Environmental Economics

M Sagoff, University of Maryland, College Park, MD, USA

Glossary

Benefit In welfare economics, benefit is equivalent to the largest amount people are willing to pay for a good or outcome.

Cost In welfare economics, a cost is defined as the least amount a person would demand as compensation for accepting an outcome that person does not want.

Externality A side effect or production or consumption; an effect – whether a benefit or cost – of a transaction on those who are not parties to it.

Market failure The failure of markets to make the prices of goods reflect the full willingness to pay of those who desire them or the willingness to accept compensation of those who would otherwise consider them undesirable. An externality is an example of a market failure.

Introduction

Economists generally distinguish between two branches of their science: macroeconomics and microeconomics. Macroeconomics deals with the performance of the overall economy, seeking, for example, to increase employment, control inflation, improve productivity, and in general promote prosperity. These goals are well understood and widely accepted. Microeconomics studies how individuals, households, and firms make decisions in allocating limited resources, typically when they exchange them in markets. The study of microeconomics has a normative dimension or discipline, called welfare economics, which pursues goals such as efficiency, utility, well-being, and the maximization of benefits over costs.

Environmental economics as a branch of welfare economics studies how these goals – in general, microeconomic efficiency – are to be advanced or achieved in the allocation and exchange of scarce environmental goods. Environmental economists generally study how environmental assets can be allocated or traded more efficiently so that their consumption or use will maximize welfare or well-being, which is typically defined or measured in terms of peoples' willingness to pay (WTP) for those goods or resources. Textbooks in environmental economics generally stipulate the equivalence of (1) welfare, well-being, or benefit with (2) the satisfaction of preference as measured or indicated by WTP.

This article discusses how environmental economists understand and defend the normative concepts on which they rely – concepts such as "welfare," "efficiency," "externality," "benefit," and "cost" – and how and why these economists use WTP to define or measure those concepts or values. The article then describes the political role the language of environmental economics plays or should play in debates and decisions involving environmental policy.

Is Preference-Satisfaction an Intrinsic or an Instrumental Good?

Environmental and other welfare economists contend that in ideal circumstances – for example, when property rights are well-defined in all assets and exchanges are easy to arrange – competitive markets will allocate resources efficiently, that is, in ways that maximize the satisfaction of the preferences of individuals insofar as the available resource base allows. This is thought to be true because under those conditions markets will in theory allocate assets to those willing to pay the most for them. Environmental economists are concerned to attach economic equivalents to unowned or public environmental goods, such as air and water quality, for which markets may fail to set competitive prices. Economists are concerned to make environmental decisions respond to the full range of preferences that could be (but often are not) expressed in a market. Accordingly, they propose to measure, insofar as possible, WTP to acquire assets – or willingness to accept (WTA) compensation to forgo them – especially when these preferences are not reflected in actual market decisions.

From the perspective of applied ethics, a philosopher would ask why it is good in general that preferences be satisfied to the full extent the resource base allows, preferences ranked by WTP and taken as they come. A philosopher will distinguish between (1) value-laden concepts, such as benefit, welfare, and well-being, and (2) apparently value-free but possibly measurable concepts such as WTP, WTA, and preference-satisfaction. Do economists believe that the satisfaction of preferences (or the maximization of goods and services for which there is WTP) is an intrinsically good thing, that is, an end in itself. Do they contend instead that preference-satisfaction (or maximized WTP) is an instrumental good, that is, a means to something else, such as well-being,

utility, or welfare? If economists believe that preference-satisfaction is a per se or intrinsic good, why? Just because something is desired does not make it desirable. If economists believe preference-satisfaction is a means to an end, what is that end? If it is welfare or well-being, how is it defined and measured? Is there any evidence that welfare or well-being, when defined independently of preference-satisfaction, varries with or has any empirical connection with it?

Background Theory

Like welfare economics generally, mainstream environmental economics takes as a normative criterion for public policy a proposition formulated by Italian economist Vilfredo Pareto more than a century ago. According to the Pareto principle, a social change is welfare improving if it makes at least one person better off and no one worse off. Since any significant social change is likely to make someone worse off, however, this criterion would seem to be too restrictive. In response, economists adopt a proposal to measure potential Pareto improvements suggested in 1939 by Nicholas Kaldor and John Hicks. The Kaldor–Hicks criterion provides a potential compensation test by asking whether those who benefit from a change would still be better off even after they compensate those who would suffer as a result. The potential compensation test serves as the theoretical basis for cost–benefit analysis (CBA), a technique that is central to the development of environmental economics and to its application to environmental policy.

