

Toward a Theory of Statutory Evolution: The Federalization of Environmental Law

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1. INTRODUCTION

Let us begin by renouncing two of the more ambitious implications of the title. No, we do not believe that any single theory can do justice to all varieties of statutory development. Nor do we believe that everything worth saying about the processes by which statutes change can be captured by analogy to biological evolution.

Just as each human being has a unique life history, so too statutes are born, live, and die under circumstances that are unlikely to be duplicated. What we are embarked on is an exercise in statutory biography: by tracing the life histories of statutes in the environmental area, we hope to deepen our understanding of the factors that influence the growth and development of statutory law over time.

In this paper, we will not attempt to summarize all our conclusions or provide full documentation. We are presently working on a book which will describe more comprehensively the circumstances which influenced the development of the environmental statutes of the 1970s. Our goal at the moment is more modest. We will describe in general terms what we have in mind when we say that statutes "evolve" and then illustrate by describing a particularly important period in the history of environmental law. During this period, roughly from 1965 through 1970, strong federal environmental legislation was passed, although environmentalists were not yet well-organized as a conventional interest group in Washington. Thus, the period is interesting in its own right because it seems to contradict the usual wisdom that statutes are passed in response to political activity by well-organized pressure groups.

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1. THE EVOLUTION OF STATUTES

By drawing this analogy between the processes by which statutes change and biological evolution, we mean to question the vocabulary that American lawyers typically use to describe statutory and bureaucratic lawmaking. American lawyers talk about statutes as if they were created by a single individual. The personification of lawmaking is built into our language: we speak of Congress "writing" statutes. Court opinions invariably invoke the "intent" of Congress or the "will" of the legislature—as if a complex lawmaking system composed of legislative committees, a majority of 535 legislators in two houses, subject to veto by the president, implemented by an administrative agency of several thousand bureaucrats, and subject to review in the courts could be compared usefully to the mind of a single lawgiver.

We believe that the metaphor that statutes are "written" implies serious misconceptions. The process by which statutory law develops is quite different from the process by which an individual human being writes a letter or a novel. The truth is that if a single person sat down to "write" the laws governing environmental pollution, she would never produce the existing legal structure.

The law regulating environmental pollution is not the creation of a single intelligence. We will never understand why it is as it is if we persist in thinking of it as the product of a single, coherent intelligence; environmental law, like other statutory and bureaucratic law, *grows*, like a living thing, in response to forces internal and external to the legal system. Sometimes its growth is unrestrained, like a cancer. Under other conditions, legislation cannot survive at all.

We propose to try to model the conditions and dynamic processes by which environmental law has developed. In adopting evolution as our central metaphor (Clark), we do not want to imply either that some mysterious deterministic mechanism is at work or that the interest groups and politicians who constitute the primary actors in our story are not rational, self-conscious beings. On the contrary, we assume that individuals and groups generally act according to what they perceive to be their rational self-interest. Our central point is rather that what constitutes rational, self-interested behavior changes depending upon the structure of the environment in which an individual or group finds itself. The structures of the lawmaking system and the organization and capabilities of various interest groups affect what rational legislators perceive to be in their self-interest. As these structures change, the incentives confronting lawmakers do also.

By focusing on the structure of incentives, we do not mean to imply that an individual politician's view of good policy is irrelevant. Our assumption is only that before any particular individual's view of good policy can be enacted into law, the structure of political incentives must be such that other rational politicians can be persuaded to go along. This, we assert, will be a function of

the organizational and political circumstances that exist at the time. Thus, we believe that the structure of the political and organizational environment selects which proposals survive in Congress to become law and which will be stillborn.

We do not claim that the organizational and political environment implies a unique solution, any more than the natural environment dictates that only one type of animal will survive. Rather, we see the structure of the political environment as constraining the choices that politicians make—to what degree they are constrained is an empirical question and undoubtedly varies from area to area and time to time. At least in federal environmental law during the years we examine, we believe that the changing structure of political and organizational incentives is a significant factor which goes a long way toward explaining the distinctive form which environmental statutes have assumed. Like the evolutionary biologist, then, we seek to correlate existing statutory features with the environmental conditions which produce them, rather than imagining that the forms of statutes reflect conscious design choices in the mind of a single Creator who “writes” the laws.

Our evolutionary model has six stages, each associated with a distinctive pattern of organization and incentives: Time One, the period of common law ascendancy; Time Two, the period of political cost-externalization; Time Three, the period of pre-emptive federalization; Time Four, the period of aspirational lawmaking; Time Five, the period of legalistic bureaucracy; and Time Six, the period of statutory revisionism. Our analysis of each stage has two related aspects, the first static, the second dynamic. Under the static approach, we analyze the lawmaking institutions characteristic of each period in an effort to describe the distinctive incentives each structure gives those who wish to further their interests through the lawmaking system. Under the dynamic approach, we show how each period’s institutional structure carries in it the seeds of its own destruction. We shall argue that each is stable only so long as one or another of the relevant interests fails to solve one or another fundamental organizational problem that confronts it in furthering its self-interest. Once the critical strategic problems are solved, a previously less powerful interest will influence the making of new laws that usher in a new period, with its own distinctive lawmaking institutions, its own decision-making incentives, and its own strategic vulnerabilities.

The ultimate aim is to provide something like a primitive moving-picture—with one static snapshot being displaced by another as statutory law and its political and organizational environment evolve together, each shaping the other.

Obviously, it is impossible to develop the full panorama of the evolution of environmental statutes in a work of the present length. However, in order to give the reader some sense of what we mean by law and its organizational environment evolving together, and to put our discussion of the 1965–1970 period into a broader context, we will describe briefly some of the more

prominent features that distinguish our six evolutionary stages.

