Morals and The Environment

The environment of an organism, in the broadest sense of the term, is everything outside it; the environment of the human species as a whole is everything nonhuman. But more narrowly and relevantly, the environment is that part of the rest of the universe that we relate to, and that affects us significantly. Distant galaxies may explode with unimaginable violence, but it makes no difference to us whether they do or not. A snowstorm in our town, on the other hand, though cosmically insignificant matters a great deal to us. The snowstorm is a part of our environment that matters; the galaxies are not.

Few topics have received so much attention in recent decades as "the environment"; and, in a way, it deserves the attention. After all, we exist because of our environment, and it's the only one we have. So far as we currently know, only this one planet in the entire universe is suitable for human habitation, and certainly the only one within practicable distance. In turn, each individual one of us thrives, or the reverse, in a home, and then a village, farm, forest, or city; what is outside but near to us obviously matters a great deal. People spend lives altering their near environments in ways hoped to make them more suitable to their interests - cleaning out the garage, planting flowers, and so on.

All of this matters a great deal, in detail. Indeed, it matters far too much for present purposes. Each of us will have some small part of the world under our particular influence - our property. And we will generally be concerned that that property be in what we regard as good condition. Other parts of the world belong to other people, and we assume that they are taking care of those parts. Occasionally we may have advice for some of them, and, very rarely, we might suppose that we actually have a right to step in and alter the arrangements they make.

But all this detailed caring for little bits of the world is not the subject of the recent attention to "the environment." That subject is the larger environment that is more or less common to us all, and changes in which can make a lot of difference to a lot of people, or all of them: if the earth were to dry up, for example, then we would all perish from lack of water. An increase in mean temperature of one hundred degrees Fahrenheit would make life impossible except perhaps at the poles. People are currently concerned about the melting of the polar ice caps, the depletion of ozone in the upper atmosphere, or the exhaustion of oxygen should the earth be deforested, and so on. Or they are worried that the "carrying capacity" of the earth might be exceeded by its burgeoning population, in which case, it is supposed, widespread disaster would befall us. Such disasters would be due to the exhaustion of resources necessary for life. "Scenarios" such as these formed the principal impetus to writings on environmental issues over the past few decades.

But although those were the spearheads, that writing has concerned other aspects as well. If we include our continuing concerns about germ-carried diseases, accidents, and old age under the heading of 'environmental' concerns, and above all if we include our relations to our fellows, then the topic of environmental ethics exhausts the subjects of engineering and medicine as well as ethics. And even that expansion isn't quite enough to cover the subject as it is actually discussed of late, for in another direction we get into aesthetics - natural beauty, say - and in still another, we get into something that amounts to religion.

We will discuss the subject in three parts, for three different kinds of concern that have exercised writers about the environment:

1. The health and survival concerns of people.

2. The more strictly aesthetic interests, as in preserving beautiful wilderness areas.

3. Finally, there is the view that the environment, in whole or in part, has some kind of "intrinsic" value, and even that it has rights, moral standing on its own account - not just because of its relation to our own interests.

These three points of view differ radically and fundamentally. On the first view,the reason we ought not to damage trees or canyons is that we ought not to damage other people, the ones who own or depend on those things being one way rather than another. On the second view, though, "damage" consists in making them ugly, or less beautiful. But on the third, to do so is to violate the moral status of those things themselves - the trees or canyons in question. We owe good treatment to the tree, for the sake of the tree and not because of whatever further good we might derive from a tree intact as compared with a tree fallen. (Or we owe it for the sake of "the world" or "the ecosystem".)

Most of the issues that make it into the newspapers are of the first type. I will argue that that is as it should be. But the other two are philosophically interesting. So let's consider these views in reverse order.

1. Intrinsic Value and the Environment

Most people, presumably, will find the third view odd or bizarre on the face of it. Why should we be concerned about the survival of a tree or canyon for the sake of that tree or canyon? The reason for this reaction, I think, lies in the inevitability of the general approach to morals set forth in Chapter One. We all want to do our best, and to enjoy the best. We would like the entities in our environment to cater to our interests, in whatever ways they can, and at the least not to hamper or threaten us. In the case of the human environment, our methods

of attempting to bring it about that we do the best we can is, generally speaking, by reasoning - that is, appealing to the reason of other people. Reason shows us that we humans - each one of us - have much to gain by cooperation and much to lose by its opposite, such as warfare. What makes it possible for others to achieve that cooperation with us is that they, like we, have minds of their own. Like ourselves, other people also take in information, redirect their actions in the light of it, and in consequence can make arrangements - agreements, contracts and the like, with us or others. We can readily understand the point of a rule to keep those agreements. Above all, a survey of our general interests assures us that we need rules against violence. With persistent training and any luck at all, those rules will have considerable effect. It is that training, the habituation of our fellows to general nonviolence and the disposition to be at least moderately helpful to others that has enabled humans to achieve the remarkable progress, material and otherwise, that we have experienced and benefited from down through the centuries.

Trees, stones, grasslands, icebergs, headlands, and so forth, by contrast, do not have that capacity. There is no use trying to discuss with a canyon how best to enable us and it to get along to mutual benefit. The canyon cannot address this matter, nor does it, in any intelligible sense of the word, "care" about itself. It has no mind, and therefore no concept of itself or anything else, to figure in that caring. Because this is so, the sense in which canyons, rivers, trees and the like might be "damaged" or the reverse, well or badly treated, is one that has nothing directly to do with morals. A canyon cannot be immoral to us, even if its walls collapse as we are walking through it and it buries us; lightning has done nothing morally wrong when it strikes us dead or destroys our house. And in turn, if we destroy that house or that canyon, that matters not a whit to it: canyons and trees simply don't care what we do to them, or to anything.