Critics of environmental economics have questioned the legitimacy of the Kaldor–Hicks compensation test, but not simply or even primarily because as a potential Pareto test it does not require that the gainers actually compensate the losers and thus may tolerate inequities. Rather, critics have for decades argued that little evidence exists to think that welfare derives from preference-satisfaction. In other words, the Pareto criterion and the Kaldor–Hicks compensation test refer to normative concepts such as "welfare" and "well-being" these Paretian principles describe individuals as better off and worse off or as gaining or losing as a result of a social change. Yet economists measure not the extent to which people are better off or worse off as a result of a social change but the extent to which they are willing to pay for the change or compensation to tolerate it. Critics have long contended that in moving from normative terms such as "well-being" and "benefit" to apparently morally neutral concepts such as "preference" and "WTP," economists engage in conceptual sleigh to fhand. What connects (1) normative ideas such as benefit and well-being to which the Pareto and Kaldor–Hicks principles appeal with (2) value-neutral ideas such as preference-satisfaction and WTP on which the methods of environmental economics actually rely?

At least four arguments, each familiar since the 1970s, suggest that no clear connection may exist between (1) social welfare, well-being, or benefit and (2) WTP or preference-satisfaction. First, environmentalists typically pursue, support, or prefer environmental policies, such as the Endangered Species Act, as a matter of moral obligation or spiritual commitment. (People may similarly respond to a moral obligation to future generations in relation to global climate change.) To act on moral obligations, cultural ideals, or spiritual commitments is to act on values that may have nothing to do with one's own well-being or self-interest. Amartya Sen, a Nobel laureate, among many other economists has pointed out that people often act because of commitments and principles and thus choose outcomes that they believe will benefit them personally less than would some more selfish alternative that is also available to them. A commitment, moral obligation, or other principled belief may lead a person to make choices he or she understands sacrifice personal well-being. This fact drives a wedge between personal choice (or preference or WTP) and personal benefit or welfare.

Second, even when people try to act on their self-interest they often prefer what is bad for them. One reason is that people often act on mistaken beliefs particularly in the area of risk, which people often over- or underestimate. Another reason is that people may not make choices autonomously but may act on preferences that are adapted to coercive conditions. Preferences are often transitory, in conflict within the same individual, antisocial, coerced, or misguided, or adapted to unjust circumstances. For example, people may come to accept degraded air and water quality if they know no alternative. Because preference is so often based on bad judgment, bad habits, and bad information, Frank Knight, founder of the Chicago School of Economics, wrote in 1935

> The chief thing which the common sense individual actually wants . . . is not satisfaction of the wants he has, but more, and better wants. . . . True achievement is the refinement and elevation of the plane of desire, the refinement of taste. (Knight, 1935: 24–25)

Third, to connect WTP and well-being, economists may have to launder preferences by admitting only those that are properly informed and self-interested, in other words, those that will correlate with outcomes that benefit the individual whose preferences they are. The attempt by the economist to prune, launder, or test preferences for acceptability may turn to a tautology the idea that properly formed or informed preferences correlate with well-being.

Fourth, empirical studies that use income as a surrogate for preference-satisfaction (people with more income can satisfy more preferences) find that money does not buy happiness after the provision of basic goods. The literature contains studies in which people report they become less happy as their income and purchasing power increases. This may be because happiness depends on the things money cannot buy, e.g., love, friendship, and faith, not on the extent of one's possessions. That money and thus preference-satisfaction do not buy happiness may be the best-established finding of social science research.

These four familiar arguments suggest that preference-satisfaction and therefore WTP and WTA are not related empirically – not instrumentally or as means to ends – to any conception of well-being, happiness, or utility that one can define or measure independently of preference-satisfaction. If preference-satisfaction and welfare mean the same thing, however, then environmental economics results in a tautology. It says that resources ought to go to those willing to pay the most for them because they are willing to pay the most for those resources.

