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January 25, 2017

Dear Legal Theory Workshop Participants,

Thanks very much for the opportunity to discuss this paper with you. I look forward to our session.

My work in the last few years has focused mainly on two sets of themes. In a series of articles and a book (*After Nature*, 2015), I have developed a political history of environmental law that focuses on the ways that changing conceptions of the natural world and the human place in it have informed lawmaking in successive eras. That project also traces how the laws of each era have contributed to the shape of landscapes and other aspects of the inhabited, material world, forming a political and legal circuit between ideas and worldview on the one hand, materiality on the other. In *After Nature*, I contend that these themes have been perennial in American environmental law, but are particularly urgent today, when the extent and depth of the human influence on the non-human world are so great that many earth scientists and others have proposed to designate our era a new geological epoch, “the Anthropocene,” or age of humanity.

Second, in a series of articles, I have explored the relation of law (but not mainly environmental law) to “the new history of inequality,” the recognition of the ways that law both contributes to and is shaped by an arc in which economic inequality declined considerably in the decades after World War Two, then returned to a pre-1930s pattern of increasing inequality in both wealth and income. I have been particularly interested in the ways that the premises of today’s practice and scholarship still reflect the experience of the anomalous period of relative economic equality (which was, of course, regarded at the time as a “new normal”) and so may have ill prepared us to grapple with rising inequality.

In this paper, I take the topic of “environmental justice,” with its claim that “mainstream environmental law” pays too little attention to questions of distribution and power, as an approach to the question how environmental law reflects the influence of key years in its history, 1970-73, the end of the “great exception” of high and equitably shared growth. I argue that environmental law’s neglect of (or at least diffidence toward) questions of inequality is symptomatic of its moment of origin, and has left a significant legacy in a narrowed conception of which problems, and whose problems, are environmental. These defining omissions are not perennial or ubiquitous, let alone inevitable: I draw attention to a “long environmental justice movement,” eclipsed in the formative period of modern environmental law, that remains a

resource for engaging distribution, power, and the total human environment as questions of environmental politics and law.

For those who may be interested, I attach as background and possible additional jumping-off points a pair of short excerpts from the Introduction and final chapter of *After Nature*.

With thanks and best wishes,

Jed

beauty in ordinary places, not just wonder in wild ones. It may mean treasuring places that are irremediably damaged, learning to prize what is neither pure nor natural, but just is—the always imperfect joint product of human powers and the natural world. All of this will require a vocabulary, an ethics, an aesthetics, and a politics, for a time when the meaning of nature is ultimately a human question. And since it is a question we must answer together, it should—but not necessarily will—receive a democratic answer.

I feel a little thrill of reverence whenever I see an image of the earth from space. I remember that the little horizon around me, often so uncharismatic and narrow that I could—and would—throw a stone to its edge, is set on the face of this beautiful sphere. Then I recall some of what the globe contains: acidifying seas, climate refugees, resource wars, and, alongside these human harms, hundreds of reminders that nature does not love us or want us to be happy: Lyme disease, birth defects, and the everyday theater of wild suffering, from the housecat hunting birds in the backyard to coyotes bringing down a terrified deer, to the thousands of ticks that can immiserate and exhaust an unlucky moose in the Rocky Mountain summer. There is no harmony waiting for us in that globe, at least none on a scale that fits our lives, our pleasures and pains and passions. But the blue marble on the infinite black background is still the only possible home of everything we can love. This book asks what we will make of that.

INTRODUCTION

“COME FORTH INTO THE LIGHT of things,” wrote William Wordsworth in 1798. “Let nature be your teacher.” To his mind, the woods in springtime revealed more about good and evil than the teachings of all religions. [A heart that watches and receives” would know more than the “barren leaves” of science and art could disclose. “Spontaneous wisdom” was all. It entered through the eye that admired a green field, the ear that heard a finch’s song. “Quit your books,” the poet urged, “or surely you’ll grow double”: fat from sitting at a desk, but also divided against yourself by too many doubts, too much confusing learning, too many theories.¹

“Observe nature and follow the path it maps out for you,” Jean-Jacques Rousseau had advised in *Emile*, his treatise on education and moral development.² The book was a guide to preserving the natural goodness and temperance of humanity against the vanity, excess, and anxiety that infected social life. “Everything is good as it leaves the hands of the Author,” Rousseau wrote; it was good just “as nature made it,” and to force it into some other form was corruption.³ [Though Rousseau did not live to see the French Revolution, whose early days Wordsworth called “very heaven,” his phrases made him a touchstone for many who did and who imagined it would rejoin human virtue to its taproot in a harmonious nature.

