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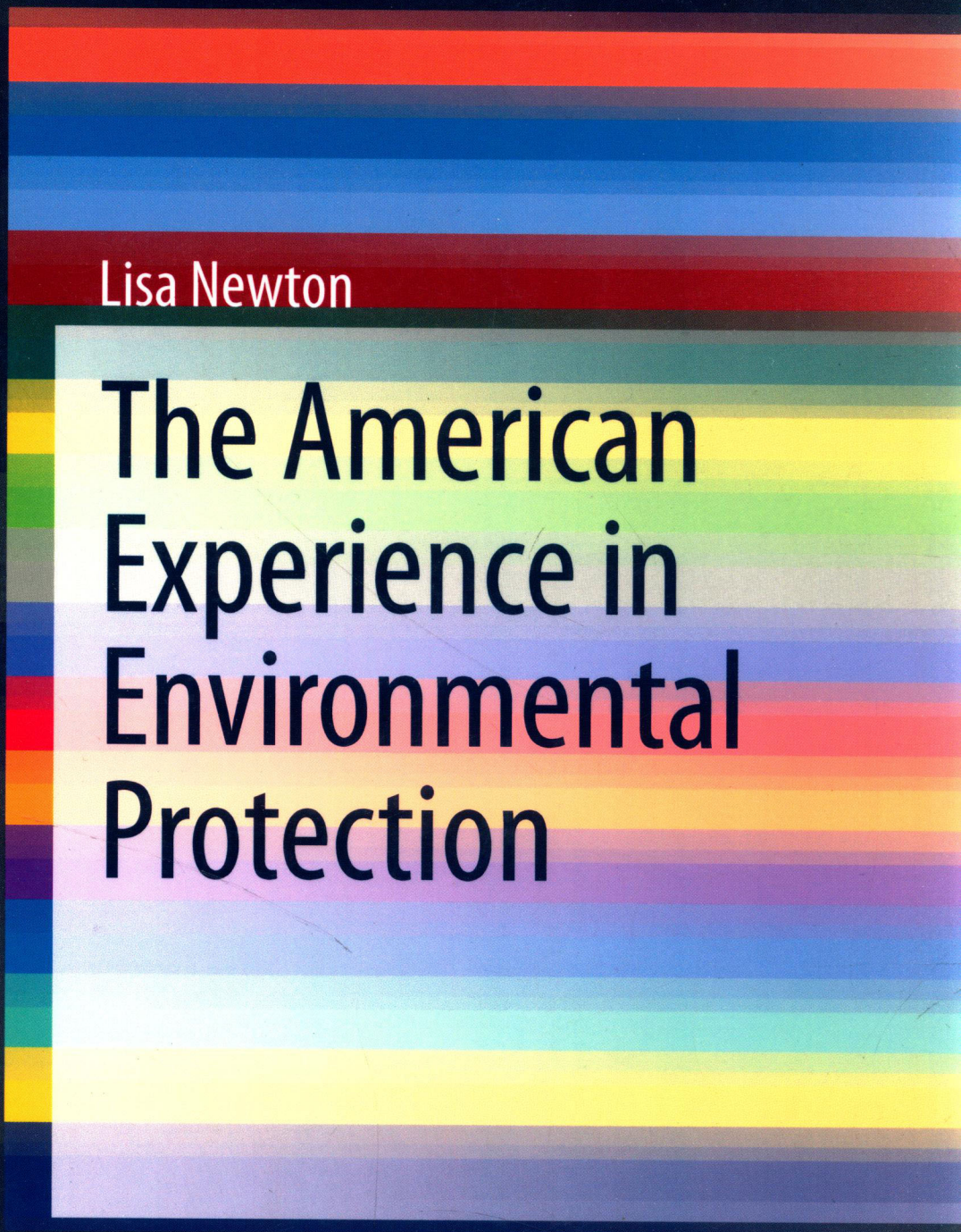

