THE TRAGEDY OF THE COMMONS, PART TWO

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I. INTRODUCTION

This symposium is about the idea of "free market environmentalism" in general and the book *Free Market Environmentalism*, by Terry Anderson and Donald Leal,[1] in particular. While I focus chiefly on Anderson and Leal's book, the discussion will necessarily involve the general idea of free market environmentalism as well.

The conceit of my title, which obviously derives from Garrett Hardin's celebrated essay on *The Tragedy of the Commons*,[2] is this: Superficial differences aside, Hardin's essay and Anderson and Leal's book address the same fundamental problem of coordinating human behavior as it affects environmental quality. But both the essay and the book attack their shared concern with the same troubling kind of argument. Aiming to resolve the problem of coordination, the authors proceed instead to assume it away. As we shall see, this flaw is perhaps more apparent, and excusable, in Hardin's essay than it is in Anderson and Leal's book, but it can be found in the book nonetheless—as can a few other difficulties.

II. SOME BACKGROUND

The idea of relying more fully on market-based incentives to control environmental problems is by now almost old hat. The intellectual history dates back at least to the 1930s, when the British economist Arthur Cecil Pigou is thought to have suggested the imposition of taxes on pollution emissions.[3] In

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1. TERRY L. ANDERSON & DONALD R. LEAL, FREE MARKET ENVIRONMENTALISM (1991). Readers especially interested in free market environmentalism might also wish to read an essay by Richard L. Stroup & Jane S. Shaw, *The Free Market and the Environment*, PUBLIC INTEREST, Fall 1989, at 30. Stroup and Shaw's account is much shorter than Anderson and Leal's, but similar in tone.

2. Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968).

3. *See* James E. Krier, *Marketlike Approaches: Their Past, Present, and Probable Future, in* REFORMING SOCIAL REGULATION: ALTERNATIVE PUBLIC POLICY STRATEGIES 151, 152 (LeRoy Graymer & Frederick Thompson eds., 1982). I say that Pigou is *thought* to have

1968, the Canadian economist J. H. Dales popularized the related technique of transferable pollution rights, which would also internalize the costs of pollution to sources.[4] Either alternative promises a number of advantages when compared to traditional command-and-control regulation, including more efficient patterns of pollution reduction and heightened incentives for technological advances, which together yield lower aggregate control costs for any given level of environmental improvement.[5]

In terms of actual policy, transferable or marketable pollution rights have proved to be the alternative of choice in the United States. Such rights were created first, though modestly, in the Emissions Trading Program devised by the Environmental Protection Agency as it implemented the Clean Air Act.[6] Now they appear most notably in the acid rain provisions of the 1990 amendments to the Act, which set up a system of tradeable permits in sulfur dioxide.[7]

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suggested pollution taxes because, while the idea is regularly attributed to him, his major treatise implies that he actually proposed to *subsidize* pollution control (he would have taxed as nuisances activities like raising too many rabbits). *See id.*; A.C. PIGOU, THE ECONOMICS OF WELFARE (4th ed. 1962).

The misattribution provides a lesson in the social construction of social problems. It has been fairly standard from Pigou on to think of subsidies (Pigou called them "bounties") for producing external benefits, whereas taxes or charges are deemed most appropriate in the case of external costs. In Pigou's day, clean air was probably viewed as something of a luxury, with dirty air being the norm. If so, pollution control would similarly be seen as conferring an external benefit or good (Pigou called it an "incidental service") deserving of a subsidy, whereas something like excess rabbits, deemed an external cost or bad ("incidental disservice"), justified a tax. Today, the relevant norms are largely reversed—we regard the absence of pollution control as bad, the nurturing of wildlife as good—and so we are inclined to reverse the incentives as well, tending to charge where Pigou would have rewarded, to reward where he would have charged.

4. J.H. DALES, POLLUTION, POLICY, AND PRICES: AN ESSAY IN POLICY-MAKING AND ECONOMICS (1968).

5. *See, e.g*, Krier, *supra* note 3, at 152-53. Given that my comments on Anderson and Leal's vision of "free market environmentalism" will prove to be largely critical, I should mention that I have no global objections to incentive-based environmental controls. To the contrary, I support them, just as I did when I began working in the environmental field two decades ago. *See, e.g.*, James E. Krier, *The Pollution Problem and Legal Institutions: A Conceptual Overview*, 18 UCLA L. REV. 429, 470-75 (1971).

6. *See generally* RICHARD A. LIROFF, REFORMING AIR POLLUTION REGULATION: THE TOIL AND TROUBLE OF EPA'S BUBBLE (1986); RICHARD A. LIROFF, AIR POLLUTION OFFSETS: TRADING, SELLING AND BANKING (1980).

7. Clean Air Act Amendments of 1990, Pub. L. No. 101-549, § 401, 104 Stat. 2399, 2584-2631 (1990). Transferable rights have been the dominant market-based approach to environmental policy in the United States, but not the only one, as the commonplace of "bottle bills" shows. On the situation in the United States, see Robert W. Hahn & Robert N. Stavins, *Incentive-Based Environmental Regulation: A New Era from an Old Idea?*, 18 ECOLOGY L.Q. 1 (1991). Other countries have adopted a variety of related economic-incentive measures. A fairly encompassing survey can be found in ECONOMIC INSTRUMENTS FOR ENVIRONMENTAL PROTECTION 31-109 (O.E.C.D. 1989).

The transferable rights technique is also the alternative of choice for Anderson and Leal, which is not to say that they wholeheartedly endorse current policy trends. They complain, for example, that the Clean Air Act's tradeable permits

> do not represent a truly free-market approach to reducing acid rain. A government agency still must determine the level [total number] of permits, and the permits do not force polluters to compensate those harmed by the pollution. In this system, the political process determines the initial or optimal pollution levels, not the polluters bargaining with those who bear the costs of the pollution.[8]

It is easy enough to see that Anderson and Leal envision a much more radical (some would say reactionary) reliance on the market to control environmental problems. Rather than using market-based techniques and incentives selectively, as occasional and constrained instruments in decidedly *governmental* programs, they hope to rely on the market more or less entirely and side-step the government just about altogether.