The flourishing or nonflourishing of nonhuman things has no direct relation to morals, I have said; but 'directly' is the operative word here. For even the good or ill of our fellows has nothing directly to do with our practical deliberation. My respect for you is called for because of what I have to lose at your hands if I do not, or to gain if I do. You react to my behavior: what I do to you affects what you do to me. So even if we had no native sympathy with each other, we will nevertheless, if we are sensible, arrive at a mutual understanding of how we are to behave toward each other.

Now, what happens to natural things can certainly affect us too. But how are we to deal with that fact? Not by making arrangements with them; the methods by which we deal with each other are simply not available when it comes to dealing with canyons or trees. They have no desires, interests, or intentions, no reasoning powers to steer their responses to us in one way rather than another, and no emotions to affect the quality of those responses. The whole idea of a tree or a canyon coming to agree that it ought to do this rather than that is a non-starter. We saw that this was true even with animals, which are at least sentient beings; it is still more obviously true of trees or mountains.

My division of environmental concerns into three identifies three different ways in which natural things affect us: they can affect our health or prosperity; they can affect our aesthetic sensibilities; or they can come to matter to us at some deeper spiritual level. It is this last one that we will consider now. It is very different from the others, especially from the first. Insofar as our environment affects the health of people, it obviously matters in a way that will motivate the affected people to do something about it. But when we come to spiritual concerns, the situation is very different. It is certainly possible for humans to develop attitudes of affection and respect for nonhuman entities. But is there any reason to do so, if we don't already happen to feel that way? That is, is there a reason that can be articulated and which, when articulated, must be accepted and found persuasive by everyone? On the basis of all we know at present, the answer is in the negative. There is often reason to do one or another thing about our environments, but the reasons in question recognizably stem from our practical interests. And for most of us, most of the time, those interests are not of the type that we might have in, say, our sweethearts. But the "deep environmentalist", as he is called, seems to think that that is exactly what they should be: we are to love the environment, somehow, for its own sake.

Philosophers who urge the claims of nonhuman bits of the environment as if they had moral standing in their own right come on as if they were the friends of the oppressed and downtrodden, or at least the hitherto ignored. But that is not so. "protecting" rivers and hills, rocks and trees, is in fact very expensive. Those natural things do not care what we do to them, or anything else - but the people who would have to bear the costs of "spiritual respect for nature" will indeed feel it, and do care about that. The net effect is that the supposed deep ecologists are engaging in extravagent pseudo-moralizing; they are putting one over on the rest of us. Who are we mere people - the five or so billions of us who have houses to build and gardens to plant - against the fifty trillion trees that a handful of eco-sympathizers claim to represent?

To this there is a simple answer: we are people, and the rest of the world is stuff; it has no vote, it cannot in any literal sense of the word have one, and it should have none.

It is perhaps useful to add that the idea of there being some one thing called "the" environment that "needs protecting" as it is, preservation in its current (or some past) state, is a muddle. The environment

consists of a whole lot of things, and a whole lot of animal species, plants, and the rest of it. And it is ever-changing, as the forces of evolution, wind and weather, viruses and gene-frequencies, go on. Species have no interest in preserving species, and certainly not individuals within them. In the course of hundreds of millions of years, the roster of species flourishing on our planet has changed incredibly. It is a peculiar conceit of a few members of the homo sapien species that somehow "all life is valuable," and that we have a duty to preserve "biodiversity" for its own sake. Believing that there is such a duty will result in officials forcing a man who has invested millions of dollars developing an upscale resort complex to cease his activities on the ground that they endanger one particular rare species of bird. Thousands of people's pleasant vacations, and this man's income, will thus be sacrificed to a "value" that neither he nor very many others hold.

Is that right? Many environmental philosophers think so. But without reason. What they do amounts to eco-gangsterism. That is not how people should relate to each other. In real terms, what cases like this appear to amount to is that people with certain tastes are enabled by the law to force other people who do not share those tastes to act in accordance with them anyway. If that description of the matter is to be rationally rebutted, it must be by showing that the disappearance of this one species of bird, or whatever, really is important to humanity generally, despite initial appearances. But important how? A few people might have enjoyed spotting those birds; a few others might have wanted to study its habits for scientific purposes. But people are not to be sacrificed to others with supposedly "superior" tastes. From the moral point of view, none of us is better than any others: we must refrain from imposing our tastes on them, no matter how high of brow we may think ourselves to be. The bird-spotters and the scientists, then, must that people are seriously endangered by activities such as those of the investor in question - which means, of course, the thousands of potential customers of that investor, who would enjoy the altered environment he proposes to create very much more than they will likely enjoy the continued existence of a half-dozen mauve-spotted tanagers. What must be shown is that we are generally endangered in respect of our lives or healths, and not merely in respect of the nonfulfillment of some other people's personal world-views. Absent such a demonstration, there is no case for forcing such people to desist from the humanly useful activities they proposed to engage in. The "deep environmentalist" view of these matters, in short, is found, on closer examination, to be thoroughly immoral. ("Better to kill a man than a snake!" - as one enthusiast for that view, we are told, has said.)

Who Owns Nature?

