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THE CALL OF NATURE*

By Charles T. Rubin

I. Introduction

American environmentalism has long been linked with apocalyptic rhetoric: if we humans do not mend our ways, we face the end of present civilization, or the destruction of human life, or indeed most life, on Earth. This mode of expressing concern for nature has persisted despite the failure of any of these dire predictions to come true so far. In their essay for this volume, J. R. Clark and Dwight R. Lee point out one reason for such persistence when they note how apocalyptic rhetoric is useful to both government and interest groups who seek to expand the scope of government.[1] But frightening end-of-the-world scenarios need to have some plausibility to be useful in this way. Despite the fact that Hollywood can make movies scaring people with ghosts, interest groups do not mobilize to expand government power to deal with a ghost crisis.

This essay argues that the plausibility and popularity of visions of man-made destruction stem in significant part from two common ways in which "nature," the object at risk, is conceptualized in relationship to human beings. In environmental thinking and policy, I suggest, we often find ourselves vacillating between these two points of view on nature, the defects in each calling forth the other. One point of view tacitly or explicitly assumes that human beings are simply a part of nature like any other; the other tacitly or explicitly assumes that what is natural is defined by what human beings have not interfered with. Both, I show, are conducive to placing environmental problems in a context where it is easy to think that the "fate of the planet" must be at stake, and both are conducive to a misanthropy that, in extreme cases, can make human extinction appear to be a way to protect the integrity of nature.

This way of framing environmental issues is counterproductive to the extent that it creates cynicism about "crying wolf" over the disaster of the week, and fuels a sense that environmentalism is in some sense antihuman. These problems, I suggest, might be mitigated by an alternate view of the human relationship to nature that makes more of the fact that

* The author wishes to acknowledge the perceptive and patient editorial advice of Ellen Frankel Paul, and particularly helpful comments by Andrew Dobson, John Hasnas, and Leonidas Zelmanovitz.

[1] J. R. Clark and Dwight R. Lee, "Suppressing Liberty, Censoring Information, Wasting Resources, and Calling It Good for the Environment," *Social Philosophy and Policy* 26, no. 2 (2009).

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human beings seem unique in their ability to articulate a concern for nature, and to deliberate on that concern in the formation of public policies or private decisions. What the Greeks called *logos,* speech and reason, arises within nature yet makes human beings the only ones (so far we as know) with a vantage point from which to conceptualize "nature" as such. The examples of Deep Ecology and transhumanism suggest that only when nature and *logos* are completely abstracted from one another will thinking about nature in these terms support advocacy of human extinction.

Still, it seems that it is not easy to find an understanding of the human place within nature that does justice to both humanity and nature itself. In conclusion I suggest that doing better may require confronting the modern tendency to "demoralize" our understanding of nature, which can coexist only uneasily with either environmentalism's attempt to get us to value nature more, or transhumanism's effort to have us value it less.

II. Nature and Dehumanization in Environmentalism

The Nature Conservancy, in a recent Web symposium on "The Next Big Ideas in Conservation," highlights the thinking of Erik Meijaard, a senior ecologist for the Nature Conservancy in Indonesia. His contribution begins: "Conservationists are strange people. We all appear to be highly motivated and ethically driven. But what do we really want? To save the world? To save nature? And what is that supposed to mean?"[2] With its policy of pursuing environmental protection by land purchase, the Nature Conservancy has always stood slightly outside of the mainstream environmental movement in the United States, but the honest posing of the question "What does it mean to save nature?" remains a remarkable event. Academic environmental philosophers, to be sure, have taken on the question, just as one would expect. But in a public discourse where the solutions to environmental problems, and all the more so the environmental problems themselves, are routinely treated as self-evident, the acknowledgment that so basic a goal as "saving nature" might require thoughtful clarification is, to say the least, refreshing.

If we are to "save nature," we ought to know what nature is and how human beings stand in relation to it. But what we mean by "nature" is far from self-evident. We sometimes use the term descriptively, sometimes prescriptively, often enough in ways that undermine our ability to make this distinction. In his essay "Nature," written between 1850 and 1858, John Stuart Mill proposes to clarify our understanding of the meaning of nature by pointing out that it has two primary senses. In its simplest

[2] Erik Meijaard, "Conservation for Us," on the Nature Conservancy Web site, http://www.nature.org/tncscience/bigideas/people/art23889.html.

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sense, nature "is a collective name for all facts, actual and possible: or (to speak more accurately) a name for the mode, partly known to us and partly unknown, in which all things take place."[3] This "correct definition"[4] means that "nature" is, in effect, a term that encompasses everything that is. In another sense, however, "nature" is used to mean "not everything which happens, but only what takes place without the agency, or without the voluntary and intentional agency, of man."[5] In this usage, "Nature is opposed to Art, and natural to artificial," even though according to the first definition, "which is the true scientific sense, Art is as much Nature as anything else; and everything which is artificial is natural."[6]

C. S. Lewis would call Mill's first definition "*nature* in the dangerous sense" or "*nature (d.s.)*." It is "dangerous" because *nature (d.s.),* "if taken strictly, has no opposite. When we say that any particular thing is part of *nature (d.s.),* we know no more about it than before."[7] Lewis also notes that "'everything' is a subject on which there is not much to be said."[8] As a response to this vacuity, we may seek to use "nature" as a term of distinction, as in, for example, nature versus art. Yet when our distinctions break down—as they always do, at least around the edges—we will feel the powerful pull of *nature (d.s.).*