In general, one may ask whether the connection between (1) WTP or preference and (2) benefit or welfare is to be understood as a logical one (they refer to the same thing) or an empirical one (the former leads causally or instrumentally to the latter). Empirical evidence strongly suggests an absence of a clear causal relation between preference-satisfaction and well-being. Many welfare and environmental economists, rather than assert an empirical link between WTP and benefit, define or stipulate their equivalence. Almost a century ago, the philosopher Bertrand Russell observed, "The method of 'postulating' what we want has many advantages; they are the same as the advantages of theft over honest toil" (Russell, 1917: 71).

Market Failure

A fundamental premise of welfare economics – and therefore of environmental economics – holds that a perfectly competitive market provides individuals the means to exchange goods until all are possessed by those who value them most in the sense that they are willing to pay the most for them. If WTP and well-being are equivalent, the outcome of a perfectly competitive or efficient market (at least in theory) will pass the Kaldor–Hicks compensation test because individuals are always able to make exchanges with each other (or compensate each other) until they exhaust the benefits of trade.

On this argument, the allocation of environmental assets should be left to market forces except in those instances (which may be pervasive and ubiquitous) in which markets fail to capture or reflect the full WTP (or WTA) of individuals with respect to the ownership, use, or consumption of those resources. Environmental economists often conclude that the presence of market failure is the necessary predicate for governmental intervention. On this view, not every market failure is pressing enough to demand governmental action, but any governmental action on the environment is needed only if it addresses a market failure.

Environmental economists often illustrate the concept of market failure with the example of pollution, which they describe as an externality or as a social or external cost of production. According to economist Robert N. Stavins,

> The fundamental theoretical argument for government activity in the environmental realm is that pollution is an externality – an unintended consequence of market decisions, which affects individuals other than the decision maker. (Stavins, 2008)

This argument suggests that when a factory that produces widgets (for example) spews air pollution on neighboring houses, those who live in them endure costs not paid by the factory and in this way subsidize it. As a result, the society produces relatively more widgets and less clean air than people want and for which they are willing to pay. To correct this inefficient allocation of resources, the government may put a price or set a tax on pollution that reflects its external costs. When the price of widgets reflects all the costs of producing them – not just the private costs for materials and labor, for example, but also the social costs associated with pollution and other externalities – the number of widgets produced and sold will reflect what individuals want relative to their desire for other goods, such as clean air and water.

This economic justification of the regulation of pollution encountered an important difficulty. One could ask why the factory owner does not bargain with his neighbors. The factory owner could compensate the homeowners to accept a certain amount of pollution (up to the point it would be cheaper to for the factory to control it) or, if the factory had a right to pollute, the homeowners could pay it to control its pollution to that extent. If bargaining and exchange leads to optimal outcomes, why not let those who cause and those who suffer from pollution strike their own bargains? If the factory wishes to emit pollutants, it should buy the consent of the neighbors. If because of prior zoning, for example, the factory has the right to pollute the neighbors could move away or pay the factory to reduce emissions.

Ronald Coase in a famous essay, "The Problem of Social Cost," published in 1960, explained that the creation of an externality always involves at least two parties, for example, the factory owner who wants to emit emissions or noise and the homeowners who want clean air or quiet. Coase emphasized the reciprocal nature of harm, for example, that harm arises not simply because of the emissions of a factory but also because of the presence of

the neighbors. Coase also explained that the operators of a source of pollution will negotiate with those they harm to reach an optimal outcome if they can manage the costs of getting information about WTP and WTA as well as the costs of processing, implementing, and enforcing contracts based on that information. The parties will agree on the cheapest solution; the initial distribution of property rights will affect not the outcome of bargaining (which will be efficient), but only the direction in which compensation is paid. This resolution might require the factory to install scrubbers or the people to move away. Coase pointed out that in the absence of onerous costs of arranging bargains or transactions (transaction costs), the affected parties will bargain to an efficient outcome; from an economic perspective, governmental intervention would then be unnecessary.

One may reply that the costs of bargaining – for example, the cost involved in identifying the affected homeowners and measuring their WTP to reduce pollution or their WTA compensation to endure it – are so great as to make such negotiations impossible. One could argue, indeed, that bargaining or transaction costs are the fundamental basis of all market failure because they inhibit or defeat the ability of third parties to influence, through their WTP or WTA, the market decisions that affect them.