One way to put this question is: to whom does nature belong? Who is to determine what nature to be used for? Whose purposes should it serve? These familiar and frequently-asked questions are misleading. For they imply that "nature", as such, does "belong" to someone, and that "it" is a sort of unified "thing" that must be maintained as is, forever. But that presupposition is plainly wrong. Nature is a whole lot of stuff, of all sorts. It is not, insofar as it is nature, "owned", but is instead simply there. Ownership doesn't happen until someone undertakes to use parts of the natural world in one way or another, and is related to someone else in such a way that difficulties arise that are best resolved by establishing rights over things. There are many ways to use these many natural things, and in detail they will vary enormously from one person to another (and from one organism to another). Even so, these different ways of using nature are mostly quite capable of being pursued by diverse people in diverse places, without seriously, and especially without adversely, affecting each other. You can build one sort of house in place X, while others build very different houses across town or in another town. We both can live happily in our different dwellings. You can enjoy walks in natural forests, over there, while I walk along the sidewalks of a large city over here - and we can trade places, too, no problem. Diverse activities can be coordinated to mutual benefit, and the process of thus coordinating them takes place all the time, all over the world, largely without fuss.

The ideas we are presently considering, however, tend to be among those that are not so readily resolvable on the face of it. If you have a view about how the whole world should look, your view clashes fundamentally and unavoidably with that of any who would like it to look some other way. And when we bring a "spiritual" dimension into the matter, these rival views will have the force of rival religions, dividing humanity into warring camps. And just as the proper solution in the case of religion is freedom of religion, so too the proper solution here is freedom of metaphysical orientation. No one of such views may be made the official one, to be used as a basis for punishing rivals, any more than with religion - where giving one of them official status has occasioned the torture, death or at a minimum the serious frustration of innumerable heretics down through the centuries.

2. The Aesthetic Dimension

People often have aesthetic tastes and pursue aesthetic purposes. We may simply want to contemplate certain portions of nature, in its unaltered form - gaze admiringly at a broad valley, or the starry heavens above or breathe it in, or immerse oneself in it as when we have a walk through a forest or take a swim in the ocean. Some claim to derive intense pleasure from

contemplating nature as a whole. That is, certainly, a set of motives that could easily inspire people to do something to preserve nature for those purposes.

But there are other people around here, too. The world does not belong to aesthetes or to believers in animism, and certainly not to one particular set of aesthetes. Their claims are, so far as they go, no better (or worse) than anyone else's. The special character of their tastes or beliefs does not give them moral authority over other people. Beauty may or may not be subjective - "in the eye of the beholder", as the saying has it - but certainly it is something about which tastes vary enormously. And just as with religion or Deep Environmentalism, the problem of reconciling these divisions is not properly solved by declaring one of them to be in the right.

Sometimes there is a good deal of agreement about some such matter. Few of us enjoy litter in the public parks or on the highways, for example. On the other hand, some like desert landscapes, others lush green valleys, and so on. Happily, the world is large enough to afford a great variety of basic scenery, and the productive work of humans often enhances the landscape rather than destroying its beauty, in many people's estimations. Again it is clear that there is no one way that the whole world ought to be, so far as visual beauty is concerned - and no one way that it can be, for that matter. A coherent moral principle about such matters must, again, enable the diversity of tastes to coexist on cooperative terms, and such terms do not consist in declaring one party's aesthetic outlook to be the right one, and all others to be wrong. Nor should they simply allow the majority to "rule." There is a better way. But it can be best appreciated by moving to our third category, that of the specifically human values of human health, human survival, and the flourishing of human individuals.

3. Human-centred Problems

Environmental problems of the latter kind can in turn be divided into three. One concerns "overpopulation" via resource exhaustion: might there be so many people that we will use up all the resources necessary for sustaining human life? The second concerns health and risks to it that arise as byproducts ("externalities") to human uses of bits of the environment. The third has to do with the general problem of distributing natural resources among potential users: how do we decide who gets to do what and with what? The "better way" hinted at in the last paragraph will emerge especially from this last question.

How are we to reconcile the immense variety of conflicting interests in nature? The bad way is to decide whose tastes or interests are the "right" ones. That question, if asked, will be decided one way by the cronies of the aesthetes, or by the politically ambitious who have found another way to exert power over some community - and another way by others, and still another by yet others. It is, in fact, a non-answer - indeed, a fraudulent or pseudo-answer - one that fundamentally re-raises the original question, but diverts the attention of the discussants.

But there is also a good answer to that question, and so far as I can see, the only good answer. It says, first, that people are to be free to use bits of nature as they please, and thus must each respect every other person's right to do so as well. This leads to the familiar idea of private property. Those using bits of nature that have not previously been used by others are to be regarded as entitled to continue to do so as they please: others may not invade and despoil just as they please, but must instead obtain the consent of the owner. As more and more things come under human use, property acquisition will proceed not by setting forth into unowned nature, but by trading, buying and selling. People will often be motivated to relinquish their right to what they currently own by being offered something they regard as better. Usually these offers will take financial form, and generally (but not always) the owners will sell to those who offer the highest price.

This suggests the solution to the kind of problems we have been considering, as well as the further ones we are about to discuss: let's see how much the different parties are willing to pay to have their interests realized. That will be a good measure of the net benefit to be had: if Group A pays more, then its interests regarding the use of that particular item will get realized; if B would, then B's will be realized. But this does not mean that B is simply left out in the cold - as he will be if instead a group of legislators with the power to force one or another "solution" upon us would do. For market solutions mean that those whose interests in that particular item do not, as a result, get pursued will now, with their newly acquired cash, be able to pursue some other interests. Moreover, these others, in the circumstances, will be regarded by B as <u>more important</u> than the original ones: it was worth more to B to relinquish his claim on the original item in exchange for possession of something else. You get this acre of land in a valuable urban location, I get a condo in Florida. You acquire my bit of land with a vein of gold running just under it, and I set up a pizza shop in Edmonton.

