

ENVIRONMENT and SOCIETY



Human Perspectives
on Environmental Issues

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Chapter Nine



TRANSFORMING STRUCTURES: MARKETS, POLITICS, AND POLICY

When architect Jaime Lerner was appointed mayor of Curitiba, Brazil, in 1973, it was a sprawling town of 500,000 half full of festering slums (favelas). The favelas had many problems, not the least of which was garbage that could not be collected because of narrow or nonexistent streets. Because trucks could not get in, and because the garbage was attracting rodents and disease, Lerner had to come up with a way to get the garbage out. The solution was to pay people for their garbage by placing recycling bags around the favelas and giving tokens to the city's transport system for the separated and therefore recyclable trash. For organic waste, which was taken by farmers and made into fertilizer for their fields, he gave tokens that could be exchanged for food. It has worked spectacularly. Kids scour the favelas for trash and can spot the difference between polyethylene terephthalate and high-density polyethylene bottles. The tokens give the poorer citizens the means to get out of the favelas to where the jobs are, while promoting cleanliness, frugality, and the reclaiming and recycling of waste.

The plan was innovative but simple. The money gained from recycling combined with the money saved by not having to take trucks into the narrow streets pays for the tokens. It was a cyclical, waste-equals-food system implemented at the grass roots. Curitiba is considered today a landmark in urban development. But it happened, according to Lerner, because he and others were not afraid to try a new thing. Not everything worked, but so much did that it has bred an innovative atmosphere throughout the city, now nearly three times its 1973 size. Curitiba is entirely self-sufficient and has decided to no longer accept money from the state, because of the red tape involved. It is booming, prosperous, and clean (Hawken, 1993:213–214).

Shift the scene from Brazil to southern Mexico. When the Zapatista National Liberation Army declared war on the Mexican government on January 1, 1994, the rebels identified as their base the Lacandon, North America's only tropical rainforest, some 3 million acres stretching across the southern state of Chiapas and into Belize and Guatemala. The "rainforest rebellion" sent shock waves through the Mexican government and the ruling party (PRI). The Zapatistas occupied four cities and several villages, and the spirit of revolt spread beyond Chiapas throughout southern Mexico. Populist forces in a half-dozen towns and villages locked up local mayors and constables, declaring their behavior to be predatory and oppressive, and demanding reform. For the Mexican government, the rainforest rebellion could not have come at a worse time. Mexico had just concluded the North American Free Trade Agreement with the United States and Canada, who made no bones about their intent to press the Mexican government to become more open, democratic, and responsive, and PRI, which had been continuous in power since the 1930s, was engaged in a national electoral campaign trying to polish its tarnished reputation for political authoritarianism and electoral fraud.

The rebels identified their breeding ground as the rainforest, but in truth it was more dead earth and gutted remains where the rainforest trees once stood. Forty years ago, the forest was largely unoccupied, now it is home to about 200,000 *campesinos* (country people), many of them indigenous Mayans, as well as another 100,000 refugees from Guatemala who crossed the border to escape the ongoing civil war there. Early in the century, the Lacandon was assaulted by loggers in search of mahogany and tropical cedar. Until the 1950s, there were still large stretches of virgin forest, but the pace of logging accelerated in the 1960s. Beginning in the 1940s, the Mexican government encouraged *campesinos* to settle there, a policy driven by its need to alleviate the overpopulation of central Mexico. The government saw farming the rainforest as more profitable than preservation. For a while, *campesinos* were able to farm sustainably, raising traditional crops such as corn, beans, squash, chilies, and some coffee by slash and burn methods or by shifting (frequently shifting plots to let them lie fallow). But increasing population pressure from continuing streams of migrants and refugees combined with intensified logging took its toll. As around the world, tropical soil quickly loses its fertility when it is stripped of tree cover and farmed intensively. In Chiapas, crop yield has steadily declined since 1982, yet the shrinking local harvest had to feed a population growing at 4% a year. Chiapas suffers one of Mexico's highest poverty and illiteracy rates, and many live there without running water, electricity, health care, or access to minimal social services. Thus, the rainforest rebellion was an act of desperation—but like all revolts, also an act of hope. The Mexican government, predictably, promised reform while sending in troops to drive the rebels out of the cities and back further into the forest, or what was left of it (Morris, 1994). As I write this in 1994, the outcome of the rainforest revolt is in doubt, but the combination of external pressure from its trading partners,

widespread dissatisfaction with PRI, and an active revolt brewing in the southern hinterlands make a climate in which real reform is possible. Perhaps by the time you read this, you can find the rest of the story.

These stories are very different, and you may wonder what they have in common. They are both about the possibility of structural change. And they both illustrate, in very different ways, the connection between environmental conditions and pressures for structural transformation. In terms of the theoretical perspective that I developed in Chapter Seven, Chapter Eight dealt with environmentalism as the agency component of the dialectic of social change. This chapter and Chapter Ten deal with the transformation of structures. They deal more in depth with some topics that you have encountered before in various earlier chapters, about the possibility of changing structures and institutional arrangements. Specifically, this chapter deals with markets, politics and policy as the mechanisms and processes of structural transformation. The next chapter deals with their global dimensions.

MARKETS

Humans have obvious needs for an incredible variety of goods and services, and these are ultimately provided by the resources of the earth. The systems through which such goods and services are distributed that bring investors, producers, sellers, and buyers together are called *markets*. Think of a city farmers' market or traditional markets in villages around the world in ancient times or contemporary less developed countries (LDCs). In such markets, people compare quickly and see what the competition is; you can taste a wedge of pear, smell a bunch of roses, or drop an olive on your tongue. You can haggle about prices, compare the quality of goods in different stalls, and if they are not to your liking, you can walk away. Such pleasures are deeply embedded, richly satisfying, and universally observed (Hawken, 1993:76). Such markets have, in the longer term, built-in protection against fraud and misrepresentation. (How many times will you be gypped by the same seller?) In contemporary society, markets are often not concrete places, as are traditional markets, but abstractions to represent the interaction between the costs of production, the asking price, and the price consumers are willing to pay for goods and services. More simply put, real economic value (prices) are determined by the interplay of supply and demand. Markets are important because they can send realistic signals about the actual economic value of goods and services, of the work that you do, and the prices that people are willing to pay for a particular product or service in specific circumstances. So there are specific markets for compact discs, Fords, bushels of wheat, books about environmental problems, and the development of more environmentally benign products. All of these have prices to be paid (by someone), and they have amounts or levels of benefits that you can get for particular prices. To think otherwise is either uninformed or naive.

Because it views human affairs primarily as the ability of markets to allocate values, neoclassical economic theory emphasizes that many human problems (social and environmental as well as narrowing economic) can be understood as market problems and failures. Harvard University economist Theodore Panayotou underlines this point, in response to antigrowth arguments of environmentalists:

Resources are limited, but resource use is infinitely squeezeable—well, almost infinitely. Antigrowth advocates [would convince us] that further growth will reduce sustainability, and that we should put a cap on growth and seek greener pastures in qualitative development, self-sufficiency, and other utopian pursuits. . . . The correlation between growth and environmental degradation may simply be a spurious one . . . it is rather the inefficiency and waste that accompanies [sic] certain growth paths that is [sic] responsible for environmental degradation . . . [caused by] policy and market failures. To put it simply: You get what you pay for, and you lose what you don't pay for. If you subsidize waste, inefficiency, and resource depletion . . . that's exactly what you get. (Brown & Panayotou, 1992:355–357)

As I noted in earlier chapters, neoclassical economic theory is embedded in an intellectual resource allocation paradigm of the human world and its problems, because in its view, free and fully functioning markets would solve problems by allocating resources in an adaptive way, that is, to the most (economically) valued ends. Neoclassical theory argues that producers and consumers respond to changing relative incomes, prices, and external constraints, so that—if the market signals are allowed to reach individuals and market prices include all the social costs and benefits of individual actions—responses to problems will be rapid and efficient (Stern et al., 1992:136). Unfortunately, these conditions are often not met in the real world, and many human social and environmental problems result from market failures.