Anderson and Leal's core proposal, drawn from a familiar body of economic theory,[9] is to set up an expansive "system of well-specified property rights to natural resources."[10] The idea is that whoever holds these rights, whether individuals, business entities, or nonprofit groups, will feel the discipline of exclusive ownership, because mismanagement or pollution of the underlying resources would result in the fouling of one's own nest. Even if rights-holders would otherwise be indifferent to polluting their resources, they will be drawn to consider the interests of others because of the transferability of the rights. As neglect would reduce the market price of rights, owners will feel incentives to be prudent. Of course, they also will feel incentives to shift the costs of mismanagement. Rather than polluting their own land or water, for instance, they would prefer to send the pollution onto the property of someone else. To deal with this externality problem, Anderson and Leal suggest, but make no effort to delineate, a system of strict liability administered by the courts.[11]

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8. ANDERSON & LEAL, *supra* note 1, at 158.

9. *See, e.g.*, Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347 (Papers & Proc. 1967).

10. ANDERSON & LEAL, *supra* note 1, at 3.

11. *See id.* The system is ill-defined in several respects. Most notably, Anderson and Leal duck the issue of how one decides, in the case of incompatible uses, who has the right to do what to whom. They appear to believe that there is some background natu-

The free market proposal would be relatively unremarkable—in fact, would be almost conventional by now—were it limited to the notion that we should seek to improve our present property rights systems in land and water resources, or that we should try to rely more extensively on market-based techniques in environmental regulation. Anderson and Leal, however, have much more than this in mind. They advocate sweeping reforms that would substitute their free market alternative for many of the state and federal legislative programs now used to control environmental problems. In a series of vignettes sketched over nine chapters,[12] they consider with enthusiastic optimism the capacity of free markets to regulate the quantity and quality of virtually *all* natural resources—not just the obvious candidates such as surface water, groundwater, timberland, and grazing land, but also wildlife and recreation areas, the oceans, and the air (including the upper reaches of the atmosphere, which are subject to global warming). Where at present we tend to have government regulations, with free market environmentalism we would have property rights.

In some cases, of course, implementation of such an ambitious rights system would have to await technological advances, like the development of "tracers" to identify the nature, amounts, and sources of air, land, and water pollutants. Without such tracers, it would often be impossible, as a practical matter, to monitor and enforce the new rights.[13] Anderson and Leal argue, not unpersuasively, that this problem would tend to take care of itself. The value created by the rights system would give entrepreneurs powerful incentives to invent whatever is needed to facilitate and protect security of ownership.

The regime envisioned by Anderson and Leal would not be utterly devoid of governmental influence and activity. Initially,

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ral order that settles the issue, but there is not. Suppose a polluter *P* is located next door to a farmer *F*. If *P*'s pollution kills *F*'s crops, is *P* strictly liable to *F*? At times Anderson and Leal imply that the answer is yes, and at other times no. For example, at one point they suggest that sulfur dioxide emitters should "be forced to pay for the damages they cause." *Id.* at 166. But at another point they seem to say that if air pollution causes global warming, which in turn alters rainfall patterns to the injury of farmers, then that is the farmers' problem. *Id.* at 163.

The general question—which has to do with much more than just problems of strict liability—concerns the matter of how resource rights are to be distributed in the first instance. The question is crucial to Anderson and Leal's case, but they ignore it entirely.

12. *Id.* at 24-174.

13. *Id.* at 165-67.

the government would play a crucial role in setting up and maintaining the new markets. It would have to abandon existing regulatory requirements and participate in the process of defining and distributing the resource rights. Courts would have to run the strict liability regime, and some government agency would probably have to administer a title recording system,[14] but there would be much less direct government regulation than there is now, which is just what Anderson and Leal want.

Disenchantment with the existing regulatory system is hardly confined to free market enthusiasts. Barry Commoner, for example, is as ideologically distant from Anderson and Leal as anyone could be, yet he agrees with much of their assessment. Like them, he finds the government's environmental record to date unenviable and the present regulatory approach virtually designed to fail. Indeed, like Anderson and Leal, he wants control of environmental problems to be essentially handed back to the people. The parties part ways, however, when it comes to the question of how. For Commoner, the answer is socialism, or something like it. Observing an environmental politics dominated by self-interested groups, especially powerful corporations that manipulate the system to their own ends, Commoner urges a program of "social governance" that would, somehow, put the people at large in command.[15] Anderson and Leal, on the other hand, mean to accomplish the same objective by just the opposite approach. They would counter the undesirable consequences of self-interest not by making the responsibility for environmental management more collective, but less. Where Commoner wants a truly public regime, Anderson and Leal want a truly private one.

Their reasons, ably presented (though not particularly fresh), run as follows:[16] Given human nature, it is wiser to harness self-interest than to preach against it. Social institutions should

14. *See id.* at 3 (stressing the "important role for government in the enforcement of property rights"). The government would help establish "clearly specified titles—obtained from land recording systems, strict liability rules, and adjudication of disputed property rights in courts . . . ." *Id.*

15. *See* Barry Commoner, *A Reporter at Large, The Environment*, NEW YORKER, June 15, 1987, at 46, 62; James E. Krier, *The Political Economy of Barry Commoner*, 20 ENVTL. L. 11, 27 (1990) (detailing Commoner's socialist vision). Commoner did not explain how or why "social governance" would work.

16. My summary is drawn primarily from Anderson and Leal's first two chapters, but the same themes run throughout their book.

provide constructive incentives, and this is precisely what private property and markets do. Markets discipline human impulses and capitalize on diffuse information. The decentralization of private property enables an appropriate responsiveness to discrete circumstances, including the complexity typically found in the natural environment.

Government regulation is said to suffer in comparison.[17] Effective regulation depends on concentrating within an agency all relevant information, but that task overwhelms managerial capacities. Relative to markets, government agencies are invariably centralized, and thus less sensitive to diverse conditions. Furthermore, because the government actors own nothing of what they control, they escape many of the consequences of wasteful mismanagement. Politics provides some discipline, but only imperfectly. Government actors are as self-interested as anyone else. They hope to advance their careers, build their budgets, and protect their turf, responding to the tug and pull of outside voices with such objectives at least partly in mind. The wishes of the electorate may at times constrain their behavior, but more often the demands of lobbying groups will play a greater role. Government agents will be inclined to send the costs of mismanagement in the direction of poorly organized interests, even though the latter might represent the majority will.

