

ultimate goal of regulatory agencies. Adopting one of the central principles of the public health field—prevention of disease—would amount to a revolution in the way most governments now regulate chemicals. Government, industry, and the public have implicitly regarded synthetic chemicals as benign until epidemiological studies provide evidence to the contrary. By definition, action at this stage comes too late.

Questions no doubt remain about the precise contribution of industrial pollutants to human disease and dysfunction. But there is ample evidence that cumulatively they are causing significant harm to humans. Given the shadow this casts over these “conveniences” of modern life, overturning the presumption of innocence about chemicals is long overdue.

For Further Discussion

1. In light of Misch's observations, what should be our public policy in the face of incomplete infor-

mation about potential harms? Where does your answer fit within the optimistic, moderate, and pessimistic alternatives described in the reading of Chapter 3?

2. Who benefits and who pays the costs of our temporary reliance on chemicals? Are the same people who benefit bear the risk?
3. Is risk assessment a technical question best left to environmental and health scientists, or is it a political question that deserves public discussion and debate? What are the costs and benefits of each alternative?
4. Should we continue to live in ways that rely so heavily on the widespread use of chemicals? What social and political changes would be needed before we could reduce chemical use significantly?



The Case for Optimal Pollution

William Baxter

In this classic essay, William Baxter lays out clearly the free-market approach to pollution. Baxter acknowledges his philosophical commitments: environmental policy should serve people, not penguins; freedom of choice is a central value; humans should be treated as ends, not means; waste is a bad thing; individuals should have incentives and opportunities to pursue their own interests and preferences. With these starting points, Baxter argues that public policy should aim for an optimal level of pollution, rather than for the total elimination of pollution, and that economic markets are the best means for attaining this goal.

I start with the modest proposition that, in dealing with pollution, or indeed with any problem, it is helpful to know what one is attempting to accomplish. Agreement on how and whether to pursue a particular objective, such as pollution control, is not possible unless some more general objective has been identified and stated with reasonable precision. We talk loosely of having clean air and clean water, of preserving our

wilderness areas, and so forth. But none of these is a sufficiently general objective: each is more accurately viewed as a means rather than as an end.

With regard to clean air, for example, one may ask, “how clean?” and “what does clean mean?” It is even reasonable to ask, “why have clean air?” Each of these questions is an implicit demand that a more general community goal be stated—a goal sufficiently general in its scope and enjoying sufficiently general assent among the community of actors that such “why” questions no longer seem admissible with respect to that goal.

If, for example, one states as a goal the proposition that “every person should be free to do whatever he wishes in contexts where his actions do not interfere with the interests of other human beings,” the speaker is unlikely to be met with a response of “why.” The goal may be criticized as uncertain in its implications or difficult to implement, but it is so basic a tenet of our civilization—it reflects a cultural value so broadly shared, at least in the abstract—that the question “why” is seen as impertinent or imponderable or both.

I do not mean to suggest that everyone would agree with the "spheres of freedom" objective just stated. Still less do I mean to suggest that a society could subscribe to four or five such general objectives that would be adequate in their coverage to serve as testing criteria by which all other disagreements might be measured. One difficulty in the attempt to construct such a list is that each new goal added will conflict, in certain applications, with each prior goal listed; and thus each goal serves as a limited qualification on prior goals.

Without any expectation of obtaining unanimous consent to them, let me set forth four goals that I generally use as ultimate testing criteria in attempting to frame solutions to problems of human organization. My position regarding pollution stems from these four criteria. If the criteria appeal to you and any part of what appears hereafter does not, our disagreement will have a helpful focus: which of us is correct, analytically, in supposing that his position on pollution would better serve these general goals. If the criteria do not seem acceptable to you, then it is to be expected that our more particular judgments will differ, and the task will then be yours to identify the basic set of criteria upon which your particular judgments rest.

My criteria are as follows:

1. The spheres of freedom criterion stated above.
2. Waste is a bad thing. The dominant feature of human existence is scarcity—our available resources, our aggregate labors, and our skill in employing both have always been, and will continue for some time to be, inadequate to yield to every man all the tangible and intangible satisfactions he would like to have. Hence, none of those resources, or labors, or skills, should be wasted—that is, employed so as to yield less than they might yield in human satisfactions.
3. Every human being should be regarded as an end rather than as a means to be used for the betterment of another. Each should be afforded dignity and regarded as having an absolute claim to an even-handed application of such rules as the community may adopt for its governance.
4. Both the incentive and the opportunity to improve his share of satisfactions should be preserved to every individual. Preservation of incentive is dictated by the "no-waste" criterion and enjoins against the continuous, totally egalitarian redistribution of satisfactions, or wealth; but subject to that constraint, everyone should receive, by continuous redistribution if

necessary, some minimal share of aggregate wealth so as to avoid a level of privation from which the opportunity to improve his situation becomes illusory.