To see the consequences of this vacillation in contemporary American environmentalism, we begin by recalling how, from early on, human self-destruction, even the destruction of many if not all forms of life on Earth, has been a common rhetorical trope. Rachel Carson began *Silent Spring* (1962) with a cautionary tale about a ghost town resulting from environmental damage, and warned of a day when no bird would sing.[9] Today, ghost *towns* would hardly merit attention; the fate of the Earth must be at stake. Such thinking is the *ne plus ultra* of environmental concern; Al Gore calls climate change "a planetary emergency—a crisis that threatens the survival of our civilization and the habitability of the Earth."[10] But the more people expect disaster-mongering about human extinction, the more it risks becoming a cliché. When New York City mayor Michael Bloomberg warned the United Nations that "global warming in the long term has the potential to kill everybody," the (internet) headline for the story highlighted not this dire prediction, but the fact that

[3] John Stuart Mill, *Three Essays on Religion* (London: Longmans, Green, Reader, and Dyer, 1874), 6.
[4] Ibid., 7.
[5] Ibid., 8.
[6] Ibid., 7.
[7] C. S. Lewis, *Studies in Words* (Cambridge: Cambridge University Press, 1960, 1967), 37.
[8] Ibid., 37.
[9] Rachel Carson, *Silent Spring* (Greenwich: Fawcett Publications, 1962), 13–15, 97.
[10] Al Gore, "Testimony before the U.S. House of Representatives Energy and Commerce Committee, Subcommittee on Energy and Air Quality, and the Science and Technology Committee, Subcommittee on Energy and Environment," March 21, 2007, http://democrats.science.house.gov/Media/File/Commdocs/hearings/2007/energy/21mar/gore_testimony.pdf.

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the mayor compared global warming to terrorism.[11] It takes something like Alan Weisman's systematic exploration of the consequences of human disappearance in *The World Without Us* to garner enough attention to become *Time*'s number one nonfiction book for 2007.[12]

The prominent place of apocalyptic scenarios cannot be explained by their certainty or even probability to the extent that most of those who deploy them to promote environmental quality think they not only must be but can be averted. Clearly, destruction and extinction are an attention-getting *reductio ad absurdum* of dangerously common behaviors that must be changed. But the tactic carries with it a Chicken Little problem. It might have been thought that the rather spectacular failure of civilization to come to an end in a timely way over the past half-century would reduce the effectiveness of such threatening. But hope, as it turns out, really does spring eternal, and there is always some new human foolishness that will bring everything to a crashing halt. What supports this persistent hope?

Another aspect of the popularity of apocalyptic thinking probably relates to a moral relativism that may be more or less widespread in people's private decision-making, but can be quite pervasive in public affairs: who would be so tyrannical as to "impose his values" on another? This way of thinking makes it difficult to make fine, or indeed any, definitive moral distinctions and leaves us at a loss when it comes to dealing with the normative foundations on which all public policies are necessarily built. Under such circumstances, it may be hoped that at least we can all agree that the end of civilization or human extinction would be a *bad* thing. Yet, as we will see, it turns out that even here there are dissenters, prompting a deeper look at the thinking behind apocalyptic projections.

We can see deeper grounds on which this concern with extinction builds if we start with the common rhetoric of environmentalism which treats human beings as if we were outsiders interfering in the workings of natural ecosystems. This point of view depends on the distinction between nature and artifice that Mill identified. What is natural, then, is what we have not interfered with.[13] In his 1971 book *The Closing Circle,* Barry Commoner provided a classic formulation of this outlook:

> Suppose you were to open the back of your watch, close your eyes, and poke a pencil into the exposed works. The almost certain result would be damage to the watch. . . . [In the same way,] the structure of a present living thing or the organization of a current natural ecosystem is likely to be "best" in the sense that it has been so heavily

[11] Benny Avni, "Mayor Compares Global Warming to Threat of Terrorism," *New York Sun* (February 12, 2008), http://www.nysun.com/article/71103.
[12] Alan Weisman, *The World Without Us* (New York: Thomas Dunne Books, 2007).
[13] Lewis, *Studies in Words,* 44–47.

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> screened for disadvantageous components that any new one is very likely to be worse than the present ones.[14]

But such interference, Commoner holds, is precisely what humans are doing to nature.

What results from placing human beings outside of nature in this way? Surely we should expect that you can't fool Mother Nature indefinitely; nature "will out" in the demise of the interfering alien. We are, after all, kicking over the ladder on which we ascended, while our technology is yet unable to provide all the "ecosystem services" that nature takes care of. Distinguishing nature from the interfered with as Commoner does, then, opens up a dire future for man and nature alike. Consistent with reading humanity out of nature, we can understand why a radical reduction of our numbers has long been viewed as a good thing (although that is not Commoner's own conclusion),[15] and we can trace over the past decades the development of environmental groups ranging from "Zero Population Growth" to "Negative Population Growth" to the present-day "Voluntary Human Extinction Movement," whose Web site notes: "Phasing out the human race by voluntarily ceasing to breed will allow Earth's biosphere to return to good health. Crowded conditions and resource shortages will improve as we become less dense."[16] Some groups, like the Wildlands Project, propose in addition a partial withdrawal of human beings, ceding large territories to "wilderness," that is, un-interfered-with nature.[17]

The once-truism that mankind is "the tool-making animal" can take on a particularly problematic cast when we seek to protect nature starting from the distinction between nature and artifice, for it seems to suggest that human beings as such will *always* interfere with nature in ways beyond the interactions with the environment that life itself requires. That is why, at an extreme point of environmental thought, Deep Ecology has articulated the hope that humanity may be replaced by something better. For Deep Ecologist Bill Devall, Sasquatch, the mythical hominid who inhabits the Pacific Northwest of the United States, represents "a more mature kind of human, a future primal being" with a "fully realized ecological self." He "dwells freely in the forest unencumbered by the burden of complex and complicated technology."[18] Yet if Sasquatch is our

[14] Barry Commoner, *The Closing Circle* (New York: Bantam Books, 1971, 1974), 38–39.

[15] While Commoner held that human interference with nature could have disastrous consequences, he was committed to socialist central planning as the route toward appropriate application of science and technology to solve environmental problems. Hence, he was critical of those, like Paul Ehrlich, who advocated coercion to reduce human numbers.