How Everybody Can Win

What's important about this "market" system, in short, is that it is "win-win": that is to say, all parties emerge from the transactions in a better situation than before. This is so when the original parties had enormous disparities of relative wealth as well as when they did not. When Microsoft sells you a piece of software that you value, you judge your several hundred dollars to be well spent: you are better off with the software than with whatever else you might have gotten

for the same money; and Bill Gates is now, say, a hundred dollars wealthier than he already was - which (at present writing) is very wealthy indeed.

What will surprise some readers, and very likely anger some others - and simply rejected without even reading it by still others - is that this "market" solution can work for the special case of scarce resources that could possibly be exhausted as for any others. The key to the matter is that as desired things become scarcer, then - provided they are owned by persons interested in making money - the price goes up. This increase in price has to very useful effects, socially speaking. First, it means that those resources will go only to the people who really want it, and are in a position to put them to good use. And second, it will motivate people to find alternatives, so that they can get along without the scarcer item. in both cases, the result is that people get more value out of the scarce resource: a given unit of it goes farther, does more things for more people.

But mightn't we run out of certain things altogether? And wouldn't that create a case for government or other forcible intervention or something of the sort? That is the standard view on this matter. But it is the wrong view, as I shall now try to explain.

Scarcity and Natural Resources: Exhastion?

Many human purposes in using parts of nature require the transformation of those parts into something else. An apple is transformed into energy for nourishing and propelling a human; a tree might get turned into firewood, a log cabin, or thousands of sheets of writing paper; coal or oil might get converted into mechanical motion as when powering cars, or making asphalt for paving, or warmth for buildings, and so on. All of these latter uses require more or less know-how, or as we now call it, "technology," low and high. And all of these uses are regarded by most people as much preferable to leaving nature as it was - leaving the oil in the ground, or the trees unaltered in the earth.

Uses of natural items that require their transformation into something else raise, of course, the question of supply. In some cases, the transformation is (so far as we presently know, anyway) one-way, irreversible: the original natural substances are "used up." Of course, nothing is used up in the sense that its material particles and contained energy literally disappear; the supply of matter in the region of the earth is virtually constant, and of matter/energy in the universe likewise. But specific materials, such as tungsten, say, more or less slowly disappears from our particular planet. In other cases, natural items are moved around a lot and transformed into other forms, as when water is boiled or freezes; but then they change back, as when ice melts or steam condenses. These cases brings up the subject of resource conservation and exhaustion - e.g., of "sustainable development," to use a recently coined phrase that has become modish. Let's pause to discuss this subject now.

Is there a realistic possibility that we humans will "run out of" resources necessary to sustain life? Or at least to sustain the kind of life-style that we in the "rich" countries have achieved? Many people, and perhaps the ordinary person on the street, apparently think so. But there are very good reasons for thinking that the answer to that, so far as we can see, is actually ir the negative.

The main reason for this is that the essentials of life for people are all renewable, rather than being exhausted upon use. Let's take the most obvious of them - food.

Food

The food on my plate disappears when I eat it, yes; but everything returns to the earth by and by, and new plants and animals appear. As a matter of fact, the nutrients out of which living tissues are made come mainly from the air, so that the mass of living matter on earth, rather than decreasing, <u>increases</u> over time.

It will be obvious right away that air renews: we breathe oxygen in and carbon dioxide out; plants do just the reverse. Equally obviously, water renews, and without even changing very much in the process. Food is part of the cycle and the chain. When humans increase their food production efforts, the results increase the base for the next round. And so on.

Without going into details about all these mechanisms, we need only point to the gross facts about food production to realize that claims about global "overpopulation" and "carrying capacity" are groundless. During the 20th Century, the world saw an amazing increase in population - due mainly to the fact that by the later part of the century they all lived so much longer. Yet, contrary to what the reader may suppose, food production has more than kept up with all the new mouths to feed. In the 40 years from 1961-1990, world population rather more than doubled - but food production considerably more than kept up - the average number of calories per person increased markedly, especially in the poor contries, as one might have hoped - by about 1/3, according to standard estimates. Starvation, about which people hear so much when it happens, has been limited in this century almost entirely to politically caused food shortages such as forced evictions and migrations of people, and not a small amount of outrightly imposed separation of people from their food supply (as in Stalin's treatment of the Ukrainian kulaks).

But once an area has a reasonably free food market and tolerably free agriculture, where producers are able to set their prices by negotiation with willing buyers, it soon becomes self-sufficient or more. When China, which had been using collective agriculture and state controlled prices, freed up its agriculture, output

increased so dramatically that by the end of one decade it was actually exporting food, as well as its inhabitants enjoying much better diets than before. Its policy of forced population control, which it had used for decades, had done no good for the food situation, but free agriculture solved its problems; almost certainly, its population control measures were completely unnecessary.[1] In general, the story about food production shows that Malthusian fears about "overpopulation" are veryfar off the mark. So far as food is concerned, there is no population problem, no problem of "carrying capacity" for the globe, and there need never be one.

This subject has provided the occasion for one of the most spectacular mistakes in the history of social science - the "Malthusian" hypothesis (originally formulated - and soon, though unnoticed by most, repudiated by its author), which has it that humankind's tendency to reproduce makes for an exponential growth in the population, but meanwhile its agricultural efforts can be crowned by at most arithmetical increases. It is puzzling how he should have arrived at so arbitrary a hypothesis about how agricultural resources increase - except that humans are wonderful at spinning elegant explanations of things they know little or nothing about. To see how arbitrary his "explanation" was, just suppose that available land is fixed, that agricultural technology is also fixed, and that all cultivable land is actually under cultivation by the available methods. In that case, the potential for increased production per acre is not an arithmetical increase - it is zero. But that combination of conditions literally never obtains, save for very tiny particular areas on modest periods of time. In fact, the whole world's supply of agricultural land is not fixed, but is itself a function of agricultural technology: forests are cleared, swamps are drained, even areas covered by the sea are made cultivable by hard-working Netherlanders with their pumps and dikes. (2) Of much greater importance is that people can increase the number of calories and other nutritional desiderata got from a given amount of land, by improvement both in methods of cultivation and the very plants that we cultivate. The result is that we grow more and better food from less and less land. And there is no particular rate at which one can predict increases from this source. A farmer with a new species of wheat, or a new method of planting it, could double his output in a year. Malthus' idea captivated the imaginations of academics for centuries, but it is, to be blunt, poppycock.