This reply is problematic, however, because it simply shifts to the political arena the problem of determining the WTP and WTA of all parties affected by a transaction. Critics have pointed out that government officials cannot possibly acquire the information necessary to measure the marginal costs of any pollutant, such as smog in the air, because these will differ from place to place, time to time, circumstance to circumstance, and individual to individual. To measure all the relevant WTP and WTA, officials would continually have to engage in surveys of mind-boggling complexity, develop regulations to meet constantly changing circumstances, and then pay to enforce or implement those regulations. The governmental agency responsible for regulating industry would have to know at least as much as the interested parties about who is willing to pay how much for what, and thus the agency would just step in for those parties in trying to determine the relevant values, benefits, and transaction costs.

Since the early 1960s, many economists have questioned whether welfare economists emphasize market failures and externalities as a bid to transfer authority over social choice from the market to the scientific managers, such as welfare economists themselves, as consultants to government. A group of conservative economists associated with Nobel prize-winner James Buchanan asked whether markets, even when they failed, would be any less efficient in allocating resources than the government. It is the fallacy of disparate comparison to judge the market with all is warts against an idealized view of the government.

The government may be in no better position – it is probably in a worse position – than market players to identify, undertake, and overcome externalities or transaction costs. According to Coase, "the costs involved in governmental action make it desirable that the 'externality' should continue to exist and that no government intervention should be undertaken to eliminate it" (Coase, 1960: 25–26). In the early 1980s, legal commentators cautioned that in the context of the argument Coase presented, regulations were unnecessary in the absence of market failure but too complicated and puzzling to be practicable in their presence.

Externalities Run Wild

A representative definition of a "social cost" or "externality" characterizes it as an unintended consequence of a market decision insofar as it affects individuals other than the decision makers. So defined, the concept of a market failure plainly refers not just to pollution but to any consequence of a market decision for which there exists WTP or WTA that does not influence that decision. For example, people who favor the protection of endangered species would object to a decision by a landowner to develop his or her property in a way that destroys critical habitat. This suggests that these environmentalists may be willing to pay to encourage the landowner to protect the species. Insofar as that WTP is unknown to and thus does not affect the decision of the landowner, there is a market failure, at least in theory. For virtually every economic decision about the environment, there is probably WTP or WTA that does not affect prices. Provided the government can hire enough economists as consultants to gather all the relevant information about WTP and WTA, it could always second guess market players, identify market failures, and intervene to correct them.

In an influential article published in 1967, for example, environmental economist J.V. Krutilla recognized that environmentalists "place a value on the mere existence" (Krutilla, 1967) of species they may never see or use. The terms existence and non-use value refer to the WTP of individuals for the preservation of environmental goods for their own sake or because of the intrinsic qualities of those resources and not for any use or benefit those individuals seek or expect. Many environmental economists recognize the importance of commitment values – including moral principles and spiritual beliefs – in the preferences or WTP of environmentalists. Commitment values – the beliefs, principles, and political judgments of environmentalists – could be measured as WTP or WTA and entered as data into the CBA on which many economists believe environmental policy should be based.

As early as the 1960s, environmentalists saw that by reinventing their values as WTP or WTA they could enlist economic science to their side. Many foundations, for example, the Macarthur Foundation, initiated major programs to fund environmental economists to green their science by measuring moral externalities such as existence and nonuse values. These foundations encouraged economists to feel the pain of environmentalists and price it. A little WTP to protect a species, if multiplied over 100 million households, could represent a lot of economic value. In this way, CBA, which might have been thought to be a foe of environmental regulation, could be transformed into a powerful friend.

Cost–Benefit Analysis

Historically, cost–benefit analysis draws on two influential philosophical traditions. The first, the tradition of utilitarianism, recalls Jeremy Bentham (1748–1832) who argued that the government ought to seek to maximize the aggregate pleasure or happiness of its people. The second, the tradition of progressivism and positivism, follows Auguste Comte (1798–1857) and Comte de Saint-Simon (1760–1825), who advocated a system of social physics in which experts, primarily economists, would manage society on the basis of their scientific knowledge.

