What IS A Tragedy of the Commons?
Overfishing and the Campaign Spending Problem

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I. Introduction

Over the thirty-seven years since its publication, Garden Hardin's "Tragedy of the Commons"¹ has clearly become one of the most influential writings of all time. The tragedy of the commons is one of those rare scholarly ideas that has had an enormous impact in academia² and is also commonly used outside of academia.³ In legal scholarship, the tragedy of the commons has been used to characterize a scarcity of intellectual property rights,⁴ telemarketing,⁵ asbestos

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2. A Westlaw search on November 22, 2004, yielded 919 hits for "The Tragedy of the Commons," /s Hardin". A search of the social sciences citation index on the same day produced 2,890 hits. Among the hundreds of books treating the concept in depth are: Elinor Ostrom, Governing the Commons (1990); Carol M. Rose, Property and Persuasion (1996); Lawrence Lessig, Future of Ideas: The Fate of the Commons in a Connected World (2001); Commons Without Tragedy: Protecting the Environment from Overpopulation (Robert V. Andelson, ed., 1991).
3. A Google search on January 17, 2005 for "tragedy of the commons" yielded over 468,000 matches. A January 17, 2005 Westlaw search of the U.S. Congressional Testimony database yielded 32 hits, while a search of the Congressional Record database turned up ten hits, including a reference by Sen. Larry Craig (R-ID) arguing that political pork-barrelling was a political tragedy of the commons (136 Cong.Rec. H4389-0, June 20, 1990), and Sen. Charles Grassley (R IA) arguing pollution is a tragedy of the commons, and should be alleviated by federal subsidies for production of corn-based fuels (137 Cong. Rec. S6024-01, May 16, 1991).
over-litigation, neglect of Presidential papers, overcrowding of the radio spectrum, overcrowding of the wireless telecommunications spectrum, sidewalk vending, greenhouse gas emissions, water pollution, underground water overdrafting, and of course, the classic environmental commons problem, overfishing. But this embarrassment of citation riches highlights the fact that although we invoke it often, we do not know exactly what constitutes a tragedy of the commons.

Defining a tragedy of the commons is not just an academic exercise. In an ideological policy battle between interventionists and libertarians, those that argue for and against governmental intervention, a true tragedy of the commons situation presents a potentially decisive argument in favor of intervention. In a true tragedy of the commons, resource users impose mutual externalities upon each other, creating a paternalistic justification for intervention. Of course, in over-exploiting a resource, resource users may also impose externalities upon a larger group that has some stake in the resource, such as the general public might have in clean air or water. This externality alone may be sufficient justification for intervening. But as I define it in this Article, a tragedy of the commons specifically involves a situation in which the resource users are detracting from their own ability to continue to exploit the resource. For those trapped in the tragedy, it is a self-defeating pathology that flies in the face of

economic reason, and yet, as I will demonstrate in this Article, is perfectly consistent with economic assumptions of rationality. The need to save the resource users from themselves provides, independent of the need to internalize other large-group externalities, a particularly compelling case for governmental intervention. In true tragedies of the commons, Pareto Superior\(^{15}\) policy moves are possible in ways that are generally not feasible in other putative tragedies of the commons, in which this self-destructiveness is absent. I use the definition set forth in this Article to analyze a problem that has not been previously recognized as a tragedy of the commons – the problem of ever-increasing political campaign expenditures.

In part II of this Article, I set out my definition of a tragedy of the commons, using the overfishing problem and other examples to illustrate what is unique about this class of problems. In so doing, I distinguish it from the broader set of large-group externality problems that are mischaracterized as tragedies of the commons problems, such as air and water pollution. In part III of this Article I use the overfishing problem to illustrate the dynamics of tragedies of the commons, showing how resource degradation over time impacts resource users. In part IV of this Article I apply this analysis to the problem of political campaign spending, showing how the problem is similar to the problem of overfishing, and showing how the current campaign spending debate, framed as freedom versus equality, is misguided. In part V of this Article, I address the question of why those trapped in a tragedy of the commons are not more eager to address their joint overexploitation problem. Finally, in part VI, I discuss solutions to tragedies of the commons, in particular those for the campaign spending problem.

II. The Tragedy of the Commons

A. Hardin's True Tragedy

Hardin's tragedy of the commons has proven to be a worthy foil to Adam Smith's much older parable of the "invisible hand."\(^{16}\)

\(^{15}\) A Pareto Superior policy is one in which at least one member of society is made better off, and none are made worse off. Andreu Mas-Colell, Michael D. Whinston, and Jerry R. Green, Microeconomic Theory 313 (1995).

Hardin's story of resource overexploitation poses a striking contrast to Smith's narrative illustrating the coincidence of self-interest and collective interest. Whereas Smith's lesson is that individuals acting in their self-interest will act to increase collective wealth, Hardin's lesson is that individuals acting in their self-interest will ruin collective wealth. Consciously or not, all varieties of public policy are debated in ways that draw heavily upon at least one of these two powerful concepts. Indeed, these two competing ideas, based upon antithetical conceptions of the ability of people to order their own affairs, often serve as the underlying bases of arguments for and against governmental intervention. Hardin and Smith serve, in this policy realm, as the ideological beacons of opposing viewpoints of the role of government.

Whereas the implication of Smith's narrative is quite clear – government should intervene as little as possible – the implications of Hardin's tragedy are not. Several different forms of policy prescriptions could be proposed to solve the "commons" problem. In his article, Hardin called for "mutual coercion, mutually agreed upon." But what does this mean? In the stylized examples provided by Hardin, a variety of policy responses might be appropriate. To address the overpopulation problem, some sort of a taxation scheme might be the most palatable, or simply a termination of some social programs that Hardin would consider subsidies for having more
children.\textsuperscript{22} To address resource over-exploitation problems such as the overgrazing problem posed by Hardin,\textsuperscript{23} privatization of the resource may be called for.\textsuperscript{24} To address the problem of pollution,\textsuperscript{25} some form of pollution control regulation may be called for. Hardin’s message was that something needs to be done, but he did not seem to distinguish between a governmental solution and a privatization solution, or any range of options in between.

I suggest that Hardin’s greatest contribution, the core insight of his article, is the identification of a class of problems in which there is a need to protect resource users \textit{from themselves}, and to protect their continued access to the resource by limiting access. This is the key to what scholars find most anomalous about the tragedy of the commons: that protecting resource users requires constraining their liberty in some way. This is necessary because, despite the irrationality of embarking upon the tragic course of over-exploitation, people persist in doing so. If a tragic player could take a long-term view of resource exploitation, \textit{or} find a way to cooperate with fellow resource users – hardly heroic things to expect\textsuperscript{26} – the tragedy could be avoided. Yet tragedies persist, particularly in environmental settings.\textsuperscript{27} This refusal of resource users to recognize their enlightened self-interest, as well, is one of those aspects of the tragedy that scholars find so compelling.

This can be distinguished from the broader class of large-group externality problems in which resource users impose externalities upon a larger population, without necessarily harming themselves in the process. The confusion exists because in both types of problems, the overexploitation pertains to jointly-owned or unowned resources. These property regimes serve as the root cause of overexploitation. But Hardin’s prescription of "mutual coercion, mutually agreed upon," seems oriented towards solving problems within the resource user group, and not necessarily (but often) alleviating externalities imposed upon those outside of the user group.

\textsuperscript{22} Hardin, supra, note 1, at 1246.
\textsuperscript{23} Hardin, supra, note 1, at 1244.
\textsuperscript{24} Ostrom certainly believed that this is what Demsetz called for in his seminal article, \textit{Toward a Theory of Property Rights}, 57 AM. ECON. REV. 13 (1967), Ostrom, supra, note 2, at 12-13.
\textsuperscript{25} Hardin, supra, note 1, at 1245.
\textsuperscript{26} Ostrom’s famous book pertains to the conditions under which cooperative arrangements, formal and informal, can solve common-pool resource problems.
\textsuperscript{27} Barton H. Thompson, \textit{Tragically Difficult: Obstacles to Governing the Commons}, 30 ENVTL. LAW 241 (2000).
What is a "true" tragedy of the commons? I suggest that a truly tragic resource overexploitation, or a true tragedy of the commons, contains all of the following elements:

1. **Mutual, uninternalized externalities.** A tragedy of the commons involves, if not perfectly symmetrical situations among identical players, at least a mutuality of externalities. The mutuality of externality places parties in mirroring situations in which every tragic player knows that attempts at cooperative behavior will be met with cheating, and that every player knows that every player knows this. Knowing that if one doesn't cheat, others will, creates irresistible incentives to cheat.

2. **Group payoffs that are less in uncooperative outcomes than they are in cooperative ones.** Professor Lee Ann Fennell has distinguished the tragedy of the commons from mere distributive questions. If uncooperative behavior merely led to a wealth transfer, then there is not necessarily any efficiency loss suffered from the societal point of view.  

3. **A resource that is rivalrous in consumption.** While situations involving nonrival goods may also produce incentives for uncooperative behavior, rivalrous consumption among those in a competitive environment creates particularly strong incentives to cheat. The understanding that consumption by others detracts from one's own consumption, coupled with the mutuality of externalities and the knowledge that this will likely lead to cheating by others, is what gives rise to the inevitability of uncooperative behavior.

A game-theoretic illustration may be helpful to demonstrate the logic of tragic behavior, and an economic explanation of why the tragedy can be so persistent. Consider a game involving two fishermen, A and B, that will last for 100 time periods. The fishery is assumed to have a capacity to sustainably yield 100 fish caught per period. If in any period, the total fish caught by A and B exceeds 100, the stock will be depleted and the capacity will fall to 99 for the following period and for all periods thereafter. Thus, if A and B could agree, they could sustainably harvest 100 fish per period for the entire 100 periods. As a baseline, assume that A and B would evenly split the 100 fish each period, and harvest 50 each. In any period, A or B could "cheat" and fish harder to catch an extra fish, or could "abstain," and maintain a current level and effort of fishing. It is further assumed that

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the effort from fishing is of negligible cost to these fishermen. The gain of catching extra fish is of paramount consideration.

If, in time period one, \( T_1 \), A abstains from cheating and B decides to cheat, B will gain an extra fish for \( T_1 \). A will have harvested 50 fish and B 51 fish, yielding 101 fish in \( T_1 \) but knocking the harvest capacity down to 99 for \( T_2 \) and all periods thereafter. Assuming B maintains the higher fishing effort for the remainder of the game, it is reasonable to assume that in future time periods, A and B will divide the 99 fish by harvesting, respectively, 49 and 50 fish. The net for the entire game would thus be that B will have gained one fish, and A, by losing out on a fish for each of the rest of the 99 periods, will have lost 99 fish, net of her baseline of 50 fish per year. If A does not retaliate by cheating but rather abstains, the game can be represented by Figure 1, and the payoffs shown in Table 1.

It is reasonable to assume, however, that A would retaliate. In fact it would be perfectly rational for A to do so. If A chose, in \( T_2 \), to cheat by fishing a little harder as well, she would also net an extra fish – 50 instead of 49, and by both of them catching a total of 100 fish in \( T_2 \), in an environment in which the yield capacity is 99, A would play her part in knocking the capacity in \( T_3 \) and subsequent time periods down to 98. In \( T_3 \) and thereafter, assuming that A and B fish equally hard, it is reasonable to assume that they would split the catch at 49 apiece. This assumes B abstains from further cheating. This outcome is shown in Figure 2 and the payoffs in Table 2. A’s payoff would be less by one fish for the remaining 98 periods, resulting in a net payoff of -98, relative to her baseline of 50 fish per year; B’s payoff would
also reflect this reduced payoff, but B would have benefited by cheating early and catching an extra fish in T₁, yielding a net payoff of -97. Although A has embarked upon the path to mutually tragic overexploitation, A is better off cheating as compared to the "abstain" strategy. By catching an extra fish in T₂, A at least got an extra fish in T₂, making her payoff less negative, -98 instead of -99. If B chooses to abstain from further cheating, B will, despite her elevated effort, also catch one less fish for the rest of the 98 periods.