Time One, the period of common law ascendancy, is characterized by pervasive *disorganization* on behalf of both polluters and environmentalists. During Time One, there are no significant groups organized around pollution issues. The primary lawmaking institution which addresses pollution during Time One—decentralized common law courts which respond to lawsuits brought by individuals or small groups—reflects the organizational environment. A number of factors account for the absence of groups organized around pollution problems, but perhaps the most important is the lack of information connecting individual maladies with pollution. As long as pollution remains invisible, groups cannot be organized and the period of common law ascendancy continues.

A number of factors combine to destabilize common law ascendancy and mark the transition to Time Two, the period of political cost-externalization. As concerned scientists gradually identify the scientific basis of pollution and the harms which it causes, polluters lose their shield of invisibility, and it becomes possible to organize small groups of citizens at the local, and eventually the state, level. The initial organization of environmental groups tends to take place in the context of the lawsuits which are the dominant form of lawmaking then available. Thus, the existing legal structure becomes a kind of seed crystal which helps to shape the form of the organizations which will in turn transform existing lawmaking institutions.

Time Two, the period of political cost-externalization, is characterized by the formation of organized groups of environmentalists at the state and local level. Industry, however, remains passive and disorganized with regard to pollution issues. Politicians respond to the strategic imbalance created by the local organizational successes of environmentalists by passing laws which place the primary costs of pollution control on out-of-state interests—hence, our label, the period of political cost-externalization.

Time Three, which we discuss at some length in this paper, is the period of preemptive federalization, when industry groups attempt to counter the organizational successes of environmentalists at the state and local level through preemptive lawmaking at the federal level.

The temporary success of industry at obtaining federal legislation in turn provokes a counter-response by environmentalists, who possess a mass grassroots following but still lack a well-organized institutional structure at the national level to counter industry lobbyists. The final section of the present paper describes the peculiar political dynamics of Time Four, the period of aspirational lawmaking, in which very tough environmental laws are passed by politicians seeking to gain political advancement by appealing to these mobilized, but poorly organized, mass publics.

The laws passed during the period of aspirational lawmaking are responsible for changing the organizational setting and ushering in a new incentive structure, which we call Time Five, the period of legalistic bureaucracy. As a

result of the successes of mass environmentalism, a new legal structure is created which is dominated by two new players, the Environmental Protection Agency (EPA) and the national environmental groups which use the courts and the news media to challenge EPA's actions.

Thus, we maintain that the surprisingly strong environmental statutes of the early 1970s were not passed in response to lobbying by well-organized national environmental groups; on the contrary, it is the other way around—the statutes of the early 1970s made it possible to consolidate national environmental groups.

The final stage, the period of statutory revisionism, is only now beginning. It is characterized by effective national counter-organization by industry to deregulate and repeal parts of the legal structure created by the legislative, judicial, and administrative victories won by environmentalists.

There is nothing magical or inevitable about our six stages. Each merely marks a significant change in the organizational environment within which lawmaking takes place and thus in the incentive structure which faces politicians and other actors. These organizational changes help to explain why many features of our environmental statutes are as they are. But more important, they also illustrate a process of *coevolution* (Bateson: 249) in which changes in organizational structure set the stage for changes in the law, and the changes in the law set the stage for additional changes in organizational structure.

Let us now turn to one phase in the evolution of environmental law.

2. PROBLEM: ENVIRONMENTAL STATUTES OF THE 1960s AND 1970s.

An extraordinary outburst of lawmaking relating to pollution and the environment occurred at the national level during the 1960s and 1970s as a dozen major federal pollution control statutes were enacted. This network of national statutes—together with a much larger body of implementing regulations promulgated by the Environmental Protection Agency—now constitutes one of the most pervasive systems of national regulation known to American law. Today every discharge into the land, water or air—from the smallest smokestack to the largest landfill for the disposal of toxic chemicals—requires direct or indirect permission from the national government.

This comprehensive structure of environmental regulation by the federal government is a curious feature of American law for at least two reasons. First, it developed fairly suddenly, seemingly out of nowhere. For two centuries, the effects of industrial pollution on the natural environment had been generally free from regulation by government, except for sporadic nuisance actions under the common law and a few municipal ordinances to control smoke (Bonine and McGarity, 1984: 235). Second, it is curious that the environmental law of the 1970s was made primarily at the national level, rather than by state or municipal governments which had traditionally had legislative author-

ity over such matters. Any theory of the evolution of environmental laws must attempt to explain how and why this "orgy of statute-making" (Gilmore: 95) came about and why it occurred at the national level.

The environmental statutes of the 1960s and 1970s are distinctive not only for their number but also for their content. In a variety of ways, they represent a sharp break from the attitudes which preceded them. Consider the approach which the Clean Air Act takes toward economics and technology, for example. For hundreds of years, the common law held that no one had an absolute right to be free from the harmful effects of air pollution. Instead, the basic attitude of the law was one of accommodation and "reasonableness," balancing the harmful effects of air pollution on the one hand against the benefits of industrial activity and the availability and cost of abatement technology on the other (RESTATEMENT (SECOND) OF TORTS, §§826-28).

In the 1970 Clean Air Act, however, Congress staked out a more extreme position. In setting mandatory national air quality standards, EPA is instructed to give no weight whatsoever to economic considerations (see *Lead Industries Assn. v. EPA*, 647 F.2d 1130, D.C. Cir. 1980, *cert. denied*, 101 S.Ct. 621, 1981.) Nor is the technical infeasibility of pollution controls admissible as an excuse (*Union Electric Co. v. Environmental Protection Agency*, 427 U.S. 246, 1976). In essence, Congress declared that every American, including particularly sensitive groups such as asthmatics (S. REP. NO. 1196, 91st Cong., 2d Sess. 10, 1970), has a statutory right to be protected from "any known or anticipated adverse effects associated with" air pollution (Clean Air Act, §§109(b) (1) and (2), 84 Stat. 1679, 1970, 42 U.S.C. 7409(b) (1) and (2), 1980), *whatever* the cost.