The relationship of these highly general goals to the more specific environmental issues at hand may not be readily apparent, and I am not yet ready to demonstrate their pervasive implications. But let me give one indication of their implications. Recently scientists have informed us that use of DDT in food production is causing damage to the penguin population. For the present purposes let us accept that assertion as an indisputable scientific fact. The scientific fact is often asserted as if the correct implication—that we must stop agricultural use of DDT—followed from the mere statement of the fact of penguin damage. But plainly it does not follow if my criteria are employed.

My criteria are oriented to people, not penguins. Damage to penguins, or sugar pines, or geological marvels is, without more, simply irrelevant. One must go further, by my criteria, and say: Penguins are important because people enjoy seeing them walk about rocks; and furthermore, the well-being of people would be less impaired by halting use of DDT than by giving up penguins. In short, my observations about environmental problems will be people-oriented, as are my criteria. I have no interest in preserving penguins for their own sake.

It may be said by way of objection to this position, that it is very selfish of people to act as if each person represented one unit of importance and nothing else was of any importance. It is undeniably selfish. Nevertheless I think it is the only tenable starting place for analysis for several reasons. First, no other position corresponds to the way most people really think and act—i.e., corresponds to reality.

Second, this attitude does not portend any massive destruction of nonhuman flora and fauna, for people depend on them in many obvious ways, and they will be preserved because and to the degree that humans do depend on them.

Third, what is good for humans is, in many respects, good for penguins and pine trees—clean air for example. So that humans are, in these respects, surrogates for plant and animal life.

Fourth, I do not know how we could administer any other system. Our decisions are either private or collective. Insofar as Mr. Jones is free to act privately, he may give such preferences as he wishes to other forms of life: he may feed birds in winter and do with less himself, and he may even decline to resist an

advancing polar bear on the ground that the bear's appetite is more important than those portions of himself that the bear may choose to eat. In short my basic premise does not rule out private altruism to competing life-forms. It does rule out, however, Mr. Jones' inclination to feed Mr. Smith to the bear, however hungry the bear, however despicable Mr. Smith.

Insofar as we act collectively on the other hand, only humans can be afforded an opportunity to participate in the collective decisions. Penguins cannot vote now and are unlikely subjects for the franchise—pine trees more unlikely still. Again each individual is free to cast his vote so as to benefit sugar pines if that is his inclination. But many of the more extreme assertions that one hears from some conservationists amount to tacit assertions that they are specially appointed representatives of sugar pines, and hence that their preferences should be weighted more heavily than the preferences of other humans who do not enjoy equal rapport with "nature." The simplistic assertion that agricultural use of DDT must stop at once because it is harmful to penguins is of that type.

Fifth, if polar bears or pine trees or penguins, like men, are to be regarded as ends rather than means, if they are to count in our calculus of social organization, someone must tell me how much each one counts, and someone must tell me how these life-forms are to be permitted to express their preferences, for I do not know either answer. If the answer is that certain people are to hold their proxies, then I want to know how those proxy-holders are to be selected: self-appointment does not seem workable to me.

Sixth, and by way of summary of all the foregoing, let me point out that the set of environmental issues under discussion—although they raise very complex technical questions of how to achieve any objective—ultimately raise a normative question: what *ought* we to do? Questions of *ought* are unique to the human mind and world—they are meaningless as applied to a nonhuman situation.

I reject the proposition that we *ought* to respect the "balance of nature" or to "preserve the environment" unless the reason for doing so, express or implied, is the benefit of man.

I reject the idea that there is a "right" or "morally correct" state of nature to which we should return. The word "nature" has no normative connotation. Was it "right" or "wrong" for the earth's crust to heave in contortion and create mountains and seas? Was it "right" for the first amphibian to crawl up out of the primordial ooze? Was it "wrong" for plants to reproduce themselves and alter the atmospheric composition in

favor of oxygen? For animals to alter the atmosphere in favor of carbon dioxide both by breathing oxygen and eating plants? No answers can be given to these questions because they are meaningless questions.

All this may seem obvious to the point of being tedious, but much of the present controversy over environment and pollution rests on tacit normative assumptions about just such nonnormative phenomena: that it is "wrong" to impair penguins with DDT, but not to slaughter cattle for prime rib roasts. That it is wrong to kill stands of sugar pines with industrial fumes, but not to cut sugar pines and build housing for the poor. Every man is entitled to his own preferred definition of Walden Pond, but there is no definition that has any moral superiority over another, except by reference to the selfish needs of the human race.

From the fact that there is no normative definition of the natural state, it follows that there is no normative definition of clean air or pure water—hence no definition of polluted air—or of pollution—except by reference to the needs of man. The "right" composition of the atmosphere is one which has some dust in it and some lead in it and some hydrogen sulfide in it—just those amounts that attend a sensibly organized society thoughtfully and knowledgeably pursuing the greatest possible satisfaction for its human members.

