ALSO BY **NAOMI KLEIN**

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Fences and Windows: Dispatches from the Front Lines of the Globalization Debate

THIS CHANGES EVERYTHING

Capitalism vs. The Climate

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New York London Toronto Sydney New Delhi

I have, so far, emphasized the familiarity of many of the deep solutions to the climate crisis and there is real comfort to take from that. It means that in many of our key responses, we would not be embarking on this tremendous project from scratch but rather drawing on more than a century of progressive work. But truly rising to the climate challenge—particularly its challenge to economic growth—will require that we dig even deeper into our past, and move into some distinctly uncharted political territory.

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BEYOND EXTRACTIVISM

Confronting the Climate Denier Within

"The best thing about the Earth is if you poke holes in it oil and gas comes out."

—Republican U.S. Congressman Steve Stockman, 2013[1]

"The open veins of Latin America are still bleeding."

—Bolivian Indigenous leader Nilda Rojas Huanca, 2014[2]

"It is our predicament that we live in a finite world, and yet we behave as if it were infinite. Steady exponential material growth with no limits on resource consumption and population is the dominant conceptual model used by today's decision makers. This is an approximation of reality that is no longer accurate and [has] started to break down."

—Global systems analyst Rodrigo Castro and colleagues, paper presented at a scientific modeling conference, 2014[3]

For the past few years, the island of Nauru has been on a health kick. The concrete walls of public buildings are covered in murals urging regular exercise and healthy eating, and warning against the danger of diabetes. Young people are asking their grandparents how to fish, a lost skill. But there is a problem. As Nerida-Ann Steshia Hubert, who works at a diabetes center on the island, explains, life spans on Nauru are short, in part because of an epidemic of the disease. "The older folks are passing away early and we're losing a lot of the knowledge with them. It's like a race against time—trying to get the knowledge from them before they die."[4]

For decades, this tiny, isolated South Pacific island, just twenty-one square kilometers and home to ten thousand people, was held up as a model for the world—a developing country that was doing everything right. In the early 1960s, the Australian government, whose troops seized control of Nauru from the Germans in 1914, was so proud of its protectorate that it made promotional videos showing the Micronesians in starched white Bermuda shorts, obediently following lessons in English-speaking schools, settling their disputes in British-style courts, and shopping for modern conveniences in well-stocked grocery stores.[5]

During the 1970s and 1980s, after Nauru had earned independence, the island was periodically featured in press reports as a place of almost obscene riches, much as Dubai is invoked today. An Associated Press article from 1985 reported that Nauruans had "the world's highest per capita gross national product . . . higher even than Persian Gulf oil Sheikdoms." Everyone had free health care, housing, and education; homes were kept cool with air-conditioning; and residents zoomed around their tiny island—it took twenty minutes to make the entire loop—in brand-new cars and motorcycles. A police chief famously bought himself a yellow Lamborghini. "When I was young," recalls Steshia Hubert, "we would go to parties where people would throw thousands of dollars on the babies. Extravagant parties—first, sixteenth, eighteenth, twenty-first, and fiftieth birthdays. . . . They would come with gifts like cars, pillows stuffed with hundred-dollar bills—for one-year-old babies!"[6]

All of Nauru's monetary wealth derived from an odd geological fact. For hundreds of thousands of years, when the island was nothing but a cluster of coral reefs protruding from the waves, Nauru was a popular pit stop for migrating birds, who dropped by to feast on the shellfish and mollusks. Gradually, the bird poop built up between the coral towers and spires, eventually hardening to form a rocky landmass. The rock was then covered over in topsoil and dense forest, creating a tropical oasis of coconut palms, tranquil beaches, and thatched huts so beatific that the first European visitors dubbed the island Pleasant Isle.[7]

For thousands of years, Nauruans lived on the surface of their island, sustaining themselves on fish and black noddy birds. That began to change when a colonial officer picked up a rock that was later discovered to be made of almost pure phosphate of lime, a valuable agricultural fertilizer. A German-British firm began mining, later replaced by a British–Australian–New Zealand venture.[8] Nauru started developing at record speed—the catch was that it was, simultaneously, commiting suicide.

By the 1960s, Nauru still looked pleasant enough when approached from the sea, but it was a mirage. Behind the narrow fringe of coconut palms circling the coast lay a ravaged interior. Seen from above, the forest and topsoil of the oval island were being voraciously stripped away; the phosphate mined down to the island's sharply protruding bones, leaving behind a forest of ghostly coral totems. With the center now uninhabitable and largely infertile except for some minor scrubby vegetation, life on Nauru unfolded along the thin coastal strip, where the homes and civic structures were located.[9]

Nauru's successive waves of colonizers—whose economic emissaries ground up the phosphate rock into fine dust, then shipped it on ocean liners to fertilize soil in Australia and New Zealand—had a simple plan for the country: they would keep mining phosphate until the island was an empty shell. "When the phosphate supply is exhausted in thirty to forty years' time, the experts predict that the estimated population will not be able to live on this pleasant little island," a Nauruan council member said, rather stiffly, in a sixties-era black-and-white video produced by the Australian government. But not to worry, the film's narrator explained: "Preparations are being made now for the future of the Nauruan people. Australia has offered them a permanent home within her own shores. . . . Their prospects are bright; their future is secure."[10]

Nauru, in other words, was developed to disappear, designed by the Australian government and the extractive companies that controlled its fate as a disposable country. It's not that they had anything against the place, no genocidal intent per se. It's just that one dead island that few even knew existed seemed like an acceptable sacrifice to make in the name of the progress represented by industrial agriculture.

