Why Sustain What We Do Not Value?

Why Value What We Are Not Moved to Sustain?

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Introduction

 I am worried that our unsustainable practices thrive in significant part because we lack compelling reasons to sustain what we do not value and to value what we are not moved to sustain. This is not a practical claim; it is a philosophical one. My fear is that we do not have a coherent understanding of the moral significance of the natural systems upon which we depend, the natural resources we are over-exploiting, and the nonhuman living beings who are forced to compete with us for access to those same systems and resources. It is hard to find a natural resource on the planet that is not already being exploited or that is not an object of commercial greed.[[2]](#footnote-2) Today, over 60% of vital ecosystem goods and services are being used unsustainably, and this means, by definition, that we are threatening today the ability of those tomorrow to meet basic needs and simple wants. We are depleting groundwater supplies, degrading agricultural soils, overfishing the oceans, cutting forests faster than they can re-grow, leveling mountains for nonrenewable sources of energy, and filling in coastal and wetland areas in ways that exacerbate the devastating effects of floods and hurricanes. Our dependence on fossil fuels has motivated ecologically destructive drilling and mining methods, caused air and water pollution hazardous to human health and that of other life forms, and blanketed the globe with greenhouse gases that are affecting global temperatures and threatening catastrophic changes in the Earth’s climate patterns. Our conversion of forests, grasslands, and wetlands to agriculture and urban development has increased the species extinction rate by as much as 1,000 times background rates, and we are currently threatening the precipitous extinction of one-third of the mammal, bird, amphibian, and wild plant populations on the globe. And as we ravenously consume the Earth’s natural resources, we continue to grow in number, our population more than doubling in the past fifty years.

 Why are we seemingly impotent to make changes that will reverse the devastating effects of our own actions on the ecological health of the planet? Environmental economists who concede that our present environmental practices are “uneconomical” will trace Pareto inefficient practices to market failures--externalities, open access resources, non-rival and non-excludable public goods, and information asymmetries (to name only a few). They will thus seek the elimination of “dirty subsidies” that encourage, rather than discourage, environmentally wasteful practices, and they will strategize about the effective use of command and control regulations, pollution quotas, trading regimes, taxes, tariffs, and better-defined property rights as means of correcting market imperfections.

My project in this paper is not to find fault with these strategies. While I cannot help but wonder whether calling on committed capitalists to cure the ills of capitalism is not like leaving one’s injured dog at the taxidermist, I shall resist the temptation to suggest that there are some things that cannot be commodified, and there are some things that ought not to be, even if they can be. Instead, I want to suggest that our environmentally destructive practices may reflect a philosophical failure that is far more serious than the failure of market mechanisms. As I shall discuss, our leading schools of ethical thought are deeply anthropocentric. As such, they appear to license the exploitation of “natural capital” so long as that exploitation does not violate the aggregated preferences, personal interests, or individual rights by which leading utilitarian and rights theories specify the parameters of permissible action. As such, efforts to employ their precepts as a means of defending accounts of weak sustainability against charges of illicit anthropocentrism are bound to disappoint. And efforts to invoke them in the service of bolstering competing accounts of strong sustainability are bound to founder. We are thus in need of a moral framework that allows us to give voice to deep-seated intuitions of a non-anthropocentric sort.

In Part I, I shall lay out four accounts of sustainability that are familiar to those who work on the questions of what we are obligated to sustain and why. As I shall demonstrate, these various accounts draw their moral sustenance from our dominant schools of moral thought and are thus hostage to the weaknesses of those theories as much as they are beholden to them for their strengths.

In Part II, I shall explore how theories of so-called “weak sustainability” implicitly ground their tenets in the preference utilitarianism that undergirds modern welfare economics. They thus invite the familiar sorts of counter-arguments that can be levied against any theory that takes things to be valuable only if, and only to the extent that, they are valued by humans. As a means of answering these counter-arguments, I shall suggest that accounts of weak sustainability might do well to take seriously the philosophical commitment implicit in utilitarianism to include in measurements of welfare all forms of welfare that can be possessed by entities that can experience pain and pleasure and that therefore have preferences that can be satisfied or thwarted. When so expanded, these theories of weak sustainability are far less anthropocentric, and are thus far less vulnerable to charges that they will permit the continued decimation of the environment in the name of satisfying human greed. Yet as I shall make clear, these theories will still be unable to capture the intuitions of those who take natural resources, systems, spaces, and places that *a fortiori* lack sentience to be valuable in their own right, rather than merely as instruments of welfare.

In Part III I shall ask whether those who have such residual intuitions, and who are thus prepared to defend a theory of “strong sustainability,” would be able to build such theoretical muscle by employing the moral machinery of deontology. Could they predicate strong sustainability on claims that natural entities, both sentient and nonsentient, have rights? And would the invocation of nonanthropocentric rights really generate obligations to conserve the natural world so as to halt our presently voracious consumption of its treasure? As I shall reluctantly argue, the answer to this question is probably no. Deontology has a number of scope limitations that will preclude its application to a wide array of environmentally exploitative practices and that will forestall its use even by those who would happily wield claims of right on behalf of nonautonomous, and even nonsentient, entities. Proponents of strong sustainability who hoped for more than instrumental arguments for environmental protection will thus find that deontology give us grounds to value and protect species, ecosystems, and biospheres for our own sake, but not for their own sakes. And as such, deontology fails to arm strong sustainability proponents with means by which to dispute environmentally destructive practices that will be of net benefit to *persons* (as judged best, perhaps, by their market practices).

In Part IV, I shall close the paper with one final effort to locate strong sustainability on the moral high-ground. I shall suggest that on our best aretaic theory—our best theory of what is required in order to be persons of virtuous character—we ought to cultivate dispositions that are inconsistent with actions that treat the environment as a mere means to our ends. As I shall confess, however, this philosophical strategy invites difficulties of its own. So proponents of strong sustainability may find it a shaky foundation upon which to construct their account of why we should conserve what we do not ourselves value.

I. Familiar Concepts of Sustainability

It has become commonplace in the literature on sustainability to lay claim to, and assign to others, one of four positions concerning what we must sustain and why.[[3]](#footnote-3) In turn, these positions are thought to imply various commitments concerning the substitutability of forms of capital, both natural and artificial, and the prioritization of needs and wants both in the present and in the future. The first two of these four positions are thought to be variants of so-called “weak sustainability,”[[4]](#footnote-4) while the second two lay claim to commitments that entail considerably more onerous obligations of conservation, the fourth position constituting a full-throated demand for “strong sustainability.”

On what has been termed a “very weak” theory of sustainability, both individuals and organizations (e.g., legislatures, agencies, city councils, corporations, small businesses) have obligations to preserve “total capital.” Total capital is comprised of both raw Earthly resources—what many now call “natural capital”—and what I shall call “artificial capital,” a term that captures Marx’s category of “instruments of labor;” namely, products generated from raw resources by the investment of human ingenuity and labor. On this theory, raw resources can be consumed so long as aggregate social welfare is preserved or enhanced by the goods into which these resources are converted or by other forms of compensation. When the loss of natural capital can be offset by the substitution of artificial resources, there can be no objection, on this theory, to such a substitution, and hence, no objection to the complete exhaustion or elimination of those raw resources. And what constitutes the measure of substitutability? When can our consumption practices comfortably outpace the ability of a natural resource to replenish itself (e.g., by adopting fishing techniques or quotas that will lead to the collapse of a fishery)? The answer, on this theory, is given by the net effect of substitutes on human welfare. If ready substitutes generated artificially will provide the same measure of welfare as did the goods and services that derived from natural capital, then there is no basis for complaining about their substitution. Thus, if the substitution of Krab (made with plentiful Pacific whiting) for crab does not come at a net cost to human welfare, there can be no objection to the continued depletion and ultimate extinction of snow and Russian king crabs. And if the substitution of plastic trees for real trees will not diminish human welfare (because they can be engineered to perform all of the functions valuable to humans), then this concept of sustainability will deem the substitution of plastic forests for natural ones to be sustainable.

On this first theory, not only are the effects on human welfare the measure of whether forms of resource consumption are sustainable, but those effects are to be weighted more heavily to the extent that they fall on present rather than future generations. “[E]ach generation is allowed to favor itself over the future,” writes Robert Solow. “The duty imposed by sustainability is to bequeath to posterity not any particular thing . . . but rather to endow them with whatever it takes to achieve a standard of living at least as good as our own. . . We are not to consume humanity’s capital, in the broadest sense.”[[5]](#footnote-5) Moreover, successive generations can be expected to have “adapted preferences”—namely, so long as their needs are met, they cannot be expected to miss what they have never known. “How many people lose sleep because it is no longer possible to see a live Dinosaur?” asks Wildfred Beckerman.[[6]](#footnote-6) And thus while our present consumption patterns may drive tigers, rhinos, and blue whales to extinction, they may prove to be weakly sustainable if future generations will not know enough to miss them and if benefits to human welfare accrue that compensate for whatever losses are inflicted upon those who experience these extinctions as losses.