[16] Web site of the Voluntary Human Extinction Movement, http://www.vhemt.org/.

[17] The rhetoric has been toned down from when Wildlands was first proposed, but the underlying purpose seems much the same. See Wildlands Project, "What We Do," http://www.twp.org/cms/page1090.cfm.

[18] William Devall, *Simple in Means, Rich in Ends: Practicing Deep Ecology* (Salt Lake City, UT: Gibbs Smith, 1988), 39.

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future, what we have here is only another argument that makes the extinction of *Homo sapiens* a normative ideal.

We may be uneasy with the grounds on which this conclusion builds, and not only because of its consequences. Our confidence in our ability to maintain a naive distinction between nature and artifice may be diminished by noticing the many animals who make things that sure look like artifice, whether it be termite towers or bee hives, and whose constructions can have at least severe and rapid local consequences (e.g., beaver dams). Indeed, when chimpanzees or even birds are documented using tools to feed, some tell us it is just anthropocentric hubris to define ourselves as *the* tool-making animal. As Mill suggests, if man is a tool-making *animal,* he did not make himself that way; the capacity to use tools arises out of nature, as of course do the raw materials for the tools themselves, as of course do the constraints created by laws of nature under which the tools become useful and must operate to fulfill their purposes. Finally, consider how much difficulty we have had recognizing when a landscape is "natural" and when it is a result of interfering artifice. The Great Plains—which are now widely regarded as having been maintained, and perhaps even created, by fires started deliberately by native populations—are one classic example. More recently, it has been suggested that what has long been taken as the natural flow of streams in Pennsylvania is really the result of long-disappeared mill dams.[19]

Thus, for many mainstream environmentalists, there is, just as Mill suggested, something problematic about the distinction between nature and artifice; it is hopeless to expect human beings not to interfere with nature. On that basis, we can understand why much of mainstream contemporary environmentalism is not hostile to technology per se, but is rather concerned with finding the right "green technology" informed by the right "green values."

Furthermore, under mainstream environmentalism, practical environmental protection, remediation, or restoration shifts the ground away from seeing humans as "unnatural" and toward envisioning human beings working with and within nature. We are to employ our artifice along the lines of nature, or to support nature, rather than attempting to confront or, in the classic Baconian language, "conquer" it from the outside; we stress instead Francis Bacon's insight that "nature to be commanded must be obeyed."[20]

As we examine this route to stepping back from an understanding of nature that so readily defines environmental problems in terms of disas-

[19] Stephen J. Pyne, "Forged in Fire," in William Balée, ed., *Advances in Historical Ecology* (New York: Columbia University Press, 2003), 77; Robert C. Walter and Dorothy J. Merritts, "Natural Streams and the Legacy of Water-Powered Mills," *Science* 319 (January 18, 2008): 299–304.

[20] Francis Bacon, *The New Organon* (1620), book I, aphorism 3 (Indianapolis, IN: Bobbs-Merrill, 1960), 39.

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ter and extinction, are we not approaching *nature (d.s.)*? We started down this path to find better grounds for accommodation between man and nature. Yet all working technology obeys nature, by definition. What understanding of nature allows us to say that one artifice is more natural than another? Indeed, if nature is all-inclusive, on what basis do we think there is something wrong with our relationship to it now?

It has been suggested that the problem is that we are a kind of invasive species whose very success in spreading destroys the condition for that success. Humanity appears as a weed, a plague, a virus, a cancer—all perfectly natural, and yet all with high potential for destruction—as in physician and Rockefeller Foundation official Alan Gregg's famous speculation, "the world has cancer and . . . the cancer cell is man."[21] You either kill the cancer, or it dies with the rest of the body it ravages—but whether the pitcher hits the stone or the stone hits the pitcher, it is bound to be bad for the pitcher. Anthropologist David Price suggests that our sense of proceeding down the destructive course we are taking voluntarily is an illusion. Rather, it is a peculiar and chance-created genetic makeup that marks our destiny as a destroyer, one more route that nature provides toward (what only we would call) catastrophic change:

> But the exhaustion of fossil fuels, which supply three quarters of [the energy we use], is not far off, and no other energy source is abundant and cheap enough to take their place. A collapse of the earth's human population cannot be more than a few years away. If there are survivors, they will not be able to carry on the cultural traditions of civilization, which require abundant, cheap energy. It is unlikely, however, that the species itself can long persist without the energy whose exploitation is so much a part of its *modus vivendi.*
>
> The human species may be seen as having evolved in the service of entropy, and it cannot be expected to outlast the dense accumulations of energy that have helped define its niche. Human beings like to believe they are in control of their destiny, but when the history of life on Earth is seen in perspective, the evolution of Homo sapiens is merely a transient episode that acts to redress the planet's energy balance.[22]

Following Price's lead, if we see ourselves as part of nature, we might notice how some animal populations exhibit the tendency called "overshoot and collapse." Their numbers expand up to the limits of "carrying capacity," then collapse because the environment can no longer support

[21] Alan Gregg, "A Medical Aspect of the Population Problem," *Science* 121 (May 13, 1955): 682.

[22] David Price, "Energy and Human Evolution," *Population and Environment: A Journal of Interdisciplinary Studies* 16, no. 4 (March 1995): 301–19.

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them. This model is the one followed by so-called Malthusians and neo-Malthusians who argue that a human population of too great size, and/or one that exploits available resources too intensively, will sooner or later approach, if not necessarily extinction, then at least the collapse of civilization.