In pointing to the extraordinary nature of the environmental statutes of the 1970s, we do not mean to suggest that there were no precursors. On the contrary, as will become apparent in what follows, we believe that statutes such as the Clean Air Act of 1970 were a natural outgrowth of a lawmaking process which began at least a decade earlier at the state level. Our point is only that the conditions which produced the environmental statutes of the 1970s are qualitatively different from those which accounted for the pattern of steady, incremental lawmaking during prior decades. As Krier and Ursin have observed, "The Clean Air Amendments of 1970 . . . [were] hardly . . . a tentative reaching out of the federal foot in a halting search for the route that offered least opposition. Rather, there was a dramatic plunge forward" (298).

3. TWO FAILED HYPOTHESES:

PROBLEM-SOLVING AND INTEREST GROUP POLITICS

What accounts for this "dramatic plunge forward"? After decades of incrementalism and accommodation, why did Congress suddenly enact a series of relatively extreme federal environmental statutes in the early 1970s?

3.1 CONGRESS AS PROBLEM-SOLVER

To an environmental lawyer, one answer is immediate and obvious: Congress enacted strong statutes because it recognized that the country faced an environmental crisis.

We do not for a moment deny the seriousness of the problems that the environmental statutes of the late 1960s and early 1970s address (Elliott 894–96). Nor is our present purpose to criticize the means by which Congress chose to deal with the problems of pollution (Ackerman and Hassler). On reflection, however, it should be clear that our typical environmental lawyer's first intuition is really no answer at all.

It is a non sequitur to assert—as lawyers frequently do—that Congress passes statutes “because” policy problems exist. The existence of a real or perceived policy problem may be a necessary condition for the passage of a statute, but the existence of a problem alone does not a statute make; additional conditions must be satisfied, which explains why Congress passes statutes addressed to certain problems while other equally pressing problems go unredressed. Conversely, when the Clean Air Act was passed, at least some air pollution problems were getting better as a result of the gradual substitution of oil for coal during the 1960s (Crandall: 84–85).

Lawyers fall into the trap of assuming that statutes “respond” to problems because they personify Congress, imagining it as a single, conscious lawgiver, who “perceives” problems and “designs” statutory solutions. This image of Congress may make sense from the perspective of a court construing the “intent” of a statute (Posner: 272–73), although even that is debatable. It is clear, however, that lawyers will never be able to understand the processes by which statutes evolve until we break free from metaphors which imply that “officials will automatically translate good policy into law once somebody finds out what it [good policy] is” (Mayhew: 5).

3.2 INTEREST GROUP POLITICS

A lawyer's second thought about how environmental statutes came into being is likely to involve a story about interest group politics.

Following a long tradition among political scientists (Truman, 1951; Lowi: 79–93) and economists (Downs; Buchanan and Tullock), lawyers frequently see legislation as the outcome of a competitive struggle among groups with differing interests (Holmes: 107–09)—or, in more fashionable language, as the means used by organized “interest groups to redistribute wealth in their favor” (Posner: 264). In its modern versions, the interest group account of legislation almost always ends up emphasizing the degree to which one or another group is able to organize for political action more effectively than groups with opposing interests (Posner: 265–66; Aranson et al. 39–40). In his

classic study of Congress, for example, David Mayhew asserts flatly: "Congress will be reluctant to legislate new programs benefitting the unorganized over the opposition of the organized" (137; see also Wilson: vii–xii).

It is possible to construct a plausible story about the birth of federal environmental legislation in the late 1960s and early 1970s which is consistent with the standard view of interest group power as directly correlated with degree of organization. In this hypothetical story, persons who want a cleaner environment somehow manage to overcome their free-rider problems to become a well-organized interest group in Washington—thereby earning the title "environmentalists." Industry, on the other hand, remains passive on environmental issues, at least until after the passage of major federal legislation. According to this hypothesis, the "dramatic plunge forward" in federal environmental legislation occurred because environmentalists were a well-organized effective pressure group on environmental issues and industry was not.

The explanation based on interest group organization would, to be sure, require overcoming a few cherished myths. For one, we would have to debunk the populist image of "Industry" as a monolith which mounts superbly organized lobbying campaigns on every issue. It is not insuperably difficult, however, to construct an explanation which accounts for industrial quiescence on federal environmental issues until it was too late. In the first place, federal environmental legislation does not affect all companies in the same way; some, such as those which make pollution control equipment or mine the rare minerals used in catalytic converters for automobiles, stand to benefit substantially from federal legislation and could be expected to support it (Melnick: 35–36). Moreover, Herbert Simon's theory of limited or "bounded rationality" in organizations (79–83) would predict that the vast majority of industrial corporations would not be set up to monitor federal environmental legislation until after they were affected by it (Melnick: 242). Finally, even if a company had focused on the terms of early federal environmental statutes, it is unlikely that it would have been able to predict the effect which they would ultimately have on it. These statutes only establish general frameworks. Until the EPA promulgates air quality standards for particular pollutants and the state plans translate these standards into emission limitations for individual sources, it is impossible to know whether there will be substantial effect on any particular company. One might even hypothesize that environmental statutes were written in general terms precisely to avoid provoking significant opposition from industrial groups (Fiorina: 71).

In short, it is possible to construct a neat little story about the content of the early federal environmental statutes in terms of interest group politics and organization theory—heaven only knows, we tried. There are, however, two problems with this approach. First, it is untrue, and second, it is not very powerful.