The second account of sustainability that is commonly labelled “weak sustainability,” varies from its even weaker sibling only because those who propound it are willing to stipulate that, at this point in human history, there are numerous functions performed by natural systems that cannot be replicated efficiently by artificial technologies. For example, human survival is presently hostage to the Earth’s biogeochemical cycles, and these thus count, in David Pearce’s terms, as “critical natural capital” which cannot be traded for artificial capital without a loss in human welfare.[[7]](#footnote-7) It may turn out, as well, that certain aesthetic experiences that enhance human welfare cannot be obtained from artificial replicas, and if this is the case, and if other aesthetic experiences that *can* be obtained from artificial replicas cannot fully compensate for the loss of these aesthetic experiences, then the natural sources of these experiences will also count as “critical natural capital.” Thus if no amount of realism can make a replica of the Grand Canyon as awe-inspiring as is the real Grand Canyon, and if no degree of artistry can cause a plastic forest of redwood replicas to elicit the same sense of wonder and tranquility as can the real California Coastal Redwoods, and if these aesthetic experiences cannot be off-set by those that can be gleaned from other natural sources or from some set of artificial sources, then the Grand Canyon and the forests of California’s Humboldt County must be considered critical natural capital and sustained on this theory of sustainability.

Because life-sustaining ecological processes operate over long time-scales, this version of weak sustainability inevitably weights the needs of future generation over the wants of the present generation. Human welfare is deemed to be contingently but deeply rooted in ecosystem health, and hence, we are not entitled to gratify desires today at the cost of the resiliency of long-term natural processes upon which the satisfaction of future needs will depend. Nature’s raw resources and complex systems are solely of instrumental value, but on this account, inasmuch as there is no prospect of crafting artificial substitutes of equivalent value to, say, the watershed protection functions of tropical rainforests or the pollution-cleansing and nutrient-trapping functions of wetlands, their lexical value over non-critical natural goods demands that they be sustained.

The third theory of sustainability, which has earned the term “strong sustainability,” calls for the preservation of “irreversible natural capital.” Such a theory collapses into the prior theory if what counts as irreversible natural capital is identical to what counts as critical natural capital. But on this theory, there may be many irreversible losses of natural capital that do not impact humans at all, and that thus cannot count as losses of critical capital. As this implies, strong sustainability denies that human welfare constitutes the sole and only touchstone of whether and to what extent natural systems and nonhuman entities have value. It thus marks the transition to accounts of sustainability that seek to sustain more than that which sustains us. To those who despair the past losses of species that made no dent in human welfare, and to those who assign value to works of nature for which there are functionally equivalent substitutes, this theory gives expression to their implicit pluralist convictions that things other than human welfare are of intrinsic value. On this theory, while losses of natural capital can be compensated for by gains in artificial capital, those substitutions cannot come at the cost of natural capital that cannot be replenished, even when such irreversible losses would result in gains to humans. Thus, no amount of krab can compensate for the loss of Russian crabs, no amount of Yellowfin tuna can substitute for the extinction of Bluefin tuna; and no amount of Pacific halibut can substitute for the collapse of the Atlantic halibut fishery.

On this third account, needs take precedence over wants, and the needs that count include the needs of non-human entities, as well as the future needs of both humans and non-human entities. Artificial substitutions for natural goods and services are legitimate so long as they represent adequate substitutions for all entities of value that depend upon them, and losses are consistent with the sustainability of a resource so long as those losses do not cross ecological thresholds so as to prevent resilience. Thus, natural migratory corridors may be bulldozed if artificial landscaping can restore places for restful stop-overs; tree cover can be eliminated along the thoroughfares of Costa Rica so long as ropes are strung that allow monkeys to swing across lanes of fast-moving traffic; and wetlands can be filled so long as off-sets are purchased elsewhere that prevent a net loss in functionality for both human and nonhuman species that are functionally dependent on their services.

The strongest theory of sustainability—denigrated by some[[8]](#footnote-8) and embraced by others[[9]](#footnote-9) as “absurdly strong”—rejects the description of nature (its raw resources, its ecological systems, its diverse species) as “capital” and rejects the notion that the only check on welfare-enhancing trades that substitute artificial goods for natural goods is the injunction not to cause irreversible losses to nature’s bounty. On this view, the value of things that have been produced through billions of years of evolution is not given by the degree to which those things instrumentally advance human welfare. We are, on this view, not entitled to elevate gains to human welfare above the satisfaction of the needs of the other 10 million-plus species with whom we share the planet. And this is true even when our consumption will not cause irreversible losses to the library of evolution. Instead, we must share the Earth’s limited resources and sustain its life-supporting ecological systems in ways that answer to a theory of distributive justice that takes nonhuman entities to be independently deserving recipients.

Once one appreciates the continuum of positions that lie between very weak sustainability and very strong sustainability, it is tempting to think that accounts that are properly located at the weak end of the spectrum cannot claim to be theories of *environmental* sustainability at all. As Alan Holland observes, “an account of sustainability in terms of non-declining human welfare will not necessarily yield a defense of natural capital on its own.”[[10]](#footnote-10) In other words, if human welfare is the sole and only thing of value, then the degree to which natural capital should be valued is purely a contingent function of the degree to which welfare can be sustained and advanced without it. The environment enjoys no place of privilege in a theory that is dedicated to maximizing welfare. Its value is instrumental, and if humans are good at anything, they are good at inventing instruments that progressively supplant the need for the creations of nature that are thought to be comparatively “primitive.”

Yet those who are suspicious of the notion that things can have value apart from their ability to be valued through pricing mechanisms within a market that capture human preferences will insist that the accounts of sustainability at the strong end of the spectrum give no guidance as to what and how much we can consume. Do these accounts imply, as Wilfred Beckerman has dismissively charged, that we must “preserve intact the environment as we find it today in all its forms;”[[11]](#footnote-11) that there can be “no mining, and no industry;”[[12]](#footnote-12) that “no species could ever go extinct,” nor could “any nonrenewable resources [ever be] taken from the ground, no matter how many people are starving”[[13]](#footnote-13)? Are we to elevate the needs of mice over the wants of humans? And what of the competing needs of animals? Are we obligated to substitute ourselves for the predators we eradicated so as to cull herds? Are we obligated to do battle with species that our own activities have made damagingly invasive? Or does the attribution of value imbue non-human entities with claims against such interferences with this “new normal”?

One way to understand the debate between weak and strong sustainability proponents is to recast it as the familiar debate between utilitarians and those who either reject utility as the good to be maximized or reject the claim that morality requires or permits the maximization of what is good. Indeed, weak sustainability has found its most ardent champions amongst economists precisely because weak sustainability appears to be concomitant with the preference utilitarianism that undergirds standard welfare economics. And strong sustainability appears to appeal, in turn, to those who subscribe to a theory that makes certain actions wrongful without regard to their consequences—wrongful because they constitute rights violations or otherwise violate categorical maxims most at home within a deontological moral theory.

But can either weak or strong sustainability proponents defend these implicit moral convictions? Can proponents of weak sustainability defend their exclusive concern for human welfare when humans are but one of 10 million-plus species on the planet? Are there not some nonhuman entities that can be said to have welfare so as to force the expansion of weak sustainability’s locus of concern out of respect for the logic of utilitarianism itself? And if so, how would this concession alter the terms of weak sustainability? Inversely, can proponents of strong sustainability do better at defending their claim that nonhuman entities possess intrinsic value of a sort that places moral limits on the ability of humans to satisfy their own needs and wants? Can they equip nonhuman entities with moral weapons that have the power to stop humans in their moral tracks—that have the power to make wrongful acts that would be welfare-enhancing? It is to these two sets of questions that the next two sections are dedicated.

II. Do Nonhuman Entities Have Welfare That Should Count

in Calculations of What is Weakly Sustainable?

 Classical Nineteenth Century utilitarianism of the sort propounded by Jeremy Bentham and John Stuart Mill has two components. The first is a theory of what is intrinsically good. Utilitarianism is a monistic theory: it takes there to be one thing and one thing only that has intrinsic value or goodness—namely, welfare. Many other things may be good, but they are good only because, and only to the extent that, they instrumentally contribute to welfare.

 The notion of welfare has varying definitions within the utilitarian tradition. Bentham’s hedonic calculus equated welfare with the presence of pleasure and the absence of pain. Mill’s theory of welfare substituted for pleasure and pain the more general notions of happiness and unhappiness. Twentieth century utilitarianism substituted preference satisfaction for happiness and preference frustration for unhappiness and subscribed to the thesis that intensities of preferences cannot be measured cardinally, but only compared ordinally, so as to make stable trade points in costless markets constitutive of welfare-maximizing distributions. And finally, the concept of welfare has sometimes been given an objective interpretation. On such an interpretation, something may be good for someone, even if she does not prefer it, and even if the thing does not give her pleasure or make her happy.

 The second component of utilitarianism is its consequentialist principle. Actions are judged to be right if, but only if, they maximize welfare. The animating intuition is that if welfare is good, more is better, and the morally optimal state of affairs is thus achieved when acts or institutions produce the greatest net welfare possible.

