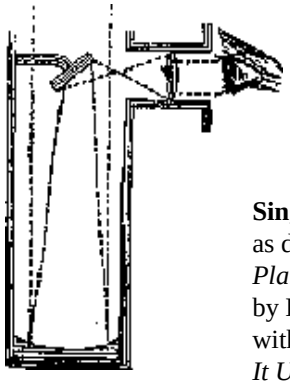


Single Vision Science Still Sleeps, as demonstrated by *Trashing the Planet: How Science can Help ...*, by Dixie Lee Ray and Lou Guzzo, with reference to *Reality Isn't What It Used to Be*, by Walter Anderson, and *Powershift*, by Alvin Toffler.

Why should we even read these books, much less think about them? Because ecology is seen as a 'wet blanket' on the fires of industry and a 'brake on the wheel' of progress. The extreme statements in books like these, because of their perceived excitement and blind optimism, may be the ones that prevail in the public "mind." These economic monomaniacs expect that the increase in knowledge (or information, rather) is sufficient to suspend the laws of ecology and the limits of the earth. (Even Barry Commoner erroneously states that, because the ecosphere is not a closed thermodynamic system, the limits to growth is based on a "serious misconception." Unfortunately, Commoner overlooks the limits of the system, e.g., net ecological productivity).

What is wrong with these books? First, ecological problems are minimized as 'side-effects' [sic] or wished away. The scale of the problems is ignored. Second, the authors discredit conservation movements by representing them as extreme and then attacking them with incomplete facts and *ad hominem* arguments. The focus of these arguments is so narrow that the frame becomes fuzzy. Third, their own solutions are exclusively scientific, technological, and managerial; they expect to substitute technology and homogeneity for understanding and diversity.

Ecological Problems as Side Effects?

"Certainly we have to acknowledge that technology has sometimes had unexpected side effects." says Dixie Lee Ray in her book, *Trashing the Planet: How Science can Help*—an apt name for this book, especially without the rest of the subtitle—*Us Deal with Acid Rain, Depletion of the Ozone, and Nuclear Waste (Among Other Things)*. Sadly, she's in good company; even the Brundtland report addresses (p. 22) the problem of "side effects." As Garrett Hardin has said, there are no such things as side effects, just effects; we call them side effects because we didn't intend or anticipate them, and calling them side effects lets us pretend that they are less important or accidental (remember Hardin's first law: you cannot do just one thing).

Ray claims that the side effects cause us to worry to the exclusion of considering the benefits of a new technology. Her example, the internal combustion engine, is ambiguous. In fact, it has had great undesirable effects on society, regions, and the planetary atmosphere. Pollution is not a side effect here; it is an equal effect, along with mechanical power. The costs of air pollution are staggering: $40,000,000,000 in health care and lost productivity in the U.S.; $4,000,000,000 from damage to wheat, soybean, and peanut crops; $5,000,000,000 from acid rain damage to agriculture, forests, and aquatic systems; destruction of 20 percent of European forests (figures from the Worldwatch Institute, 1988). Other pollutions are as bad. The oil pollution of the oceans from spills as well as the continuous discharge of poisonous sludge (up to 17,000 gallons per month per supertanker, including the BTX compounds—benzene, toluene, and xylene) and toxin-contaminated water kills thousands of animals and fish every month (including salmon, ducks, and sea birds with concentrations of metals—zinc, chromium, and cadmium).

Instead of solutions, Ray and the others offer comforting yet fallacious slogans, such as "Poison and radiation are really okay" and "There are plenty of trees left somewhere."

Slogan 1: Poison and radiation are really okay!

Ray claims that biocides have given us food surpluses new and unique in 6,000 years of history. Not so; from ancient Iraq to ancient Peru, food surpluses permitted great city populations (poor agricultural practices and overpopulation doomed some cultures to early extinctions). Ray addresses the wonder of agricultural surpluses, but she doesn't even consider the costs in erosion, degradation, and pollution. She simply says that any other way of pre-industrial agriculture is "irresponsible."

Ray bemoans the "lyrical hysteria" of Rachel Carson, saying the growing chorus of "self-proclaimed environmentalists" unfairly resulted in DDT being removed from the market. Ray inadvertently identifies many of the problems, but fails to associate them with science or technology. For instance, she says about DDT that it was overused because of its effectiveness—a common "human failing." She also quotes evidence that the peregrine falcon population was declining before DDT and its fate was more closely related to (p. 71) "the availability of prey and nesting sites than to pesticides." Animals face one form of human interference or another it seems.