When the Nauruans themselves took control of their country in 1968, they had hopes of reversing these plans. Toward that end, they put a large chunk of their mining revenues into a trust fund that they invested in what seemed like stable real estate ventures in Australia and Hawaii. The goal

was to live off the fund's proceeds while winding down phosphate mining and beginning to rehabilitate their island's ecology—a costly task, but perhaps not impossible.[11]

The plan failed. Nauru's government received catastrophically bad investment advice, and the country's mining wealth was squandered. Meanwhile, Nauru continued to disappear, its white powdery innards loaded onto boats as the mining continued unabated. Meanwhile, decades of easy money had taken a predictable toll on Nauruans' life and culture. Politics was rife with corruption, drunk driving was a leading cause of death, average life expectancy was dismally low, and Nauru earned the dubious honor of being featured on a U.S. news show as "the fattest place on Earth" (half the adult population suffers from type 2 diabetes, the result of a diet comprised almost exclusively of imported processed food). "During the golden era when the royalties were rolling in, we didn't cook, we ate in restaurants," recalls Steshia Hubert, a health care worker. And even if the Nauruans had wanted to eat differently, it would have been hard: with so much of the island a latticework of deep dark holes, growing enough fresh produce to feed the population was pretty much impossible. A bitterly ironic infertility for an island whose main export was agricultural fertilizer.[12]

By the 1990s, Nauru was so desperate for foreign currency that it pursued some distinctly shady get-rich-quick schemes. Aided greatly by the wave of financial deregulation unleashed in this period, the island became a prime money-laundering haven. For a time in the late 1990s, Nauru was the titular "home" to roughly four hundred phantom banks that were utterly unencumbered by monitoring, oversight, taxes, and regulation. Nauru-registered shell banks were particularly popular among Russian gangsters, who reportedly laundered a staggering $70 billion of dirty money through the island nation (to put that in perspective, Nauru's entire GDP is $72 million, according to most recent figures). Giving the country partial credit for the collapse of the Russian economy, a *New York Times Magazine* piece in 2000 pronounced that "amid the recent proliferation of money-laundering centers that experts estimate has ballooned into a $5 trillion shadow economy, Nauru is Public Enemy #1."[13]

These schemes have since caught up with Nauru too, and now the country faces a double bankruptcy: with 90 percent of the island depleted from

mining, it faces ecological bankruptcy; with a debt of at least $800 million, Nauru faces financial bankruptcy as well. But these are not Nauru's only problems. It now turns out that the island nation is highly vulnerable to a crisis it had virtually no hand in creating: climate change and the drought, ocean acidification, and rising waters it brings. Sea levels around Nauru have been steadily climbing by about 5 millimeters per year since 1993, and much more could be on the way if current trends continue. Intensified droughts are already causing severe freshwater shortages.[14]

A decade ago, Australian philosopher and professor of sustainability Glenn Albrecht set out to coin a term to capture the particular form of psychological distress that sets in when the homelands that we love and from which we take comfort are radically altered by extraction and industrialization, rendering them alienating and unfamiliar. He settled on "solastalgia," with its evocations of solace, destruction, and pain, and defined the new word to mean, "the homesickness you have when you are still at home." He explained that although this particular form of unease was once principally familiar to people who lived in sacrifice zones—lands decimated by open-pit mining, for instance, or clear-cut logging—it was fast becoming a universal human experience, with climate change creating a "new abnormal" wherever we happen to live. "As bad as local and regional negative transformation is, it is the big picture, the Whole Earth, which is now a home under assault. A feeling of global dread asserts itself as the planet heats and our climate gets more hostile and unpredictable," he writes.[15]

Some places are unlucky enough to experience both local and global solastalgia simultaneously. Speaking to the 1997 U.N. climate conference that adopted the Kyoto Protocol, Nauru's then-president Kinza Clodumar described the collective claustrophobia that had gripped his country: "We are trapped, a wasteland at our back, and to our front a terrifying, rising flood of biblical proportions."[16] Few places on earth embody the suicidal results of building our economies on polluting extraction more graphically than Nauru. Thanks to its mining of phosphate, Nauru has spent the last century disappearing from the inside out; now, thanks to our collective mining of fossil fuels, it is disappearing from the outside in.

In a 2007 cable about Nauru, made public by WikiLeaks, an unnamed U.S. official summed up his government's analysis of what went wrong on

the island: "Nauru simply spent extravagantly, never worrying about tomorrow."[17] Fair enough, but that diagnosis is hardly unique to Nauru; our entire culture is extravagantly drawing down finite resources, never worrying about tomorrow. For a couple of hundred years we have been telling ourselves that we can dig the midnight black remains of other life forms out of the bowels of the earth, burn them in massive quantities, and that the airborne particles and gases released into the atmosphere—because we can't see them—will have no effect whatsoever. Or if they do, we humans, brilliant as we are, will just invent our way out of whatever mess we have made.

And we tell ourselves all kinds of similarly implausible no-consequences stories all the time, about how we can ravage the world and suffer no adverse effects. Indeed we are always surprised when it works out otherwise. We extract and do not replenish and wonder why the fish have disappeared and the soil requires ever more "inputs" (like phosphate) to stay fertile. We occupy countries and arm their militias and then wonder why they hate us. We drive down wages, ship jobs overseas, destroy worker protections, hollow out local economies, then wonder why people can't afford to shop as much as they used to. We offer those failed shoppers subprime mortgages instead of steady jobs and then wonder why no one foresaw that a system built on bad debts would collapse.

At every stage our actions are marked by a lack of respect for the powers we are unleashing—a certainty, or at least a hope, that the nature we have turned to garbage, and the people we have treated like garbage, will not come back to haunt us. And Nauru knows all about this too, because in the past decade it has become a dumping ground of another sort. In an effort to raise much needed revenue, it agreed to house an offshore refugee detention center for the government of Australia. In what has become known as "the Pacific Solution," Australian navy and customs ships intercept boats of migrants and immediately fly them three thousand kilometers to Nauru (as well as to several other Pacific islands). Once on Nauru, the migrants—most from Afghanistan, Sri Lanka, Iraq, Iran, and Pakistan—are crammed into a rat-infested guarded camp made up of rows of crowded, stiflingly hot tents. The island imprisonment can last up to five years, with the migrants in a state of constant limbo about their status, something the Australian government hopes will serve as a deterrent to future refugees.[18]

The Australian and Nauruan governments have gone to great lengths to limit information on camp conditions and have prevented journalists who make the long journey to the island from seeing where migrants are being housed. But the truth is leaking out nonetheless: grainy video of prisoners chanting "We are not animals"; reports of mass hunger strikes and suicide attempts; horrifying photographs of refugees who had sewn their own mouths shut, using paper clips as needles; an image of a man who had badly mutilated his neck in a failed hanging attempt. There are also images of toddlers playing in the dirt and huddling with their parents under tent flaps for shade (originally the camp had housed only adult males, but now hundreds of women and children have been sent there too). In June 2013, the Australian government finally allowed a BBC crew into the camp in order to show off its brand-new barracks—but that PR attempt was completely upstaged one month later by the news that a prisoner riot had almost completely destroyed the new facility, leaving several prisoners injured.[19]