 So construed, welfare economics is rightly seen as an applied branch of utilitarian ethics. To the classical utilitarianism of Bentham one adds: (1) the substitution of preference-satisfaction for happiness or pleasure as the measure of welfare; (2) the Paretian skepticism about cardinal measures of preference intensity; (3) the substitution of ordinal measures of preference maximization, namely, Pareto-optimality and Pareto-superiority; (4) the behavioral measure of the ordinal criteria in terms of stable trade points in hypothetically costless markets; and (5) the assumption that real markets can sometimes induce those idealized, stable trade points, and when they cannot (because of market failures), guesses at hypothetical market behavior can supply such stable trade points.

 It is tempting for those who trace environmental degradation to profit-maximizing practices to assume that if markets were perfect, we would not need to fear for the unsustainable consumption of nature’s valuable goods and services. For prices would reflect all the costs of products (many of which are now invisibly externalized), and consumers would then be equipped with accurate information about the environmental implications of their choices. They would then vote with their dollars in ways that would achieve the ratio of consumption to conservation that would be morally optimal.

But market failures are not the embarrassment to welfare economics that many think they are. For the problem with welfare economics does not lie in the failures of actual markets to deliver evidence of what would maximally satisfy human preferences. The problem lies in taking maximally satisfied preferences to be the sole criterion of what is valuable. For notoriously, people can and do have preferences that are short-sighted, self-interested, and even evil. And nowhere is this more apparent than in the environmental arena in which people are demonstrably willing to extract small short-term gains through behaviors that they know will cause devastating long-term losses. So the real problem does not lie in the failure of the market to perfectly express human preferences; it lies in the nature of those preferences themselves. We should fear not that the market only imperfectly realizes our preferences; rather, we should fear that it perfectly realizes our preferences as often as it does!

 At the root of the problems courted by a theory of weak sustainability, then, is that it makes *human* preferences the touchstone of valuation. The domain of those whose welfare counts unsurprisingly leads to a standard that overvalues the interests of those who count and undervalues the interests of those who do not. Just as utilitarian defenses of slavery were made preposterous by their exclusion of the pain, preferences, or welfare of slaves, so one should think that weak sustainability is equally preposterous in giving only one of 10 million-plus species exclusive domain over the Earth’s natural treasure.

 This line of criticism suggests that utilitarianism and the versions of weak sustainability that owe their allegiance to its moral precepts might be more plausible if they enlarged the domain of those whose welfare counts. Could we expand the utilitarian calculus implicit in weak sustainability so that nonhuman welfare counted in computations of what must be sustained in order to maximize welfare? If welfare were translated classically as pleasure and pain, this would expand the domain at least to include animals that are sentient.[[14]](#footnote-14) If welfare were construed as happiness, perhaps the same limited expansion could be justified, so long as happiness were treated as a mood or other psychological state. The same is true if welfare is taken to concern itself with preferences, for animals are plausibly thought to have at least simple desires. And, of course, if the domain of those whose welfare counts is extended to include members of future generations of humans and animals, then our welfare calculations might well dictate actions that protect and preserve species, ecosystems, and biospheres which themselves may have no capacities for pleasure, happiness, or preference-satisfaction. In other words, we might arrive at an expanded version of weak sustainability that gives lexical priority to sustaining “critical natural capital” that is critical not only to sustaining human welfare, but also to sustaining the welfare of all nonhuman entities that themselves possess welfare.

 But however expansive is the definition of the domain of utilitarian concern, it remains clear that any brand of utilitarianism that correlates moral action with subjective satisfaction cannot vest intrinsic value in entities that do not have subjective experiences. As such their fate is properly at the whim of those of us who can have preferences about them. The only means of answering this perceived shortcoming consistent with the commitments of utilitarianism would be to adopt an objective theory of welfare—a theory that uncouples welfare from subjective well-being. If one can think of something as good for another even if that other does not now think it good for himself and never will think it good, one might be able to insist that utilitarianism demands the maximization of all things that are good for entities that can have a good, including ones that cannot appreciate that they have a good because they have no subjective experiences at all. On such an account, to maximize welfare is to do what is good for all things that can have “goods”—including bacteria, fungi, plants, trees, grasslands, and coral reefs, the goods of which are necessarily objective.

 Yet to stretch utilitarianism to require the maximization the objective welfare of entities that do not have any subjective experiences at all is surely to stretch it to the breaking point. For the notion that one can maximize the welfare of a fjord surely strains the notion of welfare beyond practical recognition. Those who are attracted to utilitarianism precisely because it converts moral questions into scientific ones by making what is right a function of what is preferred will surely resist the meaningfulness of the notion of objective welfare precisely because it is not measurable through the use of markets, opinion polls, or other empirical measures. To determine the objective welfare of an entity that itself has no subjective experiences requires an exercise in moral reasoning that is academic in the pejorative to those who are drawn to utilitarianism precisely because it grounds moral judgments in fact rather than theory. It would thus not count as a friendly amendment to suggest to those who espouse weak accounts of sustainability that they should incorporate measures of objective welfare into their calculations when determining the sustainability of our practices.

 We are left then with the conclusion that accounts of weak sustainability might be made less anthropocentric if they recognized that many creatures other than humans have subjective experiences that an honest commitment to utilitarianism’s essential precepts would make relevant. Inasmuch as all sentient beings experience pain and pleasure, have preferences that can be satisfied or thwarted, and thus are eligible to be considered happy or unhappy, those who are concerned with sustaining welfare when making resource allocation decisions ought to be concerned with the welfare not just of humans, but of all creatures that are sentient. So reconceived, weak sustainability would stand on a stronger moral footing.

 While some may fear that such an expansion would convert weak sustainability into a species of strong sustainability, I would view such a fear as misplaced. For weak sustainability, so expanded, would continue to value many natural resources, systems, services, and features not for themselves, but only because, and only so long as, they are of instrumental value. Forests and flowers, mountains and valleys, grasslands and jungles, tundra and taiga—all these should be sustained only if they provide value that cannot otherwise be provided artificially. Perhaps if the category of those whose welfare counts is expanded beyond humans, we will find that these remarkable evolutionary feats of nature do not have, and perhaps never will have, adequate artificial substitutes. But to those who continue to hanker for a theory of sustainability that accords value to Mt. Denali or the Atacama Desert that is not reducible to its value to us or other living things, this assurance falls short of providing them with a theory of sustainability that satisfactorily captures their intuitions about why such largely lifeless places should be sustained.

III. Can Nonhuman Entities Be Said to Possess Rights

That Make Actions that Do Not Sustain Them Wrongful?

 The most celebrated roll-out of an agenda to implement a strong theory of sustainability was Bolivia’s 2012 announcement of legislation granting all nature rights equal to those possessed by humans. The Law of Mother Earth purported to establish eleven new rights for nature, including the right to life and to exist; the right to continue vital cycles and processes free from human alteration; the right to pure water and clean air; the right to balance; the right not to be polluted; the right to not have cellular structure modified or genetically altered; and the right "to not be affected by mega-infrastructure and development projects that affect the balance of ecosystems and the local inhabitant communities". Bolivia has outlined a framework for establishing a Ministry of Mother Earth and appointing an ombudsman whose charge it is to speak for Pachamama, the earth deity whose independent legal standing has now been established.

 One can appreciate that rights rhetoric might have powerful instrumental advantages. Bolivia is struggling to cope with rising temperatures, melting glaciers, and more extreme weather events including more frequent floods, droughts, frosts and mudslides. As global temperatures rise and Bolivia’s vast glaciers melt, Bolivian glaciologists anticipate that Bolivia will confront devastating water shortages, and may be little more than a vast desert within a century. But while it may be rhetorically useful to claim that Mother Nature has rights, the question is, does she? Can proponents of a strong theory of sustainability invoke rights claims on behalf of natural entities to bolster their insistence that we are not entitled to trade off the existence of species or the preservation of old growth forests for gains in welfare?

 There are two species of rights theories, and it must be admitted that neither makes obvious room for the rights of nonhuman entities. On versions of the “will theory,” rights are instruments of autonomy that allow one to assert dominion over others’ actions.[[15]](#footnote-15) To have a right is (by definition) to be able to waive it, to manipulate it, to dictate the terms of its satisfaction.[[16]](#footnote-16) So on the will theory of rights, there can be no non-waivable rights. And there can be no rights-holders who are not able to waive rights. The will theory thus disqualifies from the category of rights-holders those who cannot make the kinds of choices that are at the core of exercising sovereignty. Those of exercising autonomy are incapable of having rights. And so, fetuses, infants, the senile, the insane, and the comatose are without rights. And it follows, *a fortiori*, that animals, plants, species, ecosystems, and biomes cannot be accorded rights, except metaphorically. On the will theory of rights, Bolivia’s talk about Mother Nature having rights is just that—talk: it cannot make it so, and it cannot be thought to reflect any discovery of what *is* so.

 On the second theory of rights—the “interest theory”—rights reflect powerful interests, and they trigger obligations on the part of others because those whose interests they reflect are made (substantially) better off by the satisfaction of those interests. A right, on such a view, is what one has when one’s interests in a matter become substantial enough that one’s life will go appreciably better if those interests are served in an obligatory way. Rights are instrumental to achieving the good of rights-holders. As Joseph Raz puts it: “[A] person may be said to have a right if and only if some aspect of his well-being (some interest of his) is sufficiently important in itself to justify holding some other person or persons to be under a duty.”[[17]](#footnote-17)

 On this theory, only beings capable of having interests are capable of having rights; but something may have interests without being an autonomous agent capable of exercising choice about others’ actions. The question for strong sustainability proponents is whether nonhuman entities can have interests, and if so, on what basis? To answer such a question is to advance a theory of interests—which is not something the interest theory of rights itself does.

