

An Austrian Theory of Environmental Economics

by **Roy Cordato**

Austrian economics lacks a formalized, self-conscious theory of environmental economics. But in fact all of the major elements of such a theory already exist and in that sense what is needed is to piece together the relevant aspects of Austrian economics in order to draw out and focus a theory that is already there.

The purpose of this paper is to do just that. In developing an Austrian theory of environmental economics, very little new theoretical ground will be plowed. But by bringing together Austrian concepts of costs and the praxeological foundations of economics we discover a unique perspective on pollution and the role of property rights in solving environmental problems. Furthermore by placing environmental problems within the context of personal and interpersonal plan formulation, we discover that they are not about the environment per se but about the resolution of human conflict.

Why an Austrian Theory

Environmental economics is steeped in standard neoclassical theories of efficiency and Pigouvian welfare economics. These theories have been rejected by Austrian School economists as conceptually unsound and as yielding analysis that does not reflect the real world. This in turn has led to policy prescriptions that, while theoretically and formally elegant, are nonoperational.

In particular, environmental economics is an outgrowth of the theory of externalities and is primarily focused on maximizing the social value of resource usage. This is defined as that allocation of resources obtained in a perfectly competitive general equilibrium. Social inefficiency arises when the social costs associated with external effects, such as air or water pollution, are not incorporated into the cost of producing the pollution generating product or its market price. From this perspective, the overall value of production can be increased to society by conforming the output of the pollution-generating product to the level that would be generated if the pollution costs were being reflected in its price. Under such a circumstance there would be an efficient reallocation of resources where less of the offending product and more of other goods and services would be produced. The value of the production gained will more than offset the value of production lost, increasing social welfare. When production and consumption are arranged such that all such pollution costs are accurately reflected in product prices, within the context of otherwise competitive markets, the market is said to be Pareto efficient, i.e., society, on net, cannot be made better off.

From this perspective, the process of production, exchange, and consumption in a strictly voluntary setting cannot be free of the kinds of inefficiencies generated by these negative externalities or "residuals" of the production and consumption process. Kneese, et al. (1973, p. 28) explains this inevitability as follows:

If the capacity for the environment to assimilate residuals is scarce,^[1] the decentralized voluntary exchange process cannot be free of uncompensated technological external diseconomies unless (1) all inputs are fully converted into outputs, with no unwanted material and energy residuals along the way, and all final outputs are utterly destroyed in the process

of consumption, or (2) property rights are so arranged that all relevant environmental attributes are in private ownership and the rights are exchanged in competitive markets.[2] Neither of these conditions can be expected to hold in an actual economy.

The Austrian case against the standard Pigouvian approach has been argued (Cordato 1992a and 1995) and will not be recounted in any detail here. But in order to understand the genesis of the alternative, the core problems with the standard approach need to be made explicit. These problems can be summarized as follows:

1. Efficiency is a "praxeological," i.e., individual goal seeking problem, not a value maximization problem. From a policy perspective, then, social efficiency is assessed in terms of the extent to which legal institutions facilitate consistency between the ends that actors are pursuing and the means that they are choosing to accomplish those ends.
2. Costs are subjective and therefore social costs and social value, as the terms are typically construed, do not exist as either measurable or even theoretical concepts. The standard approach is dependent upon being able to measure and therefore make objective these concepts. For example, the standard approach to environmental economics depends on being able to identify situations where the marginal private benefit of an activity exceeds the marginal social cost. This inherently involves making interpersonal utility comparisons and the summing of interpersonal evaluations across individuals. Neither of these can be held as methodologically valid.
3. Pareto optimality, i.e., the perfectly competitive general equilibrium, is irrelevant as a real world efficiency benchmark. This is largely because of the implications of 1 and 2. Because human action takes place through time, with knowledge and therefore supply and demand for inputs and outputs constantly changing, the particular Pareto optimum for any point in time is irrelevant. Strict adherence to subjective value and therefore subjective cost theory also leads to the rejection of Pareto optimality as a normative benchmark. Outside of a framework of unanimity it is impossible to talk about Pareto superior changes to a given state of the world without invoking interpersonal cost/benefit analysis.