Agricultural production is a subject that few city-folk and few academics appreciate - starting with Marx, who scoffed at the "idiocy of the countryside." The picture of agricultural production entertained by these literate and otherwise intelligent people seems to be that nature does all the supplying, and all we do is pick things up: a fixed number of apples, and eventually they'll all be plucked. But everything possible is wrong with that picture. Nature is the base from which we work, indeed: but everything is done by people - by ingenious and hard-working orchard-keepers learning ways to grow more and more apples per tree, and agricultural scientists developing new and better varieties of apple, and other clever people desiging better tractors and trucks and so and and so on. No work, no food: in the sweat of our brows, says the prophet, shall we eat bread. But the sweat is not just from muscular exertion: it is, far more, from cognitive exertion, from learning what works and what doesn't - how to get more from less. Farmers in North America have increased their yields per acre of wheat, corn, soybeans, and so on, to an extent that few can appreciate who don't live on farms. The net result of all this activity everywhere is that the contemporary world grows more food per person than ever before, despite there being many more people than ever before. And meanwhile, it also enjoys an increase - not a decrease, as writers on this matter who haven't looked up the facts tend to claim - of forested land and recreational land of all types. (It is fascinating that people can write solemn apocolyptic books, such as Paul Ehrlich's popular The Population Time-Bomb, at the very time when their ideas are being refuted all around them. The contemporary reading public has been exposed to more misinformation about the physical aspects of the world around them, I would say, than any other subject today.)

Other Resources

That is the story with food, you may be thinking - but what about other resources? Is there not a concern about "sustaining" the contemporary lifestyles of the well-off people in the world? Again, despite the virtual ubiquitousness of an affirmative answer to this question - inculcated into all heads in grade schools and even in Universities where people should know better - the answer is a resouonding negative. But here the reason, though basically the same as in the case with food and population, has nuances worth appreciating.

As noted, some natural resources tend to get "used up" when used. If the uses to which we put those things are such as to make re-supply of the same item impossible, and we kept on using them, in the same way and at a steady rate, then it would no doubt be possible to run out of those things altogether. True. Nevertheless, there is no reason to think that we will ever "run out" of any of them.

In the first place, it is well worth bearing in mind that none of those things is literally necessary for life, nor for living in high style. Indeed, none of them, in

[1] For the figures and original sources, see Ronald Bailey, editor, The True State of the Planet (New York: Free Press, 1995), specifically the articles by Nicholas Eberstadt (pp. 7-48) and Dennis Avery (pp. 49-82).

particular, is necessary for anything. The reason for this is that our wealth consists of human-made products, and those products do not in fact use much in the way of natural resources; still more important, they don't require any particular resources. Buildings are massive, but are made mainly of concrete, brick, and the like - materials that have no scarcity problem and are in any case indefinitely reusdable. Buildings nowadays usually also use a fair amount of wood - but wood is biological; it is easy to grow more, and we do. In fact, we grow new forests more rapidly than we use up old ones.[2] (The world's forests are increasing, not decreasing - a point that seems to have been overlooked by many advocates of paper recycling and the like. "Save the Trees!" is a pointless slogan.) any buildings require steel, too; but it is not in short supply either.

Now consider a product built of some natural material that is so scarce that we possibly might run out of it, if current rates of use are sustained for more than, say, a few years. Then what? The answer is easy. If those resources are, as they should be, in the hands of profit-seeking individuals and companies, then their scarcity means that their price will go up. By the time the item gets really scarce, few former users will still be using it - they will, as most of us always have, be happily using other things that are cheaper. And too, in the meantime ingenious people will have set to work not only making it possible to use the cheaper resources, but in almost all cases, to use them to make the resultant products better as well. To take a small but wholly typical example, collectors of recordings of music, such as this author, were gladdened by the switch, in about 1948, from heavy 78 rpm records, made of shellac and heavier plastics or even with an aluminum base, to Long-Playing records made entirely of polyvinyl, holding about five times as much music per disc, and weighing a great deal less; and vinyl is made of basic stuff for which there is no supply problem. Then in the 1980s, the Compact Disc supplanted LPs, and again, a tiny quantity of cheap plastic replaced a much larger one, with better sound and basically no draw at all on expendable natural resources.

A colleague of mine remarked one morning that he'd gotten a neat device for his new car that was intended to be magnetically attached to a handy metal surface - but there were no metal surfaces! Yet only collectors and antiquarians would value a 1927 or 1947 car above its 1997 successor - so more comfortable, durable, safer, faster, and in every way more convenient. This story is repeated everywhere in modern life. The greatly superior range of options enjoyed by contemporary citizens of wealthy countries depends less and less on the use of irreplaceable resources, more and more on technology. And there is no limit to technological development - no limit to the amount of useful information we humans might eventually acquire, and by means of which we can turn cheap and plentiful materials into exotic and useful devices, playthings, tools, and so on indefinitely.