 It would seem philosophically feasible to advance the claim that animals have interests—and those who write about the moral status of animals have certainly provided ample vindication of this claim. Creatures that are sentient—creatures that have subjective perceptual experiences or "[qualia](http://en.wikipedia.org/wiki/Qualia)"[[18]](#footnote-18)—are capable of feeling pain and pleasure, and as such they are capable of living lives that are subjectively better or worse *for them*. If the avoidance of pain (beyond a de minimus threshold) is a significant interest—if it is, in Raz’s terms, a sufficiently important aspect of well-being—then the interest theory of rights may demand the recognition that fish, fowl, and other fauna have rights—rights, at least, against those who are capable of modifying their behavior so as to avoid causing pain to such creatures. And so such theorists as Tom Regan and Gary Francione have argued.

 What is more philosophically challenging is to make out a claim that non-sentient entities might have interests that would support strong sustainability proponents in arguing either for the Bolivian-style recognition of rights in the biosphere itself (the global [ecological](http://en.wikipedia.org/wiki/Ecology) system that integrates all living beings with one another and with the elements of the [lithosphere](http://en.wikipedia.org/wiki/Lithosphere), [hydrosphere](http://en.wikipedia.org/wiki/Hydrosphere) and [atmosphere](http://en.wikipedia.org/wiki/Earth%27s_atmosphere), metaphorically called “Mother Nature”), or for the recognition of rights possessed by individual non-sentient entities (particular trees, plants, funghi) or groupings of entities, such as species, ecosystems, or biomes (wetlands, tropical forests, tundra). Some have argued that while things cannot matter *to* individual plants or *to* collectivities such as coral reefs, they can matter *for* them. As one theorist has put it, “matters can be better or worse for the tree, and this amounts to saying that the tree on its own has its goods and harms.”[[19]](#footnote-19) What attributes must entities have in order for us to say of them that some things are good for them, and some things are bad? In Von Wright’s view, any being that “can meaningfully be said to be well or ill, to thrive, [or] to flourish,” is a being of whose good it is meaningful to talk.[[20]](#footnote-20) Thus as he maintains, “The question ‘What kinds or species of being have a good?’ is . . . broadly identical with the question ‘What kinds or species of being have a life?’.[[21]](#footnote-21)

 Von Wright’s view is echoed by numerous environmental thinkers who are anxious to extend the class of beings who have interests beyond the class of beings who can suffer. In common to all such accounts is the notion that interests are possessed by entities that have teleological ends or are “goal directed”. Paul Taylor, for example, accords plants interests on the basis that they are “teleological centers of life;” Kenneth Goodpastor maintains that plants exhibit “self-sustaining organization and integration” worthy of moral concern; Jay Kantor vests interests in plants by virtue of their “self-regulating and homeostatic functions”; and James Mish-alani derives the interests of living things from their possession of “self-ameliorative competence”—that is, “the capacity of a living thing to adjust to its circumstances in a manner to enhance its survival and natural growth.” [[22]](#footnote-22)

 But these claims—as useful as they may be to those interested in bolstering a strong theory of sustainability—must answer several criticisms. First, by their terms, it would appear that these accounts vest interests in individual living creatures, not in collective entities, and certainly not in non-living entities such as rivers, lakes, or mountains. Such an account thus falls short of promising to vindicate anything like the Bolivian effort to extend rights to ecosystems, biomes, or the biosphere as a whole.

Second, one might think it intelligible to talk about goods for collective entities, without such talk reducing to claims about goods for individual members of those groups. The good of a population of deer, for example, may require the death of a great many of its members. But if collectivities can have interests, they will have to rest on claims other than the ones just canvassed. For while collectivities have tendencies, there is a good deal of consensus amongst scientists of evolution that species or populations are not “goal directed.” In Elliott Sober’s terms, “Darwinism rejects the idea that species, communities, and ecosystems have adaptations that exist for their own benefit. These higher-level entities are not conceptualized as goal-directed systems; what properties of organization they possess are viewed as artifacts of processes operating at lower levels of organization.”[[23]](#footnote-23)

And third, that there may be things that are good for an entity does not mean that it is itself good or that it possesses a good. While there are conditions that enable a virus to do well—to thrive or to flourish—this does not, by itself, suggest that the virus has interests that are of a sort that properly command the moral attention or concern of humans. Put differently, that things can be instrumentally good for an entity is not sufficient to infuse that entity with goodness, and to thereby make its goods into interests that might cumulate to the point of constituting rights. One must not confuse what Holmes Rolston describes as an entity that is “value-able” (able to use things in the service of its own good) with the notion that it is valuable. Or as John O’Neill puts the point:

That Y is a good of X does not entail that Y should be realised unless we have a prior reason for believing that X is the sort of thing whose good ought to be promoted. While there is not a logical gap between facts and values, in that some value statements are factual, there is a logical gap between facts and ‘oughts.’ ‘Y is good’ does not entail ‘Y ought to be realised.[[24]](#footnote-24)

 This hasty summary should be sufficient to prove the philosophical complexities of employing the interest theory to vindicate the claim that nonhuman entities can be accorded rights of the sort that would make “absurdly strong” sustainability anything but absurd. Perhaps we can assess the wisdom of further dwelling on such complexities by asking into the implications of recognizing nonhuman entities as rights-holders. What would be the normative implications of concluding that individual living things, or collectivities of such things, have rights? Would the fishing industry around the globe be estopped from bottom-trawling or dynamite fishing or clam dredging or using plant-based poisons toxic to fish? Would we be barred from peeling back Appalachian mountains in order to extract their seams of coal?; from bulldozing tracts of forest for crop lands, grazing lands, or lumber?; from damning rivers for hydro-electric power?; from filling in wetlands for commercial developments?; from using factory-farm techniques to produce meat?; from using animals for medical experimentation?; from culling populations of density-independent animals?

 It might seem, on first blush at least, that the virility of rights turns on whether they create categorical obligations (under a deontological account) or can be sacrificed in the name of other rights (under a rights-consequentialist theory). For rights-consequentialists, rights are normatively significant because they define the borders of legitimate utilitarian (or social welfare-based) justifications. Rights bar the ability of others to use the object of a right--one’s life, liberty, or property, for example—as a resource for the advancement of others’ utility or welfare. For deontologists, in contrast, rights patrol the borders of legitimate consequentialist justifications. Not only can rights not be traded for increases in social welfare; they cannot be traded to protect an even greater number of other (equal or weightier) rights. Thus, for example, if I have a right not to be tortured, then others have a duty not to torture me even if, by so doing, they could prevent many others from being tortured, and many others from suffering other equal or greater rights violations.

 Those who argue that animals have rights have never been crystal clear about whether they are rights-consequentialists or deontologists. Tom Regan, for example, insists that inasmuch as animals are “subjects of a life,” they each have an inherent worth that is the equal of that possessed by any human, and as such, they have rights “not to be treated as mere means to human ends.” Regan thus criticizes those who believe “that we are *sometimes* justified in causing nonhuman animals significant pain, in pursuit of institutionalised human interests,” insisting that “animal rightists deny that we are ever justified in doing this.”[[25]](#footnote-25) As such, he maintains that animals may not be used for food, cosmetic testing, military research, sport hunting, fur and leather products, or recreation (rodeos, circuses, etc.). Yet he rather clearly leaves open the possibility of justifying the use of animals for life-saving medical research, and he famously insists that if four humans and a dog find themselves in a lifeboat that can only hold four, the humans are justified in casting the dog overboard. He thus appears to stop short of suggesting that animals’ lives cannot be taken to prevent others’ lives from being lost, and as such, one might plausibly believe that at the end of the day he is a rights-consequentialist, not a deontologist.

 Those who find it philosophically incredible to attribute rights to animals (and to other nonhuman entities, as well) will no doubt be relieved to recognize that rights-consequentialism at least permits the sacrifice of such rights in the name of other, weightier, (human!) rights. For no one believes that plants cannot be harvested for food and that trees cannot be cut for necessary shelter or warmth; very few believe that species of harmful viruses, bacteria, and disease-carrying pests cannot be altogether eradicated; and the great majority (who eat meat, wear leather, and clamor for cheap electricity) clearly believe that animals can be killed and mountains can be leveled for relatively trivial human comforts. Those who might hope that an attribution of rights to nonhuman entities would put a stop to their exploitation might thus conclude that rights consequentialism is a practical oxymoron. It allows humans to continue to insist that their rights justify the exploitation of nonhumans and other natural resources, even if those resources are themselves assigned rights.