From the standpoint of environmental quality, government mismanagement, induced by the distorted incentives of regulators, can cut in either of two directions—too much quality, or too little, relative to the social optimum or the majority will. Anderson and Leal cite regulation of the Arctic National Wildlife Refuge as an example of "too much" quality. If oil production is not allowed in the area, consumers will pay higher prices for petroleum products. The cost in the aggregate could be very large, but it would be small per capita, leading each consumer to ignore the underlying issues and affording a disproportionate influence to environmental interest groups:

> [O]rganized groups that favor preserving wildlife habitat in the pristine tundra can gain by stopping drilling in the refuge. To the extent that those who benefit from wildlife preservation do not have to pay the opportunity costs of forgone energy production, they will demand "too much" wildlife

17. *See* ANDERSON & LEAL, *supra* note 1, at 1-23.

habitat.[18]

Regarding ways in which the regulatory process may readily yield "too little" environmental quality, Anderson and Leal say, for example:

> [S]pecial interests that engage in waste disposal are just as likely—or perhaps even more likely, if they are well organized—to influence the agency as are those who suffer damages. The capture of regulatory policies by polluters is not surprising when we realize that the costs of control are concentrated on the polluter but the benefits are diffused across the population.[19]

At least in the context of environmental problems, the second illustration is more apt than the first, because groups interested in disrupting the environment generally have a comparative organizational or lobbying advantage over groups interested in preserving it. On average and over time, we should expect to observe that government regulation does too little for the environment, rather than too much.[20]

This is what Barry Commoner observes—a regulatory system that yields insufficient improvements in environmental quality—and so he indicts the government for its failure.[21] Anderson and Leal agree with the general charge of failure, though they probably believe that most commonly misregulation results in excessive improvements. In any event, they would flatly reject Commoner's remedy of collective social governance. In their view, after all, the underlying problem is an absence of individual accountability. Socialization would only make matters worse, and in more ways than one. Free market environ-

18. *Id.* at 15. The example is an odd one, because in the case of the Arctic National Wildlife Refuge it probably does not much matter that petroleum consumers are poorly organized as compared to groups favoring habitat preservation. There is, after all, a very well organized interest group that we could expect to represent consumers—the petroleum industry. The point is neatly proved by coincidence: Just as I was writing the final draft of this essay in June 1991, I received a bulk mailing from the Natural Resources Defense Council addressing the very issue of the Arctic Refuge. In the mailing was an undated letter from the actor Robert Redford, a member of the NRDC Board. It said in part that "the oil companies have now mounted a massive campaign in Congress to open up the Arctic Wildlife Refuge in Alaska to drilling."

19. ANDERSON & LEAL, *supra* note 1, at 139-40.

20. It is difficult to tell whether the facts are consistent with this generalization. Since 1970 there has been a raft of environmental legislation, suggesting that the government does much on behalf of the environment. But one also has to look at how standards are actually implemented, at rates of enforcement, and so on. Moreover, one has to look at matters over the long haul, and twenty years is probably too short a period to form the basis for a sound judgment.

21. *See generally* Commoner, *supra* note 15.

mentalism is about more than effective policy. "Even if regulatory solutions can improve environmental quality," Anderson and Leal argue, "these benefits must be traded off against . . . the costs to individual freedom and liberty."[22] Regulation can be

> a guise for political control reminiscent of the governments being rejected in Eastern Europe. Not only has that form of political control despoiled the environment and deprived people of higher living standards, it has oppressed individuals.[23]

The market, because it is thought to escape both these shortcomings, "offers the only possibility for improving environmental quality, raising living standards, and, perhaps most important, expanding individual liberty."[24]

III. Question-Begging

A few remarks like these aside, the conservative political program underlying *Free Market Environmentalism* is only implicitly argued. The explicit discussion is about economics and in the context of economics, "free" takes on an altogether different meaning. Nothing is free, whether a lunch or a market, so free market environmentalism is, if not a moronic idea, at least an oxymoron. Anderson and Leal concede as much.[25] "This kind of approach is not costless . . . . Property rights are costly to define and enforce . . . ."[26]

A.

Private property depends on a means to set up and run the system, and ultimately that means is the government. Some agency has to figure out the contours of the rights and then distribute the rights by one or another set of criteria. Once the rights are defined and distributed, they must be protected, by

22. Anderson & Leal, *supra* note 1, at 171.
23. *Id.*
24. *Id.* at 172.
25. They do insist from the outset that the notion of free market environmentalism is *not* an "oxymoron," *id.* at 1, but their view is different from mine. They are not claiming that markets are free, but only that it is not contradictory to say that markets can regulate environmental quality (though at some cost). As to free lunches, they seem to believe in them! *See id.* at 75 (suggesting that the public trust doctrine "might provide a free lunch to special interests").
26. *See id.* at 124, 167; *see also id.* at 22 ("costs of establishing property rights are positive").

the courts or otherwise, against boundary crossings, involuntary transfers, externalities, or whatever one wishes to call invasions of property rights. Even at its simplest, then, a private market founded on private property is elaborate, public, and expensive.[27]

Compare this to a system of *common* property, where the only relevant institution is, in essence, the community at large. What common property means is that any member of the community has a right to take out of the community's common pool of resources whatever the member wishes. If other members object, their only remedy (other than ostracism) is to go and do likewise; in contrast to private property, no one has the right to exclude fellow members from tapping the common resources. So under a common property regime, *all* the costs of setting up and maintaining a system of private ownership are avoided.

Common ownership also helps to avoid transaction costs. In the case of a private property system, it is extraordinarily unlikely that rights would be distributed initially in a way that maximized their aggregate value. Even if, by some miracle, the initial distribution happened to be perfect in this respect, it would hardly remain so over time, because populations grow and change, tastes alter, technology advances, and so forth. Inevitably, at some point an owner *A* would hold rights valued more by *B*, and vice versa. In order to realign the private property holdings so as to increase aggregate welfare, *A* and *B* would have to enter into a transaction, and transactions always carry positive costs in time and energy expended. But with common ownership, *A* and *B* could just go help themselves from the common pool. Transactions would not be needed.