Lisa Newton

The American Experience in Environmental Protection

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Preface

Greetings all, and welcome to the growing world of Environmental Ethics. What follows in this introductory text is an account of the growth of environmental awareness and environmental conscience, in the course of the twentieth century (brought up-to-date in the twenty-first as appropriate), primarily in the United States. I have aimed to keep it short and readable, for maximum usefulness. The major limitation occasioned by this aim is its parochialism: all the cases and literature selected are of the United States (the case of the lethal explosion in Bhopal, India, was a US case, and held implications only for US policy); all the weights and measures are in pounds and miles. The greening of American thought, as seen in public attitudes toward the natural environment, may generalize to the world at large, but the peculiarly American interaction among the peculiarly American institutions in the course of this history suggests that indigenous social and cultural expectations may play a large role in any nation's orientation to the natural environment that surrounds their history.

Several audiences guided the composition of this work. First, it is directed to undergraduate and graduate students, whom I have had the great pleasure of teaching (and learning with) for over 40 years, and who I have found to be earnest and delightful but woefully ignorant of the background, concepts, and defining conflicts in the field of environmental studies. We often felt the need for a short treatment of the key cases, initiatives, and literature that created this field. Whether the students will be doing bench science on the diseases of plants or fieldwork on the effects of climate change in the southern Appalachian Mountains, I knew they would do better with a feel for the history that led them there.

I was especially concerned for our business students, who were headed off to the corporate world with training primarily in economics, finance, management, marketing, and demonstrations that reliance on the free market will solve every problem. They tend to learn that environmentalists are their enemies. They are not; American corporate leaders have become some of the strongest advocates for the preservation of the health of the land. For this reason, I have included several of the cases that have shaped the relationship between the major actors in the movement to preserve the environment and the corporations that found themselves, not by their own choice or expectation, ranged in opposition to them. This

text distinguishes itself from the bulk of the environmental literature by ensuring that the perspective of the corporation is fairly represented.

Another audience, following on that point, may be the corporate officers who find themselves (not necessarily by their own choice or expectation!) responsible for developing or implementing environmental policy within the corporation. Possibly they have time to educate themselves in the sciences that comprise ecology and the history of corporate confrontations, but likely they do not; this book should tell them all they need to know. For that matter, it should provide enough fact and insight to help any citizen sort out the political/environmental choices before us. After all, they have a right to know.

The need for brevity and rapid absorption in the various audiences has led, inevitably, to a concise organization that must constitute oversimplification for purposes other than my own. It has also led to decisions to omit entirely consideration of social ecology, ecofeminism, bioregionalism, and other primarily political aspects of the subject. It has long been my contention that the various topics of "environmental justice" have nothing to do with the environment and everything to do with larger legal and political fields of justice; they await another work.

Anyone, scientist or otherwise, who has tried to follow the concerns for the biosphere, warnings of climate change, loss of water, and numerous others, knows that scientific facts—number of parts per million (ppm), number of degrees of global warming to be expected under various scenarios, number of people whose health may be at risk from environmental conditions, population figures—form the bulk of most arguments. I have not always tried to include the latest figures on these problems; by the time the book reaches the shelf in the store, they would be out-of-date. It will always be the student's job to update the numbers. But I have tried to state the problems, put them in perspective, and encourage the reader to find out more on his or her own.

The book is now yours, to read, mark, and reflect upon; I hope you have as much joy reading it as I have had in writing it.

Introduction

There is little consensus on the nature and power of environmental ethics. One significant historical fact underlies all discussions: where only a few centuries ago Nature—the non-human part of our world—was regarded as nothing but an obstacle to our purposes and sometimes a means to our ends, an alien, an enemy to be conquered; Nature is now seen as the basis for all human as well as non-human life, valuable and worthy of preservation. The conditions for this transformation are generally known: with the explosion of the human population and its expansion to all habitable parts of the Earth, the boundaries of what is still wild are plainly seen; with the overuse of the fisheries and forests, the limits of the natural resources upon which we have depended are now in sight; and a series of natural collapses and catastrophes, threatening to the health of humans and others, have brought home to us the need to adopt a protective attitude toward the natural ecosystems.