Strong sustainability theorists who remain hopeful that rights can vindicate their view that human welfare must sometimes, and perhaps often, give way to the protection of the environment might thus want to insist that the rights of nature are of a deontological pedigree: they create categorical duties on the part of humans that cannot be violated in the name of other rights (let alone increased welfare). It would be wrong, however, to suppose that deontology does not permit a fair bit of moral “wiggle room” for those anxious to maximize good consequences at the expense of nature’s bounty. While deontological duties may categorically prohibit the intentional causing of harm (pain, loss of life, loss of liberty, loss of living space, etc.), and while some may affirmatively require the prevention of harm or provision of benefits in special circumstances, there are reasons to think that the notions of intentionality, causation, action, and omission that define the content of such rights have built-in limitations that ultimately make these categorical duties less expansive and less onerous then they might first appear.[[26]](#footnote-26)

 First, those who embrace “the Doctrine of Double Effect” insist that the duty correlative of, say, the right to life, precludes one from acting with the purpose of taking a life; but it does not prohibit one from doing an act that one simply knows will cause death. So long as a rights infringement is simply a known side consequence of an act done for a different purpose, that infringement is not a rights violation, and if it produces more good consequences than bad, it is not a wrong. If the distinction between purpose and knowledge can bear the moral weight assigned to it by the Doctrine of Double Effect, one can imagine that it might permit a good deal of environmental damage, for that damage is often not intended; it is simply known to follow from various human activities. Thus, for example, the Doctrine of Double Effect might permit the eradication of the Delhi Sands Flower-Loving Fly, if its extinction is not intended, but is a known side-consequence of converting the coastal sage scrub ecosystem of the Colton Dunes within the Los Angeles Basin into shopping centers, golf courses, and housing developments, the collective benefits of which might be thought to outweigh the elimination of this species of fly. [[27]](#footnote-27)

 Second, some maintain, in a somewhat similar vein, that one can often permissibly risk what one cannot knowingly cause. Thus, when the balance of consequences speaks in its favor, one can risk another’s death or injury (e.g., by driving to work, by raising children near a lake, by taking a friend tandem skydiving) even as one could not justify doing the same act if one knew it would cause death. And even this claim requires modification, for we regularly take people to be justified in pursuing activities (building skyscrapers, blasting tunnels, and mining coal) that they know, as a statistical matter, will cause others’ deaths, when they do not know the specific identity of those on whom such harms will fall (so as to make them mere riskers vis-à-vis each possible victim). If rights protect against being caused harm, but not against being risked, then many activities that risk harm to natural entities, but do not knowingly cause such harm, may remain permissible. And this is particularly so if the rights possessed by natural entities are possessed by individuals, rather than groups, for it must be a frequent phenomenon for persons to know statistically that they will cause harm to classes of environmental entities (e.g., through water pollution, air pollution, toxic waste dumping, etc.) without knowing, and without being able to know, which individual entities, in particular, will be harmed. All this is to say that the Precautionary Principle (which holds that in instances of doubt, persons must err on the side of caution, and must thus refrain from pursuing activities the environmental implications of which are unclear) may not follow from according environmental entities categorical rights—for caution (the avoidance of risks) is not, itself, morally obligatory, and can thus be cast to the wind when a net gain in good consequences can be anticipated.

 Third, it is a common intuition that when the consequential balance favors it, one can permissibly accelerate a harm to a rights-holder that is imminent and non-preventable, even as one could not have knowingly set in motion the chain of events that put the rights-holder in peril. At the root of this intuition is the judgment that one is not a full cause when one simply speeds it up, but does not instigate, an inevitable harm. One who accelerates the death of someone who is “already dead” isn’t a killer in the full sense of the term. Thus, a climber can cut a rope that is connecting him to a down-rope climber whose fall is inevitable, and whose weight will eventually drag the up-rope climber off the mountain, resulting in two deaths rather than one. Or in the textbook case of *Dudley and Stephens*, the men stranded on the lifeboat were thought to do no wrong when they ultimately used their last strength to kill and eat the languishing cabin boy, Richard Parker, who was sure to die before any rescue effort could save him. If there is moral merit in this notion that good consequences can make deontologically permissible the acceleration of imminent and non-preventable harms, then a number of implications may follow within the environmental context. For example, one might think that certain active efforts to control or stabilize population growth within a species might then be permissible. If in actively culling a population (of deer, elk, feral pigs, etc.), one is targeting animals that are themselves facing imminent death (through starvation brought on by over-grazing, for example), one may not, on this account, be violating any rights, even if rights are possessed by individual animals. More surprisingly (and more troublingly), if rights vest in species, rather than individuals, then perversely it may be permissible to accelerate the extinction of a critically endangered species if so doing achieves a net gain in good consequences, for a critically endangered species might be thought to be “already dead.” (Ironically, if rights vest in individual members of a species, and not in the species as a whole, the opposite might follow, for each individual member of a critically endangered species may still have ahead of it a full life, and may not, itself, be in peril.)

 Fourth, deontologists frequently place weight on the act-omission distinction, arguing that one can consequentially justify omissions to render life-saving aid when one could not so justify an active killing. One can thus fail to throw a rope to a drowning man in a choice situation in which one can otherwise use that rope to save two others who are also drowning. But one could not forcibly drown the man, even if, by so doing, one could thereby save two others (who might then be able to use his life jacket for flotation). In the environmental context, this distinction proves its worth in answering the argument that anyone who would vest rights in animals, for example, must be committed to preventing their deaths by natural means. If one can morally defend the distinction between causing harm and omitting to prevent harm, one can explain why we need not affirmatively prevent natural predation even as we must avoid actions that cause the death of nonhuman entities through habitat loss, pollution, and global warming.

 More troubling, however, is the thought that this distinction may allow many to take moral refuge in their environmental inaction. While it might be said that consumer behavior drives corporate behavior (and corporate behavior drives political behavior!), so that the environmental devastation caused by coal companies, oil companies, large-scale agricultural operations, and so forth, is, in fact, caused by each of us, such a claim founders on the fact that there are a great many intervening causes between a consumer’s act of buying a product and an industry’s responsive production of more of such goods. On what I take to be the most promising test of proximate causation (the so-called “direct cause test”[[28]](#footnote-28)), intentional, informed, voluntary actions sever causal chains that would otherwise reach back to the actions of others, making those prior actions causally non-proximate. If those who operate the enormous machines that access veins of coal by clear-cutting trees, shaving layers off mountains, and burying streambeds in “overburden” are sufficiently autonomous and informed to count as responsible agents (as they surely are), then our best account of proximate causation will declare them intervening causers. Those whose prior choices may have motivated their actions (consumers, politicians, family members, etc.) are thereby made nonproximate to the ensuing harm. If such prior actors are to be thought responsible for the harm they have inspired but not caused, it must be by virtue of our thinking that they are blameworthy for omitting to prevent that harm. But if, as a general matter, one violates no rights when one omits to enforce those rights, then our sense of blame will have to derive from some source other than the claim that environmental inaction is deontologically wrong.

 Fifth, a somewhat different distinction would be needed to justify the active management of plant and animal populations through indirect means—say, by the (re)introduction of predator species into ecosystems that are unstable without them. To reintroduce wolves into a habitat over-populated by deer is affirmatively to act in a manner that will cause the deaths of individual deer. To introduce biological controls (pathogens, parasitoids, predators, and weed feeders) so as to check the spread of pests or invasive plant species is to act in a manner that will eradicate those species from the habitat. If such an action is not a rights-violation it must be by virtue of finding moral merit in what theorists have called “non-omissive allowings.”[[29]](#footnote-29) A non-omissive allowing is an act (not an omission) that allows nature to take its course. There are several kinds of non-omissive allowings, and I will not sketch here the various ways in which all of them might be employed by those who seek to employ consequential justifications in defense of actions that tread very close to violating categorical obligations toward natural entities. Consider just one category—that of being an enabler of another’s action.

 Many believe that one can consequentially justify an act that enables another to do a deed that one could not do oneself. Thus, for example, it is axiomatic for deontologists to insist that one is prohibited from killing an innocent person, even if so doing will motivate a killer to spare the lives of 20 others. But when asked whether one can simply hand the gun to the killer who himself will pull the trigger, if by so enabling him to kill the one, 20 others will be saved, many agree that such an enabling would not constitute a violation of the rights of the one who is then executed by the killer (even as his execution at the hands of the killer is surely a rights violation by the killer). This intuition that one can enable what one cannot cause is surely at the root of America’s willingness to “outsource torture” through the method of extraordinary rendition so as to gain intelligence through the efforts of others (e.g., Egyptian interrogators) that it could not itself extract. By so doing, we exploit the notion that those who perform the interrogations are themselves intentional, informed, voluntary actors who break the causal chain extending back to our extradition, making our actions non-proximate to the rights-violations that ensue. If one does not violate another’s rights unless one does so proximately, the distinction between enabling and causing creates room for consequentially-justified enabling just as the distinction between omitting and causing creates room for consequentially-justified inaction.