Of course, it would be precisely to avoid this kind of collapse that we are urged to adopt more nature-friendly attitudes and technologies. But why bother? Nature will take care of any problem in its own way. Our interventions could vary in scale or speed from the norm of organic or geological change, and yet still, as part of nature, appear on a continuum with other natural processes of change, some of which dwarf our efforts with respect to either scale or speed (major flooding, volcanic eruptions, asteroid collisions, ice ages). Even if the worst were to come and we were to do irreparable damage to ourselves and nature, that does not mean that life of some sort could not go on; cockroaches might inherit the Earth, or, short of our demise, human civilization might be diminished. In either case, we can expect nature to proceed well enough on its own even if with diminished diversity in the (geologically) short term. And if not, life itself is only one aspect of nature. We don't "save nature" because there is, practically speaking, no end to *nature (d.s.)* in any case. So starting from *nature (d.s.),* we may begin to wonder if our attachment to nature as it is now is a doomed effort to freeze the status quo in a most unnatural way. We lose the sense of urgency that dire possibilities are supposed to create.

Drawing out the consequences of *nature (d.s.)* in this way is not likely to convince the committed environmentalist not to worry so much about saving nature—although his reasons for doing so may now be less clear. Still, if we are to adopt the wholesale changes in attitudes and technology that are supposed to protect nature, there is another consequence of starting from *nature (d.s.).* What happens to nature, we might wonder, as it becomes more and more a target of our *obedient* manipulation? As more and more we foster recycling and renewable, efficient resource use, protect species and designate wilderness areas, build our green homes and buildings, foster nature's amenity values, monitor the condition of air and water and soil—in short, as we adopt the green agenda and become ever more responsible stewards of nature—are we not, in effect, turning the world into a great park and, in so doing, achieving the "pacification of the struggle for existence" which is the hallmark not of nature, but of the technological project?[23] The result is no less *nature (d.s.),* but is this quite what we had in mind when we set out to use technology to save nature?

Contrary to our original hopes, then, seeing man as part of *nature (d.s.)* does not avoid definitions that frame environmental problems in terms of catastrophe and extinction, and may in addition provide less ground on which to care for nature than thinking of it as that which is not a product

[23] Herbert Marcuse, *One-Dimensional Man* (Boston: Beacon Press, 1964), 227.

of our interfering artifice. But just on that basis a question that "naturally" arises drives us back from *nature (d.s.)* into making a fresh distinction: Is any other "part" of nature capable even of formulating the question of what is best for nature by making such distinctions, however problematic? Perhaps the naive distinction between artifice and nature should give way to a distinction between nature and what the Greeks called *logos,* our speech and reason. This capacity is what makes it possible for us to *think* ourselves outside of nature and thus to think ourselves *outside* of nature. Even if we insist that speech and reason arise out of nature, *logos* still represents that (so far as we now *know*) unique moment at which nature comes to articulate and know itself. If some evidence shows that other animals have the potential for operating in a richer world of mental possibilities than science once thought, the fact remains that we are the ones teaching apes to speak or testing the counting abilities of birds, not vice versa.

It is possible to argue that *logos* and the kind of self-awareness it makes possible are precisely what needs to be rooted out for the sake of the integrity of nature. With his posthuman Sasquatch, Devall aspires that we be again those humanoid beings who Rousseau thought could achieve true happiness in an un-self-conscious immersion in the natural whole.[24] But that means aspiring to eliminate the one being that can care for nature out of care for nature. Hence, this line of thought is paradoxical at best. How many of those who love nature enough to want to see the end of man love it for its mere existence independent of man? It seems more likely that they love it out of just the communicable human responses to it (sublime, beautiful, awe-inspiring, fascinating) that would be lost with the end of man. Deep Ecologists who argue that nature has "intrinsic value" ought to be more troubled than they seem to be by the unique human capacity to conceptualize and communicate that value.

Let us recap. Starting from the distinction between nature and artifice, we saw how easy it is for environmentalism to be driven to an extreme of imagining that nature would be better off without human beings interfering with it. Starting from *nature (d.s.),* we saw how difficult it can become to find grounds for concern about preserving nature as we know it today, and how readily human beings can be conceptualized as just another of nature's destructive forces if we want to preserve something like the status quo. While only a few environmentalists may think that human extinction is an ideal solution to environmental problems, many more cannot let it go as a threat of what might happen if we continue down what they see as a dangerous path. Critics of environmentalism can be frustrated by what they see as a failure to take a more balanced view of human accomplishments. But we can now understand how Mill's two

[24] Jean-Jacques Rousseau, *The First and Second Discourses,* trans Roger D. Masters and Judith R. Masters (New York: St. Martin's Press, 1964), 137.

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definitions of nature favor seeing the human role in nature as essentially destructive, even self-destructive. The environmental extreme is defined by those who think self-destruction the most likely, or even preferred, outcome.

In contrast, thinking about human beings as both within and beyond nature by virtue of possessing *logos* seems to provide grounds for a concern for the well-being of both nature and humanity. Deep Ecology illustrates the limits of this point of view, but there seems to be something close to an inner contradiction in the advocacy of the end of *logos* to protect nature. Only if one reifies nature to the point of forgetting the potential significance of a rational observer of nature does human extinction begin to look like a good idea.

However, as we are about to see, there is apparently no limit to human self-loathing. It turns out that reifying *logos,* manifested in technology that completely restructures nature, produces the same aspiration to do away with human beings, in effect closing a circle in our shifting meanings of nature and returning us to the distinction between nature and artifice, only this time choosing artifice over nature.

III. Nature and Dehumanization in Transhumanism

The beginnings of this line of argument are seen already in Mill's essay on nature. He observes that nature readily appears from our point of view as amoral or, indeed, morally repugnant. Contemporary authors express the same sentiment. There is much in nature that is "thoroughly unrespectable and unacceptable—susceptibility for disease, murder, rape, genocide, cheating, torture, racism. . . ."[25] Furthermore, nature (that is, the chance-based processes of natural evolution) has left human beings poorly designed. Why should we be satisfied with the limits on our native sensory organs?[26] Why must we sleep, eat, and excrete as we do?[27] Why be content with the clumsy spoken or written languages for learning and the exchange of our thoughts?[28] Why should we ever be anything but ecstatically happy?[29] Why should we have to die?[30]

For some decades now those who call themselves variously "transhumanists," "posthumanists," "extropians," or "singularitarians" have

[25] Nick Bostrom, "In Defense of Posthuman Dignity," *Bioethics* 19, no. 3 (2005).