Compared to a system of private property, then, common ownership has at least one considerable virtue—it is cheaper. Unhappily, however, the very feature that accounts for this, the nonsequestration of ownership, leads eventually to the vice of waste, of too little conservation, of too much pollution. That is the message of Hardin's famous essay on *The Tragedy of the Commons*, to which I referred earlier.[28]

27. *See* JESSE DUKEMINIER & JAMES E. KRIER, PROPERTY 46 n.18 (2d ed. 1988).
28. *See* Hardin, *supra* note 2.

B.

Hardin's argument, like Anderson and Leal's, rests on the assumption of human self-interest and runs as follows. If population and demand grow with time, as has been the case historically, then there must come a day when depletion threatens the stock of commonly owned resources. Overconsumption becomes a pressing problem because the absence of individual ownership, or private property, dampens incentives to conserve. "As a rational being," Hardin wrote, each member of the community "seeks to maximize his gain."[29] Each is inclined to act, that is, in a self-interested way, taking yet another unit of good (say oil or water) out of the common pool, or putting yet another unit of bad (such as pollution) into the pool, despite the obvious and increasing scarcity, and perhaps because of it. After all, how can one afford to desist when to do so only expands the opportunities of others to take? And if others can only be expected to take, should not one take first? The resulting depletion is costly, but the costs are spread across all members of the community. The benefits of exploitation, in contrast, accrue to the individual. The logic is remorseless; hence its "tragic" element. Individual self-interest leads inexorably to destruction of the community of individuals. "Freedom in a commons brings ruin to all."[30]

The problem of the commons, Hardin said, has no "technical solution," by which he meant that the problem cannot be solved by "a change only in the techniques of the natural sciences."[31] Rather, there must be a "change in human values or ideas of morality."[32] In particular, the community must willingly surrender the unfettered freedom that characterizes common ownership and substitute for it "mutual coercion, mutually agreed upon by the majority of the people affected."[33]

Mutual coercion can be realized through any number of measures, all of them familiar: a system of private property rights; a system of public ownership, with the government controlling use-rights and allocating them by merit, on the basis of first-come first-served, or through auctions; a system of taxa-

29. *Id.* at 1244.
30. *Id.*
31. *Id.* at 1243.
32. *Id.*
33. *Id.* at 1247.

tion or other "coercive laws," such as regulations, "that make it cheaper for the polluter to treat his pollutants than to discharge them untreated."[34] Hardin recognized that none of these can work perfectly, if for no other reason than that the "statutory law" and "administrative law" set up to implement them will be overseen by government agents who are themselves "singularly liable to corruption."[35] But that is an inescapable problem; the best we can do is work "to invent the corrective feedbacks that are needed to keep custodians honest."[36]

While *The Tragedy of the Commons* is deservedly celebrated, its central insight was actually prefigured by the economist Harold Demsetz. Demsetz, moreover, penetrated more deeply. In an article published a year before Hardin's essay,[37] he showed that the problem of the commons is at bottom a problem of *coordination*. Common ownership, coupled with self-interest, leads each member of the community to exploit each other member by exploiting the common resources. As we have seen, the community would at some point be better off in the aggregate if its members could *agree* to reduce their rates of consumption, but coordination through such an agreement is extraordinarily difficult because of the high transaction costs occasioned by the absence of sequestered ownership, or private property. With common property, as Demsetz explained, members of the community would have to engage in constantly ongoing, terribly drawn-out negotiations with each other about how to treat the commons, item by item and case by case, for each member is free to exploit in the absence of agreements to the contrary.

Consider an example. Suppose a commonly owned forest and a community member *A* who is about to harvest a tree. Imagine that *B* wants the tree to be saved and is willing to pay *A* not to chop. *A* can effectively promise *B* that she, *A*, will desist, but cannot guarantee anything regarding the activities of other members of the community. *B* thus has to negotiate with them as well. *B* and others who favor conservation have to figure out the total stock of trees they wish to save and then pay all potential choppers for their promises not to chop whatever number

34. *Id.* at 1245.
35. *Id.* at 1245-46
36. *Id.*
37. *See* Demsetz, *supra* note 9.

of trees that happens to represent. The price is likely to be high, both because many people and many trees will be involved, and because each potential chopper—entitled to chop all that he or she has not promised not to chop—can be expected to hold out for large payments. (Each chopper is effectively a monopolist whose agreement is essential to saving any trees.) But how is the consideration for these side-payments to be raised? People of a conservationist bent, seeing that a tree saved is a tree saved whether or not they help pay for it, will be inclined to take a free ride, hoping others will pay for the collective benefits of conservation.

It is a bit of a mess, and one that neatly explains why resources subject to common ownership are exploited. One theoretical solution to the problem of exploitation is ostracism of unenlightened community members by enlightened ones, but ostracism itself takes time and energy (and makes one feel like a nag) and, to the extent that it succeeds, once again results in the collective benefits of trees saved—so the free-rider problem remains. There is likely to be an undersupply of nagging.

Ostracism is problematic in other ways, too, as Hardin demonstrated. He argued that, in the short run, appeals to conscience have pathogenic effects: The people who are ostracized end up feeling either guilty, if they resist, or like suckers if they do not. They are caught in a neurotic double bind. In the long run, appeals to conscience breed the conscientious out of existence.[38] This is why Hardin would resort instead to his program of "mutual coercion, mutually agreed upon." He would have the community agree, once and for all, on a new regime to regulate the commons.

The difficulty is that if the community is fairly large, then the costs of reaching agreement on Hardin's new order are once again going to be prohibitively high. It typically takes a large number of people a long time to agree on anything, and time is a cost. Moreover, in the particular case of negotiating about modifications in a system of common ownership, agreement will be especially costly because each member of the community has incentives, once again, to behave strategically in the course of discussion. Each can be expected to free-ride on the efforts of others to achieve the collective benefits of the new

38. *See* Hardin, *supra* note 2, at 1246-47.

regime, and to hold out for private benefits as the price of agreement. It is again a mess.