Amnesty International has called the camp on Nauru "cruel" and "degrading," and a 2013 report by the United Nations High Commissioner for Refugees concluded that those conditions, "coupled with the protracted period spent there by some asylum-seekers, raise serious issues about their compatibility with international human rights law, including the prohibition against torture and cruel, inhuman or degrading treatment." Then, in March 2014, a former Salvation Army employee named Mark Isaacs, who had been stationed at the camp, published a tell-all memoir titled *The Undesirables*. He wrote about men who had survived wars and treacherous voyages losing all will to live on Nauru, with one man resorting to swallowing cleaning fluids, another driven mad and barking like a dog. Isaacs likened the camp to "death factories," and said in an interview that it is about "taking resilient men and grinding them into the dust." On an island that itself was systematically ground to dust, it's a harrowing image. As harrowing as enlisting the people who could very well be the climate refugees of tomorrow to play warden to the political and economic refugees of today.[20]

Reviewing the island's painful history, it strikes me that so much of what has gone wrong on Nauru—and goes on still—has to do with its location, frequently described as "the middle of nowhere" or, in the words of a 1921 *National Geographic* dispatch, "perhaps the most remote territory in the world," a tiny dot "in lonely seas." The nation's remoteness made it a

convenient trash can—a place to turn the land into trash, to launder dirty money, to disappear unwanted people, and now a place that may be allowed to disappear altogether.[21]

This is our relationship to much that we cannot easily see and it is a big part of what makes carbon pollution such a stubborn problem: we can't see it, so we don't really believe it exists. Ours is a culture of disavowal, of simultaneously knowing and not knowing—the illusion of proximity coupled with the reality of distance is the trick perfected by the fossil-fueled global market. So we both know and don't know who makes our goods, who cleans up after us, where our waste disappears to—whether it's our sewage or electronics or our carbon emissions.

But what Nauru's fate tells us is that there is no middle of nowhere, nowhere that doesn't "count"—and that nothing ever truly disappears. On some level we all know this, that we are part of a swirling web of connections. Yet we are trapped in linear narratives that tell us the opposite: that we can expand infinitely, that there will always be more space to absorb our waste, more resources to fuel our wants, more people to abuse.

These days, Nauru is in a near constant state of political crisis, with fresh corruption scandals perpetually threatening to bring down the government, and sometimes succeeding. Given the wrong visited upon the nation, the island's leaders would be well within their rights to point fingers outward—at their former colonial masters who flayed them, at the investors who fleeced them, and at the rich countries whose emissions now threaten to drown them. And some do. But several of Nauru's leaders have also chosen to do something else: to hold up their country as a kind of warning to a warming world.

In *The New York Times* in 2011, for instance, then-president Marcus Stephen wrote that Nauru provides "an indispensable cautionary tale about life in a place with hard ecological limits." It shows, he claimed, "what can happen when a country runs out of options. The world is headed down a similar path with the relentless burning of coal and oil, which is altering the planet's climate, melting ice caps, making oceans more acidic and edging us ever closer to a day when no one will be able to take clean water, fertile soil or abundant food for granted." In other words, Nauru isn't the only one digging itself to death; we all are.[22]

But the lesson Nauru has to teach is not only about the dangers of fossil fuel emissions. It is about the mentality that allowed so many of us, and our ancestors, to believe that we could relate to the earth with such violence in the first place—to dig and drill out the substances we desired while thinking little of the trash left behind, whether in the land and water where the extraction takes place, or in the atmosphere, once the extracted material is burned. This carelessness is at the core of an economic model some political scientists call "extractivism," a term originally used to describe economies based on removing ever more raw materials from the earth, usually for export to traditional colonial powers, where "value" was added. And it's a habit of thought that goes a long way toward explaining why an economic model based on endless growth ever seemed viable in the first place. Though developed under capitalism, governments across the ideological spectrum now embrace this resource-depleting model as a road to development, and it is this logic that climate change calls profoundly into question.

Extractivism is a nonreciprocal, dominance-based relationship with the earth, one purely of taking. It is the opposite of stewardship, which involves taking but also taking care that regeneration and future life continue. Extractivism is the mentality of the mountaintop remover and the old-growth clear-cutter. It is the reduction of life into objects for the use of others, giving them no integrity or value of their own—turning living complex ecosystems into "natural resources," mountains into "overburden" (as the mining industry terms the forests, rocks, and streams that get in the way of its bulldozers). It is also the reduction of human beings either into labor to be brutally extracted, pushed beyond limits, or, alternatively, into social burden, problems to be locked out at borders and locked away in prisons or reservations. In an extractivist economy, the interconnections among these various objectified components of life are ignored; the consequences of severing them are of no concern.

Extractivism is also directly connected to the notion of sacrifice zones—places that, to their extractors, somehow don't count and therefore can be poisoned, drained, or otherwise destroyed, for the supposed greater good of economic progress. This toxic idea has always been intimately tied to imperialism, with disposable peripheries being harnessed to feed a glittering center, and it is bound up too with notions of racial superiority, because

in order to have sacrifice zones, you need to have people and cultures who count so little that they are considered deserving of sacrifice. Extractivism ran rampant under colonialism because relating to the world as a frontier of conquest—rather than as home—fosters this particular brand of irresponsibility. The colonial mind nurtures the belief that there is always somewhere else to go to and exploit once the current site of extraction has been exhausted.

These ideas predate industrial-scale extraction of fossil fuels. And yet the ability to harness the power of coal to power factories and ships is what, more than any single other factor, enabled these dangerous ideas to conquer the world. It's a history worth exploring in more depth, because it goes a long way toward explaining how the climate crisis challenges not only capitalism but the underlying civilizational narratives about endless growth and progress within which we are all, in one way or another, still trapped.