Ray notes that PCBs were eliminated in waterways, with 'proper permits' (p. 87—as if political incompetence justifies the technological). She concludes that "no harm" ever came from it. Even PCB-related illness in Japan in 1968 was the result of its conversion to polychlorinated dibenzofurans (which is what happens to used PCBs). Dioxin poisoning is also dismissed: "No human has ever

become chronically ill or died from dioxin exposure in the U.S." Although she admits that it is highly toxic to some animal species,

Ray claims that dioxins never claimed one human victim. Perhaps. In that sense, no one has died of AIDS or starvation either, just the 'side effects.' She seems unaware of the 10,000,000 environmental refugees around the world who left their homes because of anthropogenic hazards.

She asks with Paracelsus (p. 109): "What is it that is not poison?" And, she admits Paracelsus proposition: "Only the dose determines that a thing is not poison." Having admitted that everything can be poison, she states unequivocally that DDT, PCBs, and CFCs are not poisons. She does not seem concerned that nerve gases and many artificial toxins only need parts per billion to be effective.

She also uses this common sense principle to dismiss the hazards of radiation. Yes, Ray, we know the earth is radioactive and that life developed with background radiation. But, we also understand the importance of dosage, and it is the increasing doses that are dangerous. Missing from her discussion on the happiness of radioactivity is any mention of Chernobyl, not the estimated deaths (1500 by the year 2000) or the estimated costs (over $120 billion by 2000). And what of the costs and dangers of the other 37 closed reactors around the world and the 40 more expected to be abandoned by 2000?

Reversing the attack, she 'reveals' that "60 to 100 million people" are dying each year as the direct or indirect result of anti-pesticide campaigns. Alas, she provides no arguments or sources for her figures. She dismisses activists as naive or misinformed or ignorant. Is it her ignorance or naivete that lets her not mention the effective and tried alternatives to indiscriminate biocide campaigns? Organic gardeners use good alternatives. Traditional cultures have used them for millenia.

Slogan 2: There are plenty of trees left somewhere!

Ray claims that tree-growing areas have increased 18 percent from 1955 to 1977, and forests continue to increase in size, even as we supply much of the world's needs. For responsible timber companies (could this be a qualification?), Ray claims that reforestation is the usual, not "an occasional, practice." First of all, any increase is true only of plantations. Forest land has been decreasing (except in unfavorable farming areas like New England). Thoreau and Marsh warned of overcutting in the 1800s. Theodore Roosevelt warned of overcutting in 1908. The rate of cutting, for a long time, has exceeded all revegetation, according to R. M. Peterson, former Chief of the U. S. Forest Service. We are mining every old-growth stand we can for short-term economic gains. Although Oregon and other Northwest states are becoming tree plantations (third-world colonies?) for East Asia, we cannot supply our own demand, much less all of the world's.

Second, the few areas that are replanted are done with uniformly aged, monocropped (single-species) trees in plantations. These weed trees are harvested for their cellulose; they are not forests, but maintained patches of wood, and Ray attributes this greatness to better forest management. She even states that the main danger to forests comes from federal lands, where "no management is allowed, because 'nature knows best.' " Wow! How did the planet ever grow trees without us? With us, much of the earth has been deforested, from North Africa and Lebanon to Greece, Nepal, China, and the Americas.

Ray and others complain that forestry jobs are being sacrificed to save owls in the state of Washington. This is an erroneous simplification. Logging and production jobs depend on sustainable forestry and not the one-time destruction of the Washington temperate rain forest. Only one job class—deforester—would be lost for owls, and no one admits to being in that class. Does anyone remember the Illinois loggers, long after the Illinois forest has been destroyed?

Ray patronizes Carl Amery for considering that the killing of a forest is more contemptible and criminal that child slavery. Ecological destruction is a crime! It leads to poverty and disease. What does Ray think causes any kind of slavery, ultimately, if not the poverty of the environment?

Deep ecologists as Nazis?