I stated at the outset that there is an excusable flaw in Hardin's argument, and one can now see what it is. As Demsetz demonstrated, the tragic fate of common ownership arises from the underlying problem of an absence of coordination. Hardin simply assumes that problem away. Confronted by a community, the structure of which makes coordination seemingly impossible, he admonishes it . . . to coordinate! Faced with people who cannot agree, he urges agreement: "mutual coercion, mutually agreed upon." But if the members could agree on a program of mutual coercion, then probably they would not have to; they could equally restrain themselves by other means. If they cannot so restrain themselves, then how do they agree on a program of mutual coercion? There is a seemingly inescapable contradiction in the argument.[39]

None of this is to say that Hardin is undeserving of the celebrity he enjoys in ecological circles. His story about the commons is elegant, and his insights into the role of private property, regulation, taxation, and markets in rights are correct and widely shared by economists. What he called in closing "the simplest summary" of his analysis—that "the commons, if justifiable at all, is justifiable only under conditions of low-population density"—is fundamentally correct, perhaps more so than Hardin understood.[40]

In any event, the contradiction in Hardin's argument is excusable for any number of reasons. First of all, in framing *The Tragedy of the Commons* Hardin had a particular political purpose

39. An apparent way to avoid the contradiction is to regard it as conceivable that the members of a community could muster the will and effort to get together *just once*, at time *T*, to set up a system that would thereafter coerce them to act in appropriate ways and for the collective benefit of all. But the path leads to the same contradiction. Once the coercive system is set up, it will be susceptible to breakdown, corruption, and so on; hence it will need ongoing maintenance, and community members are going to have to keep cooperating in order to provide that maintenance. Cooperation will entail the same struggle all over again, because the benefits of maintenance are necessarily collective. And it is no answer to appoint someone, at time *T*, to be in charge of the job, because that someone too will have to be monitored subsequently. Et cetera.

40. Hardin, *supra* note 2, at 1248. Hardin no doubt meant that a commons might be justified under conditions of low-population density because, with a small population, the unsynchronized demands on common resources are not so worrisome, since supply is likely to be large relative to demand. What Hardin failed to consider was the fact that, with a small population, the costs of synchronizing demand are small as well. Small groups can coordinate more easily than large ones. Ostracism is probably cheapest and most effective in small groups, and so too for transactions.

in mind. World population growth was a salient issue at the time, and Hardin was trying to silence those people who argued that a *voluntary* program of birth control is the only moral approach to curtailing reproduction. His message was that population growth is itself a problem of the commons not to be solved by anything short of coercion.[41] Second, Hardin went forth on the commonplace assumption that if he managed to convince his audience of the need for coercive restraints, the government would just "be there" to do the job, to act in the public interest once the public interest was known.[42] Though he acknowledged that government agents are corruptible, his argument implicitly assumed that the government could be counted on to act in good faith and on its own to coerce the public.[43]

What Hardin neglected is a point taken from modern political theory: The public has to coerce the government to coerce it, and to do this the public must organize. Yet an inability to organize, or coordinate, is the problem to begin with. If a program of population controls, once realized, would benefit the world at large, whether or not any particular person or group helped talk the government into enacting it, then the problem of free riders still persists. Moreover, what if interest groups ardently opposed to a population control program have less trouble organizing than people who favor it, because on average they hold their views with the greater zeal?

The contradiction in *The Tragedy of the Commons* is finally excusable because Hardin is a biologist, not an economist or a political theorist, and thus could not be expected to know about the rather fancy and remote transaction-cost account published by Demsetz a year earlier. Even if Hardin had discovered Demsetz he would only have been misled, because the same mistake appears in *Toward a Theory of Property Rights*; Demsetz ends up begging the same question, assuming the same problem away, implicitly arguing that a community plagued by noncooperation can improve its condition by cooperating.[44] Indeed, the error seems to be rife in the literature on common

41. *Id.*
42. *Id.* at 1245-46.
43. *See supra* text accompanying notes 35 and 36.
44. In particular, Demsetz reasoned that private property (which promotes efficient resource allocation) develops when the waste induced by common ownership becomes intolerable. The difficulty is that a private property regime can only be achieved

ownership.[45]

C.

The error is also rife in Anderson and Leal's book, though they should have known better. Anderson, after all, is a productive professional economist and a close student of property rights theory.[46] By the time he and Leal wrote their book on free market environmentalism, the question-begging problem had been identified in the literature, and we can expect them to have known about it.[47] They ought to have seen the problem in any event, because they have a complete grasp of all the relevant underlying concepts and how they play out.

In the first two chapters of *Free Market Environmentalism*,[48] Anderson and Leal provide an excellent primer on how to think about market versus government in the context of environmental policy. Their brief yet cogent and easily accessible discussion explains, or lays the groundwork for later explaining,[49] the

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through cooperation, yet the absence of cooperation is the very problem that Demsetz thought private property developed to solve.

The contradiction inherent in Demsetz's argument has been long and widely recognized in the literature. *See, e.g.*, Richard A. Posner, *Some Uses and Abuses of Economics in Law*, 46 U. CHI. L. REV. 281, 289 (1979) (noting the illogical leap in Demsetz's argument); Frank I. Michelman, *Ethics, Economics, and the Law of Property*, *in* ETHICS, ECONOMICS, AND THE LAW 3, 30 (J. Roland Pennock & John W. Chapman eds., 1982) (recognizing the need for cooperation to establish private property); DUKEMINIER & KRIER, *supra* note 27, at 46; Carol Rose, *Property as Storytelling: Perspectives from Game Theory, Narrative Theory, Feminist Theory*, 2 YALE J.L. & HUM. 37, 50-51 (1990) (arguing that a private property regime has the same structure as common property). When some years ago I pointed out to Professor Demsetz the contradiction in his article, he replied, "That's why I called it '*Toward* a Theory of Property Rights'!"