While these arguments form the basis of a critical analysis of standard welfare and therefore environmental economics, they also allow us to bring to bear a uniquely Austrian perspective on both the positive and normative analysis of environmental problems. When viewed through the praxeological lenses of Austrian economics, with all that that implies, concepts such as pollution, environmental costs and degradation, and even the tragedy of the commons take on meanings that are quite different, and ultimately more rigorous, than definitions found in standard discussions.

The Praxeological Nature of Environmental Problems

Misidentifying Pollution as a Social Cost Problem

What constitutes an "environmental problem"? At first glance the answer might appear obvious. Issues like air and water pollution, animal extinction, or the over-use of resources, such as might be associated with the "tragedy of the commons," all come to mind. But of course this assumes a common framework of analysis that gives rise to certain definitions of these terms and explanations about why these phenomena are problematic. For example, consider a classic tragedy of the commons problem, commercial fishing in the ocean. The

conclusion is that, absent the enforcement of legal constraints, any given species of fish will be "over-extracted" by fishermen who face every incentive to catch as many fish as possible now, before the next boat comes along. In other words, there is no incentive to conserve or restock or in any way nurture the given supply of fish. But on its face this discussion doesn't explain why this is a problem. Economists see the rate of fish extraction in the commons as an "environmental problem," rather than just one of an infinite number of extraction rates that are possible, because they have a "correct" rate in mind. From the perspective of standard environmental economics, this resource, the fish, is being over-utilized because the depletion rate is greater than would occur in a Pareto optimal world. The "tragedy of the commons," is a "tragedy" because fish are being extracted beyond the point where the marginal private benefit of the fish being caught are greater than the marginal social cost. It is therefore the starting point in terms of economic analysis that gives rise to the definition of not only a tragedy of the commons but all other environmental problems.

Very similar stories could be told with respect to issues of air and water pollution. Indeed, it is the underlying economic analysis that determines what is considered pollution in the first place. If a byproduct of production that is emitted into the air ends up giving rise to a divergence between marginal private benefit in the production of the associated product and marginal social costs, then the product output will be greater than its Pareto optimum level. That byproduct will then be defined as an air-pollutant. If, on the other hand, the byproduct does not have that result, for example water vapor, a byproduct of many production processes, then that byproduct is not considered to be a pollutant.

But as noted previously, this analysis does not give us a firm methodological foundation for identifying what is and isn't a pollutant. It rests on an approach to social costs that takes the analyst's eye off the ball: individual actors. The concept of social costs, as typically invoked, completely disembodies and impersonalizes costs. Social costs exist outside of and apart from individual choosers. As Richard Posner argues, "the question of whose cost is not a profitable one in economic analysis" (1973, p. 94). This view of costs becomes quite clear in applying concepts such as the Coase theorem or the Hicks-Kaldor compensation principle. With the former, the issue of who is imposing costs on whom is unimportant to the ultimate solution. As Posner notes, "the relevant question . . . is who could prevent the loss at lower cost, not whose cost the damage really is" (p. 94). In the second, individual pollution cost bearers never need to be compensated for either past or ongoing harm so long as the output from the pollution generating production process conforms to a Pareto optimal solution. The relevant costs that must be overcome are not those that are being borne by the victims but those that are being incurred by "society" because of the "misallocation" of resources generated by the externality. In both cases, what is important is whether or not the level of emissions and the joint output of all the affected production processes are "efficient." As we will see, in either case an "efficient" solution could be implemented without ever addressing the actual pollution problem as seen from an Austrian perspective.