Today, few would agree with Bentham that experts can develop a felicific calculus by which to test the happiness factor of any action. With the downfall of the Soviet Union, fewer still would advocate that *apparatchiks* on the basis of a scientific theory of social well-being should occupy the commanding heights of government. Yet CBA in principle invokes the authority of science to prescribe an overall societal goal, namely, the maximum or aggregate net satisfaction of preference, preference weighed on the basis of WTP and taken as it comes. When used as a test for regulation, CBA draws on the still influential view that experts may maximize social utility through scientific analysis. This is the reason that critics of CBA regard it in principle as antagonistic to the deliberative processes of democratic governance and contrary to the constitutional processes that define the structure of our political institutions.

Cost–benefit analysis originated in the United States in the context of major water projects the Corps of Engineers undertook early in the last century. The River and Harbor Act of 1938 created a Board of Engineers that it required to weigh the commercial benefits of a water project – such as irrigation and hydroelectric power – against its costs. Cost–benefit analysis in this rudimentary form depends on the same intuitive and pretheoretical knowledge as would characterize a child's lemonade stand. Will the lemonade sell at a profit in view of the cost of labor and materials? In this sense, cost–benefit analysis envisions the government as if it were a firm engaged in profit-making activity. Public works projects could be criticized on this businesslike basis. This put public investment on the same rational basis as private investment, that is, a calculation of the internal rate of return.

The social legislation by which the government sought to make markets more humane rather than more efficient – the environment cleaner, the workplace safer, consumer products less dangerous, etc. – differed from public works projects. These statutes represented goals society embraced on moral, spiritual, aesthetic, and political grounds. For this reason, environmental statutes, unlike public works projects, did not allow governmental agencies to treat public health and safety or environmental quality as marketable resources. The nonutilitarian basis of pollution control law is so obvious that, as economists Maureen Cropper and Wallace Oates have observed, "the cornerstones of federal environmental policy in the United States," (Cropper and Oates, 1992: 675) such as the Clean Air and Clean Water Acts, "explicitly prohibited the weighing of benefits against costs in the setting of environmental standards."

When Ronald Reagan became president in 1981, his administration sought to dampen the environmental enthusiasm of the 1960s and 1970s. David Stockman, who became Reagan's director of the Office of Management and Budget (OMB), called in his 1980 "Dunkirk" memo for a "dramatic, substantial *rescission* of the regulatory burden" and for a major "regulatory ventilation." In this spirit, President Reagan issued Executive Order 12,291, which established a formal process for White House review of rule-making and required major regulations to pass a cost–benefit test. "Regulatory action shall not be undertaken unless the potential benefits to society for the regulation outweigh the potential costs to society," the Order stated; "Regulatory objectives shall be chosen to maximize the net benefits to society."

As reformulated by the Clinton administration in 1993, a White House directive, in Executive Order 12866, administered by the Office of Information and Regulatory Affairs (OIRA) at OMB constitutes the principal legal basis for the application of CBA in environmental policy. While Congress typically delegates authority to interpret and implement the laws to regulatory agencies and not to OMB or OIRA, the need for some kind of regulatory review is obvious and not in dispute. In a memorandum published on January 30, 2009, President Obama wrote that regulatory review at OMB is essential "to ensure consistency with Presidential priorities, to coordinate regulatory policy, and to offer a dispassionate and analytical 'second opinion' on agency actions." The Obama administration left the role of CBA an open question and called for public comment.

Environmental economists and other commentators have not only debated the merits of CBA, but also suggested and discussed several alternative methods with which OIRA and the agencies it oversees may both contain and justify the costs of environmental regulation. The principal alternatives to CBA differ from it in that they do not assume that the goal of environmental policy is to maximize net benefits measured by WTP or WTA or understood in terms of the satisfaction of the preferences of individuals. Instead, these methods use economic insights particularly about the ways people respond to incentives to help society achieve the goals set forth in legislation or by other legitimate democratic processes. In other words, alternatives to CBA do not assume that the goals of environmental policy are to maximize net benefits measured (and defined) by WTP or WTA. Instead, these alternative methods accommodate the view that Congress and other competent legislatures may set the overall goals of environmental policy, but that economic analysis can help regulatory agencies achieve these goals.