The game is likely to descend further, however. At time T₃, B may not abstain and may well decide that she is not ready to settle for harvesting only 49 fish per year. The same calculus applies at T₃ as it did at T₁: B can gain an extra fish by fishing a little harder still, catching 50 fish in T₃, and even if the yield capacity is knocked further down to 97, by virtue of A and B catching a total of 99 fish in an environment in which the capacity is 98, B will nevertheless realize a temporary, one-period gain of a fish. For the remainder of the game, B will be fishing harder still just to catch 49 fish per year. Because B is fishing harder than A, it is reasonable to assume that A and B will split the catch at 48 and 49 fish, respectively. Thus, B will be working even harder to catch even fewer fish, catching 49 for the remainder of the game for a game-total net of -96 (a loss of a fish for the remainder of the 97 periods, more the extra fish caught in T₁). But this is a better outcome than the final outcome in Figure 2, in which her net was -97. A, in the meantime, will suffer a loss of two fish every year for years 4 through 100, and loss of one fish in T₃, for a game-total of -195 below the baseline of 50 per year.
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What next? At T₄, A may decide to fish still harder as well. While A realizes that this is ultimately a fool's errand, A realizes that she can at least snare an extra fish for one year by fishing harder. A realizes that the yield capacity will be knocked down to 96, a yield which will be split by A and B at 48 fish apiece, given their equally hard fishing efforts (and assuming B abstains from further cheating). But A was going to settle for 48 fish per year anyway, so she reasons that she might as well get the extra fish this year. A had already lost a fish in T₃ and was going lose 2 fish per year for at least the last 96 years, and by snaring an extra fish in T₄, A at least reduces her loss down from 195 to 194. As in previous cases, the externality imposed upon B is huge. The outcome is shown in Figure 3, and the resulting catches are shown in Table 3.

Table 3

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Several interesting things are worth noting about Figure 3. First, while the miniscule private gains are swamped by the huge social losses, from an individual's point of view, it remains rational to pursue the tragic path. At each decision node, it pays, though slightly to cheat rather than abstain. The externality remains uninternalized. Second, A's reward for abstaining in T₁ was to suffer an inferior payoff to B in every time period. Thus, there is not only no incentive to ever abstain, but there is a compelling incentive to cheat, and cheat first. The compelling incentive to cheat is not simply the miniscule
gain of one fish in one time period, but the realization that abstention will be met with cheating. Herein lies the inevitability of the tragedy: the incentives to cheat are irresistible. They are irresistible because of the symmetrical nature of the externalities, and the mutual realizations that any abstention will be punished, and the realization that the other player understands that her abstention will be punished. Moreover, even if some sort of regulatory regime were put in place to try and police cheating, if the regime does not address the incentive to cheat, enforcement is likely to be problematic.  

One might object that the players in the above game might also agree to underharvest for a year or two, just to allow the fish stock to build back up. By the same reasoning as that illustrated in the game, the gains from cooperation might swamp those of adopting a cheating strategy. Even then, however, the incentives to cheat are present, and as a formal economic matter what makes tragedies of the common truly, inevitably tragic are those compelling incentives to cheat, which all but ensure the predominance of non-cooperative strategies.

Exceptions exist, of course. Professor Elinor Ostrom's seminal work on cooperative arrangements identified a number of sustainably-harvested common-pool resources, sometimes managed and exploited by fairly large groups. However, the conditions that must exist before such large groups can come together in a cooperative arrangement are unique. The failures remain the rule, and the successes the exception.

There is the possible objection that the assumption in the illustrative game that fishing effort is negligible compared with the harvesting gains is, at a certain point, unrealistic. As fishing effort increases, the cost of effort is likely to increase, and the benefits likely to decrease due to diminishing returns. At some point, it becomes unprofitable to overexploit, or to exploit at all, thereby putting an end to the cycle of overexploitation. This objection does not, however,

29. For example, fisheries regulation must always address enforcement issues due to the atomistic nature of the fishing industry. Many ingenious regulatory schemes have failed for lack of ability to enforce the restrictions. SUZANNE IUDICELLO, FISH, MARKETS, AND FISHERMEN: THE ECONOMICS OF OVERFISHING 26, 38, 133 (1999).
30. Supra, note 2.
31. Ostrom analyzes eight similarities among those common-pool resources that have been managed and harvested sustainably, despite the lack of property ownership. Ostrom, supra, note 2, at 88-102.
32. Thompson, supra, note 27 at 242.
detract from the generality of this game. The level of harvesting at which profitability disappears completely is apt to be at a level of harvesting that is sub-optimally high.

To illustrate this last point, consider the example of a fishery, shown in Figure 4, in which the marginal benefits and average benefits of exploitation decrease as harvesting level increases. We can assume constant marginal and average costs without loss of generality. The optimal harvesting point is level \( q_o \), at which marginal benefits equal marginal costs. However, as long as there are no entry barriers — as there would be if there were private ownership of the fishery or some entry restrictions — capital will enter as long as there are non-zero rents to be had, and will dissipate total (industry-wide) rents by increasing overall harvesting. One inefficiently high level of harvesting might be \( q_1 \), at which marginal benefits have sunk below marginal costs. But at \( q_1 \) rents still exist in the form of rectangle \( abcd \), inducing more capital to enter. Economic models of overfishing have demonstrated that capital will continue to enter and overharvesting will continue to increase until a stopping point is reached, well beyond the optimum harvest level. At this point of "rent dissipation," \( q_{rd} \) in the graph, marginal benefits are well below marginal costs, but average costs are just equal to marginal costs. \(^{33}\) Rents are zero. Herein lies the tragedy of the overfishing commons — fishermen literally fish themselves into poverty. \(^{34}\)

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34. Id.
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One possible regulatory strategy would thus be to do nothing – give up on solving the tragedy of the commons, and allow the situation to deteriorate to the point of rent dissipation. Such a course would in effect be a determination that rent dissipation is a lesser evil than an inappropriate regulatory response. At the point of rent dissipation, at least, the fish will get a break. This may be a plausible approach for some tragedy of the commons problems. For problems that truly are intractable, for which any regulatory response or property rights solution would be truly abhorrent or unworkable, this may be the answer. Or, it could be that the plundered resource is a resilient one, so that any respite from overexploitation will allow it to quickly bounce back to healthy levels. Or, as in the case of some fisheries, it may be that the capital used in exploiting a stock is a fluid one that exits the industry easily, avoiding the danger that the capital will get locked into the resource and compelled irreparably overexploit it.35

35. Paterson and Wilen showed that where the exploited resource is resilient – that it bounces back from depletion quickly – the danger of irreversible over-exploitation is low. Donald G. Paterson and James Wilen, *Depletion and Diplomacy: the North Pacific Seal Hunt, 1886-1910*, 2 *Research in Economic History* 81, 121-127 (1977). Also, where capital exits and enters the fishery quickly and easily, there is less danger that capital will have to rely solely on the fishery for income. Once the stock is depleted enough to render exploitation unprofitable, the fishermen will exit the fishery, concentrate on another, more profitable species, and return only
However, for many, if not most tragedy of the commons problems, such a let-the-chips-fall-where-they-may approach seems inadequate. The problem is that irreparable harm may have already occurred at the rent dissipation level. In the fishing example, it is possible that rent dissipation may not occur until the fish stock has crashed to the point that it is driven to extinction or will never recover. Also, the economic harm to the resource users is usually not our only concern. Resource overexploitation usually imposes externalities upon the rest of the world. Loss of a fish species will invariably upset ecological balances in ways that are impossible to predict.

Clearly, this purely economic story is not the complete explanation for the prevalence and persistence of tragedies. There exist psychological phenomena that pose obstacles to solving tragedies of the commons, that are imperfectly modeled (if at all) by formal economic models. However, the tragedy of the commons is largely an economic story, and this account is the more detailed economic account of why the tragedy persists.

B. Distinguished From Other Large-Group Externality Problems

What I define in this Article as a "true" tragedy of the commons can be distinguished from other large-group externality problems involving jointly-owned or unowned resources. There are two important differences: (1) a tragedy of the commons involves an externality imposed by resource users that they impose upon each other by damaging their own ability to exploit the resource, and (2) the exploited resource is rivalrous in consumption.

A tragedy of the commons does not preclude, of course, the imposition of externalities on those outside the group. Fish consumers, ichthyologists, conservationists, and those otherwise intrinsically interested in preserving fish stocks would suffer negative externalities at the hands of the tragic fishermen even as the latter destroy their own livelihood. But the existence of an externality imposed by resource users on those outside the group is neither a necessary nor a sufficient condition for a tragedy of the commons. A tragedy of the commons when the stock is healthy enough to exploit profitably again. Id., at 121-27. This is not to say that this exploitive pattern is ideal, only that the dangers of irreparable harm are less in some circumstances than others.

36. Thompson, supra, note 27, and Section VI. infra.
can be self-contained, with resource users destroying themselves without harming anyone outside of the group. As well, unless resource users are harming themselves by overexploitation, the imposition of an externality upon those outside the group does not, by my definition, make the situation a tragedy of the commons.

Consider the example of air pollution. Hardin himself thought this to be an example of a tragedy of the commons, only it involves the excessive putting in of something – pollution – rather than the excessive taking out of a scarce resource. There is a similarity in that the calculus facing the individual – the polluter enjoys the full benefit of polluting, just as the herdsman enjoys the full benefit of grazing an additional animal, while the costs are shared among many. However, whereas there is a paternalistic justification for intervention in a tragedy of the commons, intervention in the more general case must be justified on the grounds of internalizing externalities to others.

It is true that air polluters would benefit from pollution regulation in an indirect way, as members of the air-breathing public. Is the difference, then, between a tragedy of the commons and other large-group externality problems merely a matter of degree? The answer is no, because in a tragedy of the commons, regulation confers very different benefits upon the resource users than upon the larger group. In the overfishing case, regulation that saves fish stocks confers upon the general public a continued supply of fish, ecological integrity by preserving a possibly important part of the aquatic ecosystem, and perhaps the psychic value of knowing that we have not decimated yet another species out of carelessness. Like the rest of the world, fishermen enjoy these benefits. But what is also conferred upon the fishermen is a continued ability to fish and practice their livelihood. This is a benefit that is very different from those consumption and conservation benefits that are enjoyed by the diffuse public, and the existence of this additional benefit is what characterizes a tragedy of the commons. By contrast, regulation that reduces air pollution yields similar benefits to air polluters and air breathers alike. There is no argument that limiting air pollution helps air polluters in any way in their polluting efforts, or preserves their ability to pollute in the future. Thus, while all large-group externality problems will realize benefits from regulation that inure to the large group (typically the general public), in a tragedy of the commons resource users will receive the

37. Supra, note 1, at 1245.
38. Supra, note 1, at 1244.
additional benefit of being saved from their own improvidence and the ability to carry on the future with their resource exploitation.

Intervention may be entirely warranted, perhaps even compelling, for a variety of large-group externality problems such as air and water pollution. But the nature of the justification for such large-group externality problems is apt to be different than it is for tragedies of the commons. The justification for arresting other large-group externality problems may be varied and complicated, and may involve difficult ethical questions regarding tradeoffs between economic growth and ecological or human health. A cost-benefit analysis may or may not be appropriate for making such decisions. But the case for arresting tragedies of the commons is apt to include one additional, simple and compelling justification: save the resource users from themselves. This is also not to say that successful regulation is always possible or feasible. But the case for trying is stronger.