Yet for every claim that nature supported a revolutionary vision of human freedom, someone was prepared to testify to the

contrary: that nature was the guarantor of hierarchy and tradition. A century before Rousseau, John Evelyn, the English forester and author of the first tract on air pollution (*Fumifugium*, 1661), praised nature for being terrifying. Terror, he wrote, was a lesson in obedience. Even atheists shuddered when they heard thunder. Crashing storms were reminders that people were sinners in the hands of an unrelenting God. John Ray, a pioneering naturalist a generation after Evelyn, argued that insect swarms were nature's scourges, reminders that divine order dealt harshly with rebels. The locusts were sure to come for atheists and democrats, delivering nature's judgment on their deranged ideas. Where Rousseau and Wordsworth saw a proto-democratic nature, pregnant with harmonious equality, Evelyn and Ray portrayed a nature made for piety and monarchy. The natural order taught discipline, obedience, and "mutual subserviency."⁴

Nature turns out to be flexible like that. It has been the handmaiden of revolutions and the underwriter of kings, proof of divine design and of atheistic materialism, from Athens and Rome down to the age of democracy. It has proved and disproved the justice of slavery. The most "natural" of peoples, Native Americans (as Europeans imagined them) stood as a rebuke to decadent civilization—except when the study of nature revealed, as it did to John Locke, that the indolent tribes must give way to "the industrious and rational" Europeans. No wonder Edmund Burke, attacking certain theories of natural rights, announced, "Art is man's nature"—that is, as social beings, we are what we make ourselves through collective action, not the splendid products of any blueprint.⁶

Burke did not deny the existence of natural rights but regarded those rights as seeds that yielded different forms in the diverse soils of culture and politics, the art that is human nature. Others were much harsher in attacking Wordsworth's idea that nature should be a teacher. John Stuart Mill called all political appeals to nature

nasty and obscuring: they superstitiously projected human values onto a mute and violent natural world, usually to defend a narrow and reactionary interest like the subjection of women, the preservation of slavery, or the glory of the monarchy. "The doctrine that man ought to follow nature," he wrote, "is equally irrational and immoral."⁷ For Mill, the human duty was instead to struggle against "nature": to drain swamps, channel rivers, and overcome our own natural barbarism—our love of power, our cruelty toward the weak, and our subservience to authority, all of which distorted personality and society. Our purpose was to replace nature with art.

This brief view of nature's political, ethical, and cultural uses is a reminder of why Wordsworth's invitation—let nature be your teacher—can seem so quaint today. Most of us know, or suspect, what history bears out: that "nature" has been a vessel for many inconsistent ideas, whether one claims to be following it or overcoming it. When we hear opponents of gay rights denounce "unnatural" sexuality, we may agree with Mill that "nature" in politics is an honorific for prejudice; but we also know that Mill's humanist program to master and reform nature is not innocent, and fostered its own kinds of moral blindness. Mill's rationalism and faith in progress nourished his enthusiasm for British empire in India, which he saw as an unregenerate mass of all-too-natural humanity that must be reformed. Americans who followed Mill's call to transform nature were sometimes imperialists, too, spinning administrative schemes for Native American resettlement, and military expeditions to Cuba and the Philippines. Some were enthusiastic eugenicists—sure that, if nature needed to be overcome and perfected, human nature was the place to begin. These agendas were integrally related to their ideas of nature, which might give one pause about harboring any idea of nature at all. Maybe "nature" is one of those ideas, like "race," that confuses more than it illuminates and does more harm than good.

At the same time, Wordsworth's picture of a deeply felt response to the natural world still resonates. I'd guess that most readers of this book have known some of the following experiences. You might have identified with, felt uniquely at home in, some landscape, whether the one where you grew up, the one you moved to as soon as adulthood allowed, or the one that you've only visited or glimpsed but that has always had a special claim on you. You might have walked into the mountains and, after a few hours, felt clearer, more alive, vividly aware of what matters to you and what is just distraction and time-wasting; or you might have woken up on a farm and felt intensely the nearness of living things, the ways that plants, animals, and soil are linked in growth, eating, and decay.

But we know, too, that these encounters with nature are themselves not natural; they are cultural. Wordsworth is the teacher who taught us to meet nature as a teacher—Wordsworth, John Muir, Annie Dillard, Edward Abbey, and the many friends, parents, and in-the-flesh teachers who inducted us into their ways of seeing and feeling. These heirs of Wordsworth are one side of a culture war over the meaning of "nature." Ranged against them are those who believe the world was made to be used—to be mined, grazed, harvested, and planted. The same Appalachian terrain that, in *Pilgrim at Tinker Creek*, taught Annie Dillard about the mystical power of ordinary places teaches other pilgrims contrary and no less obvious lessons: that coal is there to be dug and burned, that slopes are to be leveled for development.

And many of the most intense encounters with the nonhuman world are strange and disruptive, not lessons in any kind of harmony. You might have felt the macabre fascination of stumbling across a decaying carcass and feeling your eye focus on a seething layer of maggots, or held a cut of meat and sensed the spooky familiarity of the joints where it was cleaved, which correspond all too neatly to those of your own body. Maybe you helped to slaughter

something, a chicken or a lamb, and felt its brief struggle and spasms transmit a terror to your nerves that took hours or days to seep back out, and left you wondering about the boundaries of species and feeling. Maybe you have been terrified—caught in a strong current, separated from a friend on a windy ridge, intoxicated in a dark forest—and found yourself, half-panicked, superstitiously bargaining with higher powers for survival, ^{AND THE} ~~only~~ to toss ⁵⁰ aside the superstition with amusement and disgust when you were safe again. The nature that Wordsworth portrayed as harmonious in his carefully formed lines is all of these things, too, and so is the human mind that receives and answers it.