Implicit in this transformation is a profound change in perception, in the way non-human Nature is seen and comprehended. All other ethics are anthropocentric, oriented to the good of human beings. Part of the subject matter of environmental ethics starts there: Nature is good, and must be protected, for the sake of human safety (from poisons, toxic spills, and explosions), human health (vs. pollution of air, water, and soil), and human enjoyment (in the preservation of the scenic wonders of the wilderness). Against the anthropocentric subject matter, there stands the ecocentric or biocentric part of the environmental ethic: Nature is good for its own sake, and should be protected, all of it, just for that reason. No reasons need be advanced to ground such an obligation to protect, any more than reasons have to be advanced to support the value of an individual human life, and the duty not to kill. Between these two clusters of values, there is a third, calling on the spiritual aspect of the natural world: Nature is beautiful, and requires our attention for that reason alone, and for what it does for our souls when we are in contact with it.

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Chapter 1
Environmental Background

Abstract The growth of "environmentalism" in the United States is traced from the earliest efforts to preserve the American wilderness through the politicization of environmental crises, real and perceived, to Earth Day and the national commitment to protect the natural environment and human health. The initial opposition between private enterprise and an orientation to the natural environment is briefly sketched, and the emerging obligation to shepherd products from "cradle to grave".

Keywords John Muir • Aldo Leopold • Rachel Carson • Garrett Hardin • Norman Borlaug • Barry Commoner • Love Canal • Bhopal • *Exxon Valdez*

What values, dilemmas, and conundrums form the field of environmental Ethics? What does the earth, its water and air, mean to us? What are the rights and duties of humans *vis a vis* the natural world from which they came? The cases and materials of an environmental ethics course tend to center around three sets of values: human health (physical and emotional), human economic welfare (profit and loss), and the flourishing of the land itself. The first two values are *anthropocentric,* measuring value, benefit and harm, in any situation, against human well-being of some sort. Incidentally, they tend to conflict: generally, human health is threatened by a polluted environment, so in the interests of health we must minimize pollution; but pollution (in the classic cases) tends to arise from profitable business enterprise, which improves the economic welfare of the people. In the interests of jobs and the economy, then, while never praising pollution, we ought to be very cautious in our efforts to abolish pollution for fear of hurting business. The third value is *ecocentric,* measuring the worth of any policy or practice according to its effect on the ecosystems of the earth. The original, and clearest, ecocentric ethic is the "land ethic," first and most eloquently advanced by Aldo Leopold in the mid-twentieth century: **"A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise".**[1] All anthropocentric ethics can be subsumed, if indirectly, into general ethics (through a series of hypothetical imperatives); but at the heart of

[1] Aldo Leopold, *A Sand County Almanac and Sketches Here and There*, New York, Oxford University Press, 1949, 224–225.

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environmental ethics is *ecocentricity:* the basis of the ethic, and the center of moral value, is the earth, the land itself, the created physical world of which humans are a very small part. Ultimately the question of environmental ethics is *why* the earth is valuable all by itself, and there are no easy answers.

Keynote for the Field: Aldo Leopold

Aldo Leopold (1886–1948) was a graduate of the Yale School of Forestry (1909) who worked for the U.S. Forest Service for nearly twenty years, primarily in predator control (hunting wolves, usually). In his *Notes from Here and There* he tells the story of his change of heart, from happy hunter to reflective environmentalist. It's worth repeating:

> We were eating lunch on a high rimrock, at the foot of which a turbulent river elbowed its way. We saw what we thought was a doe fording the torrent, her breast awash in white water. When she climbed the bank toward us and shook out her tail, we realized our error: it was a wolf. A half-dozen others, evidently grown pups, sprang from the willows and all joined in a welcoming mêlée of wagging tails and playful maulings. What was literally a pile of wolves writhed and tumbled at the center of an open flat at the foot of our rimrock.
>
> In those days we had never heard of passing up a chance to kill a wolf. In a second we were pumping lead into the pack, but with more excitement than accuracy: how to aim a steep downhill shot is always confusing. When our rifles were empty, the old wolf was down and a pup was dragging a leg into impassable slide-rocks.
>
> We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes—something known only to her and to the mountain. I was young then, and full of trigger-itch; I thought that because fewer wolves meant more deer, that no wolves would mean hunters' paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view.[2]