The second distinguishing feature of a tragedy of the commons is that the resource being overexploited is rivalrous in consumption. Rivalrous consumption is what gives urgency to the race to exploit, and creates compelling incentives to cheat. This incentive is illustrated by the game-theoretic model of the tragedy, in which A’s abstinence, even temporary, resulted in her having an inferior payoff to B in every time period. With a non-rival resource problem such as air pollution, the capacity to pollute is not hindered by the very fact of their pollution. However harmful air pollution has been for public health, polluting has not bumped up against any absolute physical limits that would prevent polluters from continuing to pollute. Polluters thus do not face the same compelling incentives to pollute. To be sure, there are competitive forces that compel polluters to pollute, but there is no


40. Lessig argues that for nonrivalrous goods, there is no possibility of a "tragedy of the commons," since nonrivalry means that availability for users does not diminish with increased consumption. Lessig, note 2, at 22-23. Lessig is arguing for leaving in the commons some intellectual property because of the positive network effects of such knowledge. However, the point of the tragedy of the commons metaphor, as applied to pollution problems, is that there are negative externalities associated with pollution, that do not diminish pollution opportunities, but should nevertheless be curtailed.
race to spew out the pollution before someone else has the opportunity.

C. Other Examples of Tragedies of the Commons

The tragedy of the commons is usually considered a story about property and property rights. For example, one prescription for fixing the tragedy is the establishment of private property rights, so that there is no externality. Like property law itself, the tragedy of the commons has insinuated itself into a variety of problems not involving real property, or any physical res. While Smith and Merrill caution us against extending property law too far into the non-physical realm and forgetting the in rem nature of property law, it is still very much worth remembering the lessons that property problems teach us for purposes of solving a variety of public policy problems.

1. Traffic Congestion

Among students who have taken my environmental law courses in both Canada and the U.S., the most consistently identifiable tragedy of the commons problem is that of traffic congestion. Traffic congestion provides an excellent pedagogical device for teaching the tragedy of the commons. Because drivers all face the same decision environment, the problem of traffic illustrates the role of mutuality in explaining the persistence of an externality. Also, the traffic problem showcases the importance of transaction costs in frustrating non-coercive solutions, in that negotiations among commuters are impossible. Finally, traffic congestion illustrates the effects of overutilization of a resource that is rivalrous in consumption: roads. Like other tragedies of the commons, resource users inflict losses upon themselves as a group in terms of the ability to use the resource, by lengthening commute times and degrading the transportation resource. Externalities are also imposed upon non-users, the air-breathing public, in the form of pollution. But this is a separate and distinct large-group externality, that is not itself the tragedy of the commons. The politically safest justification for intervention is to save commuting drivers and protect their commuting experiences. Significantly, the hue and cry for solving traffic problems comes more

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typically from frustrated drivers than those who worry about the air pollution externality being imposed upon the general public.42

The traditional engineering solution to traffic congestion has been to expand roadway capacity. As most traffic engineers now understand, this can be a self-defeating strategy, as expanding roadway capacity has the effect of reducing transportation costs so that new demands are created by new users – new residential development, for example, that springs up specifically because of the new roadway capacity.43 This is an example of the kind of solution that ignores the second-order effects, those that are easily seen once one appreciates the nature of the externality. More thoughtful approaches have thus been oriented towards internalizing the congestion externality, and trying to alter the incentives to participate in the tragedy. This has been attempted by trying to draw people out of the pool of resource users, by imposing a time-of-day-sensitive congestion tax44 and by subsidizing alternative transportation modes such as transit and bicycling.45 Or, incentives may be provided to induce people to at least make utilization of the roads more efficient, by encouraging carpooling through the creation of high-occupancy vehicle lanes.46 While not exactly like the overfishing problem, traffic congestion creates the same dynamics.47

42. See, e.g., Chip Jones, Virginia Governor’s Funding Initiative Sparks New Hopes for Rail, RICHMOND TIMES-DISPATCH, December 24, 2004, at 7 (noting that a rail expansion plan in Northern Virginia promised to bring relief to “angry commuters tired of getting stuck in traffic.”); Duane Stanford, Toll Lanes Urged to Ease Gridlock, ATLANTA JOURNAL-CONSTITUTION, November 30, 2004 at A1 (“Frustrated commuters would be able to buy their way out of traffic jams or ride train-like express buses if the newest proposal to attack long commutes on Interstates 75 and 575 through Cobb and Cherokee counties is enacted”); Stephen Ginsburg, Va. To Build Private Toll Lanes, WASHINGTON POST, August 27, 2004 at A1 (“Officials have embraced the concept as a way to give motorists relief from chronic tie-ups”).


44. Id., at 1243-47.


46. Id., at 1238-41.

47. The traffic problem is somewhat different from the overfishing problem in that there are no "stock" effects, in which excessive current consumption somehow harms the potential for future consumption. But the rivalrous nature of the resource still creates compelling incentives to cheat. Indeed, no serious attempt is ever made to induce people to not drive so as to make others' commutes more expedient.
2. Performance-enhancing Substances in Sports

Seemingly continuous revelations of the use of performance-enhancing drugs being used by professional athletes have exacted a toll on the image of the affected sports. Baseball star Barry Bonds recently demurred suspiciously to inquiries regarding his knowledge about substances that his trainer provided him that are now thought to have been steroids. Bonds claims to have believed that he was receiving flaxseed oil from his trainer, who remains under federal indictment for his connection with an alleged trafficker of illegal performance-enhancing drugs. Bonds has hit 703 career home runs, and is within reach of Hank Aaron's Major League record of 755 home runs, an approach that would normally be cause for celebration. But Bonds, never a popular star to begin with, has seen his image further tarnished by this scandal, and it seems likely that his remarkable accomplishments will be overshadowed by his use of steroids.

There are those athletes that would not trade places with Bonds, knowing that the use of such substances will exact a health toll in the long run. Anabolic steroids have been linked to a variety of health disorders, such as infertility, baldness, distorted genitalia, and a heightened danger of drug dependence. And yet, because of the exorbitant payoffs of baseball success, there are those that choose to make that tradeoff. The late baseball star Ken Caminiti, who in a

49. Id.
51. Art Thiel, Baseball Immortality Bruised by Injuries, Seattle Post-Intelligencer, February 10, 2005 at D1 (The Giants' star has 703 home runs, but the steroids scandal has baseball in a magnum twist about how to salute the pending surrender of its most hallowed individual record by a guy who looks more and more like a sports crook”).
53. In effectively admitting steroid use, Bonds joins other baseball sluggers such as the late Ken Caminiti, Gary Sheffield, Jason Giambi, and Jose Canseco. Id.; Stefan Fatsis, History Slowed Baseball's Move to Curb Steroids, WALL ST. J.,
2002 interview, was one of the first baseball players to admit to using steroids, remained unapologetic for using it. Two years before his death by drug overdose, Caminiti told a *Sports Illustrated* reporter that he felt that steroids had become a "widely-accepted," and even "necessary" means of maintaining a competitive edge in baseball.54 Caminiti estimated that "at least half" of all Major League players use steroids, while Major League Baseball physicians estimated that ten to fifteen percent of all minor leaguers they examined tested positive for steroids.

Baseball success is an extremely lucrative resource that is extremely rivalrous in consumption. Baseball success necessarily precludes success by others. Achieving and maintaining a competitive edge, even a small one, can be the difference between success and failure. The incentives to cheat by using steroids and other performance-enhancing substances is intense. In the same *Sports Illustrated* interview, Caminiti offered this perspective on the use of steroids:

"If a young player were to ask me what to do … I'm not going to tell him it's bad. Look at all the money in the game: You have a chance to set your family up, to get your daughter into a better school.... So I can't say, 'Don't do it,' not when the guy next to you is as big as a house and he's going to take your job and make the money."55

While Caminiti evinces no regrets for using steroids, he recognizes that steroids are a necessary evil due to the competitive pressures of baseball. Putting aside the loss to those players that can successfully cheat and could not succeed at baseball without cheating, the vast majority of players would be better off with an effective and enforceable ban on the use of performance-enhancing drugs. Ballplayers would then face a baseball career not competing with cheaters that use performance-enhancing drugs, not being pressured to

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54. *SPORTS ILLUSTRATED Magazine*, *Totally Juiced: with the use of steroids and other performance enhancers rampant*, according to a former MVP and other sources, baseball players and their reliance on drugs have grown to alarming proportions, June 3, 2002, at 34.

55. Id.
cheat, and if already cheating, not being pressured to cheat more, and cheat in more expensive and even more unhealthful ways. It is thus the players – the resource users – that truly do need to be saved from themselves. Appeals by civil libertarians would ring somewhat hollow in this context.

The mysterious deaths of eight young, apparently healthy professional cyclists in a seventeen-month period spanning 2003 and 2004 would be shocking if there had not already been strong suspicions that the sport is still plagued by the misuse of dangerous performance-enhancing drugs and by dangerous blood doping practices. Even 1998 Tour de France champion Marco Pantani, who died mysteriously last year from a drug overdose, had been ejected from a race in 1999 for blood doping, and had continually battled allegations of blood doping and drug use since then. It is incredible that cyclists persist in taking such high risks to succeed, particularly one of Pantani’s stature. But given the highly rivalrous nature of winning cycling races, the incentive to cheat is apparently irresistible. It is clear that it would be cyclists that would benefit from an enforceable and effective ban, in that they would no longer be risking their lives to succeed. The apparent impossibility of enforcing such a ban, however, does not portend well for the sport.

III. The Fish Problem

Despite the many applications of Hardin’s tragedy of the commons, open access fisheries have somehow borne out Hardin’s predictions the most faithfully. Examples abound, but a particularly striking example of the depletion of fish stocks in an open access situation is provided by the late nineteenth-century and early twentieth-century Pacific halibut fishery. The Pacific halibut fishery

56. Ron Kroichick, Baseball has BALCO, but Europe is plagued with its own sports drug scandal: EPO and bicycling, S.F. CHRON, May 9, 2004, at C1.


58. Hardin made the mistake of confusing a "commons" with "open access." It is now commonly understood that a "commons" resource situation involves a resource that is jointly owned by multiple individuals, while "open access" is one in which there is no ownership at all. A common-pool resource is thus one that can be considered as open access on the "inside," (within the group of joint owners) but private property on the "outside" (outside the group of joint owners). Carol Rose, The Several Futures of Property: Of Cyberspace and Folk Tales, Emission Trades and Ecosystems, 83 MINN. L. REV. 129, 155 (1998).
was unregulated until 1924, when the United States and Canada created by treaty the International Pacific Halibut Commission, a body charged with studying the halibut fishery and making recommendations on halibut fishery management. Another treaty in 1931 implemented aggregate catch limits for several intensively-fished areas, which produced an immediate reduction in amount of fishing effort and a concomitant increase in fishing efficiency.

The early twentieth-century history of the Pacific halibut fishery illustrates: (i) the incentive for individual fishermen to overfish, resulting in a collective overfishing; (ii) a general increase in effort in fishing; and (iii) a markedly consistent decrease in fishing efficiency, measured by quantity of catch per quantity of fishing effort. Table 4 shows recorded pacific halibut landings on the Pacific Coast of the Southeastern Alaska, Canada, and Washington State for the years 1910 to 1933. In table 4, the second column shows the total pounds of halibut landed for the year. The third column shows the

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59. By "unregulated," I mean to say that there were no quantitative limitations on fishing. American and Canadian halibut markets remained relatively open to imports, and neither government were particularly inclined to exclude fishing boats from their neighboring country. Thus, although there were still regulatory requirements, they did not impose any limits on fishing. WILLIAM F. THOMPSON AND F. HEWARD BELL, REPORT OF THE INTERNATIONAL FISHERIES COMMISSION NO. 5: BIOLOGICAL STATISTICS OF THE PACIFIC HALIBUT FISHERY 49-54 (1934), available online at http://www.iphc.washington.edu/halcom/pubs/scientif.htm.