Come forth into the light of things? More like the cacophony of things, including many irresolvable contests over the meaning of "nature." We know too much, and have felt too many things, to learn in good conscience from the natural world.

Another reason Wordsworth's invitation is hard to take up today has, ironically, everything to do with "the light of things." What things reveal today is that they are neither natural nor artificial. And neither are we. The contrast between what is nature and what is not no longer makes sense.

The natural and the artificial have merged at every scale. Climate change makes the global atmosphere, its chemistry and weather systems, into Frankenstein's monster—part natural, part made. The same is true of the seas, as carbon absorption turns the oceans acidic and threatens everything that lives in them. The planet's landscapes, its forests and fields, along with the species that inhabit them, are a mélange of those we have created, those we have cultivated and introduced, and those we let live—or, in only the deepest jungles, have not yet reached. Even wilderness, that emblem of untouched nature, persists where lawmaking and management create it, artificial testament to the value of natural things.

The plants and animals that some people eat and others keep for company are human creations, through selective breeding

(which now seems almost artisanal) and pruning and grafting of the genome. The human body, seat of Wordsworth's mutually counseling head and heart, is no more purely natural than our grains and cattle. Tuned with vaccines, kept up with antibiotics, patched with surgery, every function extended by engines, screens, and data streams, we are cyborgs in artificial worlds, whether we are the paralyzed child who acts through his robot extension or just a bicyclist with black-rimmed glasses and a smartphone. If Nature were a place, we could not find it. If Nature were a state of mind, we could not attain it. We are something else, and so is the world.

Post-natural as we are, we have not advanced far toward Mill's ideal of emancipated mastery over nature. Instead, the more we understand and the more our power increases, the more our control over nature seems a precarious fantasy. We brew the storms, bring the droughts, and raise the seas, but we do not command our genies. Climate change unleashes forces like those of the ancient pagan imagination, in which nature was filled with arbitrary, violent gods—one for the thunderbolts, one for the sea—who warred with one another and made human lives their playthings. With technological mastery, we have remade that unmastered world. In our own bodies, there are ecosystems, colonies of bacteria that make their home in us, and whose health is as important to ours as our lives are to the future of the planet. Whether we look to the globe or to our own navels, we are imperfect, destabilizing, and vulnerable governors, apprentices without a master sorcerer.

Because the human impact on the planet has grown enormously over the past two hundred years, and especially the past fifty, scientists, as noted above, are discussing whether the earth has entered a new geological era: the Anthropocene, the age of humanity, when our actions are transforming the world. The idea of the Anthropocene is useful, but it needs to be seen in the right light. Despite its scientific trappings, it is mainly a cultural idea, and its potential

is political and ethical. Most important, the Anthropocene is a call to take responsibility for what we make, as well as for what we destroy. It is the starting place for a new politics of nature, a politics more encompassing and imaginative than what we have come to know as environmentalism.

Three Crises

The Anthropocene begins amid a threefold crisis—of ecology, economics, and politics. These are the three great modes in which humans make a home. (It is not just chance that the first two words derive from the Greek for “household,” *oikos*, and the last from *polis*, “city.”) The three crises share a starting point: the recognition that a system believed, or at least imagined and hoped, to be stable and self-correcting has turned out to be unstable and even prone to collapse.

Ecology first. The urgency of the Anthropocene begins with the realization that, after nearly ten thousand years of relatively stable climate and burgeoning human wealth, ecological systems are intensely stressed, and that their health or collapse, as well as the shape in which they will survive (if they do), is substantially down to human choices. Ideas about natural ecological equilibrium are gone. So are older fantasies, also rooted in ideas of nature, to the effect that the world was made to foster economic wealth and development.

Economics next. Modern economics rests on an image of inherent equilibrium: billions of decisions merge into a spontaneous harmony through the invisible hand of a pricing system that puts supply and demand into balance. When everyone is free to choose, efficiency reigns and all are better off. These are the premises of economics, the dominant social science of the age, and also the premises of a form of life: the market societies in which most of us live.

Our ecological crisis begins, in part, with the failure of economic harmony. The first lesson of environmental economics is that the invisible hand is (to mix metaphors) blind to so-called externalities. That is, the discipline of economic efficiency does not apply to actions whose effects we can offload onto others while avoiding all responsibility for ourselves. Greenhouse gases are a perfect global externality: mostly free for those who release them, they are soon perfectly dispersed through the global atmosphere, which distributes their harms around the planet.

The economists' term "externality" suggests an aberration, the incidental exception to a system that otherwise works,—but here, that is the reverse of the truth. What economic analysis treats as an externality, what is invisible in market transactions, is the globe that houses all economic activity. Needless to say, everything is inside *that* "externality." The harms that are invisible to the economy may overwhelm the system itself.