The Ultimate Extractivist Relationship

If the modern-day extractive economy has a patron saint, the honor should probably go to Francis Bacon. The English philosopher, scientist, and statesman is credited with convincing Britain's elites to abandon, once and for all, pagan notions of the earth as a life-giving mother figure to whom we owe respect and reverence (and more than a little fear) and accept the role as her dungeon master. "For you have but to follow and as it were hound nature in her wanderings," Bacon wrote in *De Augmentis Scientiarum* in 1623, "and you will be able, when you like, to lead and drive her afterwards to the same place again. . . . Neither ought a man to make scruple of entering and penetrating into these holes and corners, when the inquisition of truth is his sole object."[23] (Not surprisingly, feminist scholars have filled volumes analyzing the ex–Lord Chancellor's metaphor choices.)

These ideas of a completely knowable and controllable earth animated not only the Scientific Revolution but, critically, the colonial project as well, which sent ships crisscrossing the globe to poke and prod and bring the secrets, and wealth, back to their respective crowns. The mood of human invincibility that governed this epoch was neatly encapsulated in

the words of clergyman and philosopher William Derham in his 1713 book *Physico-Theology*: "We can, if need be, ransack the whole globe, penetrate into the bowels of the earth, descend to the bottom of the deep, travel to the farthest regions of this world, to acquire wealth."[24]

And yet despite this bravado, throughout the 1700s, the twin projects of colonialism and industrialization were still constrained by nature on several key fronts. Ships carrying both slaves and the raw materials they harvested could sail only when winds were favorable, which could lead to long delays in the supply chain. The factories that turned those raw materials into finished products were powered by huge water wheels. They needed to be located next to waterfalls or rapids which made them dependent on the flow and levels of rivers. As with high or low winds at sea, an especially dry or wet spell meant that working hours in the textile, flour, and sugar mills had to be adjusted accordingly—a mounting annoyance as markets expanded and became more global.

Many water-powered factories were, by necessity, spread out around the countryside, near bodies of fast-moving water. As the Industrial Revolution matured and workers in the mills started to strike and even riot for better wages and conditions, this decentralization made factory owners highly vulnerable, since quickly finding replacement workers in rural areas was difficult.

Beginning in 1776, a Scottish engineer named James Watt perfected and manufactured a power source that offered solutions to all these vulnerabilities. Lawyer and historian Barbara Freese describes Watt's steam engine as "perhaps the most important invention in the creation of the modern world"—and with good reason.[25] By adding a separate condenser, air pump, and later a rotary mechanism to an older model, Watt was able to make the coal-fired steam engine vastly more powerful and adaptable than its predecessors. In contrast, the new machines could power a broad range of industrial operations, including, eventually, boats.

For the first couple of decades, the new engine was a tough sell. Water power, after all, had a lot going for it compared with coal. For one thing, it was free, while coal needed to be continually re-purchased. And contrary to the widespread belief that the steam engine provided more energy than water wheels, the two were actually comparable, with the larger wheels

packing several times more horsepower than their coal-powered rivals. Water wheels also operated more smoothly, with fewer technical breakdowns, so long as the water was flowing. "The transition from water to steam in the British cotton industry did not occur because water was scarce, less powerful, or more expensive than steam," writes Swedish coal expert Andreas Malm. "To the contrary, steam gained supremacy *in spite of water being abundant, at least as powerful, and decidedly cheaper*."[26]

As Britain's urban population ballooned, two factors tipped the balance in favor of the steam engine. The first was the new machine's insulation from nature's fluctuations: unlike water wheels, steam engines worked at the same rate all the time, so long as there was coal to feed them and the machinery wasn't broken. The flow rates of rivers were of no concern. Steam engines also worked anywhere, regardless of the geography, which meant that factory owners could shift production from more remote areas to cities like London, Manchester, and Lancaster, where there were gluts of willing industrial workers, making it far easier to fire troublemakers and put down strikes. As an 1832 article written by a British economist explained, "The invention of the steam-engine has relieved us from the necessity of building factories in inconvenient situations merely for the sake of a waterfall." Or as one of Watt's early biographers put it, the generation of power "will no longer depend, as heretofore, on the most inconstant of natural causes—on atmospheric influences."[27]

Similarly, when Watt's engine was installed in a boat, ship crews were liberated from having to adapt their journeys to the winds, a development that rapidly accelerated the colonial project and the ability of European powers to easily annex countries in distant lands. As the Earl of Liverpool put it in a public meeting to memorialize James Watt in 1824, "Be the winds friendly or be they contrary, the power of the Steam Engine overcomes all difficulties. . . . Let the wind blow from whatever quarter it may, let the destination of our force be to whatever part of the world it may, you have the power and the means, by the Steam Engine, of applying that force at the proper time and in the proper manner."[28] Not until the advent of electronic trading would commerce feel itself so liberated from the constraints of living on a planet bound by geography and governed by the elements.

Unlike the energy it replaced, power from fossil fuel always required

sacrifice zones—whether in the black lungs of the coal miners or the poisoned waterways surrounding the mines. But these prices were seen as worth paying in exchange for coal's intoxicating promise of freedom from the physical world—a freedom that unleashed industrial capitalism's full force to dominate both workers and other cultures. With their portable energy creator, the industrialists and colonists of the 1800s could now go wherever labor was cheapest and most exploitable, and wherever resources were most plentiful and valuable. As the author of a steam engine manual wrote in the mid-1830s, "Its mighty services are always at our command, whether in winter or in summer, by day or by night—it knows of no intermission but what our wishes dictate."[29] Coal represented, in short, total domination, of both nature and other people, the full realization of Bacon's dream at last. "Nature can be conquered," Watt reportedly said, "if we can but find her weak side."[30]

Little wonder then that the introduction of Watt's steam engine coincided with explosive levels of growth in British manufacturing, such that in the eighty years between 1760 and 1840, the country went from importing 2.5 million pounds of raw cotton to importing 366 million pounds of raw cotton, a genuine revolution made possible by the potent and brutal combination of coal at home and slave labor abroad.[31]

This recipe produced more than just new consumer products. In *Ecological Economics*, Herman Daly and Joshua Farley point out that Adam Smith published *The Wealth of Nations* in 1776—the same year that Watt produced his first commercial steam engine. "It is no coincidence," they write, "that the market economy and fossil fuel economy emerged at essentially the exact same time. . . . New technologies and vast amounts of fossil energy allowed unprecedented production of consumer goods. The need for new markets for these mass-produced consumer goods and new sources of raw material played a role in colonialism and the pursuit of empire. The market economy evolved as an efficient way of allocating such goods, and stimulating the production of even more."[32] Just as colonialism needed coal to fulfill its dream of total domination, the deluge of products made possible by both coal and colonialism needed modern capitalism.