60. The 1924 treaty also limited halibut fishing to nine months of the year. However, since the bulk of the halibut fishing took place during these months anyway, the seasonal limitation had little effect. REPORT OF THE INTERNATIONAL FISHERIES COMMISSION, NUMBER 14 (1931), available online at http://www.iphc.washington.edu/halcom/pubs/scientif.htm.


62. Id, at 13-14. Thompson and Bell concluded that "[t]he rise in catch per unit … is due in 1932 and 1933 to regulation, which has deliberately held the total catch at a level… WILLIAM F. THOMPSON AND F. HEWARD BELL, REPORT OF THE INTERNATIONAL FISHERIES COMMISSION NO. 8: BIOLOGICAL STATISTICS OF THE PACIFIC HALIBUT FISHERY 23 (1931) available online at http://www.iphc.washington.edu/halcom/pubs/scientif.htm.

63. Pacific halibut were divided into two distinct stocks, one that stayed generally south of Cape Spencer, near Juneau, and one that generally stayed west of Cape Spencer. Id. at 18-21. Statistics for the other stock yielded results very similar to the stock south of Cape Spencer. Id. at 12.
total number of utilized "skates," groundfishing lines that have a fairly standardized number of hooks per unit of length. The fourth column shows the catch per skate, the measure of what is known in fisheries economics as "catch-per-unit-effort," a measure of fishing efficiency.

<table>
<thead>
<tr>
<th>Year</th>
<th>Pounds landed</th>
<th>Number of Skates</th>
<th>Catch per Skate (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910</td>
<td>51,849,240</td>
<td>191,325</td>
<td>271.0</td>
</tr>
<tr>
<td>1911</td>
<td>56,931,796</td>
<td>240,219</td>
<td>237.0</td>
</tr>
<tr>
<td>1912</td>
<td>60,379,550</td>
<td>343,066</td>
<td>176.0</td>
</tr>
<tr>
<td>1913</td>
<td>56,235,579</td>
<td>436,273</td>
<td>128.9</td>
</tr>
<tr>
<td>1914</td>
<td>45,276,669</td>
<td>364,840</td>
<td>124.1</td>
</tr>
<tr>
<td>1915</td>
<td>45,025,016</td>
<td>381,568</td>
<td>118.0</td>
</tr>
<tr>
<td>1916</td>
<td>30,218,908</td>
<td>263,690</td>
<td>114.6</td>
</tr>
<tr>
<td>1917</td>
<td>31,602,797</td>
<td>386,342</td>
<td>81.8</td>
</tr>
<tr>
<td>1918</td>
<td>27,070,659</td>
<td>309,379</td>
<td>87.5</td>
</tr>
<tr>
<td>1919</td>
<td>27,402,631</td>
<td>332,960</td>
<td>82.3</td>
</tr>
<tr>
<td>1920</td>
<td>33,158,192</td>
<td>394,271</td>
<td>84.1</td>
</tr>
<tr>
<td>1921</td>
<td>37,476,466</td>
<td>487,340</td>
<td>76.9</td>
</tr>
<tr>
<td>1922</td>
<td>31,294,067</td>
<td>499,915</td>
<td>62.6</td>
</tr>
<tr>
<td>1923</td>
<td>28,844,269</td>
<td>504,270</td>
<td>57.2</td>
</tr>
<tr>
<td>1924</td>
<td>27,004,148</td>
<td>483,945</td>
<td>55.8</td>
</tr>
<tr>
<td>1925</td>
<td>23,941,311</td>
<td>462,187</td>
<td>51.8</td>
</tr>
<tr>
<td>1926</td>
<td>25,790,876</td>
<td>494,078</td>
<td>52.2</td>
</tr>
<tr>
<td>1927</td>
<td>24,630,370</td>
<td>498,588</td>
<td>49.4</td>
</tr>
<tr>
<td>1928</td>
<td>27,209,093</td>
<td>569,228</td>
<td>47.8</td>
</tr>
<tr>
<td>1929</td>
<td>26,253,998</td>
<td>653,085</td>
<td>40.2</td>
</tr>
<tr>
<td>1930</td>
<td>22,598,895</td>
<td>643,843</td>
<td>35.1</td>
</tr>
<tr>
<td>1931</td>
<td>22,473,326</td>
<td>548,130</td>
<td>41.0</td>
</tr>
<tr>
<td>1932</td>
<td>22,881,718</td>
<td>456,721</td>
<td>50.1</td>
</tr>
<tr>
<td>1933</td>
<td>23,599,734</td>
<td>452,970</td>
<td>52.1</td>
</tr>
</tbody>
</table>


64. Id at 21.
Several interesting trends should be noted in Table 4. First, with the exception of just a few years up to 1931, there was an increase in the number of skates each year, a measure of the amount of fishing effort expended each year. Second, with the exception of just three years before 1931, there was a decrease in fishing efficiency each year. Third, there was a general downward trend in the total amount of halibut landed.

The lessons of the early twentieth-century halibut fishery are two-fold. Clearly, regulation was needed to save the resource. But just as importantly, regulation was needed to save the fishermen from themselves. As fishing efficiency spiraled steadily downward, fishermen were caught in a dynamic of having to fish just to salvage what they could from a depleted stock. Failure to fish, giving up on the race to fish, meant having their only valuable capital asset – their boat – sit idle. With many fishermen still paying off loans on their boats, idleness was not an option.

The poverty trap that has engulfed many fishing communities is in fact what has motivated economists to study the open access fishing problem. As early as 1955, H. Scott Gordon derived the mechanism by which fishing communities invariably fished themselves into a bust cycle in which they discovered an abundant fish species, rushed in with too many boats, and wound up overfishing the stock to the brink of a collapse, the fish stocks utterly unable to provide fishing communities with sufficient income to fend of poverty.65

Regulation was thus needed not only to save the Pacific halibut, but to save the halibut fishing industry.66 This latter aspect is the one conveniently overlooked by categorical opponents of regulation. There is often the implicit assumption that any form of

65. Gordon's theoretical findings find support from studies of the halibut case. See, e.g., WILLIAM F. THOMPSON AND F. HEWARD BELL, REPORT OF THE INTERNATIONAL FISHERIES COMMISSION No. 5: BIOLOGICAL STATISTICS OF THE PACIFIC HALIBUT FISHERY 10 (1931), available online at http://www.iphc.washington.edu/halcom/pubs/scientif.htm ("The great effect of inconspicuous mechanical changes and of cheaper power explains on the one hand the present existence of the fishery despite a greatly lowered abundance, and on the other indicates … that the decline will be continued far beyond the limit which seems at present profitable." (emphasis added)).

66. For one of many accounts of how the failure to regulate resulted in the wreckage of the Eastern cod fishery, see MICHAEL HARRIS, LAMENT FOR AN OCEAN: THE COLLAPSE OF THE ATLANTIC COD FISHERY (1999).
regulation is a subtraction from an individual right, and that it invariably diminishes the wealth or utility of the regulated individual. What this overlooks are the gains to be had from cooperation, and gains that can be created by institutions, governmental or otherwise, that facilitate and even mandate cooperation.

IV. The Campaign Finance Problem

A. Overfishing for Votes

Ubiquitous campaign advertisements in all kinds of media seem to have accomplished two things: numbing the voting electorate to campaign advertisements, and cultivating a concern over the role of money in political campaigns, particularly federal ones. The pervasive nature of campaign advertising has dulled voters' senses to the messages behind the advertising. One study reported that registered voters saw an average of almost eight campaign ads on TV per day during the 2002 Congressional campaign cycle. At the same time, the sheer volume of campaign advertising has made people wonder how it can be that candidates for political office can have such huge sums of money to spend on advertising. Ballooning campaign expenditures and an increasing amount of time and effort of politicians spend fundraising have fueled a suspicion money has gained more than just a toehold over political institutions and processes. Former Congressman Lee Hamilton, as director of the Center on Congress at Indiana University, has lamented this voter cynicism:

67. Reagan administration Commerce Secretary Malcolm Baldridge disapproved a plan to introduce individual transferable quotas to the beleaguered halibut fishery because it "ran counter to free market principles." As aides explained, "[a]s an Administration, we're just opposed to limiting fishing to only those who have formerly fished... We are concerned that it would interfere with basic economic liberties." John Balzar, A Catch as Catch Can Fish Plan, L.A. Times, June 28, 1992, at A1.

68. States have not been spared from the cycle of campaign spending for statewide elections. The number of PACs in Virginia to address state elections has doubled in the last four years, reflecting the ballooning costs of seeking statewide elective office. R.H. Melton, Campaign Costs Soar, Prompting Va. Power PACs, WASHINGTON POST, June 2, 2003, at B1.

The rising flood of money that flows into campaigns also undermines general public trust in the political system. Many Americans feel it is the money, not ideas and not principles, that reigns supreme in our political system. I often heard people say that the political process was run by the moneyed interests, so they saw little reason to vote.70

This widespread suspicion only exacerbates the anesthetizing properties of campaign speech. A perception that a political candidate has been bought and paid for only dulls the viewer to the substantive aspects (if any) of campaign speech. A report by the Pew Center for the People and the Press found that while the 2000 presidential campaign was generally better in terms of information available, candidates’ commercials were considered less effective than they were in 1992.71 One might not be surprised that pundits are crying foul quite loudly,72 but not even critics of campaign finance reform proposals believe that the system we have for running political campaigns is adequate.73

Debates about the efficacy of and problems with campaign speech, however, are rarely followed by satisfying discussion of solutions. The greatest obstacle to solving the campaign finance problem is that almost any conceivable solution would somehow impinge upon Constitutionally-protected speech. And even campaign finance reform advocates seem willing to concede the notion put forth by Justice Holmes that more speech is always better. In Abrams v.

72. See, e.g., David S. Broder, Level the Presidential Playing Field, WASH. POST, Oct. 19, 2003, at B7; E.J. Dionne Jr., How to Fix Financing, WASH. POST, Nov. 28, 2003, at A41; Thomas Edsall & Dan Balz, Kerry to Forgo Public Campaign Financing; Democrat Says He Will Use His Own Money, WASH. POST, Nov. 16, 2003, at A12; Editorial, Your Turn; Fix the Finance Rules for Presidential Races; The Public-Financing Program for Presidential Candidates, Designed to Even the Playing Field, is Broken, SAN ANTONIO EXPRESS-NEWS, Nov. 12, 2003, at 6B.
73. BRADLEY SMITH, UNFREE SPEECH X (2001).
Holmes argued in dissent for a "free trade in ideas" and "that the best test of truth is the power of the thought to get itself accepted in the competition of the market...." This led to the popularization of the phrase "marketplace of ideas," coined by Justice Brennan to describe the notion that the best way to ascertain the truth is to have "uninhibited, robust and wide-open" discussion serve as an open competition of ideas. The freer the discussion, the more robust the competition, and the more certain the truth, would go the reasoning.

The battle over campaign finance reform has been waged with this truism in mind. The campaign finance problem is seen as a clash of the principles of equality and freedom of speech, with free campaign spending being equated with free speech. Reform advocates have argued that equality principles have become jeopardized, and that regulation is warranted to correct the heavy bias towards those interest groups that tend to be well-funded. Detractors of campaign finance reform, on the other hand, argue that given the necessarily clumsy and ultimately flawed ways of regulating campaign finance, it is better to stick with the principle that is easier to defend – freedom of speech, and relative freedom to contribute to campaigns.