That is one economic crisis. Here is a second. Even when markets work normally, two hundred years of evidence suggests that they produce accelerating levels of inequality, levels so high that they are quite likely to become politically intolerable.⁸ This finding disrupts a familiar picture of the economy as a self-stabilizing system—a picture long associated with the "Kuznets curve," which showed economic inequality stabilizing at (arguably) moderate levels in wealthy economies. Ironically, this influential curve counted among its offspring an "environmental Kuznets curve," which showed pollution rising during industrialization, then falling in wealthy societies. Both versions now look like unwarranted extensions of the relatively favorable conditions of the mid-twentieth century. Today, greenhouse emissions continue rising with wealth, and so does inequality.

Both families of crisis, economic and ecological, reflect the same predicament: if we want a self-sustaining world, both social and natural, we must build and preserve it. Nothing inherent in the

physical world or social life will produce that stability by itself. What humans get will be no better or worse than what they have made.

The only way to build a shared living place deliberately is through politics. Collective, binding decisions are how people can give the world a shape that we intend. But here lies the third great crisis.

Of the major realms we inhabit—ecology, economy, and politics—politics was the first to be recognized as unavoidably artificial. The authors of the U.S. Constitution were already, in their own minds, drafters and framers, not servants of a natural order of authority. More than a century earlier, Thomas Hobbes had argued decisively that political power can only be artificial, and that in creating it, people take on the responsibility that theology and superstition assigned to gods: the task of creating an orderly world. The recognition that both economy and ecology are also created orders means that both are also partly political; they are political to the same degree that their shape is intentional, and inasmuch as they are not political, the shape that humans give them is inadvertent. The choice is between politics on the one hand and accidental world-making on the other.

This is an uncomfortable truth. Politics suggests instability, arbitrary power, intrusions on personal liberty and on local harmonies. It is politics that authorizes strip-mining and produces mass surveillance in the United States, takes Chinese peasants' farmland for development, leases African communal lands to Chinese agribusiness, and sets off wars in Iraq, Afghanistan, and Ukraine. Shouldn't we avoid rather than celebrate it, and find some other, more harmonious order—economy or ecology, say—to lean on instead?

The attraction of getting away from politics is potent and perennial. The problem is that it is merely a fantasy. No order that grows spontaneously will stabilize and preserve the world. The

alternative to spontaneous order is deliberate creation, and its source must be politics. Since we cannot have spontaneous order in ecology or in economics, all that remains is to create order deliberately through politics. It is perfectly possible, of course, to foster a *political* embrace of spontaneity, local harmonies, and markets, and in many cases that may be just what we should do. But the embrace must be political: it depends on deliberately adopting rules and institutions in which spontaneity can emerge. We lack those now—at least in any form that can match our ecological and economic crises.

But back to the crisis of politics. As with the economy, part of the political crisis is that familiar approaches are failing to match new problems. All serious responses to global climate change—and to inequality in global capitalism—face the same basic problem: there is no political body that could adopt and enforce them. Breakdown in a global system outruns the reach of any national government. Serious climate-stabilizing policies impose costs on domestic economies in order to benefit the world population and future generations. Although national constituencies in the rich countries will stand for, even urge, some such policies, they have not been nearly enough to slow the rate of climate change. National self-interest breeds weak responses and failure to cooperate. The discovery that politics is the necessary source of a solution to global problems turns into a troubling meditation on the barriers to a political solution.

This unhappy situation coincides with a larger crisis of faith in the possibility of political order. It was only in the twentieth century that democracy, long a radical rallying cry and, before that, a term of abuse and a synonym for anarchy, became instead the sole standard of political legitimacy. Since the start of the twenty-first century, short-lived confidence in a global democratic tide has receded to reveal a landscape littered with doubts. The United States recently launched a pair of destructive and wasteful wars on dem-

agogic grounds; in both, an optimistic version of “exporting democracy” came to ruin. At the time of writing, Europe’s democracies seem to have put themselves in an ungovernable corner in the poorly coordinated, unpopular, and not-very-democratic European Union, and openly nondemocratic governments such as China’s are enjoying a new self-confidence.

Be that as it may, there is no alternative to political engagement with our three interlinked dwelling places—ecology, economy, and politics itself. Recognizing this turns the idea of nature on its head. “Nature” has had many political meanings and alliances, as diverse as democracy and monarchy or hierarchy and equality, but it has always had one defining characteristic. In a purblindness that has marked all of human history before today, nature has been the thing without politics, the home of the principles that come before politics, whether those are the divine right of kings or the equality of all persons. That purblindness is coming to an end with the Anthropocene. The next politics of nature will be something different and more intense: an effort at active responsibility for the world we make and for the ways of life that world fosters or destroys.

Nature as Politics and Anti-Politics

Why talk about an intensified politics of nature, rather than a politics without nature? Why not say that “nature,” that all-too-flexible argument stopper which never quite succeeds in ending the argument, is just an archaic way of talking and thinking, best overcome and discarded? There are several reasons that I don’t think this is either possible or desirable. The most telling is that ideas about nature have been much more than rhetorical flourish or metaphysical gloss. They have deeply shaped the landscapes, economies, and social practices in which we continue to live. The material world—so-called natural and so-called artificial—that we inhabit is in many ways a memorial to a long-running legacy of contested ideas

about nature: how it works, how we fit into it, and what we have at stake in doing right by it.