Ray turns her vitriol on vegetarians, dismissing them as always having "a faddish popularity" (p. 81) among "some religious cults." She links Earth First! (an "ecology terrorist group") with the Animal Liberation Front and blames them both for sabotage of farms and ranches (no doubt waiting for proof that they also caused the Vietnam war, stock crash, and recession). She identifies Greenpeace as "zealous adherents" engaging in "physical violence" (possibly by painting seals, photographing waste dumps, and coming between people and their destructive acts). She turns detective (p. 82): "Richard Whitaker of the FBI ... attributes increasing terrorist attacks to the teaming up of militant vegetarians with radical environmentalists." Bolt your doors! Obviously, these terrible radicals are trying to get undeserved media attention from the rational scientific destruction of rabbits to test ground-breaking cosmetics.

She admits that not enough is known about environmental problems, but then concludes that "so-called environmentalists" are wrong and that she and her industry sponsors are right. The proper approach to ignorance is caution, after all, and not the impulsive foolishness that she seems to recommend.

Ray condemns the new environmentalism as incorporating a strongly negative element of anti-development, anti-progress, anti-technology, anti-business, anti-

establishment, and anti-capitalism. She says that its only positive side "if that is what it can be called" is seeking a society totally devoid of industry and technology. She includes Thomas Lovejoy and Stephen Schneider with David Foreman, Albert Gore, and Paul Watson, mixing scientists, activists, and politicians indiscriminately. Paul Ehrlich and Kenneth Boulding with David Brower, Prince Philip, and Helen Caldicott, thus mixing scientists with doctors and then economists with activists and royalty (perhaps with a trace of envy for such company).

Ray foams at the typewriter about Ehrlich, mixing her adjectives and nouns without regard for contradiction or graceful style. She mocks Ehrlich for overestimating the hundreds of millions of deaths from starvation, but she ignores the millions of deaths that did occur, other than a reference to one government in Africa. What kind of indifferent calculus of misery lets Ray callously dismiss human suffering if it does not fit in her argument for blind growth? She claims that he wants to reduce population by "force," but the only forces she mentions are liberalized abortions (surely a choice), tax breaks (how are they different from the ones that fund research in her field of physics?), and deindustrialization (more of a cultural trend).

She characterizes the movement as adversarial, punitive, and coercive, as well as elitist and pantheistic, sophomoric, and emotional (pps. 165, 166): "It is quick to resort to force, generally through the courts or through legislation"—if such democratic process is force, let's have more of it! Odd that this hyper-Gandhian sense of nonviolence does not appear elsewhere in her thought. Her characterizations are juvenile and irresponsible. The movement is not against progress, development, technology, or capitalism. It does urge responsibility for business and it does criticize institutions for their violence and waste.

Deep ecology does reject the tradition of reductionistic and materialistic science. Deep ecology, like social ecology, pan ecology, and mainstream conservation, is part of a large tolerant, nonviolent movement to protect and preserve humanity in its home, the earth. This large movement does not abandon science for mysticism, but accepts them both. It has, like any movement, contradictions and inconsistencies. But, it is not the one and only correct position. There are many ways.

Ray uses the words, "finite resources," "limits to growth," and "population control," but without understanding; she associates them with distrust and a rejection of science, technology, and industrialization. What is missing from Ray's vanity piece? It is knowledge of habitat destruction and species extinctions. It is a balanced, reasonable, common-sense point of view. Although she identifies with the rest of us, 'who believe in using scientific data to deal with environmental issues,' Ray shows herself to be everything she labels her targets as being: illogical, unscientific, and biased (is it the result of being an overweight, over-consuming, privileged animal in a wasteful society?).

In his discussion in *Powershift* of "totalitarian" religions as "agents of a new Dark Age," Alvin Toffler includes the "antidemocratic fringe'' of the environmental movement (based on one issue of *New Perspectives Quarterly* apparently). He suggests that under catastrophic conditions, a wing of the movement may step up from eco-vandalism to (p. 377) "eco-terrorism." His description of the two wings of the movement is painted in apocalyptic black and white. The good guys, who favor technological advance (within constraints), believe in the "power of the human mind," in imagination and intelligence, wheras the fundamentalists, whose views "dovetail with the thinking of religious extremists," wish to plunge society into "pre-technological medievalism and asceticism." Hopefully, those are not the only choices (p. 377).