Market Failures

One reason why markets don't always work is because all resources are not owned or used in the same manner, and in some types of resource arenas, markets do not work efficiently to send the kinds of real signals mentioned earlier. Resource arenas fall into three categories. (1) *Private-property resources* can be owned and used by an individual (or organization). Others can be excluded from using such resources, and because individuals (or organizations) can own them, they are normally more willing to use them frugally, and to invest in their upkeep and maintenance. In short, we are more likely to use private property resources with an eye to their long-term sustainability. Private

property resources include things like your clothing and automobiles but also things like privately owned farmland, business equipment, and financial investments. (2) *Common-property resources* are those resources to which people have virtually free and unrestricted access. They are not really owned by individuals; therefore individuals (or organizations) entail few real economic costs for overusing them and have few incentives to manage them or pay for their upkeep. Many resources illustrate common-property resources: air, rivers, groundwater, international waters, and all the chemical and biological resources that they contain. (3) Somewhere in between private and common property resources are *public-property resources*. These are jointly owned by all people of a country, state, or local community, and they are managed by a government or public agency. Examples of public-property resources restricted from private ownership are national and state forests, wildlife refuges, beaches, coastal waters, parks, and rangelands. Social institutions can also be understood as resources, and in the U.S., public-property resources include such things as fire protection, public education, military security, highway systems, and prisons. Obviously, people use (or participate in) all these public-property resources, but governments have the exclusive rights to regulate such use. The things provided for you as a member of a family don't come from a private-property resource system either. So all of your needs are not met through private-property market systems. Precisely how much and what needs are met through private-property and public-property resource pools varies from society to society in terms of different cultural, legal, and political traditions.

This distinction between different kinds of resources is an important one for understanding the environmental consequences of economic processes because—as I noted earlier in several chapters—particular problems are associated with common-property and public-property resource arenas. Air and rivers have been polluted, water tables drawn down, and international fishing grounds have been depleted. Because they are controlled by the government and subject to pressures from organized political interests, rights of access to timber, grazing land, minerals, and energy resources are often given at prices far below what they would be if they were all treated as private property resources. These difficulties preventing the unsustainable use of common and public property resources exist because there are no real economic reasons to preserve them that apply to any concrete human actor. The commons problem has been noted by many scholars; it was popularized in reference to environmental problems by zoologist Garret Hardin as the “tragedy of the commons” (1968). Commons problems can arise because of traditional social arrangements that allow free access to all or because of the indivisible common-pool nature of resources, such as open-access marine fisheries and the world atmosphere. In short, common problems produce market failures because of the lack of clearly defined private property rights that leave no one with the incentives to pay to prevent environmental degradation.

Other Sources of Market Failure

Commons problems are the most generic sources of market failure, but there are others that are somewhat different. *First* is the problem of externalities, which is not quite the same as commons problems. *Externalities* mean, for whatever reason, that the “full” costs of production and consumption are borne by some but not calculated into the existing market price. Individuals not involved in buying or selling a good or service may nevertheless be affected. For example, pollution affects people and other species generally, as it flows downstream or drifts in the wind, not just those involved in particular industries or the consumers of particular products. The full diplomatic, foreign aid, and military costs of keeping crude oil flowing through the pipelines are not calculated into the costs of each gallon of gasoline in the United States. If it were, I assure you that you would think much more about which auto trips are necessary! As a final illustration of externalities, the costs of decommissioning a nuclear power plant (which has about a 40-year life span or less) could be built into your electric rate, but probably aren’t. The fact that it is not is a hidden and substantial tax on you or others in the future. *Second*, government action may impede or supersede the market, by providing price regulations or subsidies, or creating a sort of quasi-commons (public-property resource) from what could be privately owned. Examples include the oil depletion allowances and artificially cheap access given to public lands to ranchers and lumber industries. These lead to excessive, uneconomic, and environmentally destructive production. In western parts of the U.S., water rights are defined in a way that precludes the emergence of real water markets. Similarly, in China, artificially low coal prices and a production quota system that gave no premium for quality led to excessive production of coal (and greenhouse gases) in contrast to other energy options. *Third* is the cost-accounting difficulty. Markets may not send real signals about complete values/costs because of the difficulty and costs of collecting information of net value to all affected at present, particularly, difficulties in computing the future of the use of resources (Baumol & Oates, 1988; Burton, 1978; Coase, 1960; Stern et al., 1992:85–86, 136).

Environmentally Perverse Subsidies and Market Incentives

You need to understand the powerful and pervasive ways that present government interventions distort markets in most nations. They actively encourage public and private decisions that stimulate unsustainable resource use and environmental degradation. The evidence for this is overwhelming. Such interventions derive from the understandable efforts of powerful economic groups and firms to get government leaders to provide protection from the unalloyed discipline of the market and from the desire of politicians to keep people work-

ing and prices low. Mechanisms of intervention include tax and fiscal incentives, pricing and marketing policies, and exchange-rate and trade-protection policies. Energy subsidies usually favor large supply projects and undermine funding for innovative and renewable energy development. Such subsidies underwrite the development of coal, oil, and natural gas, and ignore the costs of polluting air and water. They favor inefficiency and waste. In the U.S. alone (as of 1991), such subsidies amounted to more than \$40 billion a year. Tax concessions for logging, settlement, and ranching accelerate deforestation, species loss, and soil and water degradation. Brazilian taxpayers subsidize the destruction of the Amazon with millions in tax abatements. Indonesians and Canadians do the same thing, and in the U.S. taxpayers are subsidizing the destruction of Alaska's Tongass forest. Pesticide subsidies promote excessive use and thereby threaten human health, pollute water, and increase the development of pesticide-resistant species. Subsidies for water-resource development lead to agricultural and municipal overuse and discourage conservation. Agriculture provides the clearest cases of perverse subsidies..

Virtually the entire food cycle in North America, Western Europe, and Japan attracts huge direct or indirect subsidies. In 1991, these costs to taxpayers and consumers were conservatively estimated to be over \$250 billion a year. Such subsidies send farmers far more powerful signals than do the small grants that support soil and water conservation. They encourage farmers to occupy marginal lands, to clear forests, and encourage profligate use of pesticides, fertilizers, and aquifer water. Moreover, by encouraging vast surpluses at great economic and ecological costs; subsidies create political pressures for more subsidies—for food exports, to donate nonemergency food aid to LDCs, and to raise protectionist barriers against food imports. All of these policies are devastating to agricultural productivity in the LDCs, where even the most efficient farmers cannot compete with highly subsidized MDC farmers when their surpluses are dumped on world markets (Brown, 1989; Kosmo, 1987; MacNeill et al., 1991:33–37; Repetto, 1988).

Transforming Market Incentives: Green Taxes and Owning the Commons

Economists argue that the prescription for addressing environmental problems is not the kind of environmental protection that takes things out of private markets and makes them common or public property resources—a strategy doomed to have perverse effects by removing any incentive for conservation by concrete individuals and firms. Rather, it is to allow the magic of the market to work by creating real incentives that encourage sustainable use rather than profligate use and subsidized consumption. My guess is that sociological conflict theorists, such as Allen Schnaiberg, who connected capitalism with an environmentally destructive treadmill of production (his work was discussed in

Chapter Seven) would have doubts about the notion of allowing the “magic of the market” to address problems of environmental degradation. But he also noted the destructive effects of government interventions, as the sponsor of profligate growth (Schnaiberg, 1980; Schnaiberg & Gould, 1994).

How could markets be reformed to produce a more sustainable economy and society? One idea would be to invert the old system of taxes and subsidies to internalize the full costs of doing business and reassign them to the marketplace, where they belong. Doing this would create an economy where business firms prosper by being responsible, both socially and environmentally. In other words, businesses would prosper by competing to be more ecological, not only because it is the right thing to do, but because it squares with the bottom line of profitability. A common proposal to do this is to shift present taxes on income and payroll to green taxes. Governments could gradually and incrementally (not suddenly) decrease taxes on income, savings, and investments (“goods”) and increase them on energy and resource use, on polluting emissions to land, air, and water, and on products with a high environmental impact (“bads”). It is important that the purpose of green taxes should not be to increase total government revenues (they should be revenue neutral) but to provide all participants in markets with accurate information about full costs and undo the perverse distortions produced by the relentless pursuit of low prices. Taxes could then have an environmentally positive impact on consumption patterns and on the cost structure of industry without adding to the overall tax burden on industry and society. But it would shift taxes among groups and economic activities; from investment, savings, and income and to certain kinds of consumption. Green tax shifts could be graduated so as not to impose a disproportionate burden on low-income people, who gain less by lowering income and investment taxes but still consume at market prices. The purpose of imposing green taxes is to give people and companies positive incentives to avoid them, as they now seek to avoid earnings and incomes taxes. Markets would send different kinds of signals (Hawken, 1993:167–171; MacNeill et al., 1991:39).