At bottom, a theory of private property depends on a theory of the state. One cannot suppose that the state sets up the private property system without explaining the existence of the state itself, because the state too can only come into existence through cooperation. *See, e.g.*, Rose, *supra*, at 51-52 (noting that classical theorists like Locke and Blackstone argued that people established "civil society" to escape the insecurity of the state of nature, a commons, but their argument "slides over" the crucial question: "Just how did they form that civil society and its government, anyway?"). Professor Anderson noted the connection between theories of property and theories of the state some years ago, but seems to have lost sight of it since. *See* Terry L. Anderson & P.J. Hill, *The Evolution of Property Rights: A Study of the American West*, 12 J.L. & ECON. 163, 167 n.15 (1975).

45. *See generally* Rose, *supra* note 44.

46. Anderson is professor of economics at Montana State University, a senior associate with the Political Economy Research Center, and senior economist for the Pacific Research Institute for Public Policy, the publisher of *Free Market Environmentalism*. The bibliography at the end of the book lists a number of his articles and books on resource economics and property rights theory. *See* ANDERSON & LEAL, *supra* note 1, at 175-76.

47. *See, e.g.*, *supra* note 44.

48. ANDERSON & LEAL, *supra* note 1, at 1-23.

49. Common property, for example, is not explicitly discussed until Chapter 9, on

basic issues: the need for constructive incentives; the characteristics and advantages of private property and markets; the costs necessarily occasioned in establishing and operating markets; the causes of market failure, such as externalities, transaction costs, free riders, holdouts, and public goods;[50] the essential role of government in a market system; government regulation as an alternative to the market; the costs of government operations; the reasons for failure of government regulation; and the influence of self-interested groups on self-interested government agents.

Beyond all of this, Anderson and Leal explicitly acknowledge that the issue of coordination is of central importance:

> [T]here is a more realistic way of thinking about natural resources and environmental policy. This alternative recognizes and emphasizes the costs of coordinating human actions. There is no assumption that costs of engaging in a transaction are zero or that there is perfect competition. To the contrary, understanding alternative policies requires that we specify coordination costs and discover why and where competitive forces may not be working.[51]

Anderson and Leal frame these remarks in this way to stress the special importance of comparative institutional analysis. Markets are not perfect, they say, but then neither are governments. In particular, problems of coordination hamper both. The objective is to determine what mixes of market and government, rights and regulation, work best under various circumstances, and why. Anderson and Leal relate at some length how environmentalist Randal O'Toole learned this essential lesson. O'Toole once regarded markets as bad and the government as a cure-all, until he went to work for the U.S. Forest

"Homesteading the Oceans." Hardin's essay on *The Tragedy of the Commons* does not figure as such in the discussion; I cannot find it cited in any of Anderson and Leal's footnotes, though it is listed in their bibliography. *Id.* at 179. Of course, they have a full understanding of Hardin's argument. They examine the problems of common property in the context of ocean fisheries, national parks, public grazing lands, and pollution. These are the same examples mentioned by Hardin, *supra* note 2, at 1245.

50. For present purposes, public goods (or collective goods) are goods which, once produced, cannot be easily withheld from any person, whether or not that person contributed to the goods' production (lighthouses are thought to be a classic example). Hence, public goods are plagued by free-rider problems, giving rise to the concern that the market cannot provide them. Anderson and Leal cite instances suggesting that these concerns are not always justified; unhappily, though, they provide no insight into how and why markets managed to function in those particular cases. *See, e.g.*, ANDERSON & LEAL, *supra* note 1, at 70, 95, 108.

51. ANDERSON & LEAL, *supra* note 1, at 10.

Service and learned that its decisions were "based mainly on their effects on forest budgets."[52] This led to an epiphany for O'Toole, who

> gradually developed a new view of the world that recognized the flaws of government as well as the flaws in markets. Reforms should solve problems by creating a system of checks and balances on both processes. . . . The key is to give decision makers the incentives to manage resources properly.[53]

That is absolutely correct. The trouble is that Anderson and Leal, having succeeded in teaching us all of this, go on to ignore the same lessons themselves. In the balance of their discussion, which is to say, in most of their book, they beg the problem of coordination and forgo any effort at serious comparative analysis. The excellent and unbiased account in their first two chapters is followed by eight more chapters that are, by and large, partial, superficial, and unilluminating. In the beginning the reader is dazzled, but by the end the authors seem to have been blinded, probably by their own prejudices.

For example, a theme running throughout the vignettes of Chapters 3-11 is that the government rather routinely goes astray in its efforts to manage the environment—whether because the government has insufficient information, processes what information it has with little discipline, seeks to advance bureaucratic welfare more than environmental quality, buckles under to well-organized interest groups of one or another stripe, or simply wastes resources because it does not bear the costs.[54] But even if these accusations are justified, they do not by themselves adequately advance the argument to use markets in place of government regulation. Quite to the contrary, the long list of complaints about the government cuts in the opposite direction, for the simple reason that markets themselves depend on an active governmental role, as Anderson and Leal recognize.[55] Why will the government not fail in setting up and

52. *Id.* at 6-7, quoting from Randal O'Toole, *Learning the Lessons of the 1980s*, FOREST WATCH, Jan.-Feb. 1990, at 6.

53. ANDERSON & LEAL, *supra* note 1, at 6-7.

54. *See, e.g.*, *id.* at 23 (political solutions become entrenched and inhibit the formation of markets), 58-59 (institutional failure brought on by self-interested bureaucrats influenced by lobbying groups), 62 (government mismanages its land resources), 71 (same), 115 ("whims of judges and administrators" have made property rights uncertain), 125 (government's policy on fisheries has resulted in waste).

55. *See supra* note 14 and accompanying text. Recognition of the government's necessary role in a market regime runs throughout Anderson and Leal's discussion,

overseeing the new natural resource markets, just as it fails, and for the same reasons, in setting up and overseeing regulatory programs?

The question is absolutely crucial, yet Anderson and Leal give it hardly a nod, and what little they do say is not very promising for free market environmentalism. The case studies sketched in the last eight chapters of their book contain as much testimony about how the government has inhibited the formation of markets as about how it has promoted them.[56] Though the courts are praised for their record in helping to define and enforce property rights,[57] they are also criticized for defeating private ownership through such means as the public trust doctrine.[58] Anderson and Leal end up in a bind. Their case for markets turns considerably on their case against the government; at the same time, their broadside against the government undermines their argument for markets.