The question in all cases is whether we can do better by continuing to use the increasingly scarce item, or by shifting to something else. Which we do depends on one factor above all others: human ingenuity, the growth of technical knowledge. For there is no natural item that is valuable, just in and of itself irrespective of human knowledge or interests. And human interests, apart perhaps from a very few very basic ones, change. We will always need food, water, air, and a local environment falling within a certain temperature range, true. But none of those involve resource exhaustion of a relevantly interesting kind. We depend on the sun for energy, and it, some billions of years hence, will no doubt exhaust itself and turn cold, or blow up spectacularly, in both cases destroying all support for life on earth, and/or the earth itself. But while that is fun to contemplate for science fiction, its practical relevance for anybody's life in any foreseeable future is nil. For all practical purposes, we can expect a continuing flow of energy from the sun, indefinitely. Water and air are naturally recycled. We breathe out CO2 and breathe in oxygen; luckily, plants do just the reverse. Both we and the plants can tolerate considerable variations in the proportions of the two gases, and within those wide limits, we can coexist happily forever. We drink water in at one end, and out it comes later on at the other, to be recycled through the earth and air until once again it goes through us. Here humans can and do help matters along, cleaning the water more quickly than would the natural environment, or moving it from one place to another. But there is no question of "exhaustion".

More interesting is that the same story is repeated everywhere. Are we running out of oil? One would think that we must be. And yet every year the estimates of remaining resources increase rather than decreasing. And meanwhile, ways to use less gasoline, oil, and gas are continually being developed. A modern well-insulated house with high-efficiency gas furnace will keep a family much more comfortable, and with a tiny fraction of the resources used by their great-grandparents with their wood or coal stoves and leaky walls and windows, or by their parents with their less efficient furnace and mediocre insulation.

As the late Julian Simon observed, a good way to go broke nowadays is to invest your money in natural resources such as gold or copper. The reason for this is that we learn to use less of these things for old purposes and to use other and better materials for many of those purposes. Diamonds may be a girl's best friend, but the major action with diamonds is in industrial applications, and most diamonds so used are now synthetic. Plastics of a great variety of types replace metals. Carbon fibre racing cars protect their drivers far better than the steel

[2] See the article by Sejo in Ronald Bailey, editor, The True State of the Planet, pp. 177-210.

or aluminum ones formerly standard - and there is no shortage of carbon. The story goes on and on. And when one gets to the farther reaches of current technology, it soon becomes clear that the idea that mankind may collectively be facing resource shortages, threatening the lives of us all, is completely without foundation. It is a bugaboo, made from misinformation, misinterpretation, and bad reasoning - period.

It is the word 'period' that will most offend many readers of the above. But it is meant seriously: there is, in the end, nothing at all - except muddle, misunderstanding, and arbitrary speculation - to the case for the idea that mankind is going to run out of x or y or z and that we therefore must start to "conserve". And if the reader looks carefully into the mandated conservation efforts of our time, she will find that the same story holds for all of them. Governments require recycled paper, and why? Because we will run out of trees? But trees are growing so fast around the world that new growth vastly outstrips harvests for commercial and industrial purposes; and recycling takes far more energy than manufacturing new paper. Again, governents require elaborate sortings of garbage so that various components of it can be recycled. But the recycling takes more energy and on the whole more resources than the original cans and bottles and cardboards in question. Is it feared that we will run out of land to dump garbage in? This idea is, again, a popular one but a modest amount of arithmetic shows it to be baseless. All of the garbage expected to be produced in the United States for the next 100 years, if simply dumped on the ground, would make a pile 300' deep about the size of Abilene, Texas - to cover the whole country to that depth would take 41,000 years. But of course, only a small fraction is dumped. And the more expensive the land gets on which we dump garbage, the greater the inducement to do something else with it, such as burning it by a clean method, promoting decomposition, and so on. As with all stories about scarcity, it assumes that no other ways of dealing with wastes are available or will be, and since many other ways already exist, that assumption is also false.

The key to all this is that the "material" needs of humans are not met by more or less rapidly depleting a large heap of some sort of natural stuff. Instead, they are met by intelligently transforming modest amounts of natural stuff into artificial but much more useful goods of immense variety. The primary ingredient is not stuff, but ingenuity; and with this, our species is remarkably well endowed. A good idea is rapidly spread around, and other bright people improve on it or apply it to different areas. Meanwhile, the people who are served by all this are free to buy or not as they choose, and their choices in that regard exert powerful pressures toward the production of what is most wanted, and the nonproduction of what is not wanted. This rather simple mechanism is amazingly effective, especially because it requires no direction or control from above. Quite the contrary: almost anything a government is likely to try to do in this area is sure to be counterproductive. If it was truly beneficial to do the things governments supposedly require people to do for their own good, after all, they would most likely do those things; that it instead requires force to get them to do them is virtually a certain indication that those things are not beneficial after all.

Most readers at this point will be thinking up supposed environmental problems that they have read about in the papers or Newsweek or the like. Or they will think of some particular case down the street or over in the next county. But what we are talking about is global-type problems - large-scale looming disasters that are supposed to affect mankind as a whole. Here we need evidence of a large-scale type. And it is that evidence that tells entirely against those who prophesy doom for mankind. The actual evidence is that the human race has more and better food to eat, better houses, more cars, more interesting entertainment, more opportunities to witness the glories of nature or to walk in the forests, and just generally, more of everything - at the same time that we live longer, on average, than humans have ever done before, despite cancer, cigarettes auto accidents, and the rest of it.[3] And as we have seen, there is no inherent reason why we cannot continue to improve, nor why the whole of the human race cannot share in the abundance.