 If enablings can be consequentially justified, then those who believe that nonhuman entities have rights may nevertheless be able to justify the positive introduction (or reintroduction) of predators and other biological controls in order to check, indirectly, the expansion of populations of plants and animals that themselves, either individually or collectively, have rights to life. Such methods reflect non-omissive allowings for they involve actions that then allow nature to take its course. Of course, we do not normally think of animals, let alone insects or bacteria, as intentional, informed, voluntary actors that break causal chains, so it would surely take some innovative theorizing to adapt this deontological modification to justify the environmental analogue of extraordinary renditions. Still, this notion that we can actively use nature to control nature, even as more direct methods of control may be impermissible, captures common intuitions amongst those who take natural entities to be properly protected by categorical rights.

 This non-exhaustive outline of the various ways by which deontologists themselves blunt the protections afforded by rights suggests that those who look to environmental rights as “trumps” of welfare calculations may find themselves disappointed by the enduring moral license that humans will have to exploit nature even if nature is recognized as having deontological rights. They thus might conclude that the benefits of rights are not worth the costs of vindicating the contentious claim that nonhuman entities have rights—that is, that nonhuman entities have interests to begin with of a type and weight that generates obligations on our part. And even if nonhuman entities can be shown to satisfy the criteria of the interest theory of rights, and even if the strategies I’ve discussed to circumscribe the force of those rights can themselves be circumscribed, at the end of the day rights will not provide a promising means of arguing that non-living entities—Mt. Denali and the Atacama Desert, for example—themselves possess moral considerability. One must thus confess that while one might do wrong to humans or other living entities, one would do no wrong *to Death Valley* by trucking in loads of soil to raise its elevation above sea level; one would do no wrong *to Mt. Everest* by removing its peak (so as to make K2 the highest mountain on Earth); one would do no wrong *to the Moon* by mining it; and we now do no wrong *to the Appalachian mountains* by doing in days what natural processes could do only in millennia. If we are to make sense of the common but philosophically uncomfortable notion that (at least some) nonliving environmental entities deserve protection *for their own sake*, then we will have to look beyond claims of right. But to what?

IV. Can Nonhuman Entities Be Said to Be Objects of Our Virtue?

 I have canvassed various means by which natural entities might be said to possess moral considerability on non-anthropocentric grounds—that is, as being valuable in themselves, and not by virtue of our valuing them. And I have sought to reveal how the traditional schools of moral thought are systematically anthropocentric, and thus provide surprisingly limited means by which to give expression to deep-seated intuitions about the independent moral standing of natural entities. This cold philosophical shower has left those who seek a principled basis for strong sustainability shivering for want of moral cover. Without some account of the basis upon which nonhuman, nonsentient natural resources, systems, spaces, and places make moral claims upon us in their own right, it is hard to know how strong sustainability proponents can defend their conviction that we are constrained not just by others’ welfare interests but by what Alan Holland has called “the units of significance” possessed by the forms and functions of nature.[[30]](#footnote-30)

 I want to close by examining the moral promise of a theory that explicitly concedes that “it’s all about us”—a theory that derives our obligations to sustain the products of millions and billions of years of evolution from considerations about *us*, but that does so in a manner that suggests that if we serve ourselves as morality demands, we will protect nonhuman entities for their own sake.

 The theory I have in mind is an aretaic one—one that takes the morality of our relationships with the natural world to derive from our satisfaction of aretaic duties to cultivate virtuous character traits and to suppress vicious ones. This account draws on the view that morality consists of both deontic and aretaic duties. Deontic duties (whatever the theory that underlies them, be it a rights-based or a utilitarian theory) concern actions that are, in particular circumstances, prohibited or required, while aretaic duties concern dispositions that must be cultivated or suppressed over the course of one’s life in order to be thought a person of good character. The objects of deontic duties are commissions or omissions at razor points in time, while the objects of aretaic duties are traits of character—enduring dispositions that cumulatively define what sort of person a person is. A man does his deontic duty if he sustains his children in a material state that meets their essential physical and psychological needs; but he does not do his aretaic duty as a father unless he loves them, that is, unless he possesses that complex package of dispositional attitudes towards them that includes affection, empathy, identification, concern, pride, etc. A woman does her deontic duty if she refrains from taking the property of others; but she cannot be thought to be an honest person if the only thing that keeps her from taking others’ property is a fear of detection and punishment.

 There is a significant literature on the question of whether aretaic duties can be collapsed into deontic duties or *vice versa.* Is one virtuous when, and only because, one does right actions? Or are one’s actions right when, and only because, they are virtuous? I have argued in some detail that both of these hypotheses are wrong, and that right action and virtuous character are quite independent of one another.[[31]](#footnote-31) After all, one can both be scrupulous in doing the right thing without being a person of good character (think of Javier in *Les Miserables*), and one can be a person of quite laudable character who at least sometimes, and perhaps often, fails to act rightly (think of the judge who indulges mercy too frequently and who thus fails to treat like cases alike). It is, therefore, open to us to say that persons *aretaically ought* to cultivate certain character traits that will (by their nature) motivate actions that are not *deontically required* and as to which others have no *deontic rights*.

 Indeed, inasmuch as virtuous character traits are psychological dispositions, they will often “bleed over” into circumstances in which they are not, on moral grounds, required. Character traits are habits of thought and action. They incline one towards beliefs, judgments, and decisions before reason has even had its say. They function as default responses; as first instincts. They define our essential selves because they assert themselves in moments of crisis, trauma, or excitement when our powers to think and act strategically have been suspended or impaired. They are responsible for the moral intuitions that we then use reason to articulate and rationalize, and in that sense, they are at the core of our moral perceptions, beliefs, and judgments. For all of these reasons, character traits tend to be “over-inclusive;” they tend to creep into circumstances in which reason would rightly exclude them. And so, deeply honest people tend to be honest to a fault; genuinely courageous people tend to be foolhardy about their own safety; generous people tend to be enablers of those who would fare better with a little “tough love”; and in reverse, those who lie to protect their interests tend to lie even when it does not do so; those who indulge their appetites tend to over-indulge them; those who enjoy the limelight tend toward narcissism, and so forth. I would even hazard that a person’s character is often best revealed in circumstances in which his dispositions are in tension with his deontic rights and duties—when he reveals generosity towards one who is selfish (think of the benevolent [Monsieur Myriel](http://en.wikipedia.org/w/index.php?title=Monsieur_Myriel&action=edit&redlink=1), the bishop of [Digne](http://en.wikipedia.org/wiki/Digne), who gives Jean Valjean the candlesticks in order to cover for his theft in the opening scenes of *Les Miserables*); or when he desires to win an argument, even when nothing turns on it. To be a good person is to exhibit attributes of admirable character (kindness, generosity of judgment, courage, moderation, honesty, self-sacrifice, etc.) even towards those who cannot claim to deserve it.

 One might plausibly think, then, that to be a virtuous person, one must possess a set of character traits that collectively motivates one to act as a theory of strong sustainability would require. Virtue would demand that one treat the environment *as if* it possessed intrinsic value—as if it possessed the independent moral considerability that one might be able to defend were one’s philosophical tools less devotedly anthropocentric. What are these personal traits from which we can extract such a strong theory of sustainability?

 Put most broadly, it seems to me that to be virtuous is “to know one’s place in the Universe.” It is to recognize that we are newcomers to a place long occupied by others. (“If you take the history of life as the length of your arm, then one stroke of a nail file erases human history.”[[32]](#footnote-32)) It is thus to have a sense that we must make a place for ourselves amongst those whose physical stake in the planet far supersedes ours (even if we cannot force-fit the notion that they have antecedently-existing moral claims into our self-regarding moral theories). This notion that virtue resides, in part, in “knowing one’s place in the Universe” is surely not an easy one to unpack. It connotes a number of different judgments and attitudes, many of which smuggle back in notions of rights and interests that we have already found wanting. But, of course, as I have just argued, a virtuous person does just that: she brings, as psychological baggage, her respect for others’ rights and her fear of shirking her own duties to arenas in which such concerns may be morally inapt. She thus feels (non-moral) guilt, for example, even when she has done no moral wrong. And she resists praise (without it being a product of false modesty) even when she has done something genuinely supererogatory. So it should be no surprise that as we unpack the attitudes that a virtuous person has towards those whose claims to the planet’s resources predate our own, we should talk in terms of “claims,” when to do so is to do so loosely, or only metaphorically (if I am right in the previous sections).

 First, to suggest that virtue requires that one know one’s place in the Universe is to suggest that one should honor notions of fairness and considerations of equality even before, and probably even after, one can establish with philosophical exactitude the degree to which others are entitled (as a matter of right or as a matter of other defensible moral criteria) to such treatment. On pain of violating the “first come, first served” and “finder’s keeper” maxims that even a child learns and finds intuitive at an early age, one should be dispositionally reluctant to displace anything that has already come to rely for its existence upon its present circumstances. As a newcomer, one’s first instincts should be to learn and adapt to existing arrangements, rather than to force the rearrangement of those circumstances for private gain. We take it to be definitional of a spoiled child that he does not appreciate that he must leave toys alone until others have finished playing with them (regardless of whose toys they are), and we are similarly offended at adults who do not appreciate that their demands will thwart the reliance of others on the continuation of the status quo.