Some reform advocates take their cue from Justice Stevens’s dissent in Nixon v. Shrink Missouri Government PAC, and take issue with the notion that campaign finance is purely "speech." Their argument has been that campaign contributions implicate property interests, not speech interests. This view would presumably bifurcate the spending of money and the use of the money to purchase speech, as acts of separate legal import. For purposes of this Article, I put
aside this objection to consider the impacts of the spending and the speech, taken together.

Neither reform advocates or detractors have examined the underlying premise of the free speech argument: that more speech is always better. "Better" in what sense? At the margins, more speech is always better for the speaker – no campaign ever makes a conscious decision to simply remove their candidate from the airwaves, newspapers, and billboards, or to unilaterally disarm. But it is becoming clear that at certain levels of campaign speech, it becomes so ubiquitous and so commodified that it loses its effectiveness. 82

And yet, candidates for political and even judicial office face ever-increasing demands to engage in more and more campaign speech. This, in turn, has led to ever-increasing pressure to raise money, surely one of the most unpleasant tasks facing campaigners. Hubert Humphrey called it a "disgusting, degrading, demeaning experience." 83 But raising large sums of money has become essential to seeking public office, and almost from the very moment that an election victory is secured, candidates must begin their new cycle anew, often raising money the morning after an election victory, giving rise to the coinage of the phrase "permanent campaign." 84 This de facto obligation is very much contrary to the purpose of seeking elected office in the first place: to serve the public. Candidates routinely miss important activities such as floor votes on important legislation so that they can raise more money. 85 A recent survey of

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82. It has become widely noted that trends seem to indicate a growing disillusionment on the part of the voting electorate with the political campaign process generally. Richard L. Hasen, Clipping Coupons For Democracy: An Egalitarian/Public Choice Defense of Campaign Finance Vouchers, 84 CAL. L. REV. 1, 3-4 (1996).

83. Hamilton, supra, note 70.


85. During the 2004 Presidential campaign cycle, Democratic Presidential Hopeful Dick Gephardt, for example, missed 85% of the House floor votes for the first part of 2003, and eventual nominee John Kerry missed over 50%. Juliet Eilperin, Gephardt, Kerry Miss the Most Hill Votes; Two Draw Focus of Republicans Tallying Absences of White House Hopefuls, WASH. POST, June 1, 2003, at A04. Former Congressman Lee Hamilton, as Director of the Center on Congress at Indiana University, has lamented that the "money chase distorts the
2200 federal, state, and local candidates reported that more than half of those running for statewide office and 43 percent of those running for Congress spent at least one-quarter of their time raising money, while seventeen percent spent more than half their time raising money. Failure to keep pace with an opponent in fundraising allows the opponent to use airwaves to define the campaign, monopolize public attention, and worst of all, launch attacks that go unanswered. Therein is the paradox: candidates must raise more and more money to engage in more and more campaign speech, but are finding their speech increasingly ineffective in reaching the hearts and minds of voters. Voters put off by the barrage of campaign speech have responded by not voting. It is an arms race of campaign fundraising and spending.

There are strong parallels between the overfishing problem and the campaign finance problem that illustrate the dynamics of a tragedy of the commons. Both involve a rival resource. In the case of overfishing, the resource is obviously the fish stock, while in the campaign finance problem the resource is the ability of political candidates to reach the hearts and minds of voters that face competing demands on their time and attention. Both involve the degradation of this resource. In fishing, the fish stock deteriorates, while in the campaign finance context voter interest in campaign messages is lost.

Both problems involve overexploitation of the resource. Just as fishermen take too many fish, political candidates go to the airwaves too often to try and get a message across to voters. Because more speech is always better from the viewpoint of an individual candidate, the incentive is for the candidate to speak until she has no more money left in her campaign coffers. In essence, the candidate is wasting the resource by using it too intensively and too often.

In both situations, individual interests conflict with collective interests. In both situations, the rational course of action from the individual viewpoint is to continue to exploit and ruin the resource, because if any one individual refrains, it cannot count on other political process, crowding out other activities like writing laws, thinking about public policy, or meeting with ordinary voters...." Lee Hamilton, supra, note 70.


individuals to also refrain. The result would be that while the resource is ruined, the refraining individual is the only one that does not enjoy the temporary benefit of the ruination of the resource. Campaigning politicians face this dilemma. There is no incentive to ever refrain from campaigning, or raising money to do it. While campaigning politicians spend less effectively the more they spend, abstention would still be tantamount to capitulation.

Both problems are serious problems that may have profound long-term consequences. Once a fish species is overfished, it will take years for it to recover, if it even can recover. Slow-growing sea mammals such as whales may not ever recover from Norwegian and Japanese whaling practices.\footnote{88} In political campaigns, once the electorate becomes sufficiently cynical and disillusioned by the methods of financing and prosecuting political campaigns, it may take a long time for voter interest and confidence to return.

Some observations can be made about the campaign speech effort that are similar to those made about fishing effort. Data on campaign spending and voter turnout in U.S. federal elections can be used to illustrate that campaign spending and spending effectiveness has followed a pattern similar to that of halibut fishing and fishing effort.

\textbf{B. U.S. Data}

As a proxy for campaign speech effort, I use total dollars spent in a federal campaign cycle on U.S. House of Representatives and U.S. Senate campaigns.\footnote{89} There is certainly some inexactness of this measure, as there is with using skates to measure fishing effort. Some campaigns involve close races that draw more money than would otherwise be the case. Some campaigns, such as those conducted by independently wealthy candidates such as 1996 Senate candidate Michael Huffington and Senators Jon Corzine and Herb Kohl, draw

\footnote{88. Martha Mendoza, \textit{Fans Thrill to the Denizens of the Deep}, L.A. TIMES, February 24, 2002 at B1. A moratorium on commercial whaling imposed by the International Whaling Commissions has been ignored by signatory states, including Japan and Norway, while they invoke its provisions to conduct "scientific research" on thousands of whales. Joel Richard Paul, \textit{Cultural Resistance to Global Governance}, 22 MICH. J. INTL. L. 1, 57-62 (2000). Since the imposition of the ban in 1986, Norway and Japan have killed approximately 18,000 whales.}

\footnote{89. I also analyzed data on campaign \textit{receipts}, and the empirical findings did not change.}
upon huge private reserves of money. However, money remains a better proxy than any other conceivable measure of campaigning effort. Data on person-hours spent on the campaign trail, or on fundraising efforts, even if it existed, would be unreliable.

Data on U.S. federal elections from 1976 to 2002 is used for analysis. This period is bookended by two major changes in the law on campaign finance: *Buckley v. Valeo* was decided in 1976, upholding most of the provisions of the 1974 Federal Election Campaign Act ("FECA"). Prior to 1974, no limits on direct contributions, or "hard money," were in effect, and FECA's limits on hard money were upheld in *Buckley v. Valeo*. In 2002, the Bipartisan Campaign Reform Act ("BCRA"), or popularly known as McCain-Feingold (after the Senate sponsors), or Shays-Meehan (after the House sponsors) was passed and took effect on November 6, 2002, the day after Election Day. The BCRA was upheld in large part by the U.S. Supreme Court in *McConnell v. FEC*. The BCRA has many effects, but for our purposes the most important were to raise the direct contribution limit from $1,000 to $2,000, and to limit the use of soft money as a source of funding in campaigns. It would be inappropriate to compare expenditure data before and after BCRA, as direct contributions between $1,000 and $2,000 could skew the fundraising data, as could differences in PAC contributions. While the Federal Election Commission continued to make significant rulings during this period from 1978 to 2002, I assume that there were no changes to the legal environment with respect to campaign fundraising and spending that would bias results.

Presidential election years are different from midterm federal election years in both spending and voter turnout. Spending is clearly greater in Presidential years, but voter turnout is much greater in Presidential years. The result is that campaign spending efficiency – measured in terms of votes per dollar spent – is invariably greater in Presidential years. For illustrative purposes, I thus divide the data into two sets, shown in Tables 5 and 6.

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94. BCRA § 307, 2 U.S.C. § 441a(a)(1)(A) (2002), limiting the amount of money that can be contributed by "multicandidate political committees."
Table 5 – Campaign Expenditures in U.S. House and Senate Campaigns, Presidential Election Years

<table>
<thead>
<tr>
<th>Year</th>
<th>Total dollars spent (2002 dollars)</th>
<th>Voter turnout (adjusted for 2002 voter registration)</th>
<th>Votes per dollar spent</th>
</tr>
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<tr>
<td>1976</td>
<td>$309,375,000</td>
<td>106,919,135</td>
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</tr>
<tr>
<td>1980</td>
<td>$417,706,446</td>
<td>105,496,502</td>
<td>0.253</td>
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<td>1984</td>
<td>$553,907,457</td>
<td>102,279,658</td>
<td>0.185</td>
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<tr>
<td>1988</td>
<td>$618,600,300</td>
<td>98,956,292</td>
<td>0.160</td>
</tr>
<tr>
<td>1992</td>
<td>$637,897,436</td>
<td>105,649,989</td>
<td>0.166</td>
</tr>
<tr>
<td>1996</td>
<td>$715,896,552</td>
<td>96,857,224</td>
<td>0.135</td>
</tr>
<tr>
<td>2000</td>
<td>$886,197,917</td>
<td>104,300,496</td>
<td>0.118</td>
</tr>
</tbody>
</table>


Table 6 – Campaign Expenditures in U.S. House and Senate Campaigns, Midterm Election Years

<table>
<thead>
<tr>
<th>Year</th>
<th>Total dollars spent (2002 dollars)</th>
<th>Voter turnout (adjusted for 2002 voter registration)</th>
<th>Votes per dollar spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>$426,388,889</td>
<td>79,533,230</td>
<td>0.187</td>
</tr>
<tr>
<td>1982</td>
<td>$533,507,393</td>
<td>81,684,886</td>
<td>0.153</td>
</tr>
<tr>
<td>1986</td>
<td>$655,829,152</td>
<td>74,486,037</td>
<td>0.114</td>
</tr>
<tr>
<td>1990</td>
<td>$533,780,822</td>
<td>76,766,507</td>
<td>0.144</td>
</tr>
<tr>
<td>1994</td>
<td>$714,536,585</td>
<td>80,935,063</td>
<td>0.113</td>
</tr>
<tr>
<td>1998</td>
<td>$674,076,923</td>
<td>75,510,851</td>
<td>0.112</td>
</tr>
<tr>
<td>2002</td>
<td>$770,180,000</td>
<td>78,390,424</td>
<td>0.102</td>
</tr>
</tbody>
</table>


Two adjustments are made to the data: the Consumer Price Index[^95] is used to adjust dollar figures for inflation,[^96] and Census Bureau data is

[^95]: Available at [http://www.bls.gov/cpi/](http://www.bls.gov/cpi/)
[^96]: Since the direct contribution limit under FECA remained at $1,000 for the entire period, and argument could be made that no adjustment for inflation should be made at all. Not adjusting for inflation would render the argument in this article stronger.
used to adjust voter turnout data for growth in the voting-age population. 97

To be sure, the nature of campaign spending changed dramatically during this period. To reach voters, politicians have used buttons, signposts, bumper stickers, radio and TV advertising, telephone solicitations, and internet advertising. This is no different from fishing, however; different fishing technologies have made fishing more efficient and more destructive over time. Similarly, TV and internet access have clearly been great technological advances, but overuse of these technologies for campaign advertising has similarly reduced their usefulness.