What does it mean to say that ideas have shaped landscapes? Is this "idealist history," which imagines that concepts create events? No, but it is history that takes ideas seriously in quite a specific way.

We shape the world by living. Our lives knit into a kind of collective landscape architecture. By the ways we eat, move around, stay warm or cool, and amuse ourselves, we create the subsystems of a vast metabolism tying us at every point to our environment. We call these subsystems the energy economy, the food economy, the transportation system, and shelter—cities and suburbs.

We do not act blindly, though we often see only a part of the whole system. From the beginning, ~~as noted in the Prologue~~, there has been a link between how Americans have acted toward the natural world and how they have imagined it—as a wilderness designed by God to become a garden, as a piece of symbolic art with the power to bring spiritual insight, as a storehouse of essential resources for national wealth. *Imagination* is less precise, less worked-out, more inclusive than *ideas*, and it belongs to people in their lives, not to philosophers working out doctrines. Imagination is a way of seeing, a pattern of supposing how things must be.

Law is a circuit between imagination and the material world. Laws choreograph human action in a thousand ways: governing the construction of highways and the electricity grid, allowing and regulating mining and drilling, setting the price of gasoline and carbon emissions (if the latter have a price), guiding and limiting the growth of cities and suburbs, shaping the use of farmland. Such legal strictures channel our lives, providing the implicit blueprints of the landscape architecture that we impose on the world.

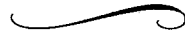
Laws have various sources, among them economic self-interest and political partisanship. Imagination, too, is part of what makes law. Laws play out the logic of competing versions of environmental imagination. American environmental laws may be sorted ac-

ording to the four pictures of the natural world that were delineated in the Prologue: the *providential*, the *Romantic*, the *utilitarian*, and the *ecological*. Each image contributed to forming a landscape, as well as to shaping a mode of identity, activity, and experience on that land.

Consider the pro-development laws, infused with the providential vision, that turned early Americans into an army of settlers. Under their aegis, pioneers treated the world as conditionally bountiful, the way providential imagination drew it. The Jeffersonian surveyors' grid and the statutes creating private farms produced an American geography where these providential attitudes made sense as a human relation to nature. This was true even to the point of making settlers blind to the inconvenient facts of weather and geography. The repeating rectangles of the settlement grid galloped over streams and wetlands and mounted the high plains, where rainfall was too scant to support farming. After a few unusually wet summers and warm winters, the seasons returned to normal and threw back the settlers, who became the first modern ecological refugees in North America. The fact that the land itself curtailed settlement in this case only highlights by contrast how successful the project of continental settlement otherwise was. The ecological transformation and the cultural developments around it were world-historical, yet Americans often discussed them as if they were the most natural things in the world, the expected upshot of a people meeting a continent. Soon another wave of settlers returned to the Great Plains, armed with technology to extend the grid westward, its lines now framing the crop circles of center-pivot irrigation.

A vision suffused these clearing and settlement efforts, a picture of nature with religious and philosophical sources. The world was a potential garden that existed to serve human needs, but only if people developed it with labor and settlement. This vision was the keystone of an idea of national mission: turning the continent into

WHAT KIND OF DEMOCRACY?



DEMOCRACY HAS NOT BEEN DOING WELL. For this reason, now is an awkward time to argue that it must be the fulcrum of the Anthropocene. In the United States and Europe, democracies have rushed into foolish wars and stumbled in the face of economic crises—or created those crises. At the time of writing, the North Atlantic democracies are splitting into elite technocrats, who wish they could govern without consulting the masses, and angry populists, who would like to liquidate the technocrats. Nondemocratic governments openly disdain democratic pieties. Official Chinese voices even suggest that American failures prove the future does not belong to democracies.

Democratic failures are often failures to impose self-restraint, and self-restraint is exactly what environmental politics needs. In the past fifteen years, democracies have failed to pay their burgeoning debts and have started wars that turned out to have little credible rationale and no decent ending. Climate change looks like another unsustainable deficit that is going to keep growing, a burden on future generations to pay for today's convenience. The preferred responses to climate change, too, have an aspect of militarized fantasy: satellite mirrors to deflect solar energy from the earth, and other sci-fi technologies. These climate failures are part

of a broader environmental failure. Although there have been important successes, notably anti-pollution laws, resource use and environmental impact continue to accelerate in the world's richest democracies, and all the more in fast-growing poorer countries. Water shortage, soil health, toxicity, and loss of biodiversity are all looming sources of future crises.

In recent decades, too, a basic change in the terms of government has narrowed the scope of democratic rule. Independent central banks, supra-national organizations like the World Trade Organization and the European Union, and constitutional limitations on taxation and spending have all taken economic governance out of the hands of popular majorities and placed it with technocrats and judges. The ideas behind these moves are twofold: first, that democracies are not to be trusted with their own most basic affairs, and, second, that there is one right way to organize economic life, which experts know and administer and everyone else must accept. These ideas coincide with a broader exhaustion in the rich modern tradition of political economy. In the last Gilded Age and in earlier economic crises, many alternative visions of economic life competed for popular attention: some of these influenced anti-trust law, labor legislation, unionization, and the New Deal. In the past decade, economic crises and suffering, even widespread discontent with the way our market capitalism is working, have inspired mainly austerity in Europe and gridlock in the United States. Democratic citizens' capacity to rework their own common lives has been hollowed out in overt and explicit ways, and eroded by a decline in political imagination.