A theory that explains the early federal environmental statutes in terms of conventional interest group politics is untrue in the sense that one can detect no striking imbalance between the organizational presence of environmentalists and industry as lobbying forces in 1970 which might account for the stringent provisions of the Clean Air Act. If anything, industry lobbyists seem to have been more plentiful and better organized in Washington in 1970 than were the environmentalists (Environmental Action: 309–24). The political dynamics which led to the passage of the Clean Air Act of 1970 are similar to those identified by David Trubek and William Gillen in their study of the National Environmental Policy Act:

The initial successes of the environmental movement in securing passage of laws like NEPA were not the result of normal group politics. Rather, these laws emerged from a period in which mass attention had been drawn to environmental concerns through the media and the activities of politicians and policy entrepreneurs who worked from relatively narrow organizational bases (216).

To be sure, we do not deny that environmentalists constituted a powerful interest group in the late 1960s and early 1970s. Our point is that they constituted a different kind of interest group, one whose power derived from a more subtle series of institutional relationships than those posited by theories which draw a direct connection between organizational structure and political power (Schuck: 723–25).

Not only do the facts fail to confirm the standard version of interest group theory, but the theory also lacks power to explain how and why environmentalists suddenly solved their free-rider problems to emerge as a powerful force on the national political scene in the 1970s.

4. COLLECTIVE ACTION AND PRISONERS' DILEMMA

The model of legislative politics as a function of the organization of interest groups fails to account for the fact that strong environmental statutes were passed in the early 1970s without pressure from well-organized environmental advocacy groups at the federal level. It is difficult, moreover, to explain the rise of national environmental groups in terms of prevailing theories of voluntary organization.

In order to attack these two problems, we will first consider them in the abstract by showing that both are problems in coordinating collective action, which may be analyzed in terms of the game of Prisoners' Dilemma. Next, we reinterpret Prisoners' Dilemma by calling attention to certain features of the game which have not been sufficiently appreciated. In the next section, we return to the history of environmental statutes and environmental groups in the early 1970s to argue that these developments can be understood in terms of the features of Prisoners' Dilemma which we identify.

4.1 THE PROBLEM OF COLLECTIVE ACTION

Modern theories of voluntary organization, derived from Mancur Olson (1965), imply that national environmental groups will be difficult, if not impossible, to organize. Large numbers of citizens, each with only a small stake in clean air, will, if they are rational in the narrow economic sense, decline to invest their time or money in the cause of cleaning up the environment in the hope that they will be able to "free-ride" on the efforts of others (Olson; Hardin: 11–12). Since everyone will be inclined to "let George do it," it won't get done at all. The paradox, of course, is that everyone ends up worse off than they would have been if they had been able to organize their actions for their collective benefit.

It is a small step from Olson's theory of voluntary organizations to the political corollary that the interest of citizens in a clean environment will be systematically underrepresented in any lawmaking process in which interest group politics plays a significant role. Individual citizens who wish to breathe clean air are a classic example of a large, disorganized population seeking a collective good which will benefit each individual by only a small amount (Krier and Ursin, 1977: 262; Trubek: 156). The costs of environmental regulation, on the other hand, tend to fall heavily on a relatively small number of companies, which are already reasonably well-organized and thus presumably less subject to free-rider problems (*ibid.*). According to most popular theories of political influence, well-organized industries would be systematically over-represented and diffuse environmentalists systematically underrepresented in formulating policy (Mayhew: 137; see also Wilson: vii–xii).¹ How, then, is one to explain the passage of strong environmental legislation in the late 1960s and early 1970s and the rise of well-organized environmental groups on the national level?

A number of emendations, corollaries, and exceptions to Olson's theory have been proposed to explain the existence of environmental and other public interest organizations. These theories have some obvious applications to environmental advocacy organizations, but, in the final analysis, they are not sufficient to account for the rise of environmental groups as a powerful force on the national level.

One such theory focuses on "by-products" which can be distributed to members in addition to the collective goods such as clean air which environ-

1. It may in fact be the case that environmental interests are systematically underrepresented in public policy, even today. It is possible to hypothesize that even the "stringent" environmental statutes of the 1970s were weaker than they would have been if industry had not had systematic organizational advantages. Without some benchmark representing the legislation which would have been adopted in an ideal world, it is impossible to measure how much legislative output has been affected by organizational distortions. What one can say, however, is that prevailing theories of organization do not account for the "dramatic plunge forward" in environmental legislation in the early 1970s; that is, if one assumes that industry had a systematic organizational advantage, why was it rendered temporarily impotent in the early 1970s?

mental organizations promote. By definition, nonmembers may enjoy the collective goods produced by an organization without joining it. "By-products," on the other hand, are items such as magazines, group outings, or even simply the psychic benefits of participation itself. Since these items can be denied to nonmembers, they may help a group to overcome the organizational problems identified by Olson (Hardin: 31–35). Many environmental groups do in fact offer such side-benefits of membership.

Another explanation hypothesizes that human beings are not in fact so narrowly "rational" and self-seeking as defined by traditional economic models. According to this theory, people can also be moved to join groups by moral and altruistic sentiments (Hardin: 14–15; 103–24). Once again, the practice of environmental groups tends to suggest that there is some truth in this thesis as well. At least some environmental groups couch their appeals in apocalyptic rhetoric which suggests that the survival of our species on this planet is at stake in the environmental controversy of the moment. This is precisely what would be expected if one were trying to stir up the maximum amount of altruistic sentiment (Trivers: 35–57).