Toffler glosses over the issues of the ecology debate, noting (p. 379) only the movement's "deep hostility to secular democracy." Hostility to democracy? Where? Like many others (Richard Neuhaus argued in 1971 that ecological activists used nature to legitimize political power—the same way Hitler did), Toffler invokes Hitler as the archetypal "eco-fascist." The youth movement (*Wandervogel*) being equated with today's greens for their spirituality, pre-industrial values, organic emphasis, physical fitness, and biological analogies. Nevermind that the biological analogies are quite different, the worst of social evolution for the Nazis, the best of cooperation for the greens. Toffler paints the "eco-medievalists" all black, accusing them of wanting a dark ages with all the worst of those times: cruelty, ignorance, mind-control, force. Of course, any historian knows the dark ages were not dark, especially in Africa, China, Pacific, Japan, and South America, and they were not that dark in Europe, since they produced many of our modern institutions, such as banking, that Toffler admires.

In his indulgent ramble in *Audubon* magazine, "Fuzzy-Wuzzy Thinking About Animal Rights," Richard Conniff likewise goes right to *ad hominem* arguments, implying that animal rights activists are: like "Hitler," "lowlife scum," and "moral fascists." Ironically, Hitler justified the extermination of Polish intellectuals by analogy with the same laws of nature (nature as "slaughterhouse") that Conniff and others espouse. Ray, Toffler, and Conniff are obsessed with Nazi themes (are these people watching too many World War II movies?).

More Technology Will Save Us?

Ray says that our technically advanced society is "based on knowledge and facts." Not on emotion or compassion or sympathy. Goethe, whom Ray quotes later, recognized that all facts are theories, composites of perception, emotion, need, and imagination. Ray does not realize this, even though her science is shaped by it. Furthermore, not

all facts are "verifiable, determinable" or repeatable. There are nonrepeating phenomena on many levels. For all of her self-congratulation, Ray is not up on her facts. She claims that asbestos is essential in automobile break linings (p. 84). In fact, it has been replaced by mandate in many states. She also states (p. 164): "The Cuyahoga has since been cleaned up, and so has Lake Erie." Certainly, fewer toxic wastes are dumped into these lakes, but where are the "sturgeons of vast bigness, and pikes seven feet long" reported by the French explorer Pierre Radisson in 1658? Where are the millions of pounds of cisco and trout from earlier in this century? Sterile cleanliness is no substitute for living diversity.

Toffler's solution is to speed up our industrial metabolism. Unfortunately, he does not seem to make any distinction between good or bad metabolism (fever as well as excitement speeds up a metabolism). Truly, we speed up our use of resources without knowing where they are coming from or going to. Modern economies, embracing the idea that "nature is capital," draw on the accumulated "capital" of ecosystems for production. By ignoring the real cost of the capital, as well as the costs of natural services, such as nutrient recycling, soil building, and atmospheric renewal, these economics create a temporary wealth (similar to the healthy flush of a fever, perhaps) and a long-term imbalance. When an economy falls out of balance with its local environment, massive disruption often results; industrial economies have only avoided disruption by trading advantageously with other economies, by using fossil fuels, and by promoting institutional inequality.

In *Reality Isn't What It Used To Be*, Walter T. Anderson (NY: Harper and Row, 1990) announces that he is calling for people to transform their relationship with nature. Then, he simplifies and rejects the way other groups describe reality. He rejects the biocentric value structure of deep ecologists, claiming that it is a logical impossibility since only humans value. This narrow philosophical use of the word value is worthless for anything other than sophistic discourse. Virtually every living being values those elements that allow it to live. Some beetles value dung and many ticks value blood—even if they construct no philosophies to communicate the values.

Anderson notes that deep ecologists call for a reduction in the size of human populations and the priority of the needs of the ecosphere. He states that the deep ecology platform (of eight principles) does not address the problem of how to reduce populations—in fact, principles, by definition, never state how to do something. Principle 1 does state that nonhuman life has inherent value, and principle 4 does state that the flourishing of nonhuman life requires a decrease in human population—such decrease is compatible with flourishing cultures. In fact, his point 16 is almost identical to the principle 4 of deep ecology. He states that we should seek "harmony with nature" and protect carrying capacity by limiting "growth in human population." Furthermore, his point 17 states that the preservation of the ecosphere is "essential," much like deep ecology principle 1 (p. 152). Anderson seems to be a closet deep ecologist? Although *Earth First!* is a good forum for the exchange of ideas, it is not the only or necessarily the foremost journal of deep ecology as Ray and Anderson mention. It is the journal of practical salvation first, then social ecology, deep ecology, conservation, and humane activities. Many other journals, including *The Trumpeter*, *Environmental Ethics*, and *Wild Earth*, address deep ecological questions.