The first and most fundamental step toward solution of our environmental problems is a clear recognition that our objective is not pure air or water but rather some optimal state of pollution. That step immediately suggests the question: How do we define and attain the level of pollution that will yield the maximum possible amount of human satisfaction?

Low levels of pollution contribute to human satisfaction but so do food and shelter and education and music. To attain ever lower levels of pollution, we must pay the cost of having less of these other things. I contrast that view of the cost of pollution control with the more popular statement that pollution control will "cost" very large numbers of dollars. The popular statement is true in some senses, false in others; sorting out the true and false senses is of some importance. The first step in that sorting process is to achieve a clear understanding of the difference between dollars and resources. Resources are the wealth of our nation; dollars are merely claim checks upon those resources. Resources are of vital importance; dollars are comparatively trivial.

Four categories of resources are sufficient for our purposes: At any given time a nation, or a planet if you prefer, has a stock of labor, of technological skill, of

capital goods, and of natural resources (such as mineral deposits, timber, water, land, etc.). These resources can be used in various combinations to yield goods and services of all kinds—in some limited quantity. The quantity will be larger if they are combined efficiently, smaller if combined inefficiently. But in either event the resource stock is limited, the goods and services that they can be made to yield are limited; even the most efficient use of them will yield less than our population, in the aggregate, would like to have.

If one considers building a new dam, it is appropriate to say that it will be costly in the sense that it will require x hours of labor, y tons of steel and concrete, and z amount of capital goods. If these resources are devoted to the dam, then they cannot be used to build hospitals, fishing rods, schools, or electric can openers. That is the meaningful sense in which the dam is costly.

Quite apart from the very important question of how wisely we can combine our resources to produce goods and services is the very different question of how they get distributed—who gets how many goods? Dollars constitute the claim checks which are distributed among people and which control their share of national output. Dollars are nearly valueless pieces of paper except to the extent that they do represent claim checks to some fraction of the output of goods and services. Viewed as claim checks, all the dollars outstanding during any period of time are worth, in the aggregate, the goods and services that are available to be claimed with them during that period—neither more nor less.

It is far easier to increase the supply of dollars than to increase the production of goods and services—printing dollars is easy. But printing more dollars doesn't help because each dollar then simply becomes a claim to fewer goods, i.e., becomes worth less.

The point is this: many people fall into error upon hearing the statement that the decision to build a dam, or to clean up a river, will cost $\$X$ million. It is regrettably easy to say: "It's only money. This is a wealthy country, and we have lots of money." But you cannot build a dam or clean a river with $\$X$ million—unless you also have a match, you can't even make a fire. One builds a dam or cleans a river by diverting labor and steel and trucks and factories from making one kind of goods to making another. The cost in dollars is merely a shorthand way of describing the extent of the diversion necessary. If we build a dam for $\$X$ million, then we must recognize that we will have $\$X$ million less housing and food and medical care and electric can openers as a result.

Similarly, the costs of controlling pollution are best expressed in terms of the other goods we will have to give up to do the job. This is not to say the job should not be done. Badly as we need more housing, more medical care, and more can openers, and more symphony orchestras, we could do with somewhat less of them, in my judgment at least, in exchange for somewhat cleaner air and rivers. But that is the nature of the trade-off, and analysis of the problem is advanced if that unpleasant reality is kept in mind. Once the trade-off relationship is clearly perceived, it is possible to state in a very general way what the optimal level of pollution is. I would state it as follows:

People enjoy watching penguins. They enjoy relatively clean air and smog-free vistas. Their health is improved by relatively clean water and air. Each of these benefits is a type of good or service. As a society we would be well advised to give up one washing machine if the resources that would have gone into that washing machine can yield greater human satisfaction when diverted into pollution control. We should give up one hospital if the resources thereby freed would yield more human satisfaction when devoted to elimination of noise in our cities. And so on, trade-off by trade-off, we should divert our productive capacities from the production of existing goods and services to the production of a cleaner, quieter, more pastoral nation up to—and no further than—the point at which we value more highly the next washing machine or hospital that we would have to do without than we value the next unit of environmental improvement that the diverted resources would create.

Now this proposition seems to me unassailable but so general and abstract as to be unhelpful—at least unadministerable in the form stated. It assumes we can measure in some way the incremental units of human satisfaction yielded by very different types of goods. The proposition must remain a pious abstraction until I can explain how this measurement process can occur. . . .

But I insist that the proposition stated describes the result for which we should be striving—and again, that it is always useful to know what your target is even if your weapons are too crude to score a bull's-eye.

For Further Discussion

1. How do the policy recommendations offered by Baxter flow from the value assumptions of free market economics?
2. Explain the distinction between clean air and water and safe air and water. According to Baxter,