[26] Ray Kurzweil, *The Age of Spiritual Machines: When Computers Exceed Human Intelligence* (New York: Penguin, 1999), 221.

[27] Simon Young, *Designer Evolution: A Transhumanist Manifesto* (Amherst, NY: Prometheus Books, 2006), 28.

[28] Ramez Naam, *More Than Human: Embracing the Promise of Biological Enhancement* (New York: Broadway Books, 2005), 189–205.

[29] David Pearce, "The Hedonistic Imperative," http://www.hedweb.com/hedethic/hedonist.htm.

[30] Hans Moravec, *Mind Children: The Future of Robot and Human Intelligence* (Cambridge, MA: Harvard University Press, 1988), 114–21.

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started with questions and observations such as these, and ended by transforming human extinction into the highest goal of scientific and technological development. For our purposes, such sectarian differences as may be indicated by the different names for those who advance such arguments are not germane. The starting-point for transhumanism is the long-standing and undoubted human ability to use our reason to improve upon the naturally given for our own benefit. This drive toward enhancement of the conditions of life only accelerates with the rise of modern technology and natural science, with their intensive use of reason and exchange of information for "the relief of man's estate," as Bacon put it.[31] Given all that has been achieved so far, and given all the promise of biotechnology, nanotechnology, information technology, and robotics, transhumanists have high hopes that human beings are on the verge of being able to use modern science and technology for self-directed evolution to some better form of life which will greatly transcend present human limitations, creating a new intelligent species—or, indeed, many intelligent species—to replace *Homo sapiens.* While this new kind of being would not *have* to replace humanity (version 1.0) completely, transhumanists have little doubt that such replacement would be an improvement.

People have long imagined having more strength, stamina, intelligence, memory, greater health, and longer life. Now we are beginning to see our way clear to achieving such goals generally and systematically. How does achieving long-standing aspirations for the improvement of human life become a program for human extinction? Transhumanists argue that the technology that might be used to repair a damaged eye, or replace a lost limb will be used to enhance sight or strength. And then, any technology that can be used to enhance an existing capacity will open the door to entirely new ones.[32] But there is much more to be done, because the chance-driven process of natural evolution has not produced an optimal design for the embodiment of our rational capabilities; our bodies are holding us back from all that our reason could achieve. If humans are "rational animals," transhumanists would say, reason is only accidentally connected to the animal, and is hampered by it. Our ability to use artifice to change nature for our own benefit should not stop at changing our own natures.

Thus, human beings are on track for a transformation that will, because of the ever-accelerating rate of technological development, quickly lead us to a "posthuman" future in which intelligence far beyond our own will be embodied in forms we can barely begin to imagine. The anticipated moment in time when the intelligence of the future becomes as unintel-

[31] Francis Bacon, *The Advancement of Learning* (1605), in *The Advancement of Learning and the New Atlantis* (London: Oxford University Press, 1974), 42.
[32] See, for example, Naam, *More Than Human,* 2–3.

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ligible to us as ours is to the ant, the moment when man becomes obsolete, is called "the singularity."[33]

In the coming world, transhumanists suggest, our minds may well be uploaded into far more durable, flexible, and capable machines, machines with manipulator arms scaled from macro to micro to nano that could transform the world around them in ways that would appear magical to us.[34] Perhaps lives will take place in virtual realities in which the distinction between "virtual" and "reality" will be meaningless.[35] Perhaps posthumans will be computer programs that could travel to the stars at the speed of light. Perhaps the minds of individual posthuman beings will mix and meld, even with those of other animals, into a group mind.[36] The search for ever more computational power could lead our descendants to "saturate the universe with our intelligence."[37] They might use a neutron star as an "immense simulator" modeling Earth at the atomic scale, able to run its history backward and forward, providing for "wholesale resurrection" of the "long dead."[38]

The fate of humanity as such in this transformed world of intelligence is at best problematic. Long before nanotechnology, biotechnology, and computing technology made human redesign look anything like a remotely practical possibility by today's lights, J. D. Bernal, the developer of X-ray crystallography, was imagining the merging of man and machine as the next step of evolution. While these new improved intelligences would be peculiarly well suited to the exploration of space, which he considered to be likewise our destiny, Bernal was uncertain about the extent to which humans would find themselves in a losing battle with them on Earth,[39] a battle which has since become the stuff of numerous science fiction treatments. In fact, why anyone would expect humans to prevail or survive given transhumanist premises about the desirability of overcoming our humanity is not clear, unless somehow unenhanced humans are useful or interesting to our successors. One recent book imagines human beings pushed to the edges of the solar system by virtual intelligences, whom humans cannot even begin to understand and who may not even be hostile to them. But in their voracious appetite for raw matter to convert to "computronium" to support their ever-growing processing require-

[33] Vernor Vinge, "Vernor Vinge on the Singularity" (1993), http://mindstalk.net/vinge/vinge-sing.html and http://mindstalk.net/vinge/antising.html. The editors of *IEEE Spectrum,* the journal of the Institute of Electrical and Electronics Engineers, take the idea of the singularity sufficiently seriously to have produced a special report on transhumanism with that title; see "The Singularity: A Special Report," http://spectrum.ieee.org/singularity.

[34] Moravec, *Mind Children,* 107–8.

[35] Kurzweil, *The Age of Spiritual Machines,* 240.

[36] Moravec, *Mind Children,* 115–16.

[37] Ray Kurzweil, *The Singularity Is Near: When Humans Transcend Biology* (New York: Viking, 2005), 356–66.