Germany’s Green Dot system illustrates what can be accomplished with green taxes on consumer products. Successive national legislation between 1991 and 1995 mandated that manufacturers prepay the costs of recycling of used junked consumer products (e.g., batteries and old TV frames) and that retailers and consumers bear some of these costs (added into the product price). Most separation of recyclables is done by hand (creating new job markets), and in 1993 Germany collected 53% of all packaging in circulation, and recycled 85% of that. Between 1992 and 1994, packaging for consumer goods in the German economy was reduced by about 13%. All of this costs the German household an average of \$25.00 per year. Significantly, manufacturers are introducing lightweight packaging and products engineered to be more cheaply recycled to save Green Dot fees. And firms, even retail firms, now

hire ecology managers (Woldt, 1994). The Green Dot system is an ecological version of the European value-added taxes long practiced there, which is a tax on consumption that produces waste and pollution.

In Chapter Four, I emphasized that it is an energy system, most fundamentally and pervasively, that connects human societies and their biophysical environments. One implication of this is that, of the possible green taxes, taxing energy would be the most fruitful and beneficial and would provide the greatest short- and long-term benefits. A tax on the carbon content of fuels would give consumers incentives to switch to fuels that produce less pollution or greenhouse gases and would give producers reason to invest in energy efficiency. Besides addressing concerns about global warming, there would be other benefits. A study of the economies of Japan, the U.S., the former Soviet Union, and European Common Market nations between 1976 and 1990 found that economic performance was directly correlated with energy prices. The more costly the price of energy resources, as in the case of Japan, the greater the technological innovation and economic growth. But where energy prices were subsidized and below world market value, as they were in the Soviet Union, both innovation and economic growth lagged significantly behind. The U.S. outperformed the Soviet Union but not the European nations, which taxed energy higher than the U.S. but not as highly as the Japanese (cited in Hawken, 1993:180). I hasten to reemphasize that energy green taxes need to be incremental. If they should go up overnight (as they in effect did during the oil boycotts of the 1970s), they would cause inflation and economic and social chaos. But phased in over a longer time (20 years?) producers and consumers would have time to adapt, plan, and reinvent.

Other proposals have been made to deal with externalities and commons problems. Because of their fluidity, how could a piece of air or river water, or ocean fisheries be owned by a person or firm? With some ingenuity quasi-markets could in fact be created where none exist. Examples include proposals to measure industrial pollutants (e.g., sulphur emissions from power plants), and issue emissions permits to companies based on the volume of pollutants. A company that exceeded its permit would pay a stiff surcharge, but importantly, a firm that didn't need to use part of its permit (because it invested in efficiency or pollution control) could sell it to another firm that needed it. In effect, this would create a quasi-market where none presently exists. Permits could be issued in terms of emission levels or practical emission-reduction targets for the whole economy or industry. More polluting firms would have to pay surcharges or buy permits; less polluting ones could avoid surcharges taxes or sell permits to others. Similar proposals envision tradeable carbon dioxide (CO₂) permits between nations, and tradeable permits for water rights and hazardous recyclable wastes. The efficiency of markets could be harnessed to achieve the implementation of environmental goals through political choices (MacNeill et al., 1991:39).¹

New Measures of Economic and Social Progress

The economic health of nations is usually measured in terms of changes in the total value of all goods and services bought, a measure called the gross national product (GNP). Economists also use the real GNP, which is adjusted for inflation, or the GNP per capita, which is the GNP divided by the number of people in the population (which ignores the fact that in the real world wealth is not evenly divided among the population). Sometimes they use a measure called the gross domestic product (GDP), which factors out the value of imported goods and services. These measures are relatively easy to record and measure, and their growth is often taken as a measure of the social as well as economic well-being of a nation. They are established but inadequate measures of economic and social well-being of nations. They do not deduct from GNP growth withdrawals from or damage to the earth's resources. They treat all goods and services as alike, whether made producing healthy food, treating sick people made ill by pollution, or cleaning up the damage from massive oil spills or nuclear power disasters. They are not, in fact, good measures of social well-being and do not differentiate goods produced under safe and remunerative labor conditions from those produced under exploitive and hazardous ones. They tell you nothing about the actual distribution of the value of goods and services among individuals or groups within a nation.

Many possibilities for alternative measures may be more multidimensional and realistic measures of economic and social well-being to gauge human progress. Economists William Nordhaus and James Tobin have proposed an indicator called net economic welfare (NEW), which subtracts from the GNP the price of pollution and other negative goods, which do not improve the quality of life. For example, to the extent that it was done, the price of the labor and materials required to clean up the Exxon Valdez oil spill adds to the GNP, but no one could argue that this really added to the quality of life for anyone. Tobin and Nordhaus's research shows that since 1940 in America the NEW has risen at about half the rate of the GNP, and since 1968 the gap between these two indicators has been widening (Nordhaus & Tobin, cited in Miller, 1992:658). The United Nations developed a Human Development Index (HDI), which combines economic and social indicators to estimate the average quality of life in a country's social indicators. Measured on a scale from 0 to 1, the HDI aggregates (1) life expectancy at birth, (2) literacy rates, and (3) real GNP per person. In 1988, 18 nations, including Australia, Canada, Sweden, and Spain, had a higher HDI than the United States. The Index of Sustainable Economic Welfare (ISEW) is the most comprehensive and complex attempt to develop an alternative to the plain GNP, developed by World Bank economists Herman Daly and John Cobb. It included the average per capita GNP adjusted of inequalities in income, dis-

tribution, depletion of nonrenewable resources, loss of wetlands, loss of farmland from soil erosion and urbanization, the costs of air and water pollution, and estimates of long-term environmental damage from global change such as ozone depletion. Their research concluded that the ISEW rose between 1950 and 1976 but declined between 1977 and 1988 (Daly & Cobb, 1989). A real problem with the ISEW is that it could not be used generally because it depends on information available in only a few countries. Most analysts believe that in the LDCs, where much of the information for these alternative measures is not available, grain consumption per person (for which statistics are usually available) provides a rough estimate of the quality of economic life (Miller, 1992:658–660).

None of these alternative indicators of economic, social, and environmental well-being are beyond question. They have been criticized as being arbitrary in what they include, and environmental and social costs are notoriously difficult to price (Miller, 1992; Dietz & Rosa, 1994a). Some proposed measures, such as the ISEW, are too complex to be presently useful. Another barrier to their adoption, I think, is that certain interest groups would not want presently externalized costs incorporated into routine measures of socioeconomic reporting, precisely because this would highlight the human and environmental costs of their business as usual. But I mention them to illustrate the possibilities of sending more realistic signals that consider costs, benefits, and human well-being much more broadly than does the GNP.

Rational Choice Theory and Human–Environment Problems

These arguments have a common theoretical thread that is broader than neo-classical economic theory. A wide variety of scholars from diverse disciplines such as behavioral psychology, economics, political science, sociology, and policy studies have created a genuinely transdisciplinary perspective on human behavior, now called *rational choice theory* (see Coleman, 1986; McLean, 1989; Olsen, 1965; Ridley & Low, 1993; Stern et al., 1992; Wallace & Wolf, 1991). In this view, humans are rational choice makers. Economic theory argues that they choose economic goods and services in terms of how much these cost and how badly they need them. But rational choice theory argues that—far beyond economic purchases—people make reasoned social choices, based on experienced costs and benefits, about all manner of things. These, include, for instance, which politicians to vote for, which member of the opposite—or the same—sex is most attractive, which college major is the right one, whether to obey or violate a law, whether to work hard for some group project or loaf along and get the benefit anyway, whether to stay married or divorce, whether to maintain a social relationship or let it erode, whether to see a therapist about your problems or deal with them yourself. We choose, ra-

tional choice theory argues, things that have high benefits relative to their costs. When you say "I don't really have a choice," what that means is that you think the costs are too high to really make a choice. It is not that anyone believes that individuals go around like cost accountants, meticulously calculating the exact numerical costs and benefits of all manner of choices. The assertion is, rather, that in some more vague but real sense, humans adapt to life by trying to minimize costs and maximize benefits. Some costs and benefits may be given in nature (e.g., a starving person will do almost anything for food), but others are shaped by culture and perceptions. They may be symbolic as well as material. (People value social honor and spiritual rewards. Think about the religious maxim that it is better to give than to receive.) Rational choices need not operate in the short term. And in our interaction with others, we develop a sense of what are roughly fair exchanges of goods, favors, or obligations to each other over time.

Thus, the human causes of environmental degradation are that we get the benefits of unsustainable consumption, but the costs, for a variety of reasons noted earlier, are invisible or work in such a delayed time frame that we don't take them into account. Furthermore, rational choice theory argues that much of the change strategies of environmental movements are precisely the wrong ones to produce significant behavior change. The way to avert global ecological disaster is not to persuade people to give up their selfish habits for the common good (often for the benefit of generations yet unborn). Typically, appeals are made in terms of sacrifice, selflessness, and, increasingly, moral shame. A more effective strategy is to tap a durable human propensity for thinking mainly of short-term self-interest. Moral appeals to be good do not work very well in the absence of real incentives. We should think about saving the commons by privatizing it. Real cooperation, at any level, builds up trust from experience with small scale "tit-for-tat" exchanges, not from moral exhortation (Low & Heinen, 1993; Ridley & Low, 1993). The most illustrative case in point of ignoring these powerful *mainsprings of human motivation* is the fate of the Soviet Union, which tried to make a commons of all economic goods (and administer them "morally"). That turned out to be an environmental, social, and political disaster. External costs are somebody else's business, and we can go for free rides on commons resources. Or so we think.