To return to our sample case: first, note that agreement on such matters is out of the question. Enthusiasts might manage to preach to our hurting resort developer and convert him to his ecocentric views. Freedom of speech permits them to do that, after all, if the developers will listen. If so, fine - no problem. But in the extremely likely event that he fails in this endeavour, then what? The standardly familiar answer is that the parties purporting to be on the "side of the environment" will fax their Members of Parliament or other persons in a position to coerce the newcomers. And if, as is likely, they are successful, then our entrepreneur is out several million dollars, and the many thousands of people who might have enjoyed a vacation at his facility are deprived of that opportunity. Total loss to the public: $20 million or so. Total gain to the public: a few bird fanciers enjoy the knowledge that there may be a dozen more spotted white-crested thrushes than there otherwise would have been. Some few people will have extracted minor benefits from others, at enormous expense to the latter, and without compensation. How much of that sum would these people have been prepared to pay for this benefit, if they had had to do so in order to get it? Probably very little. Net cost to society: a whole lot.

[3] The best single source for relevant information is an impressive volume, written by ten of the top experts in each field, called The True State of the Planet, edited by Ronald Bailey (New York: Free Press, 1996).

It will be replied, correctly, that future bird watchers are also deprived of their satisfactions by the building of the resort. That's true. But then, why do they have any more right to have their interests satisfied than future vacationers? And how would one calculate such things? There are thousands of bird species in the world for bird watchers to enjoy. The marginal cost of one less is something, no doubt - but how much? That is something for present bird watchers to consider, and insofar as they feel themselves to be representing these people, they should stand ready to invest in the future of the spotted white-crested thrush, by buying up the property and preserving it for the birds. If they are unwilling to do so, then we will have to infer that the interest in question is not as great as they supposed.

Some writers talk as though the disappearance of some species is a cosmic disaster, and that it is the sacred duty of humans to impoverish themselves (or, more precisely, their neighbours) to prevent this from occurring. Yet Mother Nature, over the past several hundred million years, has managed to exterminate species by the million, and all without blinking an eye.

Meanwhile our developer, of course, is also looking to the future. In investing millions of dollars in the area, building hotels, swimming pools, paths through the woods where guests may commune in peace with the birds, and so on, he is betting on the future. He is estimating that people will find their enjoyment enhanced so much by these facilities that they are willing to pay a great deal for it, thus justifying his investment.

So who is right? Again the market provides the solution. Those who value birds, snails, and so forth, should be buying up the sort of habitate they will thrive in, thus helping to ensure what they see to be the future of humanity. Those who value pleasant swims, the ocean air, and so forth, more than they value the sight and sound of one particular species of rare bird will buy vacations at our hypothetical resort.

Pollution and Health

The final set of questions to be concerned with has to do with health and risk. Some human activities generate byproducts that are harmful to human health. Here, surely, we need government or the equivalent? That is what most people think, and they may possibly be right about some things. But which?

The general category of most concern here is pollution. What gets polluted is the air, water, and sometimes earth. But these present very different problems. Air is ubiquitous: smoke ejected into the air at point X very soon makes its way to point Y, and thence into the lungs of people far removed from the original source. Moreover, it is very difficult, and likely impossible to know just who is to blame and who are the victims of particular pollutants. That is what makes pollution an example of what economists call "externalities": costs involved in the production of certain goods that are born by people who did not get the goods in question.

The same can be true, though in less degree, of water. Common dwellers on the shore of a lake will experience the impurities dumped into it by others on that lake. Other lakes around, however, may be quite unaffected. Rivers have a direction; those upstream pollute the waters of those downstream and not the other way around. And while earth may be polluted, the pollutions do not distribute very widely, in general. If owner A's land is infected, it is usually going to be his immediate neighbor who is to blame, not someone miles away.

Pollution of any kind is morally problematic, because it does involve the worsening of others' conditions. Your lungs, your stomach, and other parts of your biological system can be poisoned by the activities of others, and since those bodily parts are indeed yours, those activities are on the face of it wrongful.

But here we come upon three very important points that complicate matters greatly. The first, and most important, is that all of these things are very much matters of degree. There is no substance of any kind of which the human body cannot tolerate even one molecule, and almost all known poisons are such that a great deal more than that is necessary before their effects on people become so. Worse yet, substances that are poisonous in high degree may be essential to life in lesser quantities. In fact, every ingestible substance there is is a case in point: if you are forcefed anything, however nutritious, in enormous quantities, you will die. But deprived altogether of food, you will also die.

Second, there is considerable variability: poisons are rather variable from one person to another. Some people have allergies to nuts. If A invites B to a party, at which the dessert includes a pecan flavor, and B is allergic, B could easily die as a result of what was intended to be a benefit. Some people can tolerate amounts of substance X that would be fatal to others. North American tourists visiting Central America or Africa usually cannot drink the water that is the normal fare for the local inhabitants. People can be slowly habituated to diets that will sicken others, if suddenly exposed to them.

Knowledge of both of these variables is essential if we are to exert reasonable controls on our actions in relation to each other. But we now come to the third and probably most important of them. Few things we can do literally cause no pollutions of any kind to anyone else. But the levels may be low enough so that they are quite prepared to have us perform those activities anyway. This is especially so when the levels are vanishingly low, as they characteristically are. But even when they are not, they may constitute part of a price that on the

whole is worth paying. The noise of a great city is endured by all, especially when they walk the city's central streets. But most people are quite willing to endure those sounds in exchange for the other benefits of city life. Again, automobiles emit pollutants in their exhausts. Yet the benefits of automobiles, both to their drivers and to those who benefit from the improved services and levels of production that automobiles provide.