The "social cost" approach to environmental economics has led to the "dehumanization" of issues related to the environment. Pollution or "tragedy of the commons" problems are not problems because of the damage that some people may or may not be inflicting on others, but because they create what amounts to disembodied harms. A problem occurs because some goods are "overproduced" while other goods are "underproduced." In its more extreme form this has led to a separation of the concepts of costs and harm from human beings completely, substituting notions such as "costs to the environment," and damage to the ecosystem. For example, Pearce and Turner in making a case for a tax on packaging claim that

"environmental damage from packaging waste is not reflected in the prices of packaged products" and that "the size of the levy needs to be related directly to the environmental damage done by the production and consumption of the packaging, or to the costs of restoration to the environment" (Pearce and Turner 1992, p. 6). Nowhere in the article is there mention of actual people who are damaged. Costs are associated with "restoration to the environment" not compensating victims. Once the concept of costs is separated from individual human beings, i.e., from the act of choosing, it loses its footing and so does the economic analysis.

Pollution as Interpersonal Conflict

Economic analysis of the environment that starts from a praxeological perspective shifts the focus from maximizing the social value of output or equating price to marginal social cost, to efficient intra- and inter-personal plan formulation and execution, i.e., the internal consistency between the means that people use and the ends that they desire to achieve. Within this context, pollution problems that are indeed problems create an interpersonal conflict over the use of means and therefore obstruct efficient plan formulation and execution. Pollution is therefore not about harming the environment but about human conflict over the use of physical resources. Generally formulated, a pollution or environmental problem arises when individual or group A and individual or group B are simultaneously attempting or planning to use resource X for conflicting purposes. Unless emissions into the air, discharge into a river, or the extraction of fish from the ocean give rise to such a conflict then there is no economic, i.e., efficiency problem. Humans cannot harm the environment. Instead, they can change the environment in such a way that it harms others who might be planning to use it for conflicting purposes.

Most of the classic "textbook" environmental cases can be formulated in this context. Whether it's the problem of a factory discharging chemicals into a river and destroying the fishing downstream, or the odors from an animal farm fouling the air in nearby housing developments, or Coase's classic cases of straying cattle or railroads emitting sparks, they can all be seen as interpersonal conflicts. In each case people are simultaneously making conflicting plans with respect to the use of a physical resource, and it is this conflict that allows us to identify what is transpiring as an environmental problem. If there were no

recreational users of the river or housing developments downwind from the pig farm there would be no pollution. Environmental problems are not really problems for or with the environment, but human problems of mutual plan formulation and the achievement of goals. From an Austrian perspective, Robinson Crusoe cannot be a polluter.

The Role of Property Rights

It is widely recognized, even within the most orthodox literature in environmental economics, that property rights have an important role to play in resolving environmental problems. Both more traditional Pigouvians, as exemplified by Kneese, et al. (quoted above) and their Coasean critics recognize to varying degrees that the origin and solution to environmental problems lie with the extent to which property rights are clearly defined. And, on this level, Austrians would agree.

But the praxeological approach described above gives rise to a different kind of property rights analysis and distinctly different conclusions concerning property rights based solutions

to environmental problems. Whereas the standard approaches are focused on minimizing social costs or facilitating a Pareto optimum, the approach described here is focused on minimizing interpersonal conflict. For Austrians the role of property rights in abating such conflicts has its roots in Menger. In his *Principles of Economics*, Menger argued that all "economic goods" must come under the rule of private property in order to avoid conflicts of interest regarding their usage. He stated that

when all members of society compete for a given quantity of goods that is insufficient . . . a practical solution to this conflict of interest is . . . only conceivable if the various portions of the whole amount at the disposal of society pass into the possession of some of the economizing individuals, and if these individuals are protected by society in their possession to the exclusion of all other individuals. (Menger 1981, p. 100)

In a later passage Menger seems to recognize problems that might be associated with air and water pollution or the tragedy of the commons where the resource in question is generally viewed as a noneconomic or free good. Menger, again referring the relationship between private property and human conflict states that

It applies also to all non-economic goods with respect to which the boundary between requirements and available quantities is already so close . . . that any misuse or ignorance on the part of some members of the economy may easily become injurious to the others. . . . For these and similar reasons the phenomenon of property can also be observed in the case of goods that appear to us still, with respect to other aspects of life, as non-economic goods. (Menger 1981, p. 105)

While under most circumstances and for most uses the ocean is essentially a noneconomic good, it may not be in terms of its use for harvesting certain kinds of fish. Or while the air may be considered a noneconomic good for many uses, it may not be if one of those uses is to emit odors from certain farming activities. As Menger argued, the only "practical solution" to conflicts that arise over the "economic" aspects of these otherwise "noneconomic" resources is private property.