Most of us are aware of environmental problems and agree with the idea of developing a sustainable society, as I noted in the last chapter. The problem is transforming our behavior and the way social systems operate. Rational choice perspectives suggest that instead of urging us to be good, we create incentive systems that send real concrete signals. Markets for example create self-interest consistent with the abstractly good. People get real rewards for being good. That is the real logic underlying all of those proposals that I discussed earlier. It is a powerful and compelling argument based on an undoubtedly protean dynamic of human behavior. It is also a slippery and misleading one. Let me tell you why.

But Markets Are Not the Answer . . .

All of the ideas mentioned earlier about internalizing environmental costs, privatizing the commons, and creating quasi-markets from common property resources imply that our problems are a variety of market failures and that the prescription is to get markets functioning like they should. More conservative economic and political thinkers are so enamored with market solutions that they believe that the solution to most human and environmental problems is to simply unhook markets from any undue intervention and just let the magic of the market work (DiLorenzo, 1993). That is an attractive but, I think, a deeply flawed idea. Problems are deeper than market failures; even fully functioning markets will not, by themselves, solve our problems.

Markets have at least four recognized limitations. *First*, markets treat as equal worth (without value judgments) all dollar values, whether generated by cleaning up toxic wastes, producing nuclear missiles, or producing housing, food, or humanly enriching art. Whether a product was made with clean processes, or with ones that make a product cheaper by putting carbon, sulfur, chlorine, and other material into the air or water is not counted. Whether a product was made by well-trained workers in a safe environment, or by underpaid labor of unhealthy workers or unhealthy children carries no weight and even misrepresents societal preferences by making the less appropriately produced item less expensive. Markets don't care about these things. But people do.

Second, goods that are valued by nonparticipants in formal markets are systematically underpriced. What is the dollar value of a living tree? Usually, it is the price at which dead timber can be sold in a market. But what about its value to the person who harvests fruits or nuts from the tree? Or the person who values it for protecting his or her nearby land from being flooded? Or the person who values it because he or she just likes to look at it, or enjoys its shade? The combined worth of the tree for all these people may be well above its market price as lumber, but barring some cooperative arrangement that incorporates the needs of all those who value the tree, cutting the tree and selling it on the market means that the market will have operated in a way that did not optimally represent its "value" to all those who valued it (Kane, 1993b:60,64). Moreover, none of these human use-values of a tree, living or cut as lumber, incorporate the myriad functions of a tree for ecosystem maintenance, watershed protection, habitat provision, soil stabilization, and so forth. Market prices don't incorporate the needs of other species, a point clearly recognized by deep ecologists.

Third, markets gauge the real value of resources or products only in present actual exchanges. All other attempts to internalize prices or create quasi-markets from common property resources are shadow prices, determined in some speculative way by some planner, administrator, or bureaucrat. They are speculative administered prices. Take, for instance, the future values of resources. Should you consume it today, or save it for the future? Established ways of calculating the value of resources in the future assume that inflation

and technological change will reduce the future dollar price of a particular resource (forest, mine field, copper ore). In other words, future values are discounted by some percentage for every year that a resource is conserved. This process conflicts with long-term sustainability and reduces the rights of future generations to near zero (Stern et al., 1992:86).

Fourth is the most well-known limitation of markets, noted by those on the political left since the days of Karl Marx: Markets may produce a sort of efficiency, but as they operate over time without some sort of nonmarket restraints, they generate vast systems of social inequality, which themselves represent significant (but normally externalized) social costs. The evidence for this is overwhelming, both within and between nations. Some opposition to the creation of quasi-markets of tradeable emission permits from common-pool resources is on exactly precisely these grounds. Rich firms or nations would have the resources to pay surcharges or buy emission permits from poorer firms (who would be under routine pressure to sell them cheaply). Either way, the rich could still afford to pollute, and real reduction of emissions would be accomplished on the backs of the poor.

In one way or another, all of these problems with markets mean that they do not price all things effectively and do not price many things that people may care about (for more technical critiques of market strategies of change, see Kelman, 1987; Misahan, 1971; Pearce & Turner, 1990).

Market strategies have an even deeper limitation. People in free-market nations, especially Americans, and American economists in particular, tend to view markets as somehow natural and real systems that arise spontaneously among all people irregardless of differences in philosophy, religion, culture, or political belief. The prevailing imagery is of traditional village markets noted earlier, and they seem almost a part of nature. Politics and culture, by contrast, are more obviously socially constructed, arbitrary, whimsical, and often irrational. The GNP is taken as real. The other new measures of social and economic progress are seen as arbitrary (Dietz & Rosa, 1994a). Furthermore, when the word *market* is appended to the technical term *economy*, we have the satisfying feeling that we are dealing with forces in the world that function properly without government interference. We think of vast global markets organized by banks and multinational corporations as simply projections of the elemental reality of village markets—even though the scale and connections between market participants are vastly different and the feedback signals about value are much more nebulous and manipulable.

In fact, markets are no more natural than politics and culture, whether traditional face-to-face or the world market economy. There never has been, or will ever be, a market that operates beyond the specifications and interventions of politics and culture. The traditional village market was consigned to a specific place in the town, and it was conducted on certain days assigned by cultural tradition. Even traditional markets were protected from marauders, and orderly commerce was guaranteed by local constables or soldiers of the local Mandarin, Calif, or Duke. Certainly, in modern national and international

markets, there is really no such thing as a truly free market, unconstrained by political regulation or subsidies. In the global marketplace, every nation expects its government to try to create favorable terms of trade for national firms and products. And when a relatively free global trade system (e.g., the General Agreement on Trade and Tariffs [GATT]) comes into being, it will not be because of the natural operation of markets themselves but because of painful and laborious political negotiations stretching over 40 years. Markets, politics, and culture alike are social constructions of reality.

Why do I spend so much time belaboring this point? Because, if you look again at the market strategies for dealing with environmental problems that I discussed earlier (green taxes, privatizing the commons, and creating quasi-markets in tradeable emission permits, etc.), they all require political action to re-engineer markets that deliver different signals to producers and consumers. It is not a case of going from a free market to a highly engineered one, but of moving from today's environmentally perverse interventions to a new set of less perverse ones. And that is politically a tough nut to crack. It is all well and good to talk about energy taxes, but what politician in an energy-producing state is going to vote for higher taxes on energy? What senator from Wyoming is going to vote to end the virtually free concessions given ranchers to overgraze public lands? The principle of rational choice theory still holds: Politicians operate in different "political resource markets" (electoral votes and political action committee [PAC] money). The efforts of the Clinton administration in 1993 to impose a broad carbon tax and to put Western rangelands back into market prices are cases in point. Both initiatives met with utter political failure because they were opposed by powerful coalitions of interest groups that benefit from cheap energy and grazing lands. As I noted in Chapter Two, the complex division of labor and occupational specialization in industrial societies produces a quasi-speciation, which means that different economic groups benefit and bear costs very differently, even in the same physical environments. Economic or rational choice perspectives, which talk about some sort of overall good or rational choice, ignore this important fact. To take a more positive example, what the Germans have done with the Green Dot system says more about the influence of the German environmental movement (the Greens) and German political culture than anything about markets or rationality per se.

So it is one thing to talk about creating a green economy and making doing good consistent with doing well: The premise, I think, is sound. Changing market incentives can change behavior. But changing market incentives means looking squarely in the face of politics.

POLITICS AND POLICY

Like markets, political institutions are also concerned with resource allocation, and the classic definition of *politics* is the process of deciding who gets what, when, and how. But although rational choice theory might understand politics

as involving merely a different sort of market (with influence for sale), that is at least partly misleading. Politics involves the mobilization of power to allocate resources for an ostensible collective good; politics is justified by whether or not it produces public and collective benefits; market exchanges are justified on whether or not they produce private gain. Ever since the emergence of nation-states, politics and markets have involved different types of cultural legitimation. In fact, historically, the scope and power of political institutions grew to address precisely those problems that were either created by or not effectively addressed by economic markets (including many of those I just noted).