 Second, to know one’s place in the universe is to exhibit environmental “humility”. It is to appreciate how short our individual lives are in comparison to other living things (the oldest living plant on Earth is more than 5,000 years old!) and to the geological formations that form the contours of our world. One who would cut down a 2,000-year old Sequoia tree in less than an hour for pulp, or employ outdated fishing gear that traps and kills an enormous bycatch, or level a mountain within days that has been formed over millennia, or drive a species to extinction in order to build a shopping center, lacks the sort of “perspective” that one considers constitutive of a virtuous person. While it may be hard to attribute rights or interests to trees, rocks, lakes, and rivers, and while individual creatures and whole species may lack the attributes that demand sufficient moral consideration to compel their protection for their own sakes, it does not seem a stretch to suggest that we ought to conceive of ourselves as connected to and dependent upon such entities so as to require that we act with humility when effecting the course that nature would otherwise dictate for them.

 Third, a virtuous person is a generous person—one who bestows benefits on others even when they cannot be said to be entitled or deserving. Inasmuch as generosity crosses the boundaries of desert, one would also expect it to be indifferent to the boundaries between humans and animals, between animals and plants, and between species, ecosystems, and biospheres. One would expect that the virtuous person would take all things that could be made better to be worthy objects of generosity, and to thus make sacrifices for the good of environmental entities in the same way (and for the same non-obligating reasons) that she makes sacrifices for other persons.

 Finally, to be virtuous is not just to be morally modest, it is to be epistemically modest as well. It is to resist the arrogance of conquerors who destroy what is local before they even know its value.[[33]](#footnote-33) It is to take lessons from those of the past whose haughty haste to convert natural resources to human use deprived successive generations of remarkable species and altered the planet’s terrain in irreparable ways. In the absence of full information about how our activities will impact upon delicate ecosystems, virtue would seem to require action in accordance with the Precautionary Principle[[34]](#footnote-34)--the principle that demands that we do not undertake risky ventures without real confidence that we can assure the enduring health of those nonhuman entities with whom we share the planet.

 Admittedly, all of these claims are vague and, in many ways, worrisome. There is much within these brief suggestions with which to find fault, and much to be unpacked. Let me close with several examples that simply reveal the need for considerable further work. First, while our species is a relative newcomer to Earth as compared to other species,[[35]](#footnote-35) each individual living entity on Earth today is a comparative newcomer (although there is no question that we are each short-lived compared to individual members of many other species). Why are our virtues, as individuals, made relative to the longevity, history, and behavior of our species as a whole? As a general matter, we do not assign guilt to persons by virtue of their mere association with others who are guilty. So why would we think that the aretaic duties that persons have are properly responsive to the (short) history and past behavior of the species *homo sapiens*?

 Second, while one can appreciate, as an empirical matter, that virtue is sometimes (and maybe often) “over-inclusive” relative to duty, so that virtues demonstrate themselves when they are often not required, we require an account of why this *should* be so before we can derive from virtue any moral hope that the environment will be a beneficiary of its promotion. For it is tempting to say, with Aristotle, that virtue becomes vice when taken to an extreme; that it ceases to be virtue at all when it is extended to unworthy objects; that one is guilty of “tilting at windmills”[[36]](#footnote-36) when one behaves virtuously in contexts in which it is inappropriate. Thus, while our own imperfections may prevent us from ever cabining virtue in its appropriate quarters, we should be wary of resting the fate of our environment on the promise that if we cultivate virtue enough, we will cultivate it too much, and only thereby assure the protection of our planet. For while too much virtue is surely not a fear we need have anytime soon, we ought to be nervous about suggesting that we can protect our planet only if we effectively make virtue a vice.

 Finally, and most troublingly, I remain unconvinced that an aretaic theory of environmental care can properly explain the intuitions possessed by those who press a theory of strong sustainability. Such a theory is explicitly “all about us.” It makes the value of the environment a function of the value we place on our own virtue. While real virtue may require devoted stewardship of the planet and its many entities, I remain unconvinced that the reason we are bound to engage in such stewardship is that *we* will be morally worse off if we do not. I take the moral significance of the Pacific Ocean to be independent of (and far greater than) the significance to be attached to the relative virtue of those who have an effect upon it. While it may be that if we, as citizens of the lands that border that ocean, were as virtuous of character as we ought to be, we would act to ensure that its fish populations were restored, its coral reefs protected, its whales made safe, and its currents unaffected by global warming. But even if we were so virtuous, I would not think that its value as an ocean lay in the value of our exhibited virtue.

Conclusion

 And thus I end where I began. I fear that our best ethics are not up to the task of vindicating those who seek to protect the global environment from practices that service us at the expense of those in the future and those that are unlucky enough to be members of one of the 10 million other species with whom we share this planet. If moral philosophers cannot devise the theoretical means by which to give voice to deep-seated intuitions about the moral status of the natural world on which we depend, we surely cannot blame market players for failing to reflect the value of the natural world in their economic computations, and we cannot blame our political leaders for failing to keep our markets honest and for failing to exempt from market practices those aspects of the natural world that ought not to be commodified at all.

1. Ross and Helen Workman Chair in Law and Professor of Philosophy, University of Illinois. [↑](#footnote-ref-1)
2. Indeed, it should not be surprising to learn that the prospect of a “Moon rush” is far from idle. While the United States terminated its manned lunar program, it has created prizes and tax incentives that are designed to spur private efforts to do what NASA could not—to explore and exploit the Moon’s resources. In response to these incentives, numerous private corporations have partnered with academic institutions in what has already become a race for the Moon’s riches—specifically, rare Earth elements ironically required for “green technologies” here on Earth (lanthanum for the nickel-metal hydride battery in Toyota’s popular Prius; neodymium for the magnets that drive our most efficient wind turbines; cerium, crucial to UV absorption in solar panels; and Helium-3, for advanced generation pollution- and waste-free nuclear energy). For an overview of the history of America’s efforts to lay claim to the Moon’s resources, see Heidi M. Hurd, “The History of the Future: Post-Colonialists, Trekkies, and Capitalists in the Rush for the Moon” (unpublished essay available from author). [↑](#footnote-ref-2)
3. For a thorough and illuminating discussion of this taxonomy upon which I leaned heavily, see Andrew Dobson, “Environmental Sustainabilities: An Analysis and a Typology,” 5 *Environmental Politics* (1996), 401-428. [↑](#footnote-ref-3)
4. This much-used terminology was introduced by Herman Daly, *Steady-State Economics*, 2d ed. (Earthscan, 1992), p. 250. [↑](#footnote-ref-4)
5. Robert Solow, “An Almost Practical Step Toward Sustainability,” Address to Resources for the Future, Washington, D.C. (1992) (quoted in Dobson, “Environmental Sustainabilities,” 411). [↑](#footnote-ref-5)
6. Wilfred Beckerman, “’Sustainable Development:’ Is It a Useful Concept?, 3 Environmental Values (1994): 191, 194.

 Id. [↑](#footnote-ref-6)
7. David Pearce, *Blueprint 3: Measuring Sustainable Development* (Earthscan, 1993), 16. Pearce also speaks of an “ecological glue.” See David Pearce, *Blueprint 4: Capturing Global Environmental Value* (Earthscan, 1995), 52. [↑](#footnote-ref-7)
8. Herman Daly, “On Wilfred Beckerman’s Critique of Sustainable Development,” 4 Environmental Values (1995), 49-55, 49. [↑](#footnote-ref-8)
9. Alan Holland, “Substitutability: Or Why Strong Sustainability is Weak and Absurdly Strong Sustainability is Not Absurd” (unpublished manuscript, cited in Dobson, “Environmental Sustainabilities”). [↑](#footnote-ref-9)
10. Alan Holland, “Natural Capital,” in Philosophy and the Natural Environment, eds. Robin Attfield and Andrew Belsey (Cambridge University Press, 1994), 169, 176. In Michael Jacob’s words: “Once natural capital has been monetized and its benefit stream integrated with that of human-made capital, environmental protection is only contingently connected to the concept of non-declining welfare.” Michael Jacobs, “Sustainable Development, Capital Substitution and Economic Humility: A Response to Beckerman,” 4 Environmental Values (1995), 57, 61. [↑](#footnote-ref-10)
11. Beckerman, “’Sustainable Development,’” 194. [↑](#footnote-ref-11)
12. Id. [↑](#footnote-ref-12)
13. Dobson, “Environmental Sustainabilities,” at 410. [↑](#footnote-ref-13)
14. As Bentham famously wrote:

Other animals, which, on account of their interests having been neglected by the insensibility of the ancient jurists, stand degraded into the class of things. ... The day has been, I grieve it to say in many places it is not yet past, in which the greater part of the species, under the denomination of slaves, have been treated ... upon the same footing as ... animals are still. The day may come, when the rest of the animal creation may acquire those rights which never could have been withholden from them but by the hand of tyranny. The French have already discovered that the blackness of skin is no reason why a human being should be abandoned without redress to the caprice of a tormentor. It may come one day to be recognized, that the number of legs, the villosity of the skin, or the termination of the os sacrum, are reasons equally insufficient for abandoning a sensitive being to the same fate. What else is it that should trace the insuperable line? Is it the faculty of reason, or perhaps, the faculty for discourse?...the question is not, Can they reason? nor, Can they talk? but, Can they suffer? Why should the law refuse its protection to any sensitive being?... The time will come when humanity will extend its mantle over everything which breathes... "