For Austrians then, if the defining characteristic of pollution is that it is the consequence of a human conflict over the use of a resource, then it is logical that both the origin and the solution of the problem is to be found in a lack of clearly defined or enforced property rights. This property rights approach to negative externalities can be found in the work of most Austrians who have written on the subject. But what has gone unrecognized is that the writings of Mises, Rothbard, and others on this subject have been an application of insights found in Menger regarding the nature of and the solution to human conflict in a world of scarcity.

Resolving Conflict vs. Solving a Maximization Problem

The focus of the Austrian approach to environmental economics is conflict resolution. The purpose of focusing on issues related to property rights is to describe the source of the conflict and to identify possible ways of resolving it.

For both Coasean property rights analysts and more traditional Pigouvians, the goal is different. It is to achieve some form of "optimal" distribution of resources. Coase, in his analysis, seeks to maximize the total value of output, and alternative property rights

arrangements are seen in this light. As he notes in his classic 1960 article, "one arrangement of rights may bring about a greater value of production than any other" (Coase 1960, p. 16). For Pigouvians the goal is to achieve a Pareto optimal distribution of resources by seeing to it that the generator of negative externalities considers all social costs in making production or consumption decisions. In both cases attention is diverted from those who are party to the conflict and toward finding a "value" maximizing allocation of resources. But from an Austrian perspective this is not a tenable goal as it necessarily involves interpersonal utility comparisons and unreasonable assumptions about human knowledge and the static nature of the world (Cordato 1995). This is why, as noted above, a solution to a particular problem may be "efficient" within Coasean and/or Pigouvian context but irrelevant from an Austrian perspective. For example, it is unlikely that a Pigouvian tax, even if it could be appropriately calculated, would do anything to solve the "Austrian" problem. If the tax is collected only to bring about the correct price/output combination and an "optimal level of pollution" (in the Hicks-Kaldor compensation principle), leaving the initial conflict unresolved, there would be no reason to consider the solution to be efficient from an Austrian perspective. For similar reasons, the same would be true if a Coasean judge decided to allow a pig farmer to continue to emit odors into local housing developments because the homeowners are the "least cost avoider."

Property Rights and Public Policy

For Austrians then, public policy in the area of the environment must focus on resolving these conflicts over the use of resources that define pollution, not on obtaining an ultimately unobtainable "efficient" allocation of resources. The traditional Austrian approach to property rights analysis in this area can and should be seen in this light. Also, by viewing the works of Rothbard, Mises, Block and others from this perspective of conflict resolution one can obtain a better understanding of why Austrians have been so critical of Ronald Coase's approach to property rights analysis. While property rights are equally important for Coaseans and Austrians, their normative goals are significantly different.³ For Coaseans the focus is on alternative rights arrangements and maximizing the value of output. For Austrians, whose goal is to resolve conflicts, the focus is on clarifying titles to property and rights enforcement.

If a pollution problem exists then its solution must be found in either a clearer definition of property rights to the relevant resources or in the stricter enforcement of rights that already exist. This has been the approach taken to environmental problems by nearly all Austrians who have addressed these kinds of issues (see Mises 1998; Rothbard 1982; Lewin 1982; Cordato 1997). This shifts the perspective on pollution from one of "market failure" where the free market is seen as failing to generate an efficient outcome, to legal failure where the market process is prevented from proceeding efficiently because the necessary institutional framework, clearly defined and enforced property rights, is not in place.