Alternatives to Cost–Benefit Analysis

The alternatives to CBA include the following:

1. Cost-effectiveness analysis. The difference between cost–benefit and cost-effectiveness analysis is easy to characterize. The decision maker uses CBA to establish societal goals (construed in terms of aggregate WTP or aggregate welfare) as well as the means for achieving these goals, whereas cost-effectiveness analysis only compares alternative means for achieving goals that are determined by legislation as mandates to the agencies. Those who believe in the legislative role of democracy may argue that agencies should engage in cost-effectiveness analysis, which aids in determining the least costly means to carry out legislated mandates, rather than cost–benefit analysis, which determines regulatory ends as well as means. Often the least costly means to reach regulatory ends are better understood or developed by the industries and others who are regulated than by the agencies that regulate them. Thus the cost-effectiveness approach generally advises governmental agencies to avoid command-and-control approaches by setting goals for industry to achieve – a certain reduction in hazardous wastes, for example – but leaving it to the industries to determine how to do it.

2. Risk–risk analysis. In limiting or preventing one risk, a regulation may produce another that is greater. The dangers that may result from a regulatory decision should be understood and compared with those it is intended to prevent. Economists urge regulatory agencies to look deeply into the unintended consequences of regulations, that is, to the various incentives regulations create and the ways market players may respond to these risks. It is sometimes better to bear those risks we have rather than to substitute others that may be created by our efforts to reduce these risks.

3. A presumptive floor and ceiling (benchmark) for the cost of saving a statistical life or avoiding a statistical injury. If the goal of regulating risk were simply to avoid needless deaths or injuries, then it would make sense to equalize the marginal cost of lives saved or injuries avoided across programs. Because risks differ in their moral and social qualities – some are more dreadful, voluntary, familiar, etc. than others – deviations may be morally explicable or even praiseworthy. Reasons should be given to explain great deviations. If one regulation costs society a billion dollars per life saved while another program would cost only a few thousand dollars per death avoided, an agency that chose the more costly rule should offer an explanation.

4. Knee-of-the-curve analysis. In many contexts, technology-forcing regulation can allow morally acceptable amounts of pollution. In many industries, initial gains to the environment are inexpensive; eventually the cost of controlling the next or incremental unit of pollution increases. At some given state of technology, one can often find an inflection point or knee-of-the-curve – a point at which the cost of controlling the next or marginal unit of pollution increases rapidly and returns to the environment rapidly diminish per dollar spent. One morally acceptable way to allow some pollution (e.g., through cap-and-trade markets for pollution allowances) is continually to encourage or prod industry to improve its processes and technologies to move the knee of the curve – the point at which costs may go asymptotic – ever farther out along the pollution-control axis. To the extent the government can encourage industries, through incentives and threats, to invent environment-friendly technology, it can assure environmental progress while allowing at a given stage of technology a minimum amount of pollution necessary for economic growth.

5. Economic impact analysis. People care about the effect of regulation on the economy on jobs, inflation, competitiveness, and the distribution of wealth. Cost–benefit analysis concerns microeconomic efficiency – something that interests welfare economists – but has no clear relation to the performance of the economy. It makes sense to ask how a major regulation will affect the misery index, e.g., involuntary unemployment and inflation. The use of CBA relies on microeconomic theory and does not reach the indicators of macroeconomic performance such as inflation and employment. Insofar as environmental economists may become more willing to assess the effects of regulation on the macroeconomic indicators of economic performance – rather than on WTP or WTA – they may be able to provide a more accessible kind of economic advice to government.

Environmental Economics as a Conceptual Framework

This article has presented environmental economics as a normative program, the goal of which is to assist agencies to choose regulatory objectives and approaches that maximize net benefits to society. Benefits are defined in terms of WTP and WTA, that is, in terms of the preferences of all the individuals affected by environmental decisions. This article has discussed the principal objection to this normative program, namely, that the connection between WTP or WTA and any goal society has reason to achieve – such as social well-being, welfare, or happiness – is entirely stipulated and not otherwise explained.

Environmental and other welfare economists have not answered the question of why the satisfaction of preference per se is a good thing. Having a preference gives the individual a reason to try to satisfy it. That he or she should be free to try to do so in ways that are consistent with the like freedom of others is a piety few would deny. What reason has the government or society, however, to seek to satisfy that preference? To be sure, society has a reason to recognize and help to satisfy certain kinds of preferences, for example, those related to basic needs (because of a theory of justice), security (because of any political theory), and merit goods (if it wishes). What reason has society to seek the satisfaction of preference per se – not preference related to need, security, or merit but any preference at all, measured by WTP and taken as it comes?