The purpose of all political institutions is to make public policy. By public policy, I mean the attempt by government agencies to change or control collective patterns of action. But the term *public policy* is a broad umbrella that encompasses an enormous diversity of agents and modalities. Next, I'll outline some different policy options that governments use and their relevance for environmental problems.

Public Policy and Strategies of Social Change

Public policy attempts to produce change by four broad strategies that imply, according to environmental sociologist Riley Dunlap, four different sorts of "fixes" for environmental problems (Dunlap, 1992; see also Heberlein, 1974). The four strategies involve using public policy to change technology, behavior, ideas, and laws.

First, and most often identified as a "fix" for problems, are technological fixes. They are diverse and include more efficient auto engines with emission control devices that use less fuel and pollute less, highways and traffic lights engineered to reduce auto accidents, better street lights or burglar alarms to discourage crime, houses insulated to cut fuel bills, more productive seed hybrids through genetic breeding, and biotechnology. The list of technological proposals to address all sorts of problems seems endless and needs no elaboration. Public policy can stimulate technological fixes in a variety of ways, for instance, by public investment, subsidies, tax policies, or regulatory mandates.

Second, and most often contrasted with technology, are behavioral fixes by which public policy provides incentives to get us to behave differently. These are (supposedly) more difficult than technological fixes, which require no behavioral modifications. Getting people to eat lower on the food chain for both ecological and health reasons, use condoms, stop smoking, wear sweaters and turn down thermostats in the winter, install attic fans and use air conditioners less in the summer, walk, bike, carpool or use public transportation as alternatives to driving are examples of behavioral fixes. Whereas technology requires investment, behavioral changes require systems of concrete incentives (or penalties). We are not on new ground: This was the whole point of the rational choice and market perspective developed earlier.

Third are cognitive fixes, which attempt to create awareness of problems in people's minds. The assumption is that if you change people's minds, they will change their behavior. Cognitive fixes often rely on public education and media campaigns. Energy conservation ads telling people "don't be fuelish" or recycling ads reminding us that "if you're not recycling, you are throwing it all away," are cases in point. The popularity of cognitive fixes is that they rely on voluntary change and are compatible with norms of personal freedom. They require no regulation and little public investment. Unfortunately, very little evidence shows such strategies work in isolation from others (I mentioned some of this evidence with regard to energy conservation in Chapter Five). Even so, I think that the importance of cognitive fixes as part of more comprehensive policy change strategies is often underrated (more about this later).

Fourth, legal fixes mandate change through laws and regulations, rather than incentives, subsidies, or persuasion. Examples include federal speed limits on interstate highways and requirements to remove lead from gasoline, install antipollution devices, or to recycle beverage containers or household or industrial wastes.

Any of the first three strategies (technological, behavioral, cognitive) can be pursued by regulatory or nonregulatory means. Regulatory strategies can be very effective, but they are unpopular in a society that views government regulation negatively. They require great political will, or at least effective mobilization and interest group coalitions, to enact and enforce (Dunlap, 1992). It is a truism among policy scholars that the most effective strategies for change produced by public policy combine all four approaches. In other words, change could be promoted by providing better technical means, changing people's minds, providing material incentives, and regulatory restrictions or targets.

Policy and the Economic Production Cycle

The four broad strategies (fixes) that I have just described apply to broadly different domains of social behavior. But policy can be applied at three different stages of the economic production cycle. First, we are most familiar with policies that work after consumption has taken place. Such end of the pipe or downstream interventions mandate clean air standards and antipollution devices, and so on. Recycling of wastes is also an end of the cycle strategy. Such strategies obviously work and are, in fact, the way most environmental legislation to date works, either by penalties, pollution standards, or providing incentives for recycling. But such strategies have their costs and do little to reduce unsustainable resource consumption. Second are strategies that work to reduce consumption, not just be more frugal with trash and effluents. Examples are admonitions to eat lower on the food chain or industries that use cogeneration processes. Third are policy interventions that work upstream, early in the production process itself, to either make production more environmentally benign or to reduce waste and materials in the production of products and ser-

vices. The standout example in the U.S. has to do with the engineering of more energy-efficient products, ranging from dishwashers to automobiles. Other examples being envisioned are products that require less packaging (e.g., products generated by the German Green Dot system).

So far, most of our institutional and policy attention has been given to downstream interventions that deal with pollution and toxic emissions. The reasons are, I think partly historical: The environmental consciousness as it developed in the 1960s focused mainly on pollutants, and awareness of consumption and resource use issues came later. Beyond reasons of history, there were undoubtedly other reasons. Midstream and upstream policies mean intervening in the economy in more fundamental ways than just cleaning up pollution. They mean altering production technologies, consumption patterns, or both. And real upstream policies shift the burden of change from consumers to producers. But while reducing pollution and waste by end of the pipe controls or recycling is often costly, preventing it through resource efficiency and smart process redesign is usually profitable (Lovins, 1993:9). Again, doing well can be combined with doing good. As you might guess, it was probably politically easier to focus on end of the pipe policies. They provided the comforting illusion that we could go on consuming as we liked, as long as we cleaned up the messes.

The catchphrase among those who advocate such midstream and upstream strategies is to dematerialize the economy (I mentioned this notion in Chapter Seven). It means using less resources and environmentally damaging production processes per unit of production. Such dematerialization has, in fact, been going on in advanced industrial economies for some time. For example, in 1915 the U.S. used 0.95 tons of petroleum to produce \$1,000 (in constant dollars) of GNP. In the 1990s, that figure is closer to 0.40 tons per \$1,000 of GNP. Similarly, cars weighed 20% less in 1985 than they did in 1975. By 1985, U.S. auto redesign resulted in an annual savings of 250 million tons of steel, rubber, plastic, aluminum, iron, zinc, lead, copper, and glass. In fact, if you look at every durable good you own and use—your car, TV, refrigerator, or house—20 years ago, it weighed more, used more material, and employed greater amounts of embedded energy in its manufacture (Hawken, 1993:64). Such dematerialization is sometimes the result of market operations (e.g., the auto industry's response to more efficient imports) but is just as often the result of public policy, such as tax incentives, or mandated fuel consumption or emission standards. In sum, upstream, midstream, and downstream policy can move us some distance toward a true *industrial ecology* (Frosch & Gallopoulos, 1990).

But wait. Without real reductions in consumption, dematerialization will not be sufficient to produce a sustainable economy. In simpler terms, the problem is that while cars, TVs, refrigerators, and houses may use less material and be more energy efficient, there are a lot more of them than there were 40 years ago. If the proportion of material goods use relative to each unit of consump-

tion declines, that is a plus. But if incomes (or total consumption) keep rising, we may be back to square one, and on what Alan Schnaiberg called the "treadmill of production" (1980) (see Chapter Seven). Much of this has happened, making the progress that is due to dematerialization something of a mirage. To illustrate, between 1977 and 1987, energy use per unit of GNP declined in 54 of 147 nations for which adequate data existed, but in only 41 of these did per capita energy use fall, and because the number of persons increased everywhere, only 22 nations actually cut their aggregate energy use. Most of these were debt-ridden nations in Africa and Latin America, not the world's most buoyant economies (Harrison, 1993:275–276; World Resources Institute, 1990:316–317). The important implication is that, contrary to the technological mind-set of many Americans, technological strategies that make the economy more ecologically frugal and efficient are not enough unless combined with cognitive and behavioral changes. On a positive note, the massive diffusion of environmentalism as a global ideology that I documented in Chapter Eight signals, I think, that significant cognitive change is well underway (I will return to this point).

Policy and Social Structure

Political scientist Theodore Lowi developed an extensive conceptual framework to depict how public policy relates to social structure in different ways (1964, 1972, 1979). One distinction Lowi makes is between constituent and regulatory policies. *Constituent policies* provide benefits to particular constituents, clients, or publics. Providing tax incentives for the lumber or oil industry illustrates constituent policies. The environmental equivalent of traditional constituent policy would be policies that provide subsidies for windpower or "gasohol" fuel. Even when they regulate, constituent policies are often—grudgingly—welcomed by particular constituent groups and industries they regulate as necessary to police their deviants. Examples include the Securities Exchange Commission that polices the stock market against securities fraud. In the Great Plains states, state legislatures have passed enabling legislation to regulate (meter) water use from the Ogallala aquifer, to conserve water supplies. Although such policies are still embryonic and not very effective, they have met with scattered and surprisingly little opposition from dryland farmers. Constituent policies are politically easy: If they involve subsidies or tax concessions, they are enthusiastically welcomed. If they involve regulation, they are grudgingly welcomed as a necessary collective security measure for an interest group or industry.