The promise of liberation from nature that Watt was selling in those early days continues to be the great power of fossil fuels. That power is what

allows today's multinationals to scour the globe for the cheapest, most exploitable workforce, with natural features and events that once appeared as obstacles—vast oceans, treacherous landscapes, seasonal fluctuations—no longer even registering as minor annoyances. Or so it seemed for a time.

It is often said that Mother Nature bats last, and this has been poignantly the case for some of the men who were most possessed by the ambition of conquering her. A perhaps apocryphal story surrounds the death of Francis Bacon: in an attempt to test his hypothesis that frozen meat could be prevented from rotting, he traipsed around in chilly weather stuffing a chicken full of snow. As a result, it is said, the philosopher caught pneumonia, which eventually led to his demise.[33] Despite some controversy, the anecdote survives for its seeming poetic justice: a man who thought nature could be bent to his will died from simple exposure to the cold.

A similar story of comeuppance appears to be unfolding for the human race as a whole. Ralph Waldo Emerson called coal "a portable climate"—and it has been a smash success, carrying countless advantages, from longer life spans to hundreds of millions freed from hard labor.[34] And yet precisely because our bodies are so effectively separated from our geographies, we who have access to this privilege have proven ourselves far too capable of ignoring the fact that we aren't just changing our personal climate but the entire planet's climate as well, warming not just the indoors but the outdoors too. And yet the warming is no less real for our failure to pay attention.

The harnessing of fossil fuel power seemed, for a couple of centuries at least, to have freed large parts of humanity from the need to be in constant dialogue with nature, having to adjust its plans, ambitions, and schedules to natural fluctuations and topographies. Coal and oil, precisely because they were fossilized, seemed entirely possessable forms of energy. They did not behave independently—not like wind, or water, or, for that matter, workers. Just as Watt's engine promised, once purchased, they produced power wherever and whenever their owners wished—the ultimate nonreciprocal relationship.

But what we have learned from atmospheric science is that the give-and-take, call-and-response that is the essence of all relationships in nature was not eliminated with fossil fuels, it was merely delayed, all the while gaining force and velocity. Now the cumulative effect of those centuries of burned carbon is in the process of unleashing the most ferocious natural tempers of all.

As a result, the illusion of total power and control Watt and his cohorts once peddled has given way to the reality of near total powerlessness and loss of control in the face of such spectacular forces as Hurricane Sandy and Typhoon Haiyan. Which is just one of the reasons climate change is so deeply frightening. Because to confront this crisis truthfully is to confront ourselves—to reckon, as our ancestors did, with our vulnerability to the elements that make up both the planet and our bodies. It is to accept (even embrace) being but one porous part of the world, rather than its master or machinist, as Bacon long ago promised. There can be great well-being in that realization of interconnection, pleasure too. But we should not underestimate the depth of the civilizational challenge that this relationship represents. As Australian political scientist Clive Hamilton puts it, facing these truths about climate change "means recognizing that the power relation between humans and the earth is the reverse of the one we have assumed for three centuries."[35]

For one of those centuries, a huge white marble statue of James Watt dominated St. Paul's chapel in Westminster Abbey, commemorating a man who "enlarged the resources of his Country" and "increased the power of Man." And Watt certainly did that: his engine massively accelerated the Industrial Revolution and the steamships his engine made possible subsequently opened sub-Saharan Africa and India to colonial pillage. So while making Europe richer, he also helped make many other parts of the world poorer, carbon-fueled inequalities that persist to this day. Indeed, coal was the black ink in which the story of modern capitalism was written.

But all the facts were not yet in when Watt was being memorialized in marble in 1825. Because it is the cumulative impact of the carbon emissions that began in those early mills and mines that has already engraved itself in the geologic record—in the levels of the oceans, in their chemical composition, in the slow erasure of islands like Nauru; in the retreat of glaciers,

the collapse of ice shelves, the thawing of permafrost; in the disturbed soil cycles and in the charred forests.

Indeed, it turns out that coal's earliest casualties—the miners who died from black lung, the workers in the Satanic Mills—were not merely the price of progress. They were also an early warning that we were unleashing a poisonous substance onto the world. "It has become clear over the last century," writes Ecuadorian ecologist Esperanza Martínez, "that fossil fuels, the energy sources of capitalism, destroy life—from the territories where they are extracted to the oceans and the atmosphere that absorb the waste."[36]

Jean-Paul Sartre called fossil fuels "capital bequeathed to mankind by other living beings"; they are quite literally the decayed remnants of long-dead life-forms. It's not that these substances are evil; it's just that they belong where they are: in the ground, where they are performing valuable ecological functions. Coal, when left alone, helpfully sequesters not just the carbon long ago pulled out of the air by plants, but all kinds of other toxins. It acts, as world-renowned Australian climate scientist Tim Flannery puts it, like "a natural sponge that absorbs many substances dissolved in groundwater, from uranium to cadmium and mercury."[37]

When coal is dug up and burned, however, those toxins are released in the ecosystem, eventually making their way into the oceans, where they are absorbed by krill and plankton, then by fish, and then by us. The released carbon, meanwhile, enters the atmosphere, causing global warming (not to mention coal's contribution to the smog and particulate pollution that have plagued urban society since the Industrial Revolution, afflicting untold numbers of people with respiratory, heart, and other diseases).

Given this legacy, our task is not small, but it is simple: rather than a society of grave robbers, we need to become a society of life amplifiers, deriving our energy directly from the elements that sustain life. It's time to let the dead rest.

The Extractivist Left

The braided historical threads of colonialism, coal, and capitalism shed significant light on why so many of us who are willing to challenge the injustices of the market system remain paralyzed in the face of the climate threat. Fossil fuels, and the deeper extractivist mind-set that they represent, built the modern world. If we are part of industrial or postindustrial societies, we are still living inside the story written in coal.