Two Approaches to Conflict Resolution: Polluter Pays and First Come First Served

A pollution problem then can take one of two forms, either titles to the relevant resources are clear but the rights to use that property by the title holders are not being enforced, or titles to a resource are not clear and two or more parties wish to use the resource for conflicting purposes. Obviously, each of these would require a different approach to solving the problem. But in each case the solution should focus on resolving the conflict and therefore allowing for the efficient formulation of plans by all parties involved.

The polluter pays principle 4

In environmental policy the polluter pays principle is an outgrowth of Pigouvian welfare economics. The optimal price-output combination will arise in a market when external pollution costs are reflected in the marginal cost of production, i.e., are internalized by the polluter. In other words, if the polluter is made to "pay" a dollar amount that is equivalent to the marginal social costs associated with the pollution that he is generating, "efficiency" will prevail. Generally speaking there are two approaches to applying the polluter pays principle. The most traditional and straightforward is the Pigouvian excise tax. In this case the polluter is forced to "pay" either through a tax that is equivalent to the "pollution costs" per unit of output or per unit of effluence. The second is through tradable emissions permits. In this case an "efficient" level of pollution is determined and permits to pollute which total to this efficient level are bought and sold in the marketplace. The polluter is forced to pay either explicitly by having to purchase permits in the market or implicitly by having to forgo selling the permits that he holds.

There are two fundamental problems with these approaches to "making the polluter pay." First is that both of these approaches are fundamentally forms of market socialism and suffer from all of the problems that Austrians have typically made against central planning (Cordato 1997). Most specifically, a central authority must know in advance what the efficient outcome is. In the case of the tax, a central authority must know in advance the exact amount of the externality costs being imposed by the polluter, and the correct price and output, not only for the good in question but, since efficiency only makes sense in a general equilibrium context, for all other affected goods and services. In the case of tradable permits, the knowledge requirements are essentially the same. This is because the central authority must first determine the "efficient" level of emissions for the particular pollutant, which also must be determined within the context of a general equilibrium solution.

A second problem is that the focus is on achieving the efficient price/output combination and not eliminating the conflict or the harm that is being generated. "Internalizing the cost" typically means seeing to it that the producer/polluter faces a marginal cost curve that would be the same as the curve that would be faced if he were bearing all the costs of production including the costs associated with the pollution. Whether or not the costs that third parties bear are eliminated or compensated for or the intrusion into their plan formulation process is ended is incidental and ultimately irrelevant. This is particularly obvious with respect to the tradable permits approach where an efficient level of pollution is chosen and potential polluters are issued permits to, in the aggregate, emit that level. From an Austrian perspective, after implementing such a policy you are still likely to be left with a pollution problem, all-be-it a possibly less severe one (see McGee and Block 1994).

In spite of these problems the polluter pays principle should not be jettisoned. When all property titles are clearly delineated, a reconstructed polluter pays principle that is rooted in the strict enforcement of property rights makes sense. A polluter is someone whose production byproducts are seeping onto the property of others and interfering with plans that they may have for the use of that property. By interfering with these plans the polluter is reducing the efficiency by which the victim of the pollution can pursue his or her goals. What is meant by "making the polluter pay" is that it is the polluter's responsibility, to the extent possible, to make the victims of the pollution whole (see OâDriscoll and Rizzo 1985, p. 142). There is a conflict over the use of a resource. The source of that conflict is the generation of a production byproduct that crosses from property that is owned and controlled by the generator

of the byproduct to property that is owned and therefore should be controlled by a nonconsenting party. The responsibility for ending the conflict lies with the polluter who should be responsible for truly internalizing the costs of the conflict generating activity. In this case, internalizing the costs of the pollution does not simply mean facing a new supply curve that has shifted to the left by the right amount. For the polluter it instead means eliminating the costs of his polluting activities to those whose property usage is being curtailed. This might be done by eliminating the emissions, confining them to his own property, or by compensating the victims of the polluting activity by an amount that fully addresses the grievance.