[38] Moravec, *Mind Children,* 122–23.

[39] J. D. Bernal, *The World, the Flesh, and the Devil* (Bloomington: Indiana University Press, 1969), 79–80.

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ments, they are literally deconstructing the inner planets, and will soon enough turn to the gas giants.[40] In short, with the arrival of "the singularity," there is no particular reason to think that our successors will have any more care for such of us as may remain when they rebuild the universe than we have for ants when we build a house.[41]

Such futures build speculation on speculation, and plainly there are more immediate threats to human well-being in the world today than the prospect of rampaging robots. Yet drawing out the argument to this extent helps to clarify the payoff of the transhumanist critique of nature in the name of *logos.* When *logos* is in principle decoupled from nature, we have in effect returned to the understanding of nature which opposes it to artifice. Bernal argues along these lines, suggesting that the

> cardinal tendency of progress is the replacement of an indifferent chance environment by a deliberately created one. As time goes on, the acceptance, the appreciation, even the understanding of nature, will be less and less needed. In its place will come the need to determine the desirable form of the humanly-controlled universe which is nothing more nor less than art.[42]

Instead of preserving nature, transhumanism chooses to risk human extinction in the name of the endless possibilities of technological development. The universe itself becomes pure potentiality for we know not what; "singularitarian" and inventor Ray Kurzweil would not be surprised if intelligence can gain the capacity to manipulate what we more limited beings think of as laws of nature like the speed of light.[43]

At first glance, such vaunting ambition might seem to presage the end even of *nature (d.s.).* But is the victory of *logos* over nature so unambiguously a victory of artifice over nature? Bernal acknowledges insightfully that further

> development, even in the most refined stages, will always be a very critical process; the dangers to the whole structure of humanity and its successors will not decrease as their wisdom increases, because, knowing more and wanting more they will dare more, and in daring will risk their own destruction.[44]

What then is gained by transforming everything into art? There is little point to asking the question, for "this daring, this experimentation, is

[40] Charles Stross, *Accelerando* (New York: Ace Books, 2005).
[41] For a more detailed treatment of this topic, see Charles T. Rubin, "The Rhetoric of Extinction," *The New Atlantis* 11 (Winter 2006): 64–73.
[42] Bernal, *The World, the Flesh, and the Devil,* 66.
[43] Kurzweil, *The Singularity Is Near,* 356–57.
[44] Bernal, *The World, the Flesh, and the Devil,* 68.

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really the essential quality of life."[45] What we are and what we will make of ourselves, Bernal here suggests, is really the result of an imperative over which we have no control. It is, then, not simply correct to see in Bernal's far future the ultimate triumph of artifice over nature. For the possibility that there is life at all in Bernal's universe enlivened by art was not the creation of the enliveners. With a slight shift of perspective, the victory goes to nature, out of which life first arose.[46]

That transhumanism cannot avoid entirely the pull of *nature (d.s.)* shows itself more directly in the manner in which transhumanists might answer the following question: If humanity has a choice between living with all the problems nature provides for us and not existing at all, why exactly should we choose not existing at all? For those who might be skeptical of the desirability of the future they paint, transhumanists have another ground of argument: necessity. This alleged necessity includes, but goes beyond, a garden-variety technological determinism that says that whatever we can conceive we will do, because if "we" don't do it somebody else will, and "the genie will be out of the bottle." Kurzweil presents the trajectory toward transhumanism as something that long predates computers, modern technology, or even man in his "law of accelerating returns." The "law" states that as order exponentially increases, the "time interval between salient events grows shorter as time passes."[47] The more evolution produces order, the faster it produces yet further order. Kurzweil's "law" submerges the accomplishments of *logos* within nature, subject to a law that has dictated the rise of intelligence in transforming nature since even before there was intelligence. To put it another way, we can say that for Kurzweil, if human beings did not exist, evolving nature would have invented them.

IV. Why Bother with Nature?

When nature is conceptualized as everything, or as everything that is not an artifact, we have seen how easy it is to frame issues about the human relationship to nature in ways that define the problem, or the solution, in terms of human extinction. The fact that the great majority of environmentalists do not make extinction a goal does not prevent them from making it and other sorts of catastrophes essential to the definitions of environmental problems. Nor does it mean they have good grounds to avoid the extinctionist logic implicit in their assumptions about nature and our place in it. Similarly, some of those sympathetic to transhumanists may have continuous enhancement as a goal, rather than the replace-

[45] Ibid.

[46] Compare C. S. Lewis, *The Abolition of Man* (New York: Simon and Schuster, 1944, 1975), 76.

[47] Kurzweil, *The Age of Spiritual Machines,* 26.

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ment of humanity. But even such writers understand that, past a certain point, we are talking about creating a new and superior species to replace what currently exists.[48]

We have also seen how, from the side of environmental concern, viewing nature in terms of its relationship with *logos* (understood as a distinctive human capacity that arises out of but in some sense transcends nature) provides reason for valuing both nature and a human presence in the world. While at first glance it appeared that transhumanists could make *logos* a ground for favoring extinction, closer examination suggested that it was only by the reification of *logos,* by assuming away all of its existing connections with the naturally given, that they were able to do so. In effect, transhumanism turns the *logos*/nature relationship into the artifact/nature relationship. Where Deep Ecology draws extinctionist conclusions on the basis of favoring nature, transhumanism draws extinctionist conclusions on the basis of favoring artifact. In the end, neither could avoid the pull of *nature (d.s.).*

If we look again at Mill's essay "Nature," we can gain some deeper insight into the consequences of thinking about nature in accord with his two definitions. For the real burden of that essay is Mill's relentless effort to demonstrate that there is absolutely no way to derive moral norms from nature so understood. As he concludes:

> The scheme of Nature regarded in its whole extent, cannot have had, for its sole or even principal object, the good of human or other sentient beings. What good it brings to them, is mostly the result of their own exertions. Whatsoever, in nature, gives indication of beneficent design, proves this beneficence to be armed only with limited power; and the duty of man is to co-operate with the beneficent powers, not by imitating but by perpetually striving to amend the course of nature and bringing that part of it over which we can exercise control, more nearly into conformity with a high standard of justice and goodness.[49]

This "high standard," he believes he has shown, cannot be derived even from such beneficent parts of nature as might exist.[50]

In making his argument, Mill in effect synthesizes David Hume's fact/value distinction and Francis Bacon's advocacy of acquiring systematic

[48] John Harris, *Enhancing Evolution: The Ethical Case for Making Better People* (Princeton, NJ: Princeton University Press, 2007).