At the same time, the power of organized money in politics has only increased. It is a common—and fair—complaint that the U.S. government is distorted through and through by the political power of wealth. In environmental matters, the problem is even worse. Wealth is produced and sustained by an economy that effectively subsidizes fossil fuels (by treating greenhouse-gas emissions

as costless) and industrial agriculture (through explicit subsidies to big producers and regulatory tolerance of massive feedlots and slaughterhouses), along with every individual decision to buy from those industries. It's as if the Constitution gave three votes to everyone who wants to keep things as they are, and only one vote to those who seek to change them.

Real environmental reform is a matter of political economy. That is, it requires engaging the foundations of economic life: what kind of wealth an economy produces, how it distributes that wealth, what kind of freedom and equality it promotes, and what provision it makes for the future. These are political questions whose answers must be worked out through economic institutions. But the politics of modern democracies has become less able to engage such questions, even as the questions have become harder and more urgent. This is the crux of the difficulty.

The problem is not entirely new. In the 1970s, some environmentalists took democratic failures as reason to hope that nondemocratic governments would save the natural world. Such arguments were motivated by the hope that state socialism could avoid capitalism's demands for economic growth. The environmental record of the Soviet bloc established that, on the contrary, the pressure for economic growth was just as powerful there as in the West. Worse, those nondemocratic systems gave ordinary people no way to resist environmental destruction: while environmental politics was emerging in its modern form in the West, the heavy industry of the Eastern bloc created some of the worst disasters of the century, from the Chernobyl reactor meltdown to the death of the Aral Sea. Nonetheless, today there are resurgent fantasies of green authoritarianism, this time hung on China, with its state-led investment in solar cells. Where older hopes for an authoritarian savior expressed discontent with capitalism, today's attraction to China is rooted in weariness of sclerotic democracy. China's overall environmental record, though, is hardly better than the Soviet

Union's was, and its economic growth has massively increased the human impact on the planet. The lesson of the past fifty years is that humanity itself is the challenge. No political system has succeeded by contradicting the demand for more: more energy, more calories, more technology, and so more pressure on natural resources of all kinds.

It is not surprising, then, that many people hope technology will save the world. The greatest optimism rests on clean and renewable energy sources, carbon-eating organisms, and other fixes that could reduce human pressure on natural systems as thoroughly as steam power and internal combustion lightened the economy's demands on human muscles. Those technologies freed people from exhausting labor and early deaths. Mightn't the next wave of technology free the planet from some of the more crushing human demands? A weaker form of optimism looks to technology as the key to managing a continuing crisis: geo-engineering will not free the planet, but it may make a carbon-dense atmosphere more livable by reducing its effect on temperature and climate.

Maybe technological optimism will prove apt. Any environmentally responsible future would become much more likely if technology lessened the conflict between human flourishing and ecological health. There are, however, two reasons to doubt that technology alone could do the job. First, the environmental impact of innovation has always been a double-edged sword. With one edge, new technologies have made resource use much more efficient; for instance, the so-called carbon density of advanced economies, their carbon production per unit of economic activity, is much lower than in developing countries. This is a benefit of efficient energy production and use. The other edge of the sword, though, is a vast increase in overall resource use. As China has developed, for instance, its carbon density has dropped, but its overall carbon emissions have exploded, so that it in 2007 it surpassed the United States as the world's largest emitter. This example captures

the general pattern: as human powers increase, each individual puts more pressure on the natural world. The second limit on technology's power to stem environmental crisis is that no technology can tell its users how to use it, or how to shape the earth with it. But those questions will need answers. Whatever innovation brings, people will continue to shape the earth by inhabiting it, changing everything from its atmospheric cycles to its soils and habitats. It is much too late to imagine that any technology could enable humanity to "stop disturbing" the earth. Instead, every technology will become part of the joint human-natural system in which we make and remake the world just by living here.

Technology, then, brings efficiency, but it brings neither restraint nor purpose. People need both in engaging the planet. Understandably, then, many look for environmental hope in culture and consciousness. These, after all, are where individuals, families, and communities find both restraint and purpose. At some point, many meditations on environmental questions conclude that consciousness must change, or nothing will change. People must learn to make more modest choices, find satisfactions that exact a smaller toll on the natural world. After all, technology and democratic politics channel the values and priorities of individuals, families, and communities. In some way, these are always the local roots of a national failure of self-restraint and purpose.