That great utilitarian Jeremy Bentham alluded to this problem over a hundred years ago, except he used the word "law" where I use the cognate "government." "Property and law are born together," he wrote in his *Theory of Legislation*, "and die together. Before laws were made there was no property; take away laws, and property ceases."[59] For Bentham, the "legislator owes the greatest respect" to the security of expectations upon which property is based; "when he disturbs it, he always produces a proportionate sum of evil."[60] Why won't markets in environmental resources be tainted by the very evils of government about which Anderson and Leal complain?

It is possible, of course, that the harmful incentives thought

though sometimes the point is only implicit. *See, e.g.*, ANDERSON & LEAL, *supra* note 1, at 22, 118, 131-32, 166.

56. *See, e.g.*, ANDERSON & LEAL, *supra* note 1, at 71-72, 115, 124-25, 128-29. *But see id.* at 29-31 (suggesting that the government did the right thing). Given Anderson and Leal's account of the incentives of government actors, we would expect government resistance to the formation of markets—at least in instances where the market is offered as a sweeping alternative to regulation. Government actors comprise an important and powerful interest group that benefits from regulatory regimes and is thus inclined to keep them in place. So it is far from clear why the government would ever be interested in, or tolerate, radical moves to markets of the sort envisioned by Anderson and Leal. More likely they would oppose such moves tooth and nail, or insist upon concessions that would corrupt the market mechanism.

57. *Id.* at 32-33.

58. *See id.* at 112-114.

59. JEREMY BENTHAM, THEORY OF LEGISLATION 113 (London, Trübner, 4th ed. 1882).

60. *Id.*

to distort government intervention are less forceful in the case of government-as-market-maker than in the case of government-as-regulator, but, if so, the theory underlying that possibility is hardly obvious. The question seems to be an empirical one, and the facts indicate a mixed picture. The wayward path traced in Anderson and Leal's vignettes points in no clear direction; the dependence on government is acknowledged but not pursued, even though resolution of the issues to which dependence gives rise is crucial to the argument for environmental markets. All in all, the impression is that the issues never even occurred to Anderson and Leal. That impression is furthered by other evidence as well. At the conference leading up to this symposium, a young economist in the audience put a question to Anderson after he presented the argument for free market environmentalism. Under which general sorts of conditions, the economist wondered, might the market approach be expected to succeed, and under which might it be expected to fail? Anderson pondered for a moment and then replied, "That's a good question." He said he had not thought about it.[61]

As Anderson and Leal explained in their introductory chapters, there are any number of reasons to worry that the government will distort markets in natural resources just as much as existing regulatory programs distort use of those resources now. Consider, as a rather all-inclusive example, that the natural resource property rights envisioned by Anderson and Leal would be worth many billions of dollars; the initial question of rights allocation would thus be hotly contested.[62] After all, under our existing regulatory regime industrial polluters are entitled to pollute for free up to the limit allowed by applicable regulations. With a rights system, polluters would either have to control all their pollution or buy rights to emit what they did not want to control—unless they owned the rights from the outset, as a result of the initial distribution.

61. Terry L. Anderson, Remarks at Conference on Free Market Environmentalism, Northwestern School of Law of Lewis and Clark College (April 13, 1991).

62. To get an idea of the enormous wealth that would be available for distribution in nationwide markets in natural resources, consider that the estimated 1982 value of merely 150 tons per day of sulfur oxide rights, and merely in California's South Coast Air Basin (the Los Angeles area), was between $60 million and $225 million! *See* GLEN R. CASS ET AL., CALIFORNIA INST. OF TECHNOLOGY, ENVIRONMENTAL QUALITY LABORATORY REPORT NO. 22-1, IMPLEMENTING TRADABLE PERMITS FOR SULFUR OXIDES EMISSIONS: A CASE STUDY IN THE SOUTH COAST AIR BASIN 22-23 (1982).

Given the billions of dollars involved, polluters are going to fight mightily for a large original endowment that will be determined by the government.[63] Conservationists are going to fight, too, of course, and even the general public will be interested in having rights to a clean environment rather than allowing polluters to own rights to pollute. Each interest group will try to deal with the government, which is itself composed of self-interested actors. Which groups are likely to have a comparative advantage—the various polluter groups or conservationists and environmentalists and the general public?[64] Why would there not be all the problems of free riders, holdouts, transaction costs, externalities, and governmental malincentives that Anderson and Leal see as such a plague on the present regulatory system? Indeed, might not these problems be greater because the stakes are greater?

Yet Anderson and Leal do not give any systematic attention whatsoever to the distribution issue and the hornet's nest of problems it contains. They seem to believe there is some natural order that determines the matter—that, for example, I am obviously entitled to clean air rights over my land, so an individual pollutes my air at the peril of strict liability unless that individual buys my rights from me. If that is the case, we will all spend the rest of our lives transacting and litigating. If that is not the case, what is?[65]

63. Battles over rights distributions are starting already with respect to proposals for tradable permit systems in greenhouse gases and fishing rights. Regarding greenhouse gases, see *Trading Places*, ECONOMIST, July 7, 1990, at 33 (discussing "the appalling difficulties" of distributing greenhouse gas permits between "third-world" and "industrial" countries—"Third-world countries and the Soviet Union would agree only if they were sure they would have spare permits to sell; America, which would be the main buyer of permits, would agree only if it knew in advance what price its industry would have to pay other countries for emission permits."). Regarding fishing rights, see Peter Passell, *U.S. Starts to Allot Fishing Rights in Coastal Waters to Boat Owners*, N.Y. TIMES, April 22, 1991, at A1, A11 (discussing the federal government's program "to turn over to private interests the exclusive rights to the multibillion dollar harvest of fish off the United States coast," and noting the "deep division over who should financially benefit from the distribution of the rights," the market value of which is estimated to be "at least $10 billion.").

64. *See supra* notes 18-20 and accompanying text. A range of issues regarding the politics of distribution in the context of incentive-based environmental regulations is discussed in Hahn & Stavins, *supra* note 7.