A third explanation is not prominent in the literature but seems at least as important as the first two for understanding the rise of some environmental groups. It focuses not on individual motivations but on the nature and distribution of the costs of organizing.² If there are significant economies of scale to be achieved by multipurpose organizations, when the start-up costs of establishing an organizational structure have been paid it may be possible for the organization to diversify into other, related areas at only small marginal costs. In theory, then, a purpose which would not be a sufficient incentive to establish a voluntary association might nonetheless be taken over and performed successfully by an existing group. In fact, many environmental groups, such as the Sierra Club and the National Audubon Society, which are engaged in lobbying and litigation on pollution issues at the national level, were not organized for these purposes originally but took them on later after the initial costs of establishing an organization had been paid (Bonine and McGarity: 3).

These theories may be of some help in understanding how environmental groups have been able to overcome the problems of collective action described by Mancur Olson. They are not sufficiently persuasive, however, to account for the dramatic rise of environmental groups as powerful forces on the national scene. There is nothing in them to suggest why environmental groups emerged when they did, or to explain how strong environmental legislation was passed before environmental groups achieved their current prominence as powerful lobbying forces in national politics (Crandall).

2. In a sense, the economy of scale hypothesis is not a separate theory at all but merely a generalization of the phenomenon which gives rise to the by-product theory. Thus, the reason that publishing a magazine may help an environmental lobbying group to organize successfully is that there are organizational economies of scale.

4.2. POLITICIANS' DILEMMA

The answer, or at least a more complete answer, can be discovered by considering the problems of environmental organizing and passing environmental legislation as analogous to the game of Prisoners' Dilemma.

Prisoners' Dilemma gets its name from a story about two prisoners who are separately interrogated about a crime. The two were the only witnesses, so if they both refuse to testify, the worst that can happen to them is a one-year conviction for illegal possession of firearms. However, a clever prosecutor approaches each prisoner and offers him a proposition: "If you confess and testify against your partner, he'll get life but you'll go free; the only hitch is that if you both confess, you'll both get a sentence of six years for armed robbery. I should tell you that I'm offering the same deal to your partner" (Hardin, 1982: 2-3; Rapoport and Chammah: 24-25).

Assuming that the game is played only a single time, and assuming further that the prisoners are rational and motivated only by self-interest, they will both confess—and get six years in jail, rather than keep quiet and get off with only a year (Rapoport and Chammah: 24-25; Shubik: 37-38). The paradox, of course, is that by pursuing their individual self-interest, the prisoners behave in a way that is contrary to their shared collective interest in shorter sentences.³ If they could only organize their actions for their common benefit, they would both be better off.

In his recent book on collective action, Russell Hardin has shown that the problems of forming voluntary groups described by Olson are an application of Prisoners' Dilemma (25-30). In classic Prisoners' Dilemma, each prisoner confesses in an attempt to exploit his codefendant, and as a result they both end up worse off than they would have been if they had coordinated their actions for the collective benefit. Similarly, a citizen who wants clean air but refrains from joining an environmental group in the hope that she can free-ride on the efforts of others is also playing an exploitative strategy. She will be best off if she gets the benefits of clean air without paying her fair share of the costs for this collective good; her exploitative strategy will not work, however, if everyone plays the same strategy. When everyone, or nearly everyone, tries to free-ride, they all end up worse off than they would have been if they had been able to coordinate their actions to play a cooperative strategy.

Prisoners' Dilemma has generally been interpreted as a parable about the difficulty of organizing collective action. In recent years, a growing literature has developed analyzing the conditions under which cooperative solutions to the Prisoners' Dilemma may develop (Hardin: 155-231; Axelrod). Most of these analyses emphasize the dynamic aspects of multiple-play or iterated Prisoners' Dilemma. However, the standard interpretation of single-play Prisoners' Dilemma as a story about the prisoners' inability to organize for

3. In formal terms, single-play Prisoners' Dilemma is unique among 2×2 games in that it is characterized by a "stable equilibrium" which is "Pareto-deficient" (Rapoport et al.: 28).

their collective benefit overlooks a second, equally important, moral to the tale, generally ignored in the literature.

We can interpret Prisoners' Dilemma not only from the standpoint of the prisoners but also from the standpoint of the prosecutor. From the prosecutor's perspective, Prisoners' Dilemma is not a story about failed organization but about a very successful attempt to organize the actions of those with whom one is in an adversarial relationship. The prosecutor is, after all, able to motivate the two prisoners to act in a coordinated fashion—they both confess. Before the prosecutor speaks to the two prisoners, however, a stable equilibrium is in place: each prisoner knows that it is in his interest to keep his mouth shut and he has no intention of doing otherwise. By credibly threatening the two prisoners with the possibility of a state of affairs which is substantially worse than what they have at present—namely, a life sentence if his partner confesses and he does not—the prosecutor is able to undermine the stability of the equilibrium and motivate both prisoners to confess.

The hidden moral to the story of Prisoners' Dilemma is that forming a voluntary organization for collective benefit is not the only way to organize persons to engage in collective action; it is also possible to coordinate actions by altering the structure of incentives which motivate them.⁴ It is important to notice, moreover, that the prosecutor is not essential to the tale. She is merely a narrative device, a convenient personification of the institutional structure facing the prisoners.⁵ It is this institutional structure, not the prosecutor as a conscious actor, that defines the incentives facing the prisoners and explains their otherwise inexplicable actions (Rapoport et al.: 31).

This institutional perspective helps to explain the evolution of environmental law during the late 1960s and early 1970s. Not that the evolving institutional structure technically complied with all the conditions for the

4. Hayek distinguishes two different kinds of social orders. One he calls *taxis*, or "made orders," which he associates with "organizations," and the other he calls *cosmos*, or "spontaneous orders," which he associates with "organisms" (35–55). At least for our purposes, the distinction is not a viable one. Most modern theories define organizations merely as "complex pattern[s] of communication and relationships in a group of human beings" (Simon: xvii); in other words, as structures of incentives which are capable of motivating coordinated human action. In this sense, the prosecutor creates an organization through her communications with the prisoners.