Leopold goes on to describe a landscape browsed to death by a surfeit of deer, until, every shred of vegetation gone, their bleached bones join the denuded landscape. In order to preserve Nature, he insists, even the part most useful to human beings, we must learn to "think like a mountain," with the whole ecosystem in view. His classic *A Sand County Almanac* and other essays proceed from this point, culminating in the statement of the "land ethic," above.[3] (Note that the Land Ethic answers the question, "why is the earth valuable?" It makes the earth the center of value, and measures human activity by its effects on the earth.) It would be wonderful if American environmental consciousness had taken off from there. But Leopold, by the end of his life a quiet professor at the University of Wisconsin, was little noted nor long remembered by the American public at that time. (His name recognition has improved since then.) The Land Ethic may have

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[2] Aldo Leopold, *A Sand County Almanac and Sketches Here and There*, New York: Oxford University Press, 1949 pp. 129–130.

[3] *Ibid* pp. 224–225.

been the earliest comprehensive statement of environmental ethics in the United States, and it may be where we end. But we have a long history of crises to go through before we get there.

Let us begin with some of the more familiar examples. All these cases are real (reality overtook my ability to construct scary scenarios years ago). Notice, as we go through these cases, that while the burden of the case (and why it made it into the literature) is anthropocentric, focusing on the ability of people to stay healthy, make a living or enjoy themselves, even the simplest cases call upon ecocentric dispositions, as reinforcement for the anthropocentric conclusions.

Case 1: Hetch Hetchy Valley

Environmental consciousness had begun, for the United States, in the ninetieth century, when the gentlemen of the hunting class discovered that their hunting and hiking grounds were being eaten up by the industrial revolution's insatiable demand for wood. President Theodore Roosevelt's progenitors founded the first National Park, Yellowstone, in 1872, not to go shooting, but in large part for the love of Nature and the desire to preserve it for enjoyment, theirs and that of all the American people. In the establishment of such Western destination points, they had the support of the railroads, looking for tourist dollars in an expanding market for rail travel. Hikers and businessmen were joined by the visionaries of a new preservationist movement, led by an eccentric adventurer, John Muir. Muir had been blinded in an industrial accident as a boy, moved west to the mountains and fell in love with them. He vowed that should he ever regain his sight, he would dedicate his life and work to preserving those mountains, and spearheaded a move to keep them forever pristine and protected. He did regain his sight, and began his campaign, which brought Yosemite National Park into being in 1890, but he didn't stop there. He formed the Sierra Club in 1892, to promote exploration and consequent protection of the wild areas, to promote the responsible use of resources, and above all to educate the citizenry on the value of protecting environmental quality and on the ways to accomplish that protection. Meanwhile Roosevelt's friend Gifford Pinchot, founder of the Yale School of Forestry, noticed that unlimited logging was threatening our resources for the future. The Forest Management Act of 1897 undertook to identify and protect forest reserves, primarily for their economic uses, to save the wood, water, and mineral resources for later use. These reserves became National Forests in 1907. Save for this reservation, that there were some forests that we were saving to cut later, the creation of forest reserves was due in some part, always, to love for the beauty of nature, with no further reason necessary.

