

Protection, Yes. But Against Whom? For Whom?

by Garrett Hardin

I would like to discuss some of the great generalities about environmental protection that lie at the foundation of what we are all trying to accomplish. Foundations are often neglected because we are so busy working on the upper stories, correcting the previous inconsistencies. Many of the objections we encounter (as well as the support that we fail to get) arise because we have not considered the implications of our assumptions.

For example, environmental reforms are often impeded by tacit assumptions about the meaning of *property*. Most people assume that this is a simple idea, that property is a thing, the way specific gravity is a "thing." But, of course, it is not at all; "property" is an interpretation of the relationships between people. My friend, Dan McKinley, once protested that "private property includes the smokestack, but not what comes out of it." And that is the problem. To be ecologically acceptable, the concept of property must weld privilege and responsibility together. He who benefits from the products must accept responsibility for the by-products. This is a shocking idea for people brought up on a simpler view of "private property."

Ecologists are trying to teach people what can only be called "total economics." Card-carrying economists do not like this interpretation. They think of economics as one of the great academic

disciplines, with ecology as no more than a problematic one. In contrast, ecologists focus on the relationships between peoples and many other elements of "the real world." From that perspective, economics is just one subdivision of ecology. This attitude does not get us any Nobel Prizes, of course, or even attract many friends from the competing discipline. Our excuse: society must learn to deal with all aspects of the humanity-environment interchange.

The most basic fact in human ecology is this: We human beings create nothing. We merely take the atoms the earth gives us and, using the sun's energy (sometimes in fossilized form), reorganize them into arrangements that are better suited to our purposes. For example, we cite figures on "the yearly production of petroleum." Question: How many barrels of petroleum did human beings produce last year? The correct answer is zero. We extracted the petroleum from the earth and burned it, deriving energy thereby. We certainly did not truly produce any oil. All we do is transfer commodities from the account called "nature" to the account called "human society."

Legions of influential people casually identified as "well educated" live by persuasive superstitions. In the early 1990s, Malcolm S. Forbes, Jr., the editor-in-chief of *Forbes* magazine, wrote: "Overpopulation is all nonsense. Since Malthus' time, the Earth's population has increased six-fold and the standard of living has become infinitely higher." So here is a man who is certainly "educated," yet he gloriously supports the superstition that perpetual growth is possible in a severely limited world.

Evidently there is more than one kind of education. I think it helps to distinguish three kinds of competence produced by education. I will refer to the variety as three kinds of intellectual filters. The oldest is literacy, which can be defined as competence with words, whether the result is expressed in speech or in print. In the 1950s, someone coined the term

Garrett Hardin, Ph.D., is Professor Emeritus of Human Ecology at the University of California, Santa Barbara, and author of many articles and books including *Creative Altruism: An Ecologist Questions Motives*; *The Ostrich Factor*;

Overpopulation Myopia; *The Immigration Dilemma*; *Avoiding the Tragedy of the Commons*; *Living Within Limits: Ecology, Economics, and Population Taboos*.

“numeracy” to stand for a second kind of filter, which is coupled with a facility in using numbers and quantitative reasoning. Speaking broadly, we may say that, as a class, scientists are more numerate than the typical novelist or poet. Journalists, who should be both literate and numerate, are often weak in the second area.

Beginning about 1960, with the sensitization of the public to the importance of ecology and environmentalism, it became apparent that there needed to be a third intellectual filter, which was soon called “ecolacy.” This orientation implies sensitivity to “And then what?” types of questions, and to the ability to see and predict subtle and delayed interactions of many influences.

Over time, for example, a herbicide may have an important side effect on herbivores, thereby diminishing its value to humans; an insecticide may kill more than just harmful insects. Bactericides may select for inheritable resistance not only among useful microorganisms, but also among the harmful ones. So widespread are these effects that, as a working hypothesis, we now say that each blank-icide selects for its own defeat as a controller of the unwanted blank. Not meliorism, but rather pejoration, is the new expectation in the Era of Ecology.

The ecolate view is not welcome to timid minds. Even if you come up with a true answer, you may have a hard time persuading others that you are on the right track. But we have to try. Literacy, numeracy, ecolacy: We need all three abilities.

We moderns are following in the footsteps of the old Romans who habitually asked, “*Cui bono? Cui malo?*” Who is benefitted (by a new measure), and who is harmed? Though the word “society” is grammatically singular, the reality is very plural indeed: Many people, many vested interests. Whenever we propose changing a system of reward and control, we must try to predict who will be harmed, and who helped, by the change. Most pressing is the need to foresee how those who are harmed will respond to the change. We must not forget that we cannot just throw away unwanted things. In whose backyard might they land? What is he or she then likely to do about it? Such questions must be ever in the forefront of the environmentalist’s mind.

Numbers influence results; situation ethics acknowledges this. The relative blindness of traditional ethics to real-world situations creates ever-

new problems for environmentalists. As long ago as the fourth century A.D., one of the Fathers of the Christian church, Tertullian, implied as much in a passage that has shocked many traditionalists over the centuries: “The scourges of pestilence, famine, wars, and earthquakes have come to be regarded as a blessing to overcrowded nations, since they serve to prune away the luxuriant growth of the human race.”