Ever since the French Revolution, there have been pitched ideological battles within the confines of this story: communists, socialists, and trade unions have fought for more equal distribution of the spoils of extraction, winning major victories for the poor and working classes. And the human rights and emancipation movements of this period have also fought valiantly against industrial capitalism's treatment of whole categories of our species as human sacrifice zones, no more deserving of rights than raw commodities. These struggles have also won major victories against the dominance-based paradigm—against slavery, for universal suffrage, for equality under the law. And there have been voices in all of these movements, moreover, that identified the parallels between the economic model's abuse of the natural world and its abuse of human beings deemed worthy of being sacrificed, or at least uncounted. Karl Marx, for instance, recognized capitalism's "irreparable rift" with "the natural laws of life itself," while feminist scholars have long recognized that patriarchy's dual war against women's bodies and against the body of the earth were connected to that essential, corrosive separation between mind and body—and between body and earth—from which both the Scientific Revolution and Industrial Revolution sprang.[38]

These challenges, however, were mainly in the intellectual realm; Bacon's original, biblically inspired framework remained largely intact—the right of humans to place ourselves above the ecosystems that support us and to abuse the earth as if it were an inanimate machine. The strongest challenges to this worldview have always come from outside its logic, in those historical junctures when the extractive project clashes directly with a different, older way of relating to the earth—and that older way fights back. This has been true from the earliest days of industrialization, when English and Irish peasants, for instance, revolted against the first attempts to enclose communal lands, and it has continued in clashes between colonizers and Indigenous peoples through the centuries, right up to—as we will see—the Indigenous-led resistance to extreme fossil fuel extraction gaining power today.

But for those of us born and raised inside this system, though we may well see the dead-end flaw of its central logic, it can remain intensely difficult to see a way out. And how could it be otherwise? Post-Enlightenment Western culture does not offer a road map for how to live that is not based on an extractivist, nonreciprocal relationship with nature.

This is where the right-wing climate deniers have overstated their conspiracy theories about what a cosmic gift global warming is to the left. It is true, as I have outlined, that many climate responses reinforce progressive support for government intervention in the market, for greater equality, and for a more robust public sphere. But the deeper message carried by the ecological crisis—that humanity has to go a whole lot easier on the living systems that sustain us, acting regeneratively rather than extractively—is a profound challenge to large parts of the left as well as the right. It's a challenge to some trade unions, those trying to freeze in place the dirtiest jobs, instead of fighting for the good clean jobs their members deserve. And it's a challenge to the overwhelming majority of center-left Keynesians, who still define economic success in terms of traditional measures of GDP growth, regardless of whether that growth comes from rampant resource extraction. (This is all the more baffling because Keynes himself, like John Stuart Mill, advocated a transition to a post-growth economy.)

It's a challenge, too, to those parts of the left that equated socialism with the authoritarian rule of the Soviet Union and its satellites (though there was always a rich tradition, particularly among anarchists, that considered Stalin's project an abomination of core social justice principles). Because the fact is that those self-described socialist states devoured resources with as much enthusiasm as their capitalist counterparts, and spewed waste just as recklessly. Before the fall of the Berlin Wall, for instance, Czechs and Russians had even higher carbon footprints per capita than Canadians and Australians. Which is why one of the only times the developed world has seen a precipitous emissions drop was after the economic collapse of the former Soviet Union in the early 1990s. Mao Zedong, for his part, openly declared that "man must conquer nature," setting loose a devastating onslaught on the natural world that transitioned seamlessly from clear-cuts under communism to mega-dams under capitalism. Russia's oil and gas companies, meanwhile, were as reckless and accident-prone under state socialist control as they are today in the hands of the oligarchs and Russia's corporatist state.[39]

And why wouldn't they be? Authoritarian socialism and capitalism share strong tendencies toward centralizing (one in the hands of the state, the other in the hands of corporations). They also both keep their respective systems going through ruthless expansion—whether through production for production's sake, in the case of Soviet-era socialism, or consumption for consumption's sake, in the case of consumer capitalism.

One possible bright spot is Scandinavian-style Social Democracy, which has undoubtedly produced some of the most significant green breakthroughs in the world, from the visionary urban design of Stockholm, where roughly 74 percent of residents walk, bike, or take public transit to work, to Denmark's community-controlled wind power revolution. And yet Norway's late-life emergence as a major oil producer—with majority state-owned Statoil tearing up the Alberta tar sands and gearing up to tap massive reserves in the Arctic—calls into question whether these countries are indeed charting a path away from extractivism.[40]

In Latin America and Africa, moving away from overdependence on raw resource extraction and export, and toward more diversified economies, has always been a central piece of the postcolonial project. And yet some countries where left and center-left governments have come to power over the last decade are moving in the opposite direction. The fact that this tendency is little discussed outside the continent should not be surprising. Progressives around the world have rightfully cheered Latin America's electoral "pink tide," with government after government coming to power promising to reduce inequality, tackle extreme poverty, and take back control over the extractive industries of their respective countries. And purely from the perspective of poverty reduction, the results have often been stunning.

Since the election of Luiz Inácio Lula da Silva, and now under the leadership of his former chief of staff, Dilma Rousseff, Brazil has reduced its extreme poverty rate by 65 percent in a single decade, according to the government. More than thirty million people have been lifted out of poverty. After the election of Hugo Chávez, Venezuela slashed the percentage of the population living in extreme poverty by more than half—from 16.6 percent in 1999 to 7 percent in 2011, according to government statistics.

College enrollment has doubled since 2004. Ecuador under Rafael Correa has dropped its poverty rates by 32 per cent, according to the World Bank. In Argentina, urban poverty plummeted from 54.7 percent in 2003 to 6.5 percent in 2011, according to government data collected by the U.N.[41]

Bolivia's record, under the presidency of Evo Morales, is also impressive. It has reduced the proportion of its population living in extreme poverty from 38 percent in 2005 to 21.6 percent in 2012, according to government figures.[42] And unemployment rates have been cut in half. Most importantly, while other developing countries have used growth to create societies of big winners and big losers, Bolivia is actually succeeding in building a more equal society. Alicia Bárcena Ibarra, executive secretary of the U.N. Economic Commission for Latin America and the Caribbean, observes that in Bolivia "the gap between rich and poor has been hugely narrowed."[43]