To review this early trend in environmentalism, then, we started with a love for the land, the land as it was, for its beauty, for its wealth as a resource, and for our own enjoyment and spiritual refreshment. Note from the beginning, the fault line in the conservationist movement. According to Gifford Pinchot, Teddy Roosevelt's

Forester, the woods were an economic resource for the United States, needed by her people, whose future the President and he served. According to John Muir, no human purpose could justify destroying the natural beauty of the woods themselves. The two understandings of the move to preserve the forests were bound to lead to conflict at some point, and they did monumentally, in Yosemite Park's Hetch Hetchy Valley. The problem was simple: San Francisco and its surrounding region needed more water; the waters of the Tuolumne River, swelled by snowmelt from the surrounding mountains, would provide the region with more than enough pure water; and the river ran through a conveniently stable and narrow valley at Hetch Hetchy. So Pinchot proposed to dam the river and send the water to San Francisco. From 1901 to 1913 Muir and the Sierra Club conducted furious letter-writing and lecturing campaigns against the dam, arguing both that the wilderness had a right, preceding human rights, to persevere in its original form (Muir), and that the beautiful valley should be preserved for the joy of future humans (most of the other letter-writers). The effort did not succeed. In 1913 Woodrow Wilson signed into law the Raker Act, authorizing the damming of the river. It took 20 years to build, but in 1934 the Tuolumne Reservoir started delivering water to San Francisco. That water system now serves 2.4 million citizens, plus businesses and public facilities of all kinds. If the current movement to "Restore Hetch Hetchy" prevails, where will water come from?[4] This conflict is real, and is in no way resolved.

Case 2: Prospectors and Neighbors

The environmentalist move to restore the valleys occasionally worked. Not every set of dams supplied entire cities. Some had been built, on the smaller rivers, just to run local mills, now out of date and closed. The environmental damage of these dams, unforeseen or disregarded at the time they were built, was significant: the salmon and steelhead runs were interrupted, sometimes ended, there was no way to replenish the downstream environment with upstream nutrients, and recreational uses of the river, fishing, kayaking and rafting, were impossible. One such river was the Rogue River, flowing through Oregon to the Pacific Ocean. It took the NGO Water Watch 23 years of campaigning and lobbying (and lawsuits) to bring down four dams that blocked the river from Eagle Point to Grants Pass on the river, but they won—the last dam, Gold Ray, was demolished August 11, 2010.[5] Wonderful! The river now belongs to nature and to those who would innocently enjoy it!

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[4] The information came from the websites of the Sierra Club, of Restore Hetch Hetchy, and the Bay Area Water Supply and Conservation Agency, on July 1, 2007.

[5] Felicity Barringer, "Where Dams Once Stood, Prospectors Spur Anger," *The New York Times*, September 4, 2010, A10.

Not so fast. The next sound heard on the river was not the babbling of water over stones, or the scream of the fish-hawk, but the deafening roar of gas-powered gravel dredges, as prospectors seeking gold clustered below where the dams had been, dredging up mounds of gravel from the bottom, sifting through the piles for flakes of gold, then returning all the gravel to the bottom in huge mounds, only to start again a few feet away. After all this work to restore the river, does the environment now belong to the "New 49'ers" [sic] as they call themselves? Immediate efforts were made to determine how much environmental damage they were doing, with (as is usual in these cases) mixed results. To be sure, the dredges destroyed the bottom, where the fish spawn, and the dredges can suck up eggs and small fry; but the dredging happens in summer, when the spawning is done. It destroys insect nests on the bottom; but these return in weeks. Meanwhile, fish get to eat the disrupted insects. All the dredgers have permits from the State of Oregon Department of Environmental Quality; Beth Moore, general permit coordinator for the state, "said 1,205 dredging permits had been issued this year, up from 934 in 2009".[6] That's revenue for Oregon, with no obvious environmental damage, except for the assault on the ears of the neighbors, and possibly other damage to them—the neighbors claim, for instance, that the silt is fouling their irrigation pumps. At first it was assumed that the prospectors would only be active on weekends—but this year, they've been at it seven days a week. No real economic profit from the mining is alleged—but the hope of gold can keep the activity going through a long run of dry holes. The only claim on the part of the prospectors is that they have that hope, that they want to prospect for gold in this way, that they are American citizens, that they have permits, and therefore that they are free to ignore the neighbors. They see themselves as "citizens whose rights are under siege".