In contrast to constituent policies, true regulatory policies are another matter. *Regulatory policies* attempt to control behavior across a broad spectrum of constituent groups, industries, and economic processes. Related to environmental matters, early legislation from the 1960s that established broad air

and water pollution standards are such regulatory policies. Other examples are the regulation of utility pricing to encourage a variety of energy conservation measures by organizations and individuals or the 1993 proposals by the Clinton administration to enact broad carbon taxes. Such policies do indeed cast a broad net, and their costs percolate through the economy to affect most groups. Investors, producers, workers, and consumers all eventually share a piece of the costs of true regulatory policies (in Lowi's sense of the term). But, precisely because their costs are so pervasive, they are politically unpopular, difficult, and contentious. They raise issues about who really should pay. (Anyone, it seems, but "us"!) Thus, regulatory policies are perceived as inefficient and unjust, as taxes imposed on some by others. Even the environmental policy principle of the "polluter pays" is of little help, because different client groups have very different notions about who the real polluters and beneficiaries of pollution are. Again, anyone but us. Thus, regulatory policies instigate political struggles by powerful interest groups to politically capture the agencies responsible for administering them, or at least to capture the fine print of regulations that shape who pays how much. In the ill-fated 1993 Clinton proposal for a broad carbon energy tax, for instance, the electoral constituents in the Northeast made sure that it was a tax on gasoline, not heating fuel oil; natural gas producers and transporters, along with many environmental organizations, wanted natural gas exempted as the less polluting preferred carbon fuel; while the oil industry made sure that the tax was to be paid at the retail pump (by consumers) not at the wellhead (by producers). Subject to such interest-group whipsaw, true regulatory policies are, as you might imagine, politically difficult and often turn out to be *de facto* constituent policies.

The National Environmental Protection Act (NEPA) includes language to prevent the capture of the EPA by regulated industries and the environmental movement alike. Nonetheless, both trade associations and environmental organizations have been active in attempting such capture (Aidala, 1979; Sabatier, 1975). But the fact that litigation against the EPA comes as often from environmental organizations as from industry groups suggests, to me anyway, that it has been able to maintain itself as a true regulatory agency instead of being captured as a constituent-policy organization. That stands in sharp contrast to the Nuclear Regulatory Commission, which all observers agree became a virtual lobby and propaganda arm for the nuclear power industry.

Most national environmental movement organizations have advocated regulatory policies, whether in setting standards for emissions or pollution, screening toxic substances, requiring environmental impact statements, setting aside or protecting ecosystems, or encouraging resource conservation. Such policies have involved the various criteria developed by the technocratic "risk establishment" (mentioned in Chapter Four) for assessing environmental risks and hazards.² In short, American environmental politics has involved a heady and contentious mix of both constituent and regulatory policies (Schnaiberg, 1983).

Second, Lowi distinguishes between distributive and redistributive policies (1979). *Distributive policies* are “gifts” from the stock of things that governments control. The distribution of the air waves at different frequencies to radio and TV stations by the Federal Communications Commission is an example. Distributive policies allocate a “common good” such as logging rights to lumber corporations in national parks or cheap grazing rights to ranchers in public rangelands. Other examples could include incentives for replacement of energy-inefficient equipment for energy-conserving equipment, incentives and subsidies to farmers for soil conservation and to promote low-input or sustainable farming practices. As you might guess, these are very popular; they are perceived as free gifts from the government that can be transformed into private income. As these illustrations suggest, distributive policies, while popular, can be connected with moving to a more environmentally sustainable system but also with the overuse that attends commons problems.

Redistributive policies involve not just the distribution of goods or resources that government controls but the redistribution of those that have already been allocated to people or organizations in some way. Redistributive policies involve using the government to take traditional benefits, subsidies, or privileges from some and give them to others. You are familiar with these: The notion has been around since the 1930s in industrial societies that income taxes should be progressive so that the very wealthy should bear a higher tax burden (and pay a higher tax rate) than middle- and low-income groups. This in effect creates transfer payments of some type, whether direct or in tax concessions, from the rich to create subsidies or social programs for low-income and poverty groups who are most disadvantaged in private markets. Conversely, taxing corporate gains at a lower rate than income tax creates a redistributive gain for the wealthy. Redistributive policies have been the hallmark of welfare politics. Earlier, I noted that farm subsidies (for whatever purpose) may be distributive policies. But subsidies and incentives through the Department of Agriculture (DOA) for low input and sustainable agriculture are better understood as redistributive policies. They involve redistributing fixed budgets of the DOA—away from the much larger and more well-established subsidies for corporate, agribusiness, and high-input agricultural interests to other priorities and interests. A clearer example of an environmental redistributive policy proposal is the creation of windfall profit funds to provide energy costs offsets for working- and poverty-class constituents facing higher energy costs. Most proposals for energy and green taxes now include such redistributive clauses. As you might guess, because they involve taking money, traditional benefits, or incentives from some and giving them to others, redistributive policies are unpopular, contentious, and politically difficult. Because they challenge not only operations of markets but the established patterns of wealth and privilege, redistributive policies attempt to divest such resources from the very groups in the population most able to defend themselves. They are thus politically the most difficult of all types of policy to enact and implement. So why bother with

them? For reasons of social justice. But if those reasons don't persuade you, there are other reasons. Consider that, as critics of markets have noted, any policy that significantly increases social inequality, whether to produce growth or environmental sustainability, has very real social costs that will be paid one way or another. All nations have found some redistributive policies necessary for social peace.

Some environmental movements, such as grass-roots activist movements, have advocated redistributive policies that compensate victims and communities for the damages done by industrial firms. Other environmental movement organizations, such as the appropriate technology movement of the 1970s (led by Amory Lovins and others), initially used the rhetoric of redistribution but in fact came to advocate distributive goals, such as the general benefits of renewable energy technologies, without noting their redistributive effects (Schnaiberg, 1983:208).

The Limits of Policy

The fragility of true regulatory policy, and its tendency to devolve into constituent policy through the capture of legislation and enforcement, as well as the enormous political difficulties of redistributive policies underline that policy is indeed rooted in *politics*—the contentious processes of deciding who gets what, when, and how. The legislative politician's dream is to be able to propose only constituent, distributive policy legislation. The reality in closed and interconnected systems—whether ecological or budgetary—is that politically difficult regulatory and redistribution policies are often required. In democratic systems, they require solid bases of electoral support or powerful coalitions of interest groups, lobbies, and movement organizations. I emphasize the rootedness of policy in politics to underline the fallaciousness of the technocratic assumptions that often dominate discussions of public policy: that we can simply devise rational, feasible, and cost-effective market interventions and incentive systems that get us to behave properly and simply enact them. In a pig's eye we can! Not without getting the politics right first.

Political institutions and cultures in different nations are not alike, and as you might guess, the policy process works differently in various nations. In America, the electoral system, with its two-party winner take all elections, makes it difficult for reform-oriented groups, factions, and movements to be represented in the executive policy-making process. By contrast, in Germany, parliamentary proportional representation of various electoral parties in the formation of governments provides greater access to the political system for parties and groups committed to social reform (Parkin, 1989). The German Greens, for example, had in their heyday political influence out of all proportion to their numbers and resources, which made American environmentalists turn "green" with envy, so to speak. But in America, the constitutional system

and the separation of powers provide nongovernmental organizations with greater opportunities to shape policy through the judicial system. Whereas citizens of other more developed countries (MDCs) are more likely to have strong political party affiliations than Americans, they are less likely to join environmental social movement organizations (SMOs) and other nongovernmental organizations (NGOs), and are less likely to have direct access to policy debates. The more centralized political systems of Japan and France limit participation of citizens' action groups in the political process. Environmental policy is relatively centralized at the national level in Great Britain, Japan, and France, and is administered primarily by local governments in Germany. The U.S. has developed an adversarial regulatory style, in which government establishes ambitious and highly specific standards and frequently tries to impose legal penalties for noncompliance. Great Britain, by contrast, uses an approach to regulation characterized by more flexible standards, modest goals, very infrequent use of legal penalties, and restricted participation by the public and environmental groups. The U.S. is unusual in providing opportunities for diverse groups of scientists to affect public policy. By contrast, participation by scientists in Europe is more likely to be confined to official channels. The U.S. is also unusual in having regulatory decisions tied by statute to the outcomes of technical risk analysis studies. Thus, it is sometimes easier to have a product or production process banned or restricted in the U.S. than in most other MDCs (Brickman, Jasanoff, & Ilgen, 1985).