[49] Mill, *Three Essays on Religion,* 65.

[50] It is worth noting that toward the beginning of his essay Mill laments the lack of a Platonic dialogue on nature: "If the idea denoted by the word had been subjected to his searching analysis," Mill is confident that many future errors might have been avoided (Mill, *Three Essays on Religion,* 4). Yet nowhere does Mill consider the Greek understanding of nature, so different from either of the definitions he provides.

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knowledge of nature (which in and of itself is purposeless matter in motion) for the "relief of man's estate." Mill thus articulates the "value-free" outlook on nature of modern natural science and technology, according to which it becomes a fallacy to suppose that we can find in nature any normative guidance. This idea is sufficiently deeply embedded even in popular culture to appear in a recent *New York Times* op-ed by biologist Neil Shubin. On various issues of the day, he notes, like "raising bigger cattle or growing life-saving organs or trying to 'live forever,' both sides like to stress their abilities to judge what is 'natural'" and hence desirable. But it won't work: "morality is a concept limited to our species."[51]

Leon Kass, chairman of the President's Council on Bioethics from 2001 to 2005, has summed up the situation created by modern science's reductionism:

> [I]t is a truism that nature and human nature as conceived of by modern natural science are virtually useless as moral guides. How could it be otherwise when banished from nature as our science sees it are soul, inwardness, and purpose; living things lack not only natural purpose relative to some larger scheme of things but even ends they naturally seek for themselves. The distinction between fact and value, promulgated by modern philosophy, is in fact rooted in the belief that *nature* is, in truth and not just in our *science* of nature, "objective," "value-free," and indifferent to all human concern with better and worse, or with the good, the just, and the beautiful.[52]

Hannah Arendt draws a conclusion whose accuracy seems to be confirmed, at least up to a point, by the extinctionist tendencies we have observed. Science, she claims, is characterized by anti-anthropocentrism, which means that the scientist qua scientist "does not even care about the survival of the human race on earth, or for that matter, about the survival of the planet itself."[53]

Two refinements must be made to Arendt's formulation. First, as Mark Sagoff's essay in this volume attests, scientists who want, qua scientists, to make a point of caring about the fate of the planet wittingly or unwittingly have to import into their scientific analyses normative elements that should not be there according to their own strict assumptions.[54] Indeed, the reason why mainstream environmentalism, with its heavy reliance on having

[51] Neil Shubin, "Birds Do It. Bees Do It. Dragons Don't Need to," *New York Times* (February 24, 2008).

[52] Leon Kass, "The Troubled Dream of Nature as a Moral Guide," *The Hastings Center Report* 26, no. 6 (November–December 1996): 22–24.

[53] Hannah Arendt, "The Conquest of Space and the Stature of Man," in Arendt, *Between Past and Future* (New York: Penguin Books, 1977), 276.

[54] Mark Sagoff, "Who Is the Invader? Alien Species, Property Rights, and the Police Power," *Social Philosophy and Policy* 26, no. 2 (2009).

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the scientific high ground (most recently, in the case of global warming), does not more often draw out the consequences of its assumptions about nature is due to the same "unscientific" normative commitments. Environmentalists avoid extinctionist conclusions to the extent that, qua scientists, they are involved in the inconsistency of caring about the fate of man or the planet. At best, an effort is made to separate the science (facts) from policy options (values). But the prospect of looming catastrophe which drives the policy is often taken to be a fact rather than the value judgment it truly is. It is easy to forget that to be consistent with "value-free" assumptions about nature, one always must use the conditional: "If we want to do something about x, then here are options to consider."

Second, even when our assumptions about nature open a door to the prospect of extinction, there is clearly a difference between "not caring" about extinction and advocating it. In the case of Deep Ecology, there is no inconsistency in this respect, since that advocacy takes place on the basis of rejecting the scientific outlook, at least insofar as Deep Ecologists are committed to the proposition that nature has "intrinsic value." However, the vagueness of this formulation means it is little help when dealing with the *what, when, how much,* and *who* questions that define actual moral choices, such that it becomes, in practice, the trump card to justify human extinction.

At the corresponding transhumanist extreme, in contrast, the problem is different. As we have seen, it appears obvious on the surface that in good Millian fashion, transhumanists are not going to seek moral guidance from the nature they propose to subdue. But, in fact, we have also seen that when Bernal arrives at the imperatives of "life," or Kurzweil advances his "law of accelerating returns," they *are* deriving imperatives from the naturally given. Do they really believe we have no choice about the posthuman futures they outline, or are they implicitly deriving a moral *ought* from nature?

Mill's essay helps us see, then, that the treatment of human extinction in environmentalism and transhumanism is shaped in large part by the value-free picture of nature at the root of modern natural science. That being the case, perhaps "nature" is not, in fact, a very useful way to conceptualize environmental issues, or questions of technological development. At any rate, the Nature Conservancy's Erik Meijaard is willing to consider that possiblity. He suggests that conservation ought to be explicitly justified by human welfare precisely because "nature doesn't really care. Nature doesn't do ethics. And nature doesn't need saving, especially not because we are part of it. Nature will always be there, either with or without us." If the argument presented in this essay has merit, it is not an accident that Meijaard goes on to say that this shift of thinking implies that "we should step away from the doom-and-gloom scenarios of missed conservation opportunities."[55]

[55] Meijaard, "Conservation for Us."