All of this is a marked improvement over what came before, when the wealth extracted from each of these countries was overwhelmingly concentrated among a tiny elite, with far too much of it fleeing the continent entirely. And yet these left and center-left governments have so far been unable to come up with economic models that do not require extremely high levels of extraction of finite resources, often at tremendous ecological and human cost. This is true for Ecuador, with its growing oil dependence, including oil from the Amazon; Bolivia, with its huge dependence on natural gas; Argentina, with its continued support for open-pit mining and its "green deserts" of genetically modified soy and other crops; Brazil, with its highly contentious mega-dams and forays into high-risk offshore oil drilling; and of course it has always been the case for petro-dependent Venezuela. Moreover, most of these governments have made very little progress on the old dream of diversifying their economies away from raw resource exports—in fact, between 2004 and 2011, raw resources as a percentage of overall exports increased in all of these countries except Argentina, though some of this increase was no doubt due to rising commodity prices. It hasn't helped that China has been throwing easy credit around the continent, in some cases demanding to be paid back in oil.[44]

This reliance on high risk and ecologically damaging forms of extraction is particularly disappointing in the governments of Evo Morales in Bolivia and Rafael Correa in Ecuador. In their first terms, both had signaled that a new, nonextractive chapter was beginning in their countries. Part of

this involved granting real respect to the Indigenous cultures that had survived centuries of marginalization and oppression and that form powerful political constituencies in both countries. Under Morales and Correa, the Indigenous concepts of *sumak kawsay* and *buen vivir*, which strive to build societies in harmony with nature (in which everyone has enough, rather than more and more), became the discourse of government, even recognized in law. But in both cases, escalating industrial-scale development and extraction has overtaken this promising rhetoric. According to Ecuador's Esperanza Martínez, "Since 2007, Correa's has been the most extractivist government in the history of the country, in terms of oil and now also mining." Indeed Latin American intellectuals have invented a new term to describe what they are experiencing: "progressive extractivism."[45]

The governments claim they have no choice—that they need to pursue extractive policies in order to pay for programs that alleviate poverty. And in many ways this explanation comes back to the question of climate debt: Bolivia and Ecuador have been at the forefront of the coalition of governments asking that the countries responsible for the bulk of historical greenhouse gas emissions help to pay for the Global South's transition away from dirty energy and toward low-carbon development. These calls have been alternatively ignored and dismissed. Forced to choose between poverty and pollution, these governments are choosing pollution, but those should not be their only options.

The default overreliance on dirty extraction is not only a problem for progressives in the developing world. In Greece in May 2013, for instance, I was surprised to discover that the left-wing Syriza party—then the country's official opposition and held up by many progressive Europeans as the great hope for a real political alternative on the continent—did not oppose the governing coalition's embrace of new oil and gas exploration. Instead, it argued that any funds raised by the effort should be spent on pensions, not used to pay back creditors. In other words: they were not providing an alternative to extractivism but simply had better plans for distributing the spoils.

Far from seeing climate change as an opportunity to argue for their socialist utopia, as conservative climate change deniers fear, Syriza had simply stopped talking about global warming altogether.

This is something that the party's leader, Alexis Tsipras, admitted to me

quite openly in an interview: "We were a party that had the environment and climate change in the center of our interest," he said. "But after these years of depression in Greece, we forgot climate change."[46] At least he was honest.

The good news, and it is significant, is that large and growing social movements in all of these countries are pushing back against the idea that extraction-and-redistribution is the only route out of poverty and economic crisis. There are massive movements against gold mining in Greece, so large that Syriza has become a significant opponent of the mines. In Latin America, meanwhile, progressive governments are increasingly finding themselves in direct conflict with many of the people who elected them, facing accusations that their new model of what Hugo Chávez called "Twenty-first-Century Socialism" simply isn't new enough. Huge hydro dams in Brazil, highways through sensitive areas in Bolivia, and oil drilling in the Ecuadorian Amazon have all become internal flashpoints. Yes, the wealth is better distributed, particularly among the urban poor, but outside the cities, the ways of life of Indigenous peoples and peasants are still being endangered without their consent, and they are still being made landless by ecosystem destruction. What is needed, writes Bolivian environmentalist Patricia Molina, is a new definition of development, "so that the goal is the elimination of poverty, and not of the poor."[47]

This critique represents more than just the push and pull of politics; it is a fundamental shift in the way an increasingly large and vocal political constituency views the goal of economic activity and the meaning of development. Space is opening up for a growing influence of Indigenous thought on new generations of activists, beginning, most significantly, with Mexico's Zapatista uprising in 1994, and continuing, as we will see, with the important leadership role that Indigenous land-rights movements are playing in pivotal anti-extraction struggles in North America, Latin America, Australia, and New Zealand. In part through these struggles, non-Indigenous progressive movements are being exposed to worldviews based on relationships of reciprocity and interconnection with the natural world that are the antithesis of extractivism. These movements have truly heard the message of climate change and are winning battles to keep significant amounts of carbon in the ground.

Some Warnings, Unheeded

There is one other group that might have provided a challenge to Western culture's disastrous view of nature as a bottomless vending machine. That group, of course, is the environmental movement, the network of organizations that exists to protect the natural world from being devoured by human activity. And yet the movement has not played this role, at least not in a sustained and coherent manner.

In part, that has to do with the movement's unusually elite history, particularly in North America. When conservationism emerged as a powerful force in the late nineteenth and early twentieth centuries, it was primarily about men of privilege who enjoyed fishing, hunting, camping, and hiking and who recognized that many of their favorite wilderness spots were under threat from the rapid expansion of industrialization. For the most part, these men did not call into question the frenetic economic project that was devouring natural landscapes all over the continent—they simply wanted to make sure that some particularly spectacular pockets were set aside for their recreation and aesthetic appreciation. Like the Christian missionaries who traveled with traders and soldiers, most early preservationists saw their work as a civilizing addendum to the colonial and industrial projects—not as a challenge to them. Writing in 1914, Bronx Zoo director William Temple Hornaday summed up this ethos, urging American educators to "take up their share of the white man's burden" and help to "preserve the wild life of our country."[48]

This task was accomplished not with disruptive protests, which would have been unseemly for a movement so entrenched in the upper stratum of society. Instead, it was achieved through quiet lobbying, with well-bred men appealing to the noblesse oblige of other men of their class to save a cherished area by turning it into a national or state park, or a private family preserve—often at the direct expense of Indigenous people who lost access to these lands as hunting and fishing grounds.