There are clearly similarities between this data and that shown in Table 6 for halibut fishing. When an adjustment is made to account for growth in the voting-age population, it is not clear that there is a downward trend in voter turnout over time, as there is in halibut landed. But there is in both data sets an observable upward trend in expenditures, and an observable downward trend in efficiency, as measured by catch per skate and by votes per dollar. The data from Tables 5 and 6 are set out in Figure 7, along with the data from Table 4, containing data from halibut fishing discussed above, set out in Figure 8.

97. Estimates on the number of voting age Americans and data on voter registration data are from the Census Bureau. http://www.census.gov/population/socdemo/voting/tabA-1.xls
Figure 7
Votes Per Dollar Spent

Figure 8
Pacific Halibut Catch Per Skate
(lbs/skate)
Although the similar downward trends in campaign spending efficiency and fishing efficiency are obvious, there are a number of possible explanations for the downward trend in campaign expenditure efficiency other than the existence of an inexorable tragedy of the commons. Given the small number of observations, it is impossible to conclusively test hypotheses on the causes of decreasing campaign spending effectiveness. However, the data from Presidential-year and Midterm-year elections can be pooled using a dummy variable to capture the differential effects, and the resulting fourteen observations will permit us to at least entertain some suggestions.

One alternative explanation is that increasing income has led to more disposable income that can be used to fund campaigns, leading to more money being pumped into the political campaign effort. If this were true, then there is no market failure because increased campaign spending is simply a reflection of this particular effect of greater disposable income.

Another alternative explanation is that increased campaign spending is simply due to increased advertising expenditures. It could be that political candidates are simply spending more money because it takes more to compete with potato chip commercials or automobile commercials. This does not, however, necessarily preclude a tragedy of the commons explanation; it may simply reflect the possibility that campaign speech and advertising are all caught up in a tragedy of the commons.

Another possible alternative is that increased competitiveness of certain races has accentuated the important of these races, and led to an infusion of money into these races. However, the available evidence suggests that federal campaigns have become less competitive, not more. Incumbency re-election rates have been increasing for decades.98

Another possible alternative explanation is that voters have been turned off by a number of factors other than campaign spending. One might argue, for example, that political partisanship has turned off...

voters, and caused them to turn out in lower numbers. This also runs counter to the evidence available, as political party identity seems to be on the decline.99 If one takes party loyalty as a measure of partisanship, then, one can say that partisanship has been decreasing, not increasing, over time.

Professor John Lott has empirically tested the hypothesis that the growth in the size of government has accounted for the growth in the amount of campaign spending.100 This hypothesis is not inconsistent with the hypothesis advanced in this Article. To the extent that Lott is claiming that there are increasing favors to be gotten from helping to fund elections, and that this has led to increasing attempts to curry favor with aspiring politicians, it is only natural that voters would be disillusioned with the degree of campaign spending, recognizing it for what it is: a symptom of the growing influence of money over political institutions. Lott's prescription, to shrink the size of government, is not necessarily inconsistent with prescriptions for solving the tragedy of campaign spending commons, though Lott is clear in his conviction that any other prescription would merely be addressing symptoms and not root causes.101 The suggestive findings in this Article are not inconsistent with Lott's.

A test for the effect of a tragedy of the commons can be accomplished by regressing the reciprocal of campaign spending efficiency – dollar spent per vote for U.S. House and Senate campaigns – against a simple time trend variable, the election year. The general form of the model estimated is

\[
\frac{\text{Campaign Expenditures/Votes}_i}{= \beta_0 + \beta_1 \text{PresDummy} + \beta_2 \text{Year}_i + \\
\beta_2 \ln \text{GDP}_i + \\
\beta_3 \ln \text{Ad Expenditures}_i + \varepsilon_i}
\]

The dependent variable is thus the reciprocal of the campaign spending efficiency. \text{PresDummy} is a dummy variable indicating an election taking place in a presidential election year. \text{GDP} is per capita

101. Lott, supra, note 100, at 360. Lott warns that attempting to restrict contributions would simply force would-be contributors to substitute in-kind contributions for monetary donations. Id, at 362.
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income, in 2000 dollars,\textsuperscript{102} and \textit{Ad Expenditures} is the total amount of money spent nationally on advertising, also adjusted for inflation.\textsuperscript{103} I use the natural logarithm for these two variables.\textsuperscript{104} A positive coefficient on the year variable thus represents the decreasing effectiveness, over time, of campaign spending. Results are shown in Table 7 below.

### Table 7
(n=14; t-statistics in parentheses)

<table>
<thead>
<tr>
<th></th>
<th>Model 1 Year only</th>
<th>Model 2 Advertising only</th>
<th>Model 3 GDP only</th>
<th>Model 4 All</th>
</tr>
</thead>
<tbody>
<tr>
<td>( R^2 )</td>
<td>0.90</td>
<td>0.93</td>
<td>0.89</td>
<td>0.96</td>
</tr>
<tr>
<td>Adjusted ( R^2 )</td>
<td>0.88</td>
<td>0.92</td>
<td>0.87</td>
<td>0.94</td>
</tr>
<tr>
<td>Intercept</td>
<td>-369.6 (-7.90)</td>
<td>-61.8 (-8.92)</td>
<td>-86.9 (-7.20)</td>
<td>-422.4 (-2.26)</td>
</tr>
<tr>
<td>Presidential Election Dummy</td>
<td>-1.73 (-4.57)</td>
<td>-1.78 (-5.73)</td>
<td>-1.77 (-4.56)</td>
<td>-1.76 (-6.42)</td>
</tr>
<tr>
<td>Year</td>
<td>0.190 (8.07)</td>
<td></td>
<td></td>
<td>0.250 (2.04)</td>
</tr>
<tr>
<td>In Ad Expend</td>
<td></td>
<td>5.77 (10.06)</td>
<td></td>
<td>10.84 (3.45)</td>
</tr>
<tr>
<td>In GDP</td>
<td></td>
<td></td>
<td>9.27 (7.85)</td>
<td>-20.96 (-2.30)</td>
</tr>
</tbody>
</table>

\textsuperscript{102} GDP data is obtained from a website provided by Economic History Services: \url{http://www.eh.net/hmit/gdp/} (last visited January 30, 2005).

\textsuperscript{103} National advertising data is obtained from Bob Coen's Insider Report, archived at \url{http://www.universalmccann.com/ourview.html} (last visited January 12, 2005).

\textsuperscript{104} A Box-Cox test indicated that a linear model might also provide a fit, but empirically, the log-linear models provided slightly more predictive models.
With just 14 observations, these results can only be considered suggestive. But the signs of coefficients rarely switch, and the coefficient for the dummy for Presidential Election Years is very consistent. These results point us towards some interesting inferences. First, the time trend variable is positive and significant, and the coefficients of similar magnitude in both models 1 and 4, indicating that we may at least entertain the suggestion that declining efficiency over time is indicative of a tragedy of the commons pattern of campaign fundraising and spending. Second, the best explanatory variable is \( \ln \text{Ad Expenditures} \). Does this suggest that campaign spending has been increasing only because general advertising expenditures are increasing? This is possible, but if true, this would not render less plausible the hypothesis that campaign spending efficiency is a tragedy of the commons. It would entirely consistent to offer a complementary hypothesis: that advertising spending in general follows a tragedy of the commons pattern. However, because private rents from advertising are so high, this is likely to be tolerated for a longer time by private advertising spenders.

It is interesting to compare these results with those obtained by Lott. Using a slightly different specification, Lott found a highly significant relationship between campaign spending and government size, but Lott’s regressions also found a significant time trend relationship.\(^{105}\) Since Lott’s was simply trying to control for time-sensitive effects, he did not comment on the significance of his time trend variable.

I am not prepared to make the strong claim that I have proven that the tragedy of the commons fully explains spiraling campaign spending. Strictly speaking, this latter proposition would be difficult to conclusively prove, requiring the rejection of all other possible and incompatible explanations. However, the combination of anecdotal evidence and the statistical inferences in this case should give us reason to consider the possibility carefully. Does a tragedy of the commons explanation seem more or less likely than the alternative explanations? Does it ring true that we are pouring money into campaigns, and candidates are pouring effort into fundraising and spending, because we are simply wealthier, and can afford it? Perhaps spiraling advertising costs are to blame, possibly its own tragedy of the commons that has spilled over into the political arena. But in all of the

\(^{105}\) Lott, supra, note 100, at 383.
hand-wringing by politicians and by pundits and concerned citizen
groups over campaign spending, not one, to my knowledge, invokes
increased advertising expenses as the root cause of spiraling campaign
spending.

Future research may involve data in which the time trends in
GDP data or advertising data can be separated out. In the meantime,
we should be willing to acknowledge that perhaps, we are facing too
much campaign speech and too much campaign spending, and that it
does our political candidates no good to give them unfettered rights to
raise money and spend it.

C. Is U.S. Campaign Spending "Excessive"?

I do not make the claim that campaign spending is inefficiently
high due to a tragedy of the commons dynamic, such that we have
reached the equivalent of rent dissipation. More evidence is needed
before this strong claim is made. Indeed, most scholars in the field of
campaign finance balk at the suggestion that campaign spending and
concomitant campaign advertising is in any sense of the word
"excessive." The problem with campaign spending, as Professors
Bruce Ackerman and Ian Ayres have argued, is that most campaigns
are underfinanced, and not overfinanced.106 As Ackerman and Ayres
note, campaign expenditures for the 2000 election cycle totaled $3
billion, while automobile advertisement expenditures totaled $13
billion, and total TV advertising expenditures totaled $66 billion.107
Critics of campaign finance reform, of course, chime in with more
examples of expenditures on trivial goods and how they dwarf
political campaign expenditures.108

In terms of raw spending amounts, perhaps $3 billion is too
small a sum to be spending on a matter far more important than the
type of automobiles we buy, or the sum total of all the other fairly

106. BRUCE ACKERMAN AND IAN AYRES, VOTING WITH DOLLARS: A NEW
CAMPAIGN FINANCE PARADIGM 85 (2002) (citing a study by fourteen campaign
finance experts that the problem is "not too much spending, but too little..." See
also, CAMPAIGN REFORM: INSIGHTS AND EVIDENCE, REPORT ON THE TASK FORCE ON
CAMPAIGN REFORM, PEW CHARITABLE TRUSTS (2002), available online at
http://www.wws.princeton.edu/~lbartels/campaignreform/; Richard Briffault,
Reforming Campaign Finance Reform: A Review of Voting With Dollars, 91 Cal. L.
107. Id.
108. Bradley Smith notes that Americans spend two to three times more on
potato chips than on political campaigns. Smith, supra, note 73, at 35.
trivial consumer expenditure decisions we make that bring on the spending of $66 billion advertising per year. However, the conclusion must be more nuanced than that. Ackerman and Ayres fully recognize that the problem is the taint of the money that is used to fund these campaign expenditures – hence their ingenious proposal to establish a secret donation booth for campaign donations.\textsuperscript{109} Thus, in the overall sense, campaign spending is too small a part of our budget. This is why Ackerman and Ayres's proposal to subsidize campaign spending makes sense. More spending on campaign speech is not necessarily a bad, \textit{provided that it is funded by the right type of sources}. However, the amount of campaign speech and spending of the nature currently predominant is \textit{not} a good or effective thing, precisely for the reasons that Ackerman and Ayres and others have recognized: the lack of credibility associated with campaign speech that seems too closely tied to unseemly regulated interests. A reform critic, FEC Chairman Bradley Smith, has allied himself with the John Lott argument: that campaign expenditures are rising because of the growth of government, federal and state.\textsuperscript{110} But this seems to concede that voters view money as a corrupting influence, since this causal relationship implies a quid pro quo in large campaign contributions by large donors.