5. To confirm that the payoff structure, not the prosecutor as a conscious actor, defines the Prisoners' Dilemma, simply retell the story without the prosecutor: Two prisoners are arrested for a crime to which they were the only witnesses; both are experienced, streetwise criminals who immediately realize the implications of their situation: if one of them turns state's evidence, he will get a better deal from the government; if they both confess, however they are both likely to get stiff sentences.

Prisoners' Dilemma does not depend on self-conscious action by the prosecutor. It results from strategic incentives which are inherent in the organization of the existing criminal law system, which make it rational (in the short run) for the state to trade a lesser sentence for testimony which it needs in order to win a conviction; if both defendants are willing to confess, however, the price that the state will pay for their testimony naturally goes down.

What underlies Prisoners' Dilemma, then, is the organization of the system. The prosecutor merely presents to the prisoners the strategic implications of the organizational structure which she represents.

game of Prisoners' Dilemma—in contrast to the standard game, our story involves many relevant players, no single subset of which could have coordinated their strategies in a way that guaranteed them an optimal result. Nonetheless, like the prisoners, many of the key actors responded to institutional threats of terrible outcomes by rationally choosing strategies that were very far from first-best from their point of view. We shall, then, use the term *Politicians' Dilemma* to describe situations which are analogous to the game of Prisoners' Dilemma in that the structure of incentives facing the players creates a strong incentive for them to pursue a less than ideal outcome in order to avoid an even less desirable result. We believe that institutional structures which create the Politicians' Dilemma are a particularly important feature of our lawmaking system, since they provide one mechanism by which Kenneth Arrow's famous General Impossibility Theorem (1963) is resolved in practice, as groups are forced to abandon their true preferences to coalesce around compromise legislation.

5. POLITICIANS' DILEMMA AND ENVIRONMENTAL STATUTES

The first significant federal statutes regulating air pollution, the Motor Vehicle Pollution Control Act of 1965 (79 Stat. 992) and the Air Quality Act of 1967 (81 Stat. 485), were not passed because of the political power of environmentalists at the national level but because two well-organized industrial groups, the automobile industry and the soft coal industry, were threatened with a state of affairs even worse from their perspective than federal air pollution legislation—namely, inconsistent and progressively more stringent environmental laws at the state and local level. As a consequence of the structure of our federal lawmaking system, environmentalists were able to organize industry to do their bidding for them. Thus, the first federal legislation regulating air pollution was passed not because environmentalists solved their own organizational problems on the national level but because environmentalists exploited the organizational difficulties of their industrial adversaries at the state and local level.

The auto industry and the soft coal industry undoubtedly would have preferred no government regulation of air pollution rather than federal legislation. When faced with the threat of inconsistent and increasingly rigorous state laws, however, they resolved their Politicians' Dilemma by using their superior organizational capacities in Washington to preempt or control the environmentalists' legislative victories at the state level.

It does not matter to our argument whether environmentalists and industrialists were consciously pursuing the strategy we outline. Like the characters in the Prisoners' Dilemma, they may have been simply reacting rationally to the strategic implications of their situation. What we have found, in short, is empirical support for a paradox previously elaborated by theorists of federal

systems (Rose-Ackerman: 152-65). Rather than serving only as a mechanism for *decentralized* decisionmaking, federalism also creates strategic incentives for *national* lawmaking activities that would not have existed under simpler unitary constitutions. Thus, a political chain-reaction occurred in which organized industries used their resources at the federal level to offset the dangers posed by environmentalists' activities at the state level.

But pressure group analysis is never enough to explain the passage of a statute. The challenge, instead, is to show how rational legislators can make use of the changing political environment to further their own goals of reelection and political advancement. During the period of preemptive federalization this turns out to be a relative straightforward affair. Given the absence of significant federal legislation, the air pollution issue was ripe for political entrepreneurship by an ambitious legislator with presidential aspirations.

Our aspirant could point out that before *his* landmark legislation, the federal government had been doing little or nothing in the war against pollution. The fact that his initiative preempted or otherwise constrained even more stringent state legislation could be viewed (if it was perceived at all) as an unfortunate side-effect of the fact that pollution was a problem that required a coordinated national solution.

Moreover, the institutional structure of Congress provided one particular presidential aspirant with the organizational means to appropriate the political credit associated with a legislative breakthrough. By exercising his powers as chairman of the relevant Senate subcommittee, Edmund Muskie could claim credit for legislation at a time when other presidential aspirants had not yet invested in linking their names to a cleaner environment. Thus, our period of preemptive federalization reveals a second form of preemptive activity. Not only did the auto and coal industries seek to preempt activist state regulation, but Senator Muskie sought to associate his name so intimately with environmental protection that he would effectively preempt efforts by rival aspirants to claim credit for legislation on the issue.

The second phase of statutory creativity at the federal level we call Time Four, the period of aspirational lawmaking. It will modify both premises of the preceding structure. On the level of interest group organization, local environmental activists began to credibly threaten federal politicians with electoral retribution, although they were not yet organized as a coherent lobby in Washington. As a consequence, the organizational advantage shifted away from the hands of the Washington representatives of a few well-organized industrial interests.

At the same time, the effort by Senator Muskie to corner the credit-claiming market was placed in jeopardy by the entry of two rivals, Senator Henry Jackson, principal sponsor of the National Environmental Policy Act, and President Richard Nixon. It is this context of competitive credit-claiming that serves as the matrix generating the basic structure of environmental

institutions of the present day: the National Environmental Policy Act of 1969, the Environmental Protection Agency, created in 1970, the Clean Air Act of 1970, and the Clean Water Act of 1972.