The emphasis on culture and consciousness, then, cannot be wrong. But is it helpful? History suggests that changes in consciousness are a necessary precondition for big and material changes in the human relation to the natural world, but also that they are not enough. By themselves, changes in personal values make differences on the margins of, say, buying decisions, or even choices of career, but they do little to change the larger systems that organize the relationship between humans and nature. Say that 60 percent of Americans come to value sustainably raised food and low-energy commutes enough to spend money on them. As most U.S. readers

will realize on the basis of experience, the effect of this change will be to make sustainable food and urban housing into luxuries, inducing more production of these things, but also pushing the less wealthy into exurbs and utilitarian supermarkets. Some environmentally beneficial changes can follow from shifts in consciousness alone, but the biggest material changes happen through changes in the legal and economic infrastructure that guide human energies and activity. So long as the economy treats greenhouse-gas emissions and soil exhaustion as free and the legal system permits the mass feeding operations and slaughterhouses of industrial agriculture, a good deal of changed consciousness will mean no more than shuffling furniture between the first-class and second-class cabins of the *Titanic*.

Ecological Economics

With this in mind, many hope that economics will be the force that saves the world. The ideal of much of the U.S. policy elite is an economy in which every environmental effect of an action is expressed in monetary terms as a cost or a reward. Buy gasoline for your car, or burn coal in your power plant, and you should pay a premium that captures the effect of carbon emissions on climate change. On the reward side, farm in a way that preserves topsoil or wetlands, supporting soil fertility and clean waterways, and you should receive a payment or tax credit. If every act has consequences, the logic goes, let every consequence have a price. Such pricing would drive down use of fossil fuels and other harmful technologies, and encourage environmentally friendly alternatives. It would also spur research in alternative energy and soil-preserving technology. With a green hue tingeing every decision, the whole economy would tilt toward sustainability.

This is a sort of eco-utopian economics. In its ideal form, it would harmonize the ecological effects of human activity with the

rewards and penalties of the economy by building complete ecological information into every choice. It offers a "corrected" market as a neutral framework to reconcile our appetite for the world's resources with the earth's finitude and fragility.

This market vision has a special affinity with ecology: both are ways of engaging the world's complexity. "Neoclassical" economics praises markets for solving the insufficient-knowledge problem: that the information relevant to economic choices is too diverse and widely dispersed for any decision maker to know it all. Markets gather this information through as many small, locally informed decisions as there are human actions in a day. When you decide between copper and ceramic tile, the price tag summarizes a huge amount of information: orders from factories in China, a recession in Europe that drives down copper use there, and worries over political instability in copper-producing countries. You don't need to know any of this: the higher price of copper "tells" you enough to coordinate your choice with everyone else's.

This image of social life as too complex to be managed from any one perspective resembles the picture of the natural world that ecology introduced: everything is connected to everything else, often in subtle and hidden ways, and any attempt to master the whole from a single standpoint is hubris and likely to turn out badly. We live in the age of complexity, in both economic and ecological terms. The ecological revolution has thus become an invitation to recast environmental regulation economically, as an ecological market, able to gather and integrate the complex, dispersed facts of the natural world through millions of individual decisions, organized into a single system by the price mechanism, the universal translator, which makes it possible to measure any choice—what to use, what to save, what to waste—in terms of all possible others.

The ideal of an ecological economy also grows out of the prominence of cost-benefit analysis. Whether one sees it as desecration

of precious incomparables such as life and health, or as simple rationality in a world of inevitable tradeoffs, the upshot of such analysis is that all values can be expressed as prices—and, to be useful in decision making, should be so expressed. The ecological-utopian economy would combine this ambition to price everything with the neoclassical embrace of complexity, the reliance on dispersed, individual choices rather than on a central regulator.

By combining economic means with ecological ends, eco-utopian economics gives the appearance of marrying hard-headed realism to charismatic radicalism, at once making environmentalism mentally tough and helping economics to become spiritually deep. But the idea that "getting the prices right" can produce a neutral architecture for environmental choice is a fantasy. Economics depends on political—which should be democratic—judgments about nature's value. Without these, it is both conceptually incoherent and useless in practice.

A scheme relying on ecological economics depends on "getting the prices right" so that individual decisions entail appropriate penalties and rewards. Ordinary economic activity—not the eco-utopian kind—produces prices automatically: gasoline prices rise and fall with summer demand, changes in car use by the Chinese, and political vicissitudes in the Middle East. By contrast, in ecological economics, prices arise only through regulation; in fact, the starting point for all economic study of environmental problems is the insight that markets do not spontaneously produce prices for resources that nobody owns, such as clean air or a stable atmosphere. The result is that markets effectively treat these resources as "free," and in consequence they are used wastefully. The starting point of eco-utopian economics is to create prices deliberately where none arise spontaneously. But how, then, to decide what the prices should be? The answers can only come from political judgments.¹

Economists try to generate prices by measuring individual preferences for unpriced environmental goods—basically, how much

people value air, water, biodiversity, etc.—but to do so they must choose tools for measurement, and it turns out that their choice of tools makes a big difference in the “facts” about preferences that they end up “finding.” The act of measuring itself does a lot to produce the reality it aims to discern. Moreover, individuals’ environmental attitudes do not spring fully formed from their heads, but are themselves the products of previous policy judgments. People learn to value nature by interacting with the world in which they are born and grow up. When that world includes national parks and other public lands, intact forests and charismatic species, these become treasures. Otherwise, like the giant ground sloth and dire wolf of ancient North America, they fade until not even a sense of loss remains.