Who are the adversaries here? So far, the ecosystem does not figure in; permits can be drawn to restrict the seasons of prospecting so the salmon are not hurt. This particular battle is between groups of citizens whose interests in interacting with the environment just happen to be incompatible (like those of the hikers who want to enjoy the natural ambience of the mountain park, and the motorcyclists who want to use the trails for adventurous and high-decibel riding). Who should have precedence? This is a matter for local politics—suppose it were the neighbors who were doing the dredging?—and any solution will have to be negotiated repeatedly.

Case 3: Rachel Carson, DDT and the New Threats to Our Health

The period immediately following World War II in the United States was defined by the triumph of Science. The changes that affected the American land in this new industrialized time were enormous. Plastics were discovered. Mighty

[6] *Ibid*, p. A10.

machines and household appliances, consuming electrical or fossil fuel energy rather than human effort, transformed the home and the workplace. We believed in miracles, benign miracles. For the first time in history, we could contemplate the possibility of eradicating disease and feeding the world. These hopes were spawned by two of the banner scientific discoveries of the mid-century: antibiotics for the infectious diseases that used to kill our children, and organochlorines to rid the world of the insect pests that had carried disease and decimated our food crops since the beginning of human existence. Foremost among these chemicals was the pesticide dichloro-diphenyl-trichloroethane (DDT), apparently harmless to human beings (the son of its developer recalls traveling the country dramatically eating the stuff to prove it wouldn't hurt anyone), but absolutely deadly to insects—we sprayed the malarial swamps and the lairs of the tsetse fly, and we also sprayed our farms, to create the rich tapestry of efficient industrialized agriculture, which could produce more food than we had ever dreamed of.

It was the DDT that launched the current wave of environmentalism—the anti-industrial revolution, I suppose we could call it. The era was born in 1962, with the publication of *Silent Spring*, Rachel Carson's masterpiece.[7] Rachel Carson was a biologist by profession, a naturalist by persuasion, with many excellent portrayals of nature in and near the sea to her credit. But the theme of this book was not that we ought to preserve nature for its beauty, but that our imposition of industrial methods and profit motives on nature, in the form of the widespread use of the pesticide DDT, was death-dealing in its effects on non-target species. Humans, for instance, at the time she wrote, carried large burdens of DDT in their own bodies. We had thought it was harmless, but it was not. In the body, pesticides mimic chemicals in the endocrine system, and may have serious negative effects on reproduction. As she wrote, the reproductive failures of the magnificent raptors, our prized eagles and falcons, which fed on the birds and fish contaminated by the insecticide, had already been documented.[8] That our industrial agricultural chemicals might be dangerous to higher species had been suggested for decades, but Carson had the proof. Slowly and reluctantly, the Congress of the United States brought itself to intervene in the Free Market system to save the birds, and that was the beginning of environmental legislation in the country.

Reflection: How Had We Come to This Point?

What created the environmental crisis? In 1967, Lynn White jr published his groundbreaking essay, "The Historical Roots of Our Ecologic Crisis," in *Science* magazine, one of the most prestigious journals on the planet. His argument was that the major culprit of destruction was the theology of human domination of the

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[7] Rachel Carson, *Silent Spring*, Boston: Houghton Mifflin, 1962.

[8] Carson, pp. 118–122.

earth, originating in the Book of Genesis chapter 1, where God assigns to Adam the power and duty to name, i.e., dominate, all the other animals. All of creation, on White's reading of the tradition, was subordinate to human desires; "God planned all of this explicitly for man's benefit and rule: no item in the physical creation had any purpose other than to serve man's purpose".[9] This understanding became part of Christian assumptions; my Christian university has cut in stone (literally, around the top of the columns of the porch of one of the dormitories) the quotation from St. Ignatius, "God made man [humans] for Himself, and everything else in creation for man".

To the Judeo-Christian tradition, White joined the religion of Technology. According to what we now know as the Technological Imperative, humankind has always exhibited an unchecked enthusiasm for each new device, opportunity, machine, ever larger and more complex, to increase productivity and consumption of the world's resources. From the invention of the wheel to the crafting of the atomic bomb, each "advance" in human technology had rapidly become irreversible, laying the groundwork for the next.