First come first served

The second scenario under which a pollution problem can arise is when property titles and therefore property rights are unclear. A and B are attempting to use the same resource for conflicting purposes, with neither A nor B nor anyone else having clear rights to the use of the resource. A typical example might be where effluence is being discharged into a river that is being used for fishing or recreational purposes further downstream.

First of all, it should be made clear that in this type of case, the effluence is not really the problem. The problem that is generating the conflict is the lack of property rights definition. Typically, it is the scenario described by Menger where use of an otherwise noneconomic good becomes injurious to others and therefore, at least in that use, moves from noneconomic to economic. Unlike in the former case where the goal is to insure that "the polluter pays," in this case the goal is to determine who has the right to use the resource.

It should be noted that we cannot determine, as Coaseans might insist, that the rights go to the person whose use will maximize the overall value of production. There is no methodologically sound way of making such a determination. It also means that we cannot determine, without injecting a sense of personal aesthetics, that a more pristine resource, a portion of a river that is used for swimming or fishing, is preferable to a less pristine resource, the same area used as a waste receptacle. In other words, the responsibility for internalizing costs does not automatically go to the person generating the production byproduct.

In such a case, a solution might be to use the principle of first come first served (see Rothbard 1982). This has several virtues from the perspective of an efficient running market process. First it can reduce the possibility that a conflict will arise in the first place, or it might generate a negotiating process that could resolve potential problems before they arise. With the knowledge that a first user rule is likely to be upheld by the courts someone who desires to use a resource in a way that conflicts with a known first user will either decide not to go ahead with his plans or will go to the first user to negotiate a compromise. This also increases the level of certainty for the first user who can go ahead and implement his plans

with reasonable expectations that his rights to use the relevant resource will be enforced in the face of others whose future plans might conflict. Such a rule would also increase the efficiency of the market process by reducing overall uncertainty in the plan formulation process by enhancing both the amount and quality of information that is captured in relative prices (see Cordato 1998).

Austrian Theories of Welfare Economics

Thus far we have avoided any detailed discussion of Austrian welfare economics. This is primarily because the theory that is outlined here does not hinge on acceptance of one or another of the more general standards for assessing social welfare found in the Austrian literature. In particular I refer to Rothbard's (1977) demonstrated preference standard of social utility; Kirzner's (1988) plan coordination standard; and Cordato's (1992a) knowledge based theory of catallactic efficiency. Instead it is derived from what all of these theories hold in common, namely Austrian economics's praxeological foundations. As such, this theory is consistent with all three of these approaches to social welfare.

The starting point for all Austrian welfare economics is the goal seeking individual and the ability of actors to formulate and execute plans within the context of their goals. Furthermore, in all three approaches, social welfare or efficiency problems arise because of interpersonal conflict. For Rothbard such conflicts arise because of interferences with the voluntary use of one's own property. This prevents a demonstration of true preferences, moving one to a lower level of utility than would otherwise be achieved. For Kirzner interpersonal conflict that cannot be resolved by entrepreneurship and the market process gives rise to a lack of plan coordination and therefore social inefficiency. And for Cordato, conflict, that similarly cannot be resolved by the market process, gives rise to catallactic inefficiency by preventing useful information from being captured by prices. A theory of environmental economics and pollution that evolves from problems associated with human conflict then would be a natural implication of each of these welfare standards.

In addition, these standards would argue that irresolvable inefficiencies, i.e., inefficiencies that cannot find a solution in the entrepreneurial workings of the market process, arise because of institutional defects associated with the lack of clearly defined or well enforced property rights. In a setting where rights are clearly defined and strictly enforced, plans may conflict but the resolution to that conflict is embedded in the exchange process. In other words, conflict may arise at the planning stages but is resolved before the actors proceed with implementation of those plans. For example, persons A and B may have conflicting plans with respect to resource X, but if ownership to X is clearly defined as being in the hands of A, B, or a third party C, then there will not be a conflict over the actual use of X. It will be understood by A or B that before proceeding with their plan they must gain rights to X. For Kirzner especially, the entrepreneur plays a key role in resolving this potential conflict by bringing together those who may have plans with respect to the use of certain resources and the resource owners.