Competitive credit-claiming gives a double sense to our label of aspirational lawmaking: not only did environmental aspirations take on a new political significance as environmentalists organized at the local level, but, because there was not yet a coherent National Clean Air Coalition with whom a bargain could be struck, lawmaking was characterized by unrestrained competition among presidential aspirants for the credit to be gained from legislation assuring the public of a cleaner world. Thus, paradoxically, the failure of environmentalists to achieve full national organization during Time Four resulted in more stringent—not weaker—environmental laws.

Our analysis of competitive credit-claiming, moreover, permits us to glimpse the importance of a second constitutional structure in shaping the substance of our environmental law. Just as the period of preemptive federalization was shaped in nonobvious ways by the constitutional division of lawmaking power between state and nation, so too the period of aspirational lawmaking was shaped by several constitutional separations of lawmaking powers: president versus Congress; House versus Senate; legislative committee versus legislative committee. It is precisely this separation of powers that renders the question of lawmaking responsibility sufficiently problematic so as to encourage actors at different lawmaking stages to try to capture the lion's share of the credit to be gained from a poorly informed public.

The result of our analysis of the periods of preemptive federalization and aspirational lawmaking will be a new perspective on some of the received understanding about our Constitution. We have been taught to understand the division and separation of powers as the basic components of our constitutional system of checks and balances. This view traditionally emphasizes the impressive constitutional obstacle course that must be run before a bill becomes a law. It is implicit in this view that the resulting statutory output is both smaller and weaker than that which would arise under a simpler "majoritarian" system. Our system is defended, however, as promoting deliberation and as checking irrationality or tyranny.

Our analysis suggests a more complex view. Some of the time, at least, our polycentric lawmaking system has very different structural implications: rather than delay federal legislation during a lengthy period of experimentation on the state level, the federal system and the difficulty of organizing interest groups on a national level may sometimes encourage rapid and extreme lawmaking. Instead of checking and balancing opposing forces, the separation of powers may generate a system in which lawmakers compete to impress a poorly informed public with the strength of their symbolic commitments. Rather than prompting extended deliberation and broad consensus, our polycentric system may emphasize the strategic manipulation of passing organizational advantages and emotive symbolisms. The dynamic is this:

environmental victories on the state level precipitate the counter-organization of certain specific polluters on the the national level, which channels the legislative activities of credit-claiming politicians in the direction of preemptive federal lawmaking.

We will analyze the dynamic by first showing why a federal system gives environmentalists important strategic advantages at the state level, then showing that the strategic situation at the national level was vastly preferable from the polluters' point of view, and finally showing how the strategic interests of polluters coincided with the pursuit of political self-interest by reelection-maximizers and presidential aspirants in the Congress.

5.1. TIME TWO: THE PERIOD OF POLITICAL COST-EXTERNALIZATION

The existence of states aids environmentalists in three ways. First, and most obvious, the existence of the states makes it possible for environmentalists to seek piecemeal solutions to their organizational difficulties. Not that the effort to transcend their free-ride problems will be easy—even in smaller states, thousands of people will have to be convinced to take seriously the signals activists are beaming in their direction, and states such as California and New York present the problem of organizing a population the size of Canada's. Nonetheless, even here, the demands on a variety of resources—from political savvy to hard cash—do not compare with the challenges involved in achieving organizational credibility in a nation of a quarter of a billion. Moreover, environmental groups do not form spontaneously at even the state level. States consist of a hierarchy of smaller governmental units, over 80,000 in total in the United States, which form a kind of lattice around which organizations crystallize. Environmental groups tend to be comprised of coalitions of groups which organized first on a smaller scale, around local problems or narrow interests.

Second, federalism opens up the possibility of a distinctive credit-claiming strategy for aspiring politicians on the state level, which we call *cost-externalization*. Quite simply, dividing the nation into fifty geographic zones makes it almost inevitable that some pollution problems will be generated by out-of-staters. Since midwestern auto workers don't vote on whether California should ban the internal combustion engine to control smog and Appalachian coalminers don't vote on whether New York should ban coal to control sulfur oxides from power plant smoke stacks, these issues promise politicians on the state level the equivalent of a free lunch—"tough" legislation allows them to garner public credit for bringing a benefit to *their* constituents at somebody else's expense.

Finally, as scattered environmental victories begin to appear, this evidence of success will feed efforts in other states. Activists will be prompted to continue the fight, rather than seek out other issues; the media and the public will gradually begin to take greater notice and express increased interest. A

bandwagon effect becomes possible: victories in one state may promote the marshalling of the resources necessary for victory in another. Indeed, legislation in one state can stimulate other states to adopt even more stringent laws.

5.2. TIME THREE: PREEMPTIVE FEDERALIZATION

The Motor Vehicle Air Pollution Control Act of 1965. The first statute which gave the federal government regulatory power over air pollution was the Motor Vehicle Air Pollution Control Act of 1965. The roots of this federal legislation run deep into the California of the 1950s and 1960s. The story of the lawmaking process which unfolded there has been admirably told by others (Krier and Ursin: 41–177). Suffice it to say that through a combination of a cost-externalization strategy by California politicians, auto industry ineptitude, and local environmental organizing, state air pollution legislation had begun to pose a serious threat to the automobile industry by the middle 1960s. California had already adopted a regulatory program requiring the installation of emission controls on all new cars sold in the state (159), an auto emissions bill was pending in the Pennsylvania state legislature, and New York was considering an emission standards bill even more stringent than California's (175).

We are not presently interested in these state legislative initiatives in and of themselves, but for the strategic incentives which they created for the automobile industry. Unlike most other industries, the automobile industry has strong reasons to prefer national legislation over state and local regulation of air pollution. Most manufacturing industries would rather have state and local governments set air pollution standards, because the political and economic costs of controlling their pollution are concentrated at the local level. It is a rare politician who is immune to the charge that a proposal will harm a local, job-creating industry. In addition, some manufacturing industries may be able to play one state off against another by threatening to move their factories out of states which set stringent air pollution standards (thereby creating a true Prisoners' Dilemma from the standpoint of the states).