The Technological Imperative is not a surprising emergence in the human experience. Long before Capitalism and the Free Market came on the scene, competition for resources was a fact of life. There has never been a time when the resources available to a community were not "scarce," from the perspective of the members of the community, who had to divide them up somehow. (We need not retreat to Darwinian times, and the competition for dominance and for mates; in any discussion of the twentieth century environmental movement, we may assume that the players have social structures, like elections and proposals of marriage, which channel such conflicts). Technological advance—whether in the form of a better plow, or tractor, or turbine, or high-speed railroad, or jet aircraft, or computer (or iPhone), or method of creating financial products (like derivatives) without the U.S. Securities and Exchange Commission noticing—has always advanced the economic fortunes of its possessor, and so written itself irreversibly into history. We do not expect its early disappearance.

White's critics rallied first on the theological issue. There are no plans for an environmental movement in the Bible, but there are many places where the natural world is celebrated and loved. Further, White's interpretation of Genesis is open to question. It is not clear that "naming" means "dominating": it might just mean organizing into an intellectually available framework for human enterprises. And in any case, the *second* chapter of Genesis gives a much clearer picture of the desired relationship between humankind and Nature: first God created the Garden, then "God placed man in the Garden *to tend and to keep it*". The relationship is not one of domination, but of stewardship—it is the human's job to protect Nature, the garden, *and to give an account to God, as to any owner, for the conduct of his stewardship at the end of days.* Worth noting is Psalm 24: The earth is the Lord's,

[9] Lynn White Jr., "The Historical Roots of our Ecologic Crises," *Science*, 155, 1967, p. 1205.

and the fullness thereof, the world and they that dwell therein. It does not belong to humans. (Note that the passage renders any human "right" to private property problematic.)

The Technological Imperative is similarly open to question. Its major role is, as above, as an aid to competition, which is ordinarily assumed to be necessary to survival. But it doesn't have to be. If social arrangements can manage distribution of scarce resources according to some plan accepted by the whole community, competition becomes unnecessary (in fact counterproductive), and the Technological Imperative can be scrapped. At this point the community can decide exactly what level of technology they want to accept, what kind of work they want to do and what kind of relationship they wish to maintain with the larger community. (There is an impressive literature on the strategies for forming communities that practice voluntary simplicity, even voluntary poverty.[10] All of them consciously reject the Technological Imperative.)

On the Christian imperative to dominate nature, then, White is simply wrong, or at least incomplete. On the Technological Imperative, he is probably right, historically, but there are alternatives, to some of which we can return at the end. But White's thesis was unusually important in the history of environmentalism: for the first time, scholars were invited to examine their own intellectual and cultural history for the sources of the problems they addressed. According to Baird Callicott, most of the philosophical discussions of the natural environment in the 1970s were dedicated to debating Lynn White's thesis.

Case 4: Malthus Revisited: Kenneth Boulding's Spaceship, Garrett Hardin's Commons and Paul Ehrlich's Population Bomb

In 1966, not that many years after Rachel Carson's pioneering work, economist Kenneth Boulding published "The Economics of the Coming Spaceship Earth," a powerful Malthusian argument that the resources of the earth, overused by an increasing population, were severely limited and decreasing. For the entirety of human existence to this point, he argued, humankind had enjoyed the illusion (and for the first several million years of human existence, the fact) that the material and energy resources of the earth were limitless in relation to human needs. Now suddenly we were looking at a closed and limited system, finite in resources and possibilities, putting firm boundaries on human enterprise. It was a bit like the closing of the frontier. Even if we avoided poisoning ourselves, we have to worry

[10] See, for instance, Linda Breen Pierce, *Choosing Simplicity,* Carmel, CA 2000; Mark A. Burch, *Stepping Lightly,* Gabriola Island, BC: 2000. Also good is the history and literature of The Catholic Worker, founded by Dorothy Day.