65. Anderson and Leal discuss the expectation "that individual dischargers will lobby to increase or decrease the number of permits" under any tradeable permit system in which the rights are initially distributed by the government. ANDERSON & LEAL, *supra* note 1, at 147. They go on to imply that their free market alternative would avoid this problem because it "would require polluters and recipients of the discharge to bargain over the level of pollution. Bargaining may take place in the form of an exchange of property rights, where the discharger pays the recipient for disposal before

Even if the problem of distribution is put aside, Anderson and Leal still exhibit a blind faith that everything else will just work out, simply because it has, at times, in the past. Thus, they cite instances where "good" interest groups have triumphed, public goods problems have been overcome, the government has managed to do the right thing, and free-rider problems and transaction cost problems have been surmounted.[66] But, as I have said, they also cite instances to the contrary.[67] What they don't tell us is why the constructive instances happened, or how to avoid the counterproductive ones.

Anderson and Leal give no attention to dynamics or mechanisms, to the magic keys that open the way to fruitful coordination. Instead, they engage in what Carol Rose has called "narrative."[68] They tell stories of failure and stories of success, and the successes themselves are never explained but only depicted. We can get hope from them, but little else. Anderson and Leal do not provide even a clue about how the dysfunctional features of common property's tragic structure have on occasion been transcended, yet that is precisely what we need to know before embarking on the grand reform called free market environmentalism. By what means did this interest group or that manage to organize in the face of seemingly insurmountable collective action problems? Why has the government at times been unbiased in establishing markets? What are the *conditions* that determine failure and success?

There is only the suggestion, terribly familiar to the literature on property rights theory, that the necessary things just "happen." In particular, Anderson and Leal sound a provocative theme, running throughout the book, that "environmental entrepreneurs" and "institutional entrepreneurs" will find it worthwhile, as environmental resources become more scarce and thus more valuable, to devote energy and ingenuity to the

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the fact or in the form of payments for damages paid after the fact." *Id.* This begs the question. How were the "property rights" distributed in the first place? The question does *not* simply answer itself. *See supra* note 11 and accompanying text.

66. For just a partial list, see *id.* at 28 (cattlemen effectively organized into effective interest group), 29-31 (government did the right thing), 70 (land conservation efforts show that private markets can provide public goods), 108 (free-rider problems overcome), 110 (innovative contractual arrangements can overcome public goods problems), 118 (coalitions can organize to bring about needed institutional reforms).

67. Again, for just a partial list, see *supra* notes 56-58 and accompanying text; ANDERSON & LEAL, *supra* note 1, at 17, 58-59, 126 (concern with counterproductive influence of special interest groups), 14-15, 95 (free-rider problems).

68. Rose, *supra* note 44, at 48-53.

successful development of free market institutions.[69] If it is that Panglossian, who needs a book?

IV. Conclusion

So much for my lament about *Free Market Environmentalism*. Let me conclude by suggesting a partial list of topics that would be truly valuable in a book on the subject:

(1) A study of ways and means detailing precisely how and why successes and failures were achieved in the management of environmental resources, rather than further stories. In particular, the research program should aim to explain how non-governmental groups and institutions have at times overcome collective action problems as they sought the production of collective, or public, goods like environmental quality. There is a literature here, but it needs systematic enlargement.[70]

(2) Close and disinterested attention to the *shortcomings* of markets, especially in the environmental context. The upsurge of environmental legislation that began in 1969-70 provoked an equally energetic and sizable outpouring of critical studies on regulatory performance, and these in turn led to articles and books like Anderson and Leal's in praise of the market alternative. Lacking are many new insights into market failure.[71]

(3) Sustained inquiries into the appropriate domain of markets, matters of efficiency aside. Surely, for example, there is value in free public access to some natural resources; there is also evidence that extra-legal norms can develop to control resources in such settings.[72] A market in national parks might function effectively in allocational terms, yet not be the best alternative precisely because it closes lands that should be left open. Similarly, the array of distributional issues entailed in establishing markets, ignored by Anderson and Leal, should be explored. How are rights to be defined and apportioned? How should rent-seeking be controlled? How may regressivity be avoided? Beyond this, the alleged dangers of "commodification"—treating every possible good like it is a thing to be

69. *See, e.g.*, Anderson & Leal, *supra* note 1, at 21, 34, 108, 150.

70. *See, e.g.*, Russell Hardin, Collective Action (1982); James E. Krier & Edmund Ursin, Pollution and Policy 263-77 (1977).

71. *See, e.g.*, Steven Kelman, What Price Incentives? (1981).

72. *See, e.g.*, Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. Chi. L. Rev. 711 (1986).

traded—should be confronted.[73] To put the point more generally, as my colleague Rick Pildes has, we have to be mindful of the "unintended cultural consequences" that might follow from wholesale substitution of a market regime for a regulatory one.[74]

(4) Further inquiries into command-and-control regulation. Anderson and Leal are correct in suggesting careful comparative institutional analyses. These could lead to entirely new insights, including new forms of institutions that have yet to be imagined.

Perhaps most important of all, we need less hubris on the part of reformers of any persuasion. In this respect, Anderson and Leal fall grievously short. To be sure, the government's environmental record to date is sufficiently sorry to make out a clear case for modest, careful, closely studied experiments in reform. But *Free Market Environmentalism* urges us to revolution. Its importuning is remarkably premature, weakly supported, and probably counterproductive, in that it is more likely to close minds than to open them. The book rests too little on analysis and too much on ideology, all the while pretending the opposite. It is a proselytistic work. In its understandable efforts to dispense with familiar, ill-reasoned, pro-regulation baggage, it proceeds to gather up a similar collection of pro-market baggage, most of it heavy with question-begging. Fighting fire with fire, it sheds more heat than light.

73. *See* KELMAN, *supra* note 71, at 54-83.

74. Richard Pildes, *The Unintended Cultural Consequences of Public Policy: A Comment on the Symposium*, 89 MICH. L. REV. 936 (1991). "Unintended cultural consequences" means, essentially, the unanticipated "effects of public policy on social understandings, norms, and meanings." *Id.* at 938.