These political differences interact with differences in economics, resource base, and geography to produce different environmental policy outcomes. To wit, the West Europeans (especially the Germans and the Danes) have pioneered the world's premiere recycling systems, partly because there is little space left there to "throw it away." The Americans have taken the lead in banning toxic substances and addressing water and soil degradation. The Japanese, with a much more vulnerable energy supply and a greater economic dependence on international trade, have pioneered energy-efficient machines, particularly industrial machinery. They are making more effort than other nations to exploit future green markets for efficient products and antipollution equipment of all sorts. Americans and Canadians are the most wasteful energy consumers, while the Japanese are notorious for violating international fishing agreements and for profligate consumption of tropical hardwoods.

But there is more: Because political mobilization is always a contentious, difficult business, the truth of the matter is that public policy is difficult. Policy that aims at significant, system-wide transformations in structures, markets, and behavior is particularly fragile. In point of fact, it often simply doesn't work. Part of the difficulty is that national social systems are simply too large and complex to manipulate by policy without many unintended consequences that may negate the intent of policy. Policies that improve some things make other things worse. Other difficulties are built into particular policies. These can be richly illustrated in America.

A difficulty peculiar to American environmental policy is that we are perhaps still too close to the frontier history of wide open spaces and cheap resources for the taking to appreciate the importance of some ecological problems (as compared with Japan or Germany). Even more pertinent to the American political system is the growing fragmentation of American politics, which is reflected in fragmented environmental policy. One can think of *system-wide* reforms delivered by public policy in the past: the Progressive Reforms of the 1900s, New Deal of the 1930s, or the extension of civil rights and the War on Poverty of the 1960s. But political change in the last few decades, such as the increasing electoral fragmentation, the declining cohesion and power of parties, and the institutionalization of interest groups as Political Action Committees (PACs), all mean that such system-wide reforms are increasingly difficult, and according to some, politically impossible in the absence of a clear, immediate, and overwhelming national crisis (see Burnham, 1982; Dionne, 1991; Harper, 1993; and Wolfe, 1991 for succinct analyses of these political changes).

The futility of trying to enact such eminently reasonable policies without electoral or political coalitional support is richly illustrated, again, by the ill-fated Clinton energy and rangeland policy proposals (much to the dismay of environmentalists). The "dirty little secret" about public policy in the U.S., known among policy scholars but not often publicly discussed, is that no administration or political party in recent decades has been able to mobilize an effective coalition to support the system-wide domestic reforms such as those of the American past. You can see this not only in the attempts to create coherent environmental policy but also in the seemingly futile attempts to reform welfare, control crime, or most graphically, in the efforts to create a national health-care system of some sort. Increasingly, American public policy is retail policy, that is, constituent policy that addresses the needs of particular organized client groups, rather than wholesale policy in the public interest (Mans, personal communication, 1994).

CONCLUSION: THE POTENTIAL FOR STRUCTURAL CHANGE

If the limitations of market strategies for change brought us face to face with politics, the argument that I'm making is that public policy is a blunt, limited, and imperfect instrument of social change. If markets won't do it, and politics probably can't do it, what then? Is all lost? Indeed not. The limitations of public policy bring us, full circle, to recognize again the importance of culture and consciousness. Policy promoting change, in both democratic and authoritarian contexts, works best in cultural environments supportive of change. This is simply restating my argument about change in Chapter Seven, that social transformation is the joint product of human agency and encountered structures. Underline this: The combination of (1) a rough scientific consensus about the

nature and magnitude of problems; (2) committed activists and social movement campaigns, preferably flush with cash; (3) sympathetic political and policy-making elites; and (4) businesses interested in figuring out how to profit from change is a powerful force.

There are many examples of significant social change produced by this configuration of social forces. Take, for instance, the successful antismoking crusade since the early 1970s in the United States. It involved a consciousness-raising crusade by antismoking activists and medical researchers, a willingness to use tax and regulatory measures, and insurers and businesses who were only too pleased to be able to exclude smokers from their policies as well as their offices and stores. Tobacco companies now fight a rear guard action: economically diversifying their investments in the U.S. while promoting their wares overseas. Or take changes in the American diet, which has exhibited a steady and pervasive decline in per capita red meat consumption (much more so than Europeans). This transformation was effected again by a configuration of forces, including activist groups, nutritionists, public education campaigns, willing regulators, and profit-seeking restaurateurs and food producers. In the region where I live, livestock producers are trying to breed lean animals, and they advertise pork as "the other white meat," while the producers of prepackaged meals such as Con Agra, Stouffers, and Campbell Foods are falling all over themselves in a rush to produce Healthy Choice, Lean Cuisine, and the like. Nutritionists and activists are frustrated at the slow pace of change, but in per capita terms, Americans drink less alcohol, eat less red meat, and smoke less than they did in the early 1970s. America will probably never be smoke free (we've had too much experience with prohibitions to try to legislate that). Nor will the U.S. become a hotbed of ethical vegetarianism. But the aggregate behavior change and social standards have changed remarkably in the last two decades, probably surpassing that of any other MDC.

These examples are from aggregate individual behavior, but there are corporate examples of this powerful configuration of forces, as well. The most well-known case is about tuna. The H. J. Heinz company doesn't catch its own tuna, but that made little difference when environmental groups enlisted schoolchildren in a campaign to end fishing techniques using seine nets that encircled and killed large numbers of dolphins. After a barrage of mail from young consumers, Heinz announced in 1990 that its Star-Kist brand would buy tuna only from fishing boats that used methods that did not kill dolphins. According to company spokespersons, consumer response was extremely positive. Other companies followed suit, and shortly Congress passed the U.S. Marine Mammal Protection Act (MMPA), which forbids dolphin-killing techniques not only among U.S. fishers but also for all fish imported into the U.S. (File this "tuna-dolphin" case example in the back of your mind, because I will return to it several times in the next chapter.) In December 1992, a network news special charged that Wal-Mart claims to "Buy American" were false, and worse, that many Wal-Mart products were made in LDCs under exploitive labor and envi-

ronmentally damaging circumstances. While Wal-Mart denied and fought the charges, a competitor, the Atlanta-based Home Depot retail chain attempted to preempt the high moral ground (and some market shares as well). Home Depot demanded information about environmental and labor practices from its 300 foreign suppliers of hardware and lumber: Lest the suppliers think that Home Depot wasn't serious, they were given 72 hours to reply to a questionnaire or their contracts would be terminated. Similarly, by 1993 Sears said it wouldn't import forced-labor products from China. Phillips-Van Heusen explicitly threatened to terminate orders to apparel suppliers that violated its broad ethical, environmental, and human-rights code. And Dow Chemical, itself certainly no stranger to environmental litigation, asked suppliers to conform not just to local pollution and safety laws but to the often tougher U.S. standards. Persistent rumors that McDonald's suppliers grazed their cattle on cleared rainforest land finally led the company to ban the practice in writing (though they claimed it never to have been true). In 1992, Levi Strauss and Co. laid down tough standards of conduct to its 600 suppliers worldwide. After inspecting each one, the company ditched about 30 of them and exacted reforms from an additional 120. The company also pulled out of Myanmar (formerly Burma) for pervasive human rights violations. Note that these examples are from retailers, rather than primary production industries, such as lumber and oil.

Certainly, such changes take place under considerable pressure, from regulators as well as activist groups. Socially conscious investors and mainstream religious groups promote the positive message that companies should extend their own high standards to all their business partners. Environmentalists and other activists tend toward the more direct pressure that comes from naming names. Union officials take a more investigative approach to locate human rights and exploitive labor conditions (McCormick & Levinson, 1993:48-49).

Many companies do, of course, resist such scrutiny and pressure from what they depict as a broad antibusiness conspiracy of unrepresentative "kooks." But, threatened with such charges, a surprising number of firms pledge to enforce appropriate standards and rules. Certainly, they do so for good public relations and to deflect the possibility of more heavy-handed regulation or consumer/investor boycotts. In the context of a massive and growing international cultural consciousness and consensus about environmental and human rights issues, it is difficult for companies to occupy the moral high ground while knowingly, willfully, and publicly profiting from environmental degradation or human misery. In the context of both public and private watchdog agencies and the everpresent possibility for the mobilization of green sentiments among consumers, many companies have concluded that doing good is indeed consistent with doing well.

What do these examples mean? Do they mean that the American corporate system is on the very precipice of some dramatic, system-wide, transformation to the kind of restorative industrial ecological system mentioned earlier? *Certainly not.* Several anecdotes do not, in any case, demonstrate a more gen-

eral point. Furthermore, as I documented in Chapter Eight, there is clear evidence of a powerful, pervasive, and well-funded American corporate counterattack against organized environmentalism. The same could be documented for corporate antilabor mobilization in the 1980s. And many corporations still ask no questions about either the human or environmental conditions of production among contractors as well as ones which are meaningfully responsive to moral, consumer, or political pressures to be good (I note some of these cases in the next chapter). Many companies are also striving to be known as environmental “good citizens,” but their commitment goes no deeper than glossy ads depicting pristine wilderness surrounding their production facilities, recycling aluminum cans from the company cafeterias, or ceremonial tree plantings. Although there is nothing wrong with these things, they are tantamount, in the words of businessman-critic Paul Hawken, to “bailing out the sinking Titanic with teaspoons” (1993:5).