There were those in the movement, however, who saw in the threats to their country's most beautiful places signs of a deeper cultural crisis. For instance, John Muir, the great naturalist writer who helped found the Sierra Club in 1892, excoriated the industrialists who dammed wild rivers and

drowned beautiful valleys. To him they were heathens—"devotees of ravaging commercialism" who "instead of lifting their eyes to the God of the mountains, lift them to the Almighty Dollar."[49]

He was not the only heretic. A strain of radicalism drove some of the early Western ecological thinkers to argue for doing more than protecting isolated landscapes. Though frequently unacknowledged, these thinkers often drew heavily on Eastern beliefs about the interconnectedness of all life, as well as on Native American cosmologies that see all living creatures as our "relations."

In the mid-1800s, Henry David Thoreau wrote that, "The earth I tread on is not a dead, inert mass. It is a body, has a spirit, is organic, and fluid to the influence of its spirit, and to whatever particle of that spirit is in me."* This was a straight repudiation of Francis Bacon's casting of the earth as an inert machine whose mysteries could be mastered by the human mind. And almost a century after Thoreau, Aldo Leopold, whose book *A Sand County Almanac* was the touchstone for a second wave of environmentalists, similarly called for an ethic that "enlarges the boundaries of the community to include soils, waters, plants, and animals" and that recognizes "the individual is a member of a community of interdependent parts." A "land ethic," as he called it, "changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such."[50]

These ideas were hugely influential in the evolution of ecological thought, but unattached to populist movements, they posed little threat to galloping industrialization. The dominant worldview continued to see humans as a conquering army, subduing and mechanizing the natural world. Even so, by the 1930s, with socialism on the rise around the world, the more conservative elements of the growing environmental movement sought to

* "In the morning I bathe my intellect in the stupendous and cosmogonal philosophy of the Bhagvat Geeta," wrote Thoreau in *Walden* of the famous Indian scripture. He continued, "I lay down the book and go to my well for water and lo! there I meet the servant of the Brahmin, priest of Brahma and Vishnu and Indra, who still sits in his temple on the Ganges reading the Vedas, or dwells at the root of a tree with his crust and water jug. . . . The pure Walden water is mingled with the sacred water of the Ganges."

distance themselves from Leopold's "radical" suggestion that nature had an inherent value beyond its utility to man. If watersheds and old-growth forests had a "right to continued existence," as Leopold argued (a preview of the "rights of nature" debates that would emerge several decades later), then an owner's right to do what he wished with his land could be called into question. In 1935, Jay Norwood "Ding" Darling, who would later help found the National Wildlife Federation, wrote to Leopold warning him, "I can't get away from the idea that you are getting us out into water over our depth by your new philosophy of wildlife environment. The end of that road leads to socialization of property."[51]

By the time Rachel Carson published *Silent Spring* in 1962, the attempts to turn nature into a mere cog in the American industrial machine had grown so aggressive, so overtly militaristic, that it was no longer possible to pretend that combining capitalism with conservation was simply a matter of protecting a few pockets of green. Carson's book boiled over with righteous condemnations of a chemical industry that used aerial bombardment to wipe out insects, thoughtlessly endangering human and animal life in the process. The marine biologist-turned-social-critic painted a vivid picture of the arrogant "control men" who, enthralled with "a bright new toy," hurled poisons "against the fabric of life."[52]

Carson's focus was DDT, but for her the problem was not a particular chemical; it was a logic. "The 'control of nature,'" Carson wrote, "is a phrase conceived in arrogance, born of the Neanderthal age of biology and philosophy, when it was supposed that nature exists for the convenience of man. . . . It is our alarming misfortune that so primitive a science has armed itself with the most modern and terrible weapons, and that in turning them against the insects it has also turned them against the earth."[53]

Carson's writing inspired a new, much more radical generation of environmentalists to see themselves as part of a fragile planetary ecosystem rather than as its engineers or mechanics, giving birth to the field of Ecological Economics. It was in this context that the underlying logic of extractivism—that there would always be more earth for us to consume—began to be forcefully challenged within the mainstream. The pinnacle of this debate came in 1972 when the Club of Rome published *The Limits to Growth*, a runaway best-seller that used early computer models to pre-

dict that if natural systems continued to be depleted at their current rate, humanity would overshoot the planet's carrying capacity by the middle of the twenty-first century. Saving a few beautiful mountain ranges wouldn't be enough to get us out of this fix; the logic of growth itself needed to be confronted.

As author Christian Parenti observed recently of the book's lasting influence, "*Limits* combined the glamour of Big Science—powerful MIT computers and support from the Smithsonian Institution—with a focus on the interconnectedness of things, which fit perfectly with the new countercultural zeitgeist." And though some of the book's projections have not held up over time—the authors underestimated, for instance, the capacity of profit incentives and innovative technologies to unlock new reserves of finite resources—*Limits* was right about the most important limit of all. On "the limits of natural 'sinks,' or the Earth's ability to absorb pollution," Parenti writes, "the catastrophically bleak vision of *Limits* is playing out as totally correct. We may find new inputs—more oil or chromium—or invent substitutes, but we have not produced or discovered more natural sinks. The Earth's capacity to absorb the filthy byproducts of global capitalism's voracious metabolism is maxing out. That warning has always been the most powerful part of *The Limits to Growth*."[54]

And yet in the most powerful parts of the environmental movement, in the key decades during which we have been confronting the climate threat, these voices of warning have gone unheeded. The movement did not reckon with limits of growth in an economic system built on maximizing profits, it instead tried to prove that saving the planet could be a great new business opportunity.

The reasons for this political timidity have plenty to do with the themes already discussed: the power and allure of free market logic that usurped so much intellectual life in the late 1980s and 1990s, including large parts of the conservation movement. But this persistent unwillingness to follow science to its conclusions also speaks to the power of the cultural narrative that tells us that humans are ultimately in control of the earth, and not the other way around. This is the same narrative that assures us that, however bad things get, we are going to be saved at the last minute—whether by the market, by philanthropic billionaires, or by technological wizards—or best

of all, by all three at the same time. And while we wait, we keep digging in deeper.

Only when we dispense with these various forms of magical thinking will we be ready to leave extractivism behind and build the societies we need within the boundaries we have—a world with no sacrifice zones, no new Naurus.