A standard reaction to that statement is that the writer must really have hated human beings, since he saw some good in death. But let us take a second look. Note, first, that Tertullian implies that this was

“The ecolate view is not welcome to timid minds. Even if you come up with a true answer, you may have a hard time persuading others that you are on the right track. But we have to try. Literacy, numeracy, ecolacy: we need all three abilities.”

not a new thought in the world: He says that the negative factors (disease, etc.) “have come to be regarded” as benefits, in part. He did not originate the thought; he merely reported it. The second thing to notice is the agricultural image that shaped Tertullian’s words. He says that pestilences can be regarded as blessings because “they serve to prune away the luxuriant growth of the human race.” That is both a numerate and an ecolate contention, since it implies the reality of limits and carrying capacity. And “pruning” is an eminently agricultural figure of speech: A city dweller would be unlikely to use such language. These days most Americans are born and raised in cities; for that reason they seldom think in the rural images implied by the concepts of carrying capacity, overpopulation, and pruning.

It is amusing to observe the results of citified thinking when a long-time urban resident moves to more spacious suburbs and decides to have a garden. He is almost sure to plant seeds too close together, being poor at imagining the future as biological

expansiveness threatens the inflexible limits of the environment. As his crowded plants get bigger, he has trouble bringing himself to thin them out: Long exposure to the propaganda resident in the phrase “the sanctity of life” has stunted his imagination. Citified persons need to muster courage to reject the “civilized” images they were brought up on as they liquidate the excess members of the population of plants for the sake of a fraction that can survive into the future in a state of vigorous health. Ours is now a thoroughly citified world. To save civilization, we must educate its citified denizens to understand the language of agriculture and the environment. People must become ecolate in their thinking.

By virtue of the content of their specialty, economists should be among the principal supporters of ecolate thinking. Unfortunately, the accidents of history have made them powerful opponents of the concept. Through and through, their theory assumes limitless supplies. This has led to the amazing assumption that if a society wants more of a good thing, it has only to raise the price of it and supplies will increase without limit. Julian Simon and Herman Kahn stated in 1984 that “the term carrying capacity has by now no useful meaning.” It is true that when we are dealing with the earth’s carrying capacity for human beings, there is considerable wiggle room for variations in the standard of living assumed; but wiggling at what cost?

One of the peculiarities of modern economics is that though the indexes of elementary texts sometimes include the entry “diseconomies of scale” — the important observation that in many situations, beyond a point things may get worse as size or numbers increase — the subject is not treated extensively in most of them. But the positive economies of scale are always dwelt upon at length. One can only conclude that both sales personnel in business firms and economics professors in colleges know that optimism pays.

In the opinion of human ecologists, the bottom line of economic and political organization is this: With unfettered growth, diseconomies of scale rule. Consider democracy, for example. As the number of participants grows, a reasonable facsimile of true democracy is still possible — up to about 100-150 souls, according to the centuries-old experiments of the Hutterites, an earnest religious group in the northwestern United States. Beyond that point, the greater the population, the less the democracy, and

eventually it must be abandoned and replaced by some sort of representative government. But were we to achieve the idealists’ dream of “One World,” our schoolbooks would no doubt crow about a global democracy of ten billion people. “Democracy” is a sacred word, and sacred words cannot be easily replaced by the truth.

More generally, many aspects of the quality of human life are negatively related to the number of people living in the community, once it exceeds a certain size. If every family now living on Earth is to have two automobiles, the number of families living on nature’s bounty will have to be markedly reduced. The question that begins with “How many people...” is meaningless if it is not preceded by the question, “What kind of life...” Widespread agreement on the second question will be hard to achieve; once it is introduced, the pejorative word “elitism” is likely to dominate the discussion.

Reaching a community-wide agreement on the size of the population to strive for involves not only scientific questions but also arbitrary decisions. Unfortunately, the word “arbitrary” is understood differently in science and law. In the law, the word is used with obvious distaste. By contrast, scientists frankly defend the word and its related practices, particularly in the field of statistics, where an arbitrary standard of significance has to be agreed upon. If you want to make one in twenty the limit for non-significant deviation from pure chance, fine. If you choose one in one hundred, also fine. But in every contested case some arbitrary decision has to be made. (Actually, John Q. Citizen makes such decisions every day, but he may not be aware of this fact.) If you cringe at “arbitrary,” you might try to coin a new word.

The ecologist’s basic question of “And then what?” runs all through human affairs. Different stages in the development of a nation may evoke different answers. For example, in this country, there was a time when Kit Carson, traveling across the prairies, would shoot a buffalo, cut out the tongue for eating, and leave the rest of the carcass to rot. “What a waste!” we say now, but the lonely horseman had no refrigerator with him; and for him to interrupt his journey to build a fire (with what fuel?) and smoke-dry the extra carcass would involve wastes of other sorts. “Waste” is defined by circumstances.

The ecologist’s “And then what?” needs to be applied to one of the most ancient of the

commandments in the Bible: "Be fruitful and multiply." The rabbi who wrote this was living in a village, and it was a village version of morality that he was calling for. In a world of many separate villages, tribes, and ethnic groups, vigorous reproductive competition arises naturally. (If you do not believe that, read the Old Testament.) Other things being equal, fast multipliers win out over slow ones.

Circumstances have changed now, but most

ethnic groups continue to follow the biblical advice just cited. We are thus laying the ground for the great tragedy that would follow from transgressing the carrying capacity of the earth, unless we somehow find the wisdom and ability to come to grips with the situation. There may not be much time, but we do not have too many other choices.

As you can see, ecological analysis is not for the faint of heart. •