An economic analysis illustrates this point. Ackerman and Ayres lament that campaign spending is less than one-fourth of spending on automobile advertisements. This is exactly what we would expect, however. Automobile advertising is a private good, as opposed to the public good of campaign speech; at least that's what the pretense is. Assuming that auto advertising and the campaign advertising expenditures can be modeled as declining-marginal benefit enterprises with constant marginal costs (as Gordon modeled overfishing\textsuperscript{111}) a comparison of the two markets reveals that the higher marginal and average products of auto advertising, owing to the private nature of its rents, is higher than that of campaign advertising. This is show in Figure 9.

\textsuperscript{109} Supra, note 106, at 25-44, 93-110.
\textsuperscript{110} Smith, supra, note 73, at 35.
\textsuperscript{111} See text accompanying figure 5, infra.
We expect auto advertisements to be more frequent, because we expect auto manufacturers to appropriate the rents from auto advertising. However, an idealistic voter does not expect campaign advertising to be very high, because she does not expect that campaign advertising yields a result that inures to the private benefit of the campaigning politician – unless, of course, there are quid pro quos involved with the campaign donations,\(^{112}\) in which case we expect the level of campaign spending to rise, concomitant with the higher average and marginal product of campaign advertising. Marginal and average products of advertising are no longer low, because there is a generous private benefit that inures to the campaigning politician – a

---

secure job of relative wealth and power in the United States Congress. The higher level of campaign advertising is thus a signal to the voter that average productivity of campaign dollars has increased, and that unsavory, if perfectly legal, funding sources are involved.

The Ackerman and Ayres proposal to attempt to infuse campaign speech with more frequent speech, more meaningful speech, and less cynical perceptions on the part of voters is an ingenious one. Like most public funding proposals, they attempt to infuse campaign dollars into those campaigns that need and deserve it the most – those meritorious yet underfunded candidates that face a political machine with generous private funding sources that benefit from the incumbent's power. But by providing some free "Patriot" dollars to such candidates, the Ackerman/Ayres proposal not only funnels some money to the underdog, but also confers upon voters some expressive power by virtue of their being able to designate recipients for their Patriot dollars. At the same time, it raises the bar for private giving to incumbents with less-than-noble motivations for seeking and maintaining public office. The dual effects of this proposal are to subsidize those for whom campaign spending tends to be too low, and discourage giving to those for whom campaign spending tends to be too lavish, flattening differences in spending between well-endowed and poorly-endowed candidates. A graphical illustration is provided in Figure 10. The higher average product (AP) for the favorite reflects the greater private returns from campaign spending, in the form of job security in politics, and also perhaps a payback position upon retirement. The higher MC for money raised privately beyond the Patriot dollars (for which the MC is zero) represents the greater difficulty of raising this money, since donors will be more reluctant to contribute when it comes on top of the large base of Patriot dollars. Note the gap in campaign spending, between q_{under} and q_{fav}, is

113. Incumbency rates have been increasing for decades. Various explanations are offered for various periods. Bradley Smith argues that campaign finance limitations have disadvantaged challengers. See, e.g., Smith, supra, note 73, at 34-36. Numerous theories pertaining to redistricting activities have been put forth. See, e.g., Andrew Gelman and Gary King, Enhancing Democracy Through Legislative Redistricting, 88 AM. POL. SCI. REV. 541 (1994); Abramowitz, et al., supra, note 98. Also see other citations at note 98, supra.

114. Billy Tauzin retired in 2004 after twelve terms as a Congressman to head up the Pharmaceutical Research and Manufacturers of America, a drug industry trade group, a position for which he will receive a $2 million salary. Sheryl Gay Stolberg, Washington Talk; Lawmaker's Plans to Lobby Raises Issue of Crossing Line, N.Y. TIMES, February 7, 2004, at A12.
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relatively small, indicating the greater parity of spending power among competitors in this scheme. In the meantime, the speech becomes more credible, being provided in large part by Patriot dollars instead of private donations for which some political favor is expected.

Figure 10

However, all this is not to say that campaign spending is too low and thus not tragedy of the commons. Rather, it is an acknowledgement that some form of public funding of political campaigns would serve to improve the efficiency of campaign dollars spent. That is, it could be that campaign speech is only excessive because it is perceived by the voter to be tainted. The presence of the taint is what renders current levels of campaign speech excessive. Indeed, it is possible (though admittedly unlikely) that we would find, contrary to Ackerman and Ayres's suspicions, that less money is required to launch an effective campaign once the taint of money is removed. Ackerman and Ayres's proposal, to remove the taint by way of a form of public financing – a form that engages the public by involving it with distributional decisions – is thus aimed at flipping the campaign speech world from the incredible to the credible, but it does not necessarily relieve the candidates and the public from the inexorable push to engage in a fundraising and spending derby.
V. Why Don't Resource Users Want to Be Saved From Themselves?

The most interesting question raised by true tragedies of the commons is why it has proven so difficult to save resource users from their own self-destructive behavior. If resource users benefit from limits on their own behavior, why don't resource users demand regulation? In some instances, they do. In *The Theory of Economic Regulation*, Stigler illustrated how some regulated industries came about by the co-option of government by industries seeking protection from new entry and competition. A less cynical view of Stigler's theory might be that resource users sought the government's "coercive" powers to arrest wasteful over-exploitation. In other instances, even in the absence of governmental regulation, resource users coordinate behavior to avoid wasteful over-exploitation, as studied by Elinor Ostrom's and others. But the reality of tragedies of the commons is such that most often, tragedies of the commons are not solved, despite the obvious and sometimes huge gains to be had.

Economists have some difficulty explaining the persistence of tragedies of the commons that remain unsolved by coordination or regulation. Explaining this persistence seems to require some relaxation of assumptions of rationality, and some concessions to behavioral economists. Professor Barton Thompson has applied some of the behavioral economics literature to environmental tragedies of the commons, most notably overfishing and groundwater overdrafting. Thompson has attempted to explain why so many environmental tragedies of the commons have remained unresolved, and why, given the tremendous potential gains, we do not see more cooperation or regulation. Much of the answer, Thompson finds, is that resource users harbor a variety of what can best be described as pathologies that cause them to oppose any sort of co-operative or regulatory arrangement that would extricate them from their particular tragedy. Roughly, the pathologies fall into three categories: the

116. Stigler's view of government and rent-seeking by regulated industries was based upon the one thing government can offer industries: its "power to coerce." Id. at 4.
117. Supra, note 2.
118. Supra, note 27.
119. Supra, note 27.
difficulty of giving up perceived rights, self-serving notions of fairness, and undue optimism.

In the case of fisheries, fishermen, like most other people, are inherently skeptical when asked to surrender a current right in exchange for a future benefit, even if the potential upside is very great. \textsuperscript{120} Thus, curtailing fishing effort, even if the benefit is a healthier stock to fish in the future, is viewed as a sacrifice even if the net result is a gain. It could be, as Thompson argues, that people simply frame gains and losses differently, discounting future gains relative to current losses. \textsuperscript{121} Or it could be that an "endowment effect" \textsuperscript{122} causes people hold onto their perceived entitlements with irrational stubbornness. Transportation planners would sympathize. In solving traffic problems they must deal with drivers who want traffic problems solved without their giving up their right to drive. There is a reason that the most popular solutions involve more government provisions, such as more roads or more subsidization of transit services, and rarely impose any costs upon drivers. \textsuperscript{123} One study found that some drivers even resent high-occupancy vehicle lanes as "special treatment" for other drivers, failing to recognize that they could pick up a passenger and become eligible themselves. \textsuperscript{124}

Second, fixing resource and environmental problems often requires an allocation of burdens, a task that engenders self-serving "egocentric interpretations of fairness," that inhibit agreements that must be made before getting to the solutions. \textsuperscript{125} Cooperation to solve even the most pressing problems is elusive. Canada's Pacific halibut fishery provides a case in point. The fishery had become overfished as early as 1980, giving rise to economist Peter Pearse's prescription of adopting an individual transferable quota program to curb overfishing. \textsuperscript{126} The fishermen themselves recognized the need to adopt

\begin{footnotesize}
\begin{itemize}
    \item \textsuperscript{120} Supra, note 27, at 252-65.
    \item \textsuperscript{121} Supra, note 27, at 262-65.
    \item \textsuperscript{122} The "endowment effect" is the propensity for people to hold onto that which they already have, and to value it more than if they had to engage in a transaction to acquire it. Richard H. Thaler, *Toward a Positive Theory of Consumer Choice*, 1 J. Econ. Behav. & Org. 39, 44 (1980).
    \item \textsuperscript{123} Legislatures have typically indulged constituents by offering tax incentives rather than taxes to curb externality-imposing activities like driving. Maureen B. Cavanaugh, *On the Road to Incoherence*, 49 U.C.L.A. L. Rev. 685, 687-690 (2002).
    \item \textsuperscript{124} Strahilevitz, supra, note 43, at 1239.
    \item \textsuperscript{125} Supra, note 27, at 260-62.
    \item \textsuperscript{126} Peter H. Pearse, *Turning the Tide, a New Policy for Canada's Pacific Fisheries*, B.C. Department of Fisheries and Oceans, 1982. Individual
\end{itemize}
\end{footnotesize}
an individual transferable quota program, but could not agree on an initial allocation of the quota. Only a sharply-worded ultimatum by the Minister of Fisheries and Oceans (who would have jurisdiction over the program) brought the fishermen back to the bargaining table, from which they eventually emerged with an agreement on how to allocate the quota.

The human propensity to blame also plays into this pathology and plays a role in preventing cooperation from taking place. Fishing industries and fishing communities have trouble refraining from overfishing and have trouble agreeing to a cooperative solution because they remain fixated on the role that others have had in contributing the problem. Even if cooperation and sacrifice are in the best interests of the resource users, it has often proven to be too galling to undertake if they harbor a perception, right or not, that someone else's behavior was to blame for the problem in the first place.

Finally, resource users deal with scientific uncertainty in ways that are not conducive to conservation or co-operation. People tend to adopt the most optimistic projections of resource stocks. People assume that they will find a way to make things work out, or that there will ultimately be some sort of government bailout. In the case of fishermen, regulation is often resisted because they cherish the opportunity to compete against each other, many of them because they harbor an elevated perception of the fishing skills vis-à-vis other fishermen. In short, uncertainty is almost never resolved in such a way that invites co-operation or regulation.

quota programs regulate fishing by licensing fishing to a specified quantity per quota. The quantity-based license cures the incentive to overfish in order to maximize profits, and the transferability provides an incentive for less efficient fishermen to exit the fishery, alleviating the overcapitalization problem. See, e.g., Shi-Ling Hsu & James Wilen, Ecosystem Management and the 1996 Sustainable Fisheries Act, 24 Ecology L.Q. 799, 801-03 (1997).

128. Id.
129. Supra, note 27, at 261.
130. Supra, note 27, at 261-62.
132. Id.
133. Supra, note 27, at 244-45.
134. Supra, note 27, at 244.
All of these propensities are, in some sense, pathological. But for even the casual observer of human nature, these explanations of why people ignore their own long-term interests ring remarkably true. People very often very strongly prefer the broken system they know to the quite possibly superior system they do not know, even if they recognize that they are trapped in a tragic spiral.

Campaign finance and spending reform have been hostage to the same fears of the unknown. Opposition to the BCRA came from the AFL-CIO, the American Civil Liberties Union, the National Right to Life Committee, the Christian Coalition, the American Heart Association, and various chambers of commerce, to name just a few of the strange bedfellows. Congressional campaigners, presumably the beneficiaries of regulation that would limit the amount of fundraising they would have to do, have themselves been extremely critical of election financing. Rep. Albert R. Wynn (D-MD), an African-American, opposed the BCRA because he believed that the soft money ban would impair the ability of black candidates and elected black representatives to fund get-out-the-vote drives and voter registration activities; this, despite the obvious reality that the overwhelming majority of soft money is contributed by regulated industries to further their economic interests, and confer substantially more advantages to white candidates than black. On the other side of the aisle, Republicans opposed the bill because of its lack of prohibitions on labor union activity in soliciting soft money for party activities; this despite the widely-held belief that a ban on soft money would amplify their advantage in hard money donations over the Democrats. At every turn, opposition to the BCRA has come from those with worst-case suspicions of how the legislation would work to their detriment.

