

25. This is the thesis advanced in Hans-Werner Sinn,The Green Paradox (Cambridge, MA: MIT Press, 2012).

26. Henry Fountain and Erica Goode, " Trump Has Options for Undoing Obama's Climate Legacy ,"New York Times, November 25, 2016.

27. Ewan Palmer, " 50 Other Times Donald Trump Denied Climate Change and Global Warming ," International Business Times, September 27, 2016, http://ibtimes.co.uk.

28. Henry Fountain, " Trump's Climate Contrarian: Myron Ebell Takes on the EPA ,"New York Times, November 11, 2016; Matt Shuham, "
Trump Adviser: Global Warming Could Be Disproven Just Like Flat Earth Theory
," Talking Points Memo, December 14, 2016, http://talkingpointsmemo.com; Mazin Sidahmed, "
Climate Change Denial in the Trump Cabinet: Where Do Nominees Stand?
"Guardian, December 15, 2016; Tim Murphy, "
Rick Perry's War on Science
,"Mother Jones, December 13, 2016; Lee Fang, "
He Waged Intimidation Campaigns Against Climate Scientists; Now He's Helping Trump Remake the EPA
," The Intercept, December 9, 2016, http://theintercept.com; Dan Vergano, "
Trump Transition Lawyer Has Spent Years Suing for Climate Emails
," Buzzfeed, December 13, 2016, http://buzzfeed.com; Michael E. Mann,The Hockey Stick and the Climate Wars (New York: Columbia University Press, 2012), 367–68; Nick Surgey, "
Revealed: The Trump Administration's Energy Plan
," PR Watch, December 4, 2016, http://prwatch.org; Steven Mufson, "
Trump's Energy Policy Team Includes Climate Change Skeptic, Free-Market Advocate
,"Washington Post, November 29, 2016; Scott Pruitt and Luther Strange, "
The Climate-Change Gang
,"National Review, May 17, 2016; John Cook, "
Yes, There Really is Scientific Consensus on Climate Change
," Bulletin of the Atomic Scientists, April 13, 2016,
http://thebulletin.org
; Charlie Rose, "
Charlie Rose Talks to ExxonMobil's Rex Tillerson
," Bloomberg, March 7, 2013, http://bloomberg.com.

29. Coral Davenport, " Climate Change Conversations are Targeted in Questionnaire to Energy Department ,"New York Times, December 9, 2016; Chris Mooney and Juliet Eilperin, " Trump Transition Says Request for Names of Climate Scientists Was 'Not Authorized,' "Washington Post, December 14, 2016.

30. Matthew Philips, Mark Drajem, and Jennifer A. Dlouhy, " How Climate Rules Might Fade Away ," Bloomberg, December 15, 2016; Mufson, "Trump's Energy Policy Team Includes Climate Change Skeptic."

31. Dana Nuccitelli, " Trump and the GOP May Be Trying to Kneecap Climate Research ," Guardian, November 30, 2016.

32. James Hansen, " The Real Deal: Usufruct and the Gorilla ," DeSmogBlog, August 16, 2007, http://desmogblog.com; Mark Bowen,Censoring Science (New York: Penguin, 2008), 303–04.

33. Naomi Oreskes and Erik M. Conway,Merchants of Doubt (New York: Bloomsbury, 2011).

34. Thomas Heath, " How a Trump Presidency Will Affect 15 Industries ,"Washington Post, November 12, 2016; Michelle Conlin, " Exclusive: Trump Considering Fracking Mogul Harold Hamm as Energy Secretary ," Reuters, July 21, 2016; James Delingpole, " Trump: The Left Just Lost the War on Climate Change ," Breitbart, November 9, 2016, http://breitbart.com.

35. Peter Andreas, "Yes, Trump Will Build His Border Wall. Most of It is Already Built,"Washington Post Monkey Cage blog, November 21, 2016; Peter Schwartz and Doug Randall, An Abrupt Climate Change Scenario and Its Implications for United States National Security (Pasadena, CA: California Institute of Technology, 2003); John Bellamy Foster, The Ecological Revolution (New York: Monthly Review Press, 2009), 107–20.

36. A. B. Spellman, " Interview with Malcolm X ,"Monthly Review 16, no. 1 (May 1964): 23.

37. Eric S. Godoy and Aaron Jaffe, " We Don't Need a 'War' on Climate Change, We Need a Revolution ,"New York Times, October 31, 2016.

38. Fyodor Dostoevsky,Notes from Underground (New York: Vintage, 1993), 13; Paul A. Baran, The Longer View (New York: Monthly Review Press, 1969), 104. The phrase "vomits up reason" is taken from Baran's interpretation of the Underground Man's rejection of the "laws of nature": and "two times two is four."

39. Klein,This Changes Everything, 56, 449; Kevin Anderson, " Why Carbon Prices Can't Deliver the 2°C Target ," August 13, 2013, http://kevinanderson.info/blog.

40. Klein,This Changes Everything, 7–10, 294.

41. ↩ Lauren Regan, " Water Protectors File Class Action Suit for Retaliation and Excessive Force Against Brutal Police ," Civil Liberties Defense Center, November 28, 2016, http://cldc.org; " News Timeline of Standing Rock Water Protectors' Resistance to Dakota Access Pipeline ," Daily Kos, October 11, 2016, http://dailykos.com; Wes Enzinna, "Crude Awakening,"Mother Jones (January–February 2017): 32–37; Jack Healy, " As North Dakota Pipeline Is Blocked, Veterans at Standing Rock Cheer ,"New York Times, December 5, 2016.

42. ↩ Unconventional fossil fuels are often dirtier, as in the cases of oilsands and oil shale. In other instances, they represent such a great expansion of fossil-fuel availability—as in tight oil and shale gas (via fracking), and ultra-deep oil wells, particularly in the Arctic, now opening up to oil exploration—that they put an end to any expectation of any "peaking" of fossil fuels in time to alleviate the pressure on the climate. Fracking is also associated with methane leaks, which further exacerbate climate change. It should be noted that Hansen himself sees fourth-generation nuclear energy (still not fully developed) as a possible alternative, non-carbon energy source, and thus part of the answer to global warming. However, this would be a Faustian bargain, raising a host of concerns for humanity and the environment.

43. ↩ John Bellamy Foster, " James Hansen and the Climate Change Exit Strategy ,"Monthly Review 64, no. 9 (February 2013): 1–18; Foster, " The Fossil Fuels War ,"Monthly Review 65, no. 4 (September 2013): 4–5; Bowen,Censoring Science, 305.

44. ↩ Anderson, "Why Carbon Prices Can't Deliver."

45. ↩ See Fred Magdoff and John Bellamy Foster, What Every Environmentalist Needs to Know About Capitalism (New York: Monthly Review Press, 2011), 124–31; Angus,Facing the Anthropocene, 189–223.

46. ↩ See, for example, the multifaceted threat that capitalism poses toward oceans and marine life, as depicted in Stefano B. Longo, Rebecca Clausen, and Brett Clark,The Tragedy of the Commodity: Oceans, Fisheries, and Aquaculture(New Brunswick, NJ: Rutgers University Press, 2015).

47. ↩ "If we do not now dare everything, the fulfillment of that prophecy, re-created from the Bible in song by a slave, is upon us: 'God gave Noah the rainbow sign, No more water, the fire next time.'" James Baldwin,The Fire Next Time (New York: Dial, 1963), 105–06.

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