In the absence of clearly defined and strictly enforced property rights this process breaks down and the conflict becomes irresolvable through the market process. Under all three Austrian approaches to welfare economics, therefore, the solution to pollution problems, defined as a conflict over the use of resources, is to be found in either clearly defining or more diligently enforcing property rights. Not surprisingly this is the approach that has been taken by nearly all Austrian economists who have looked at the issue dating back to Menger.

Conclusion

The purpose and one hopes the contribution of this paper, has been to reconstitute both positive and normative environmental economics "from the ground up" using the praxeological method of Austrian economics. As noted at the outset, this exercise is more about pulling together building blocks that are scattered throughout the Austrian literature than fashioning a completely new set of building materials. In pursuing this goal we have

integrated the Austrian focus on the actor's means-ends framework, including its emphasis on the subjective nature of value and therefore costs, with the definition of what constitutes an environmental problem. By defining such problems in these terms, both the nature of pollution and the definition of a polluter take on new meaning. Environmental problems are brought to light as striking at the heart of the efficiency problem as typically seen by Austrians, that is, they generate human conflict and disrupt inter- and intra-personal plan formulation and execution. This is in contrast to either Pigouvian or Coasean environmental economics, which defines pollution problems primarily in terms of resource allocation.

It is also demonstrated that the property rights approach to policy analysis taken by Mises and Rothbard is not only conceptually different from the approach taken by Coase, but is a natural outgrowth of, and directly follows from its praxeological roots. The role of property rights in environmental economic analysis is integrated into the Mengerian role of property rights more generally. For Menger, the social purpose of private property is to resolve interpersonal conflicts and allow for the peaceful pursuit and fulfillment of plans. In pursuing this analysis modern Austrian discussions of environmental issues are seen as part of an historical continuum, starting with Menger.

The confusion that currently surrounds the formulation of environmental policy is an outgrowth of a theory of environmental economics that is fundamentally flawed. The standard approach is rooted in indefinable concepts of social cost and general equilibrium and implies policies that cannot be implemented in the real world. In light of this most economists have accepted the idea that their role is to devise efficient methods for achieving politically determined pollution or emissions targets. As noted by Lloyd Orr,

economists have moved to the position of advocating effluent charges as a means of meeting politically determined environmental standards at minimum cost. The proposed solution establishes . . . the charge structure required to meet the predetermined standards. (Orr 1981, p. 57)

Politicians determine what is and isn't pollution and what the appropriate emissions targets are. The economist steps in to advise policy makers about how to develop an excise tax or a tradable emissions scheme that utilizes the "efficiency" of market incentives to achieve the politically determined result (see Cordato 1997).

Austrians can offer an alternative approach that does not depend on having to define or measure what is conceptually indefinable or unmeasurable. This is not to suggest that the clear definition of property rights is an easily achievable goal in all situations. It is not. But, while the Austrian approach to solving pollution problems may face implementation problems at the margin, i.e., with certain "tough cases," defining and enforcing property rights already stands as the fundamental way in which interpersonal conflicts of all kinds are avoided or dealt with. This approach is clearly operational as it has been in operation, to one extent or another, throughout human history. The challenge for Austrians is to explain how we apply the theory in certain tough cases, not to explain, in reality, how it can be applied at all.

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1 By this it is meant that the environment does not have the ability to naturally absorb environmental residuals in a way that is costless to society.

2 This is the world of efficient outcomes as demonstrated by Coase (1960) where all relevant property rights are specified and, because markets are "competitive" transaction costs are zero and the inefficiencies associated with externality problems can be bargained away.

3 Austrian disputes with Coasean property rights analysis have been detailed in a number of articles and will not be recounted here. For only a sample of these articles see Block (1977); Cordato (1992b); Krecke (1996); North (2002).

4 For a more extensive discussion of the polluter pays principle within the wider context of contemporary environmental policy debates see Cordato (2001).