139. Herrnson, supra, note 137, at __.
And yet, some have recognized the need for mutual coercion. Former Senator Zell Miller wrote in an op-ed about his support for the BCRA:

Make no mistake about it: When it comes to winning political races by raising millions of dollars and buying lots of TV time, I'm as competitive as they come. I've done it three times in a row now – once for the Senate and twice for governor – and it's the formula for success in politics today. But frankly, it's a rotten formula, and the rules of this game need to change…. Yes, I know how to play that fundraising game with the best of them. Only today, I don't sleep nearly as well as I did years ago in those cheap motel rooms or on supporters' sofas.142

Implicit in Miller's op-ed is the recognition that, on some level, he enjoys the competitive aspect of raising and spending money. Like fishermen, politicians do not like to admit, publicly or to themselves, that they would like to be restrained from competing against each other in a game of skill, energy, and aggression, even if it detracts from the more important business of legislating and governing. Politicians labor under the same self-serving and self-congratulatory myths that fishermen do. And yet, at the end of the day, both politicians and fishermen understand on some level that the rat race just gets worse and worse.

In the end, of course, the BCRA passed both the House and Senate and the President signed it into law on March 27, 2002. In some ways, it was surprising that it took as much effort to pass it as it did – clearly the public perceived that campaign spending, especially that procured from soft money – was a corrupting influence.143 Campaign finance reform generally receives strong public support,144 and the BCRA, as a flashpoint for the issue, enjoyed particularly

144. Id., at 13.
strong support. 145 Even if Congressional opponents of BCRA really believed that this would not ultimately solve the problem of tainted soft money, why would they be so reluctant to adopt something their constituents so strongly favor?

VI. Solving Tragedies of the Commons Problems

What, then, is to be done about these true tragedies of the commons that are at the heart of Hardin's contribution? What we have learned from the fishing problem is that it is very difficult to control the overexploitive behavior without addressing the incentives to race. Fishing regulations governing the use of destructive fishing technologies have been fraught with enforcement problems or been met with technological substitutions that have foiled the conservation purposes behind the regulations. For example, restrictions on boat lengths were met with the entry of rounder and more powerful boats, 146 while regulations on line lengths were met with lines with more hooks. 147 Regulations requiring fishing nets to be of a minimum mesh size (to allow small fish to escape) were met with the practice of intertwining nets to reduce the mesh size. 148 Seasonal restrictions have only increased the pressure to engage in a short but increasingly intense fishing season. The Alaskan halibut fishery was reduced to a two-day season composed of two 24-hour fishing seasons, and the Canadian Pacific halibut fishery was reduced to a six-day season. These absurdly short seasons were simply derbies in which fishermen caught as much halibut as possible, paying no regard to ecological waste or human safety. 149 The problem is that none of these solutions

145. Public opinion polls vary in quality and results, but almost all every stage showed support for the McCain-Feingold legislation. The advocacy group Public Campaign commissioned a reputable polling group, the Mellman Group, to conduct eight statewide polls on support for the bill, and found support ranging from 58 to 75 percent in favor. http://www.commondreams.org/pressreleases/jan99/011999e.htm (last visited January 31, 2005).
146. NATIONAL RESEARCH COUNCIL, SHARING THE FISH: TOWARD A NATIONAL POLICY ON INDIVIDUAL FISHING QUOTAS 175-76 (1999).
147. IUDICELLO, supra, note 127, at 81.
148. IUDICELLO, supra, note 127, at 81.
149. In derby fisheries such as the Canadian Pacific halibut fishery and the Alaskan halibut fishery before the advent of quotas systems, fishermen routinely worked around the clock, elevating risk of injury, while hauling in massive quantities of bycatch – fish species other than halibut incidentally caught – and wastefully discarding them. Derby fishing also leaves behind a trail of discarded
change the incentive to cheat. Making it more difficult to fish does not change the fundamental tragedy of the commons dynamics – the race to overexploit a rivalrous resource, and grab as much as possible while the resource still exists. Indeed, many of these regulatory courses exacerbate the incentives to cheat, overfish, and engage in a race to do so. Of course, sometimes a property rights-based solution is also unworkable – enforcement and monitoring problems must be solved no matter what the regulatory regime. But the essential failure of regulators in addressing tragedies of the commons is the failure to recognize and address the incentives to race to exploit a finite resource that is rivalrous in consumption.

Like Ackerman and Ayres, I applaud the BCRA because it attempts the difficult task of trying to control excessive campaign behavior rather than throwing up one's hands and declaring defeat. And the Ackerman and Ayres proposal, a public financing proposal that confers, rather than detracts from fundamental liberties is a salve that could buy some valuable time in terms of removing the taint of campaign money, making political speech more temporarily more credible. But in the end, neither of these schemes addresses the incentives of politicians to race to raise money, to try and best one another even in a game that is "disgusting, degrading, and demeaning." In the end, neither would save the voting public from a world congested with campaign speech. Even "clean" money, if it buys too much speech, will dull the voters' overloaded senses. If in fact, we are witnessing a tragedy of the commons in campaign spending, then arresting it will require more than the BCRA and more than what Ackerman and Ayres propose. It will require limitations on the quantity of campaign spending.

The argument that we might regulate campaign speech is not a radical or new one. Cass Sunstein argued in *Democracy and the Problem of Free Speech* that the distinction between campaign contributions and campaign expenditures has turned out to be somewhat illusory. Moreover, because of the rise of political action committees, the limit on contributions has actually exacerbated some of the problems of corruption and taint that the limit was meant to

hooks, lines and nets that continue to "ghost fish" by snaring fish outside of any fishing effort at all. IUDICELLO, supra, note 127, at 136-37; Charles Birkeland, *Ratcheting Down the Coral Reefs*, 54 BIOSCIENCE 1021, 1021 (2004).

150. Ackerman and Ayres, supra, note 106, at 177-78.

solve. Indeed, Sunstein argues that these scheme of half-hearted regulation is no less a regulatory system than one that might involve considerably more government involvement, and that replacing it is not necessarily unconstitutional. More generally, there are those that are concerned with economic power being perpetuated or even amplified by means of protecting free speech rights that, as a practical matter, can only be purchased through large sums of money. But while these measures have heretofore been justified on the grounds that a new balance must be struck, my argument is different. My argument is that no balancing is necessary, as intervention could be beneficial to those that would be regulated.

Exactly what form of campaign expenditure limits might be needed to truly solve the tragedy of the commons in campaign finance and spending problem is beyond the scope of this Article. Suffice it say, however, curtailing the incentives to race and overadvertise would almost certainly involve curtailing the *quantity* of direct appeals from political candidates through controlling their spending. The overabundance of campaign speech, after all, is what causes us voters to tune out. Perhaps this must be coupled with some form of public financing, as many have suggested, to ensure that we are still attempting to enhance speech and not merely quash it. But limiting candidate access to the public merits a serious discussion when we already tolerate a number of abridgements, including those set out in the BCRA.

Several U.S. states have enacted various forms of spending and contribution limits. Canada has had federal campaign spending limitations in effect since 1974. The Election Expenses Act imposed spending limits on parties and individual candidates, provided

152. Id.
153. Id.
155. See, e.g., supra, note 79.
158. Parties may only spend $0.70 for every eligible voter in the district. Canada Elections Act, c. 9, § 422(1) (S.C. 2000).
159. Candidates may only spend some calculated amount based upon the number of eligible voters in the district. Canada Elections Act, c. 9, §§ 440, 441(1) (S.C. 2000).
fairly generous federal subsidies for election expenses,\textsuperscript{160} and required broadcasters to make prime time air time available for registered political parties.\textsuperscript{161} Interestingly enough, at least one commentator has attributed the spending limits and electoral reforms to "an agreement to put an end to the upward spiral of election spending."\textsuperscript{162} The same commentator also noted that

when combined with a reasonable level of public funding, spending limits reduce the pressure for parties and candidates to raise funds. This should not be interpreted to mean that parties face no such pressures. Rather, the pressure to raise money is reduced so that candidates do not find themselves devoting as significant a portion of their time to fundraising as do their American counterparts. By lessening the pressure to raise funds, spending limits are believed to reduce the temptation for parties and candidates to offer a quid-pro-quo for large contributions. Of course, such unsavory practices do occur from time to time, but the combination of spending limits and public funding in all probability reduces the frequency of such incidents.\textsuperscript{163}

Is Canada such an awful example of electoral politics? The parliamentary system of government poses different challenges than does the American system, but surely this experience with spending limits is not such a failure that it is worth dismissing out of hand.

\textsuperscript{160} Parties may receive federal reimbursement for up to 50 percent of their election expenses provided they garner at least two percent of the valid votes case nationally, or a total of five percent of the valid votes in districts in which they ran candidates. Canada Elections Act, c. 9, § 435(1) (S.C. 2000). Candidates may receive up to 50 percent of their election expenses reimbursed provided they receive a minimum of some calculated percentage of votes. Canada Elections Act, c. 9, §§ 464, 465 (S.C. 2000). Finally, political contributions are eligible for a tax credit worth up to a total credit of $500. Income Tax Act, c. 1, § 248 (R.S.C. 1985).

\textsuperscript{161} The Canada Elections Act requires radio and TV stations to provide free prime time air time advertising for registered parties. Canada Elections Act, c. 9, § 345 (S.C. 2000).


\textsuperscript{163} Young, supra, note 162, at 450.
Clearly, problems would remain were spending limitations to be adopted. The strongest criticism of campaign spending limits seems to be that any financial prohibitions will only result in like-kind behavior. Lott has argued that limits on contributions will give rise to like-kind donations. But is this always such a bad thing? Would it be such a disaster for democracy to have people donating, for example, their time rather than their money to a political campaign? One wonders if the distortions caused by attempts to regulate campaign speech would really be worse than the existing distortions.

VI. Conclusion

This Article does not set forth a Constitutional justification for campaign fundraising limits or spending limits. But in the end, if the Constitutional value that we are protecting when we strike down these limits is that of freedom of speech, then we must confront threats to that freedom. This Article is meant to demonstrate that one threat to that freedom is the excessive exercise of that freedom itself. Well-recognized intrusions upon the right to speak are based upon a recognition of competing interests. My proposed curtailment of speech is motivated by protection of the right to speak itself. While great care must be taken to design a regulatory scheme and implement rules that minimize perverse incentives, no balancing of interests is necessary.

It is curious, this dichotomy we draw between speech and property. Why does the Constitution treat property regulation and speech regulation differently? Is it because we believe property is scarce and speech is "free"? This is clearly not true in an information-overloaded modern society. I certainly do not advocate jurisprudentially collapsing speech and property, but it is worth bearing in mind property lessons as we think about campaign speech and speech generally. Just as the tragedy of the commons has taught us that in a property context we sometimes cannot trust people alone to order their affairs in a sensible way, we should now realize that some paternalism in the speech context may be necessary as well. Because political campaign speech is so important to a well-functioning democracy, it is all the more important that we consider bringing it

164. Supra, note 100, at 362.
165. Overton, supra, note 81, at 1249-58.
166. Overton, supra, note 81, at 1249-58.
into the regulatory realm, and not be left to chimerical free market ideals.