Even with these qualifications, it is my contention that, given the powerful growth in awareness of the interconnected nature of human and environmental problems, you can expect increasingly effective pressure on firms to do good while doing well. At the very minimum, I think, there are enough such cases to embarrass those theoretical arguments alleging that the present forces of unsustainable growth (the so-called treadmill of production) are the embodiment of some sort of inexorable economic law of the universe in which we are trapped. All things considered, I find no compelling theoretical reasons why unsustainable growth is a *necessary* companion to profitable private markets.³

PERSONAL CONNECTIONS

Consequences and Questions

The rational choice perspective on human behavior suggests that you do make choices that maximize benefits and minimize costs. Here are some questions to help explore this in terms of some of the ordinary choices that people make.

1. Earlier, I argued that there are some benefits in living close to work. What are some of its costs? What are some costs of living in the suburbs and driving or commuting miles and miles to work? What are some of the benefits? Include in your consideration not only the dollar costs of transportation or the environmental impacts (which is something most people never think about), but things like the social quality of life in various neighborhoods. Are there places close to where people work where they would not like to live and would bear large costs to avoid? As you can see, deciding what is a net rational choice is not so simple.

2. Many have noted that convenience meals are very expensive per unit price, wrapped in layers of packaging that took an enormous amount of material and energy to produce, and perhaps laced with fat, sugar, salt, chemicals, preservatives, dyes, and so on, which make their nutritional and health value questionable. Even knowing this, are there times when the benefits of eating them outweigh the benefits of healthier food? Again, consider benefits broadly: money costs, costs imposed by job routines, family roles, time constraints, and market availability. Alternately, consider the costs and benefits of cooking the way most nutritionists and environmentalists advocate: buying unprocessed food in large quantities and cooking as much "from scratch" as possible.

3. Members of a voluntary organization (a church) once asked me what they could do to increase environmental awareness among their members. They did some things: They insulated the building, didn't heat and cool all of it all the time, established a paper recycling program, made some utility efficiency improvements, and featured environmental matters (sometimes) in congregational educational programs. They had a coffee fellowship after services and sometimes served large meals to various groups, often using styrofoam cups, plates, plastic utensils, and the like in voluminous amounts. I suggested that they stop using plastic cups and plates and use ceramic ones and re-usable utensils (sometimes they did), and failing that, they at least replace styrofoam with recyclable paper cups, even though this gesture was more symbolic than substantive. But maybe that was OK. After checking around town, they reported that an alternative to styrofoam for hot drinks and dishes was not available in local stores, except for triple the price. I pointed out that they could order such goods from special environmental goods mail order catalogues but, again, at several times the price. They either had to hire someone for every event to wash an enormous load of cups, dishes, and so forth; stop having coffee fellowships and congregate meals, which had important social functions for the organization; or pay a much higher price for environmentally better recyclable disposable goods. They did the organizationally rational thing. They dropped the whole matter. To quote Kermit the Frog, "sometimes it's not easy bein' green"!

Think of your own examples. One can do many things to be more environmentally frugal. Why do they seem difficult? Indeed, it is easy to talk glibly about changing life-styles but this is often difficult for us to do, even when we want to. What are some of the reasons why?

4. You can see the complexities of the rational choice perspective in action. Some argue that *regulatory strategies are indeed necessary* for environmental protection, occupational and safety standards, health, social justice, and many other concerns. The National Environmental Policy Act,

which created the EPA, revolutionized the American way of thinking about regulatory policy. Think about this concretely. How has your life been impacted, negatively or positively, by environmental or occupational regulation? Talk to some other people for their perspectives: city officials, university administrators, homemakers, your relatives, and small business owners. You will find that hardly anyone likes such regulations. But how do opinions differ about whether they are necessary or not? What do you think shapes divergent opinions?

What You Can Do

Environmental Careers? There will be jobs for people with environmental expertise in government, private nonprofit organizations, and companies. An incredible variety of careers involve environmental and ecological issues. Here are just a few:

- Scientific fields: environmental health and toxicology, environmental geology, ecology, chemistry, climatology, biology, air and water quality control, solid waste management, energy analysis, energy conservation, agronomy, environmental consulting
- Resource and land management careers: sustainable forestry and range management, parks and recreation, fishery and wildlife conservation management, conservation biology
- Engineering and architecture: environmental engineering, environmental design and architecture, product and appliance engineering
- Law, policy, social science, and communications: environmental law, demography (population dynamics), environmental economics, psychology, sociology, environmental communications and journalism, environmental marketing, environmental policy, lobbying

For more information, contact the Institute for Environmental Studies, 550 North Park St., 15 Science Hall, Madison, WI 53706. They publish *Environmental Job Opportunities* 10 times a year (you can subscribe for \$10).

In Chapter Eight, I discussed the possibilities for joining with others in efforts to mobilize environmental concern, action, and change. In this chapter, I argued that all attempts to create change (about anything important) involve politics and political action. Here are a few guidelines for effective grass-roots organizing for action, from John Gardner, former cabinet officer and founder of the citizens organization Common Cause (adapted from Miller, 1992:688).

1. Have a full-time continuing organization.
2. Limit the number of targets and hit them hard. Most groups dilute their efforts by taking on too many issues.

3. Form alliances with other organizations on particular issues.
4. Get professional advisers to provide you with accurate, effective *information and arguments*.
5. Have effective communication that will state your position in accurate, concise, and moving ways.
6. Persuade and use positive reinforcement—don't attack. Confine your remarks to the issue. Don't make personal attacks on individuals. Try to find allies within the institution, and compliment individuals and organizations when they do something you like.
7. Do your homework, and then privately approach public officials whose support you need. It's best not to bring up something at a public meeting unless you have the votes lined up ahead of time. Most political influence is carried on behind the scenes through one-on-one conversations.
8. Instead of fighting with your opponents, respect their beliefs and work with them to achieve your goals when possible.
9. Organize for action, not just for study, discussion, or education. Minimize meetings. Have a group coordinator, a series of task forces, a press and communications contact, legal and professional advisers, and a small group of dedicated workers. A small, well-organized group can accomplish more than a large, unwieldy one.
10. Work in groups, but keep in mind that people in groups can act collectively in ways that individuals know to be stupid.
11. Concentrate your efforts at the local and state levels. Stay on good terms with the press.

ENDNOTES

1. Such proposals have their critics, who argue that, while they might address common problems by creating efficiencies and responsibility of something like private ownership (for the rights to pollute), they also have the same problems with *inequality* in the distribution of resources that markets do. Relatively wealthy companies could afford to buy emission permits of more financially strapped ones, and wealthy MDCs might be tempted to buy the carbon emission rights of poorer LDCs, thus further preventing their economic growth.

2. Different criteria include (1) *no unreasonable risk*, as in the regulations in the Food, Drug, and Cosmetic Act; (2) *no risk*, such as the Delaney Clause, in that legislation that prohibits the deliberate use of any food additive shown to cause cancer in test animals, or the zero-discharge goals of the Clean Water

Act; (3) *risk-benefit balancing*, such as the regulations that govern the use of pesticides, (4) *standards based on best available technology*, as those embodied in the Clean Air Act, and (5) *cost-benefit balancing*, such as Executive Order 1229, which gives the Office of Management and Budget the authority to delay indefinitely, and in some cases veto, any federal regulation that is not proved to have the least costs to society. All of these criteria have been strongly criticized, for reasons similar to those I discussed in Chapter Four.

3. In the interests of candor, I need to re-emphasize that there are those, particularly those on the political left, some economists, and some sociological conflict thinkers, who vehemently disagree with this conclusion. They assume that private markets and capitalism require unsustainable growth for their very operation. Hence, no real environmental (or social justice) progress is possible as long as the world capitalist system (e.g., the global market economy) remains intact. In addition to the works of Alan Schnaiberg, which I have cited many times, see works by Bookchin (1982) and O'Connor (Farber & O'Connor, 1989). These thinkers argue that the culprit is not only capitalism as it is currently practiced, but capitalism itself. I believe this view is embarrassed by evidence and variations within both historic and contemporary capitalist systems themselves and certainly by the obvious events in its polar opposite system: Communism. I hasten to add that these analysts are precisely and empirically correct in seeing much of our current predicament as attributable to the dynamic of the world capitalist system as it currently exists. The *necessity* of that connection is what I have come to question.