Jeremy Bentham, *Introduction to the Principles of Morals and Legislation* [↑](#footnote-ref-14)
15. As H.L.A. Hart put it in his defense of this view of rights, ““The individual who has the right is a small-scale sovereign.” H.L.A. Hart, *Essays on Bentham: Studies in Jurisprudence and Political Theory* (Oxford University Press, 1982), 183. [↑](#footnote-ref-15)
16. In Hohfeldian terms, it is to have a power over a claim. It is to have the ability to alter one’s own or another’s “Hohfeldian incidents” (first-order privileges or claims). See Wesley Newcomb Hohfeld, *Fundamental Legal Conceptions*, ed. W. Cook (New Haven: Yale University Press, 1919). See also Michael S. Moore and Heidi M. Hurd, “The Hohfeldian Analysis of Rights” (unpublished manuscript available from author). [↑](#footnote-ref-16)
17. William A. Edmundson, *An Introduction to Rights* (Cambridge: Cambridge University Press, 2004), 129. [↑](#footnote-ref-17)
18. Sentience is distinct from other aspects of [consciousness](http://en.wikipedia.org/wiki/Consciousness), such as [creativity](http://en.wikipedia.org/wiki/Creativity), [intelligence](http://en.wikipedia.org/wiki/Intelligence), [sapience](http://en.wikipedia.org/wiki/Sapience), [self-awareness](http://en.wikipedia.org/wiki/Self-awareness), and [intentionality](http://en.wikipedia.org/wiki/Intentionality) (the ability to have thoughts that mean something or are "about" something). [↑](#footnote-ref-18)
19. Holmes Rolston III, “Value in Nature and the Nature of Value*,” Philosophy and Natural Environment*, eds. Robin Attfield and Andrew Belsey, Royal Institute of Philosophy Supplement (Cambridge University Press, 1994), 13-30, 18. [↑](#footnote-ref-19)
20. Id. [↑](#footnote-ref-20)
21. G.H. von Wright, *The Varieties of Goodness* (London: Routledge, Kegan Paul, 1963), p. 50. [↑](#footnote-ref-21)
22. I draw all of these quick summaries and their citations from Harley Cahen, “Against the Moral Considerability of Ecosystems,” 10 *Environmental Ethics* (1988), 196-216. See specifically Kenneth Goodpastor, “On Being Morally Considerable,” 75 Journal of Philosophy (1978); pp. 323; Paul Taylor, The Ethics of Respect for Nature,” 3 Environmental Ethics (1981); p. 210-11; Jay Kantor, The ‘Interests’ of Natural Objects,” 2 Environmental Ethics (1980); p. 169; James K. Mish’alani, “The Limits of Moral Community and the Limits of Moral Thought,” 16 Journal of Value Inquiry (1982). [↑](#footnote-ref-22)
23. Elliot Sober, “Philosophical Problems of Environmentalism,” in The Preservation of Species, ed. Bryan G. Norton (Princeton: Princeton University Press, 1986), p. 185. For more sustained criticism of the thesis that groups or species can have interests, see Cahen, “Against the Moral Considerability of Ecosystems,” id. [↑](#footnote-ref-23)
24. John O’Neill, “The Varieties of Intrinsic Value,” 75 *The Monist* (1992), p. \_\_\_. [↑](#footnote-ref-24)
25. Tom Regan, Animal Rights: What’s in a Name?” Animal Welfare and the Environment, ed. Richard D. Ryder (London: Duckworth, 1992), p. \_\_(italics in original). [↑](#footnote-ref-25)
26. For a rich discussion of the ways in which deontologists themselves constrain the scope of deontological rights and duties in ways that permit the consequential justification of a surprising number of harms, see Larry Alexander and Michael S. Moore, “Deontological Ethics,” The Stanford Encyclopedia of Philosophy, ed. Edward N. Zalta (Fall 2008 Edition)*,* section 2.1. URL = <http://plato.stanford.edu/archives/fall2008/entries/ethics-deontological/>. [↑](#footnote-ref-26)
27. For a wonderful discussion of the extraordinary obstacles posed to local development efforts, as well as to the operation of I-10 freeway, by the Fish and Wildlife Service’s designation of the Delhi Sands Flower-Loving Fly, *Rhaphiomidas terminates abdominalis* as “endangered,” see John Copeland Nagle and J.B. Ruhl, *The Law of Biodiversity and Ecosystem Management* (Foundation Press, 2006), Ch. 1, pp. 2-14. [↑](#footnote-ref-27)
28. For the classic unpacking of this test of proximate causation, see H.L.A. Hart and Anthony Honore, *Causation in the Law*, 2d ed. (Oxford University Press, 1985). [↑](#footnote-ref-28)
29. See e.g., Michael Moore, “Patrolling the Borders of Consequentialist Justifications: The Scope of Agent-Relative Restrictions,” 27 Law and Philosophy (2007), p. 70-94 (discussing five kinds of such allowings). [↑](#footnote-ref-29)
30. Holland, “Natural Capital,” 178. [↑](#footnote-ref-30)
31. *See* Heidi M. Hurd, *Duties Beyond the Call of Duty*, 6 Ann. Rev. of L. & Ethics 1-36 (1998). [↑](#footnote-ref-31)
32. This quotation is attributed to Professor Kevin Padian of the University of California at Berkley who apparently uses it to give his students a Deep Time perspective. SeeJohn Knoebber and Louie Psihoyos, *Hunting Dinosaurs* (Random [House](http://wiki.answers.com/Q/How_does_the_durationm_of_human_life_on_earth_compare_with_of_the_dinosaurs), 1994), p. \_\_\_. Don L. Eicher, Professor Emeritus of Geological Sciences at the University of Colorado, advances this analogy, compressing the Earth's history into one calendar year. January 1: The Earth begins. Springtime, March 20: The Birthday of DNA. The first one-celled bacteria, bobbing happily in the muck, re-creates itself. All life forms thereafter will be stamped with this same DNA. Thanksgiving: [Sea](http://wiki.answers.com/Q/How_does_the_durationm_of_human_life_on_earth_compare_with_of_the_dinosaurs) Creatures begin pioneering the land. December 11: 90 percent of all life forms go extinct. December 13: Dinosaurs enter. The day after Christmas: Dinosaurs go extinct. The evening of December 31: Manlike creatures appear. December 31 11:59:45 to 11:59:50: Roman empire rises and falls. 3.5 seconds to midnight: Columbus discovers America (or, if you wish, Indians discover Columbus) 1/20th of a second to midnight: The Beatles play the *Ed Sullivan Show.*" CITE.

 [↑](#footnote-ref-32)
33. One is reminded of the marvelous parody of the proverbial conqueror in Disney’s, *Pocahontas*, in which the character Ratcliffe, greedy for gold, instructs his men to clear-cut the land and “dig up Virginia.”

The gold of Cortés
The jewels of Pizarro
Will seem like mere trinkets
By this time tomorrow
The gold we find here
Will dwarf them by far
Oh, with all ya got in ya, boys
Dig up Virginia, boys

Mine, boys, mine ev'ry mountain
And dig, boys, dig 'til ya drop
Grab a pick, boys
Quick, boys
Shove in a shovel
Uncover those lovely
Pebbles that sparkle and shine
It's gold and it's mine, mine, mine

Pocahontas (Disney, 1995), music by Alan Menken; lyrics by Stephen Schwartz. [↑](#footnote-ref-33)
34. The precautionary principle states that “if an action or policy has a suspected risk of causing harm to the [public](http://en.wikipedia.org/wiki/Public) or to the [environment](http://en.wikipedia.org/wiki/Natural_environment), . . . the [burden of proof](http://en.wikipedia.org/wiki/Burden_of_proof) that it is *not* harmful falls on those taking the action.” It is embodied in numerous documents, including, for example, Principle #15 of the [*Rio Declaration*](http://en.wikipedia.org/wiki/Rio_Declaration), which states: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.” <http://en.wikipedia.org/wiki/Precautionary_principle> (citing <http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=78&ArticleID=1163>, and containing a very nice discussion of the principle and its problems). [↑](#footnote-ref-34)
35. The first anatomical humans emerged in Africa 200,000 years ago, but did not reaching behavioral modernity until 50,000 years ago. Compare this to Gingko trees, which are described as “living fossils” and date back 270 million years; funghi, which for 400 million years have been responsible for the mycorrhizal symbiosis upon which 90% of plant species depend for their survival; cockroaches, whose earliest ancestors came on the evolutionary scene 354 million years ago, and coelacanth, which is the oldest still-living fish species on the planet, dating back 400 million years. [↑](#footnote-ref-35)
36. This phrase derives from the novel [*Don Quixote*](http://en.wikipedia.org/wiki/Don_Quixote) by [Miguel de Cervantes](http://en.wikipedia.org/wiki/Miguel_de_Cervantes) in which Don Quixote mistakes windmills for giants with whom to do battle. See Part 1, Chapter VIII. *Of the valourous Don Quixote's success in the dreadful and never before imagined Adventure of the Windmills, with other events worthy of happy record.* [↑](#footnote-ref-36)