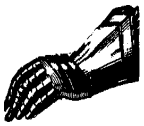
Ray concludes with a short grocery list of suggestions for thinking about science and the environment. They are: ask for evidence (or "insist on facts"), then put pressure (force perhaps?) on the government not to panic during environmental catastrophes; keep a sense of perspective—after all the dinosaurs died out (a good, unconscious metaphor?) and life continued; and finally, convert everything into a garden, since we're "better" than other species. What a list.

She closes with a quote from *Faust*, whom she claims finds contentment in a land reclamation "engineering" project (p. 172). Alas, the values and functions of wetlands were not understood in the early 1800s, when Goethe was finishing his work. Salvation for Goethe's Faust was in aspiring and struggling, not in conquest and factual indifference; it was through spiritual improvement, not modernization. From Goethe on, the idea of the novel has reflected the human being as creator of the self and not the master of the cosmos that Ray wants to tout.

We do not need to "master" the cosmos. We do not need better technologies or faster economies. We need to create local communities through self-reliance and participation. A community protects individual freedoms, guards regional culture (our values and identity), and holds groups accountable for the use of technology and power. In communities, people can decide to be conservatively sustainable or to grow and gamble on innovation (and maybe lose). Communities can have different economic attitudes, paces, and goals. A community that is balanced and flexible, in tune with natural cycles, based on traditional values—in which industrial production is limited to appropriate goods—can absorb the shocks of change far better than the technologically powerful, accelerating, industrial, national vehicle worshipped so unquestionably in these books.

ed.

The annual meeting of the board of directors of the Marsh Institute is scheduled in Seattle on November 20th. Call 206 323 4127 for more details.



Deep Ecologists Want to Rule the Earth?

I had trouble recognizing Richard Watson's characterization of deep ecology in the winter 1985 issue of *Whole Earth Review*. He seems to have quoted the program correctly, but drawn the wrong conclusions from it.

For example, he seems to find somewhere in the literature of deep ecology that the ideal human impact would be on the level of hunters and gatherers (which is Paul Shepard's ideal anyway), with a global population of five million, after quoting Naess's ideal at 200 million. However, limiting human impact is not the same as returning to hunting or gathering or to subsistence agriculture, which no deep ecologist has ever recommended. Watson presents his own ideal at 500 million, based on a concept of cultural flowering. That figure is the same as Daniel Kozlovsky arrived at intuitively and the one I calculated for an optimum population based on global net ecosystem productivity (in 1981).

Watson's criticism of ecological ethics is based on a confusion of value. A nonanthropocentric ethics argues that beings have self-value, although not necessarily human value. Saying that the generic term value is independent from 'man' as Watson does, is meaningless. An ecological ethics can address the limited relationships of all beings without becoming entangled in the fuddle of reciprocity or sentience. By basing an ethics on 'what is,' deep ecology avoids the 'absolute' that bothers Watson.

Deep ecology is not anti-anthropocentric. In fact, it accepts the necessity of an anthropomorphic, anthropocentric, and anthropometric logic. It does not accept the extremes of such a logic, however, which assigns to humanity all value and creativity. Furthermore, deep ecologists do not claim, as Watson accuses, to know what is right or good for humanity, let alone the ultrahumanity on which we all depend. Indeed, most deep ecologists urge caution and noninterference with primary cultures or wilderness areas.

I do not know what the ecosystem wants Watson to do, as he begs. Does anyone else know? But I doubt if it wants him to die for the human species, as he complains. Deep ecology is not concerned with the good of the human species *apart* from the diversity of species and the health of the ecosystems in which we live.

When apocalyptic rhetoric is not heeded, human societies vanish, leaving behind their monuments and deserts; hundreds of human cultures have 'bit the dust' in the last 3000 years alone—keeping archaeologists in business. Contrary to what Watson would have us believe, deep ecology is not concerned with telling people what to do or with saying what is right. Moreover, it stresses that we should not always attempt to say what is right for all.

Watson's fear for the ambition of deep ecologists is unfounded. It is unlikely that Naess, Hardin, or Skolimowski want to 'rule humanity' (in Watson's words), although it would not hurt to keep an eye on them. *ed.*

Editor
PAN ECOLOGY
G. P. Marsh Institute
P. O. Box 12864
Seattle, Washington 98111