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Arguably the same outlook is at work in free market environmentalism. Here we find nature treated as raw material for human ingenuity and valuation; it becomes another context for the expression of our preferences, a form of property. These are really the fundamental things; without us, nature would be worthless. If individuals or groups of people decide that nature is worth more to them than some other good, then the marketplace provides the best arena for the expression of that preference. And again, it is some confirmation of the link suggested in this essay that free market environmentalists often take a skeptical stand on "doom-and-gloom" scenarios based on an underlying precept that people, acting within a market framework, are "the ultimate resource."

Taking our cues from human welfare and the instrumental value of nature to human beings may indeed be a useful corrective when it comes to dealing with certain kinds of environmental problems, but it reaches its limit with respect to transhumanism. No few of those sympathetic to transhumanism are explicitly libertarian and free market oriented, and most transhumanists present the issue of enhancements as essentially best left to consumer choices. Their argument generally only requires that we be willing to treat concern for the naturally given as a preference; they expect that only an increasingly small minority will have a taste for it. Nobody will be forced into enhancement or reengineering, but nobody should be prevented from it either. (A world of transhuman possibilities might even have a place for a few primativists who reject them entirely.) Their libertarianism amounts to a wish to liberate human willing from natural and conventional constraints alike; technology will fix things so that we will all be able to do as we please. But this apparent liberation from nature is almost self-evidently utopian, the very free lunch which is supposed by economists and environmentalists alike to be nonexistent. Furthermore, as Lewis might object, what is this supposed authentic voice according to which I transform myself unconstrained by anything that once marked the all too human?[56] Is it really *logos* that rejects the given, or is it appetite, a grasping voice of nature uninterfered with by reason, convention, or the supernatural? In short, whether the important good of human liberty is best defended by advocates of transcending humanity is a large question, one that will not be answered here. Suffice it to note that *this* way of starting from the human instead of the natural provides no obvious stopping-point along the road to extinction.

So while it is clearly quite difficult to think our way out of the definitions of nature that Mill provides and their value-free consequences, I believe there are suggestive possibilities inherent in considering *logos* as a mediating point between human and natural well-being. Those possibilities are in a sense confirmed by Kass's remarks about what is *missing* from modern natural science's account of the human and the natural:

[56] Lewis, *The Abolition of Man,* 76.

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soul, inwardness, purpose, goodness, justice, beauty. All of these seem linked to our speech and reason and the kind of self-awareness they make possible; all of them could serve as elements in an understanding of the human and the natural that might suggest that there is something good to be found for us and nature in continued human existence.

University of Chicago political theorist Joseph Cropsey has laid out in schematic form the dualism that once made it possible to think there was a good by nature. "Man's corporeal necessities and his intellectual powers, bridged by his passions, are his natural constitution," and this natural constitution sets the stage for the moral order in which man operates based on his spirited ability to adopt "a posture of resistence" to "the necessities that are laid on him by common nature." A unique dualism of body and spirit in man places him as a "culminating element" within nature precisely by going beyond nature.[57]

Even if questions and answers based on the dualism Cropsey sketches are unlikely to be formulated with the precision to which science aspires, that does not prevent, *pace* positivism, either the questions or the answers from being meaningful. This dualism is surely not the story that a monistic modern natural science tells, from which point of view there is nothing special about mankind. But has this science refuted the dualistic story, or simply assumed it away, setting out to ask different kinds of questions in expectation of different kinds of answers? As Cropsey describes it, the tension between nature and spirit is perennial; the two are inexorably linked.

To suggest that doors may yet be opened to an alternative view of nature does not mean that many will pass through. Kass himself has no illusions about the prospect that an account of nature that has room for what science leaves out might readily displace, even in the popular mind, that of modern natural science, despite his own life-long efforts to write about a "more natural science." But we can be reasonably confident that if the case is not being made at all, the reductionist point of view will continue to prevail. Furthermore, as Francis Fukuyama has pointed out, it is not as if the many philosophers who in one way or another sought to generate human *oughts* from the natural over the course of the history of philosophy have been definitively refuted.[58] He thinks, for example, that classical liberalism still has much of value to contribute to our understanding of nature and the human good. Even in the twentieth century, the effort to understand human norms in relationship to nature continued among phenomenologists like Erwin Straus and Hans Jonas, neo-Darwinians like Larry Arnhart, and social scientists like James Q. Wilson.

[57] Joseph Cropsey, "Political Life and a Natural Order," in Cropsey, *Political Philosophy and the Issues of Politics* (Chicago: University of Chicago Press, 1977), 226–27. My essay is deeply indebted to the approach taken to nature in Cropsey's essay.

[58] Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (New York: Farrar, Straus, and Giroux, 2002), 114–28.

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V. Conclusion

Human beings as such are able not to take the naturally given for granted, and have created remarkable things on that basis. That ability, and those remarkable things, have only expanded as the modern scientific and technological projects have come into their own. But we have seen in this essay how, within this context, two common conceptualizations of nature lead to (1) framing our concerns about nature in terms of catastrophes and human extinction, and (2) a situation where, at best, we cannot draw a moral defense of nature or humanity from nature, and where, at worst, the extinction of nature and/or humanity becomes a normative goal. Those who wish to defend the continued well-being of humanity and nature may need, therefore, to rethink some deep modern assumptions about both. Mill outlines a view from which nature is divested of moral significance; we have seen how difficult that position is to maintain consistently in practice, and how problematic the result can be in theory. As Horace knew long ago, "You can drive nature out with a pitchfork, but she always comes back."[59]

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[59] Horace, *Epistles* I.10, available online at http://www.humnet.ucla.edu/horaces-villa/poetry/Epistle1.10.html.

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