To define preference-satisfaction as well-being or to stipulate WTP as a measure of benefit is not to answer but to ignore this question. This leads to another and more important question. This critique of environmental economics as a normative discipline (as a sort of applied ethics) has been well known and constantly repeated for at least 40 years. (This article depends on papers that are decades old.) Yet the conceptual framework of environmental economics – market failure, Kaldor-Hicks compensation, externality, WTP and WTA, CBA, etc. – continues to provide the basic vocabulary in terms of which environmental policy is discussed. In spite of its inability to connect benefit and WTP in a meaningful or plausible way, environmental economics remains the fundamental theory and its vocabulary the *lingua franca* of environmental policy. It must serve a purpose. What is it?

One explanation may be that the Kaldor–Hicks or CBA framework provides a moderating or mediating vocabulary that serves a useful political purpose, that is, to co-opt and draw to the center extreme positions on both the left and the right. The language of discount rates, WTP, WTA, utility, etc. is completely malleable to any political program, since whatever one's program, one can find ways to attach high economic values to its success, while emphasizing the costs of the political alternative. This malleability of the framework brings the right and left into the same conversation, one that accepts the legitimacy of basic market and regulatory institutions.

In the heyday of the environmental movement – during the 1970s but continuing today – environmental activists on the left, such as Paul Ehrlich and Lester Brown, preached that an environmental Armageddon would quickly consume the world unless radical changes were made. They called for a kind of eco-totalitarianism. At the other extreme, Libertarians like James Buchanan taught that government programs were bound to fail and that individuals do best if left to their own devices within a minimalist night watchman state. The initial position of those on the extreme left and right was to reject the kind of compromise that might emerge from the political center and might rely on incremental changes to current regulatory arrangements.

The analytical confusions and ambiguities of the Kaldor–Hicks or CBA framework make it malleable to any political purpose. Environmentalists of the far left have seen in the language of environmental economics a way to gain scientific and academic legitimacy, for example, by attaching very high values to ecosystem goods and services. At the other extreme, right-wing technological optimists have used the same conceptual framework to belittle the role of ecological goods, e.g., by using high discount rates. As a result, we do not fight ideological battles over who should rule society. Instead we attend academic debates over how to get the prices right. The overall effect is that the CBA or Kaldor–Hicks framework, by inducing the extreme ideologies of the left and right to validate themselves within an academic culture of scientism, has empowered middle-of-the-road liberal and conservative positions against their fringes. In other words, environmental economics as a vocabulary or conceptual framework serves a centrist, moderate, and rationalistic politics that tends to maintain entrenched interests and disempower those on the far right and left who call for radical change.

The current effort to apply environmental-economic theory to the problem of greenhouse gases and climate change illustrates its centralizing, indeed, sometimes stultifying effect. The attempt to create out of political whole cloth a market where there was none for commodities (emission allowances) that do not exist in nature illustrates the contortions governmental institutions undergo to appear rational or efficient in economic terms. In fact, the theory of the efficient market plays to everyone's interest since everyone has his or her price. As politicians get interest-group buy in by buying them out, the political effort to control greenhouse gases has become a farce both in Europe and in the United States. As we argue about getting the prices right, we engage, perhaps, in a kind of participatory academic fiddling as fossil fuels burn.

A different vocabulary – one more openly ethical and political – may take us farther down the road of change.

See also: Environmental Ethics, Overview.

Further Reading

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Biographical Sketch

Mark Sagoff has published widely in journals of law, philosophy, and the environment. His most recent books are *The Economy of the Earth*, 2nd edn. (Cambridge University Press, 2008) and *Price, Principle, and the Environment* (Cambridge University Press, 2004). He was named a Pew Scholar in Conservation and the Environment in 1991 and awarded a Fellowship at the Woodrow Wilson International Center for Scholars in 1998. He is a Fellow of the American Association for the Advancement of Science and of the Hastings Center. Sagoff has an A.B. from Harvard and a Ph.D. (Philosophy) from Rochester, and taught at Princeton, the University of Pennsylvania, the University of Wisconsin (Madison), and Cornell before coming to the University of Maryland, College Park, where he is Director and Senior Research Scholar at the Institute for Philosophy and Public Policy in the School of Public Policy.