Moreover, just as we are products of past judgments, so our judgments today shape the experiences and values of the future. In making a world, we also contribute to making those who live in it. This may not be a welcome burden, but it is not optional. Environmental policy making is a choice among futures.

Other questions that masquerade as technical are really ethical and political. How much should future interests—a life in 2100, for example—count in calculations today? Again, there is no merely technical answer. Cost-benefit analysis of decisions whose repercussions extend across many decades must consider effects on people not yet born. All standard methods give those future interests less weight than present ones. This “discounting” of future interests began as an accounting convention: in decisions about expenditure and investment, it is assumed that a dollar of returns in the future is equivalent to the smaller amount that would have to be invested today to reap that future income. Discounting persists for a variety of ethical and practical reasons, which people have debated intensively. The point here is not to assess those arguments, but to make a more basic point: this is another choice among values that must come before the technical procedure.

These considerations show that, although markets and economic analysis are valuable tools for coordinating choices and implementing collective commitments, they cannot substitute for those commitments. Economic analysis depends on political judgments, past, present, and future, about how to value the natural world. In shaping the world, we shape ourselves and future generations, as we are shaped in turn by the world that past generations made. This is the Anthropocene reality. Political judgment must precede economic pricing—not because politics is always morally superior, but because the valuations that economic analysis and market-creating policy require simply cannot come from economic analysis itself. With respect to the natural world, that analysis is necessarily incomplete, and political decisions about how to put cultural values to work are what fills that gap.

Economic analysis aims at a kind of neutrality and objectivity: ideally, it does not say what people should value—it only measures what they do value. Appealing to it is a way of avoiding divisive political and cultural conflict. Unfortunately, however, it depends on noneconomic values, and trying to impose “economic answers” on ethical and political questions is a form of ideological question-begging. The limitations of economics are particularly acute in connection with the natural world. Aiming at economics-style neutrality may, ironically, degrade the quality of decisions by diminishing the capacity to reflect on and argue over basic values and disagreements. Reflection and argument take effort and practice, and when people are embarrassed to express commitments that seem “subjective” or “culturally relative,” they lose practice and slacken effort. A part of what we need to do—it’s not enough, but necessary—is just to be bold in voicing the visions of the natural world that we carry and the ways they matter to us. The benefits could be greater understanding of what matters most to any one person or group, a clearer sense of what unites us, and a sharper image of our divisions. A critical part of environmental politics is

what philosopher Charles Taylor calls an ethics of articulacy—the work of saying what we mean, finding words for what we see and feel. There is no way around this kind of work, so we might as well get better at it.

Political judgment, then, makes an economy, and an economy goes far toward making a world. Politics is the fulcrum, not because it is attractive or easy, but because the questions about what kind of world to make cannot be answered without collective choice.

Democracy and Post-Humanism

This brings us to democracy. Today democratic consent is the only widely accepted way to make political power legitimate, and for very good reasons. It expresses two critically important ideas: that power should not be exercised over people without their consent, and that all individuals should have equal voice in the question of consent—in saying yes or no to a law or a government. But democracy's standing is less secure than this quick summary suggests. Widespread acceptance of democracy as the standard of political legitimacy can be thin and nominal: it is effectively universal, but not because of deep commitment. In fact, as noted at the beginning of this chapter, pieties about democracy are now under pressure from, and sometimes yielding to, technocratic government at the heart of the historically democratic world, such as Europe, and assertive authoritarianism in countries such as Russia and China. This newly evident fragility is a reminder that much of democracy's seemingly universal triumph came from the failure and decline of alternatives, rather than from affirmative democratic success. Moreover, even democracy's thin universality is novel, a mere wrinkle in history. Less than a century ago, it was common to say that democracies were weak, enervating, feckless, and that stronger, more demanding forms of government must rise to replace them.

The romance of authoritarianism was a major theme of the twentieth century, with fascism being only the most indelible instance, and it would be complacent to suppose that the romance will not return. Not all of its variants are revolutionary; indeed, some of the most important today are technocratic and distinctly conservative in their relation to the existing order of power and authority.

Disgust with democracy grows where democracy palpably fails, and failure has recently seemed to be its specialty. Here we return to the irony that opened this chapter: the awkwardness of calling for more democracy when democracy seems a formula for failure. Today's American voters, the country's political parties, and the government they form are unlikely to strike anyone as the source of attractive answers to the question: What kind of world shall we make together? In fact, their answer is already visible in the world we are making, and its drawbacks are evident. Whatever else it means, a call for deepened democracy had better not amount to "More of this, please!"

It will not do to raise pious calls for democracy just because democracy is abstractly a good thing. The Anthropocene question—what kind of world to make together—should be taken as a challenge to democracy. The test is whether citizens can form the kind of democracy that can address the Anthropocene question, the question of what kind of world to make. A democracy that cannot do this will have marked itself as inadequate to its most basic problems.

A commitment to democracy must not be a pious test of faith in a failing system. It must be a commitment to producing democratic politics that can meet these challenges, that can achieve strength and decisiveness of the most delicate kind: in favor of self-restraint.

To ask the question, "What kind of democracy?" means asking both "What kind of democracy could address the Anthropocene