In fact, if there were no motor vehicles, we would not only be far poorer than we are, but less healthy as well. Longevity has increased greatly in the industrialized countries, despite the levels of pollution that are the byproducts of their industries. This is undoubtedly due to the better diets and improved health care that reliable and efficient transportation makes possible. If the ambulance that carries a heart attack victim to hospital had to be horse-drawn, many patients would be dead by the time of arrival who would otherwise live - not to mention that horses pollute far more than cars anyway.

Environmental Fallacies (1) Perfect Purity

The first lesson of all this reflection is that any policy that tells us that the right level of pollution is no pollution is, to be put bluntly, daft. Zero pollution is unachievable, and close approximations to it are almost always far worse than modest pollution, especially when its full costs are taken into account. If it is proposed to spend huge sums cleaning up the external atmosphere, the unwary taxpayer should know that the average home has an atmosphere far more polluted than the external air, even in busy cities with considerable industry. Despite the fact that he spends half of his hours in that polluted air, that average taxpayer is going to live to be eighty to ninety years old at current rates. The extra money he would spend on reductions of air pollutions might well be a waste of money. He would likely be better off spending it on a vacation in Hawaii or an improved stereo system.

The situation is this. Most people live in environments that are clean enough to support a good and long life. When they become fatally ill, it will rarely be due to any of the usually cited causes: environmentally induced cancers, for example, are fairly rare. Or when there is such, it is usually self-imposed, as when the cancer patient spent the last twenty years smoking a pack of cigarettes a day, or the heart attack victim has avoided the foods that would have prevented his condition, or eaten too many of those that bring it on. For all these people, extra expenditures to "clean up the environment" are not worth making at all. The smoker who lives in Los Angeles is poisoning himself at a rate that makes the effects of its frequent smogs trivial by comparison. For other people, such expenditures, up to some point, may be worth making. But what point?

To know this, we must have an estimate of the health-promoting effects of the proposed cleanups. We must then compare those benefits with the proposed costs. If the probability of getting cancer is improved by one thousandth of one percent, at a cost of $500 per capita, that expenditure will not be worth making for almost all of us. But if the same benefit can be obtained for, say, 25¢, it is worth it for almost anyone. In a political environment in which we are continually told that all pollution is evil and that anything spent on pollution is a good investment, the likelihood that environmental proposals are good investments from the point of view of the ordinary citizen is very low.

Fallacies (2): Back to Nature

In today's political environment, the average citizen probably thinks that pollution is a uniquely contemporary problem, brought on by industrialization. Such citizens will be interested to hear how far the reverse of the truth this actually is. Primitive peoples have a life expectancy roughly half that of contemporary front-line countries. What brings this about? The brief answer is: polluted water, infested food, and woodsmoke. Modern water purification methods avoid the first, refrigeration, cooking, and care in the initial preparation of food deal with the second, and the use of efficient furnaces burning natural gas - a fuel, by the way, not available in "nature" - greatly reduce the dangers associated with the third.

An acquaintance used to drive a car with a bumper sticker that read, "Split Wood, not Atoms!" This charming thought was about as badly informed as one can readily imagine. Wood smoke is among the worst sources of air pollution known to us, whereas the generation of electricity by nuclear means is about as near a method as we know to absolute purity so far as air pollutions are concerned. (Nuclear generation is also safer than any other method, when all costs are taken into account. Even hydroelectricity has the disadvantage that the dams producing it have a way of bursting, drowning many people, whereas the dangers of nuclear generation are well known to engineers and readily containable.)

Probably the chief benefit of modern science to mankind was the discovery of the germ theory of disease. This especially led to our ability to test water for microorganisms likely to cause diseases, and also to the use of routinely sterile methods of supervising the birthing process. Clean water and clean births lower the infant and child mortality rates by quite spectacular amounts, by comparison with which, probably, all the other benefits of modern medicine pale. Primitive peoples are victims of these microorganisms at a rate that amounts to devastation by contemporary standards.

The plausibility of "Back to Nature" as a formula for healthy living is, in short, zero. Those who say this

probably mean that if you could back to just the right parts of nature, armed with an arsenal of modern scientific knowledge about the environment you would then be living in, you could probably do very well.

Fallacy (3): Health Above All!

The most fundamental, perhaps, of the fallacies that infect current thinking about the environment is that physical health in particular is so important to us all that nothing else counts by comparison. This is a view that does not correspond to the practice of very many people. Almost everyone we know, including ourselves, has a lifestyle that could be healthier. To achieve that greater degree of health would involve abandoning that lifestyle, or modifying it so much that its main benefits would be much diminished. When this is the case, we must consider which is more important. And it may be either one. The writer who must spend an hour a day exercising if he is to avoid a heart condition may conclude that it is well spent; but if he does so at the cost of what would be his best work, it will not be so obvious.

Some lives are very risky indeed. The mountain climber and the racing car driver engage in activities with a quite significant probability of early death. They make efforts to decrease those risks, but reducing them to negligibility is probably out of the question. Nevertheless, people knowing the risks prefer to engage in those activities. The expectedly shorter but more interesting life seems to them better than the less interesting but less risky alternatives.

And this brings us back to the ideas explored in early chapters on life and death. We choose what we shall do on the basis of our values, and those are highly variable from one person to the next. We are not in a very good position to tell our neighbor what he ought to do with that life, and that includes nagging him about his health. All of us value our health to at least some degree, and almost all of us value it quite highly. But making it the dominant interest of our lives is another matter. And imposing it on people at the cost of what they hold dear is not something we have any business doing - so long as what they do hold dear is not, in its turn, significantly dangerous to the next person.

Summary on the Environment

All of us deal with an environment all the time.