The automobile industry is in a very different strategic position, however, because it is geographically concentrated and its product, not its factories, is the main source of its pollution. Local politicians can set strict antipollution standards for motor vehicles without fear of being accused of putting their constituents out of work. It is true that pollution controls tend to increase the price of new cars, but the connection between government action and particular price increases is only dimly perceived by voters. And unlike other industries, Detroit could not credibly threaten to stop selling cars in California or other states which established stringent pollution standards.⁶ More-

6. In fact, an auto industry spokesman had assured the California assembly that Detroit would continue selling cars in California even if it banned the internal combustion engine (Wicklein: 13).

over, differing or inconsistent air pollution standards set at the state and local level were perceived as a serious threat to Detroit's assembly lines. Finally, the companies feared a kind of political domino effect, in which one state legislature after another would set more and more stringent emission standards without regard to the costs or technical difficulties involved.

Ideally the auto companies would have preferred to remain free of any substantial government regulation of pollution, but if they were going to be regulated, federal legislation was preferable to state legislation—particularly if federal standards were set based on technical presentations to an administrative agency rather than through symbolic appeals to cost-externalizing politicians.

During the early 1960s, the automobile industry successfully opposed federal emission standards for motor vehicles. In mid-1965, however, the industry abruptly reversed its position on the advice of Washington lawyer Lloyd Cutler: provided that the federal standards would be set by an administrative agency, and provided that they would preempt any state standards more stringent than California's, the industry would support federal legislation.⁷ As a result, Senator Muskie's pending bill to have the federal government set emission standards for motor vehicles was amended to provide that standards would be set by HEW, rather than in the legislation itself, and legislative history was written to leave no doubt that more stringent state laws were preempted (Currie: 1087–89). With auto industry backing (Bonine and McGarity: 264), the Motor Vehicle Pollution Control Act of 1965 became the first federal statute regulating air pollution.

The Air Quality Act of 1967. The Air Quality Act of 1967 was the first federal statute to give the federal government a significant role in regulating air pollution from stationary sources such as factories and powerplants. Under the 1967 act, the federal government was to promulgate criteria based on the latest scientific evidence concerning the adverse effects of air pollution. Each state was then to develop its own air pollution control plan based on the federal criteria. If any state failed to adopt a satisfactory plan, the federal government could promulgate one for it (Martin and Symington: 244–46).

The story behind the Air Quality Act of 1967 is complicated, but here too the threat of state and local legislation provided the impetus for a crucial industry to acquiesce in federal legislation in the hope that it might dampen local legislative initiatives. Like the automobile industry, the high-sulphur, soft (bituminous) coal industry is geographically concentrated, and its product, not its factories, constitutes the primary source of its air pollution. Soft coal provided a logical target for local politicians anxious to place the blame for pollution on out-of-state sources.

7. Interview with Lloyd Cutler, private attorney who represented the Automobile Manufacturers' Association during the mid-1960s, September 24, 1982. See also Krier and Ursin: 173–75.

During the mid-1960s, the soft coal industry faced increasingly strict air pollution regulations in the Northeast, which eventually threatened it with the loss of a major market. In 1965, Mayor John Lindsay of New York proposed—and despite strong opposition mounted by the coal industry, the city council eventually passed—a program to ban the use of coal as a heating fuel and to greatly restrict the sulfur content of coals used for other purposes (Knowles: 30). In 1966, New York, New Jersey, Pennsylvania, and Connecticut announced joint plans to combat air pollution (*New York Times*, Dec. 18, 1966: 41). In March 1967, the threat of strict state legislation which would eliminate markets for high-sulfur coals in most major metropolitan areas increased when the federal HEW released an advisory criteria document reviewing the scientific literature on the health risks of sulfur dioxide, a pollutant which is formed when soft coal is burned (Davies and Davies: 50–51).

Its unsuccessful campaign against pollution control legislation in New York City had taught the coal industry that it was virtually impotent in local political arenas. It did have a very powerful ally in the U.S. Congress, however—Senator Jennings Randolph of West Virginia, the nation's leading coal-producing state. Randolph was chairman of the Senate Public Works Committee, the parent committee for Senator Muskie's air and water pollution subcommittee. It probably would be going too far to assert that through Randolph the soft coal industry had a veto over federal air pollution legislation—although there have been reports that Joe Moody, chief lobbyist for the National Coal Policy Conference, claimed to have written the entire 1967 Air Quality Act (Esposito: 279–80). Be that as it may, there is no doubt that Senator Randolph was in "a key position to influence the legislation" (Davies and Davies: 51). Through Randolph's intercession, a number of amendments favorable to the soft coal industry were written into an air quality bill which Senator Muskie proposed: HEW was directed to reconsider its report on sulfur oxides and to consult with an advisory committee which included industry representatives; to undertake an extensive research program to find technological solutions to air pollution problems; and to accompany all future criteria documents with recommended control techniques. (See Air Quality Act, §§104 and 107, 81 Stat. 485, 1967; Davies and Davies: 52; Krier and Ursin: 180–81.)

Ideally, the soft coal industry, like the automobile industry, probably would have preferred that there be no government regulation of the pollution produced by its product. However, if there was going to be regulation, federal legislation offered distinct advantages to the coal industry over runaway state and local lawmaking. While the 1967 federal Air Quality Act did not forbid states from setting air pollution standards more stringent than those recommended by HEW (Martin and Symington: 259), as a practical, political matter, the air quality criteria which HEW established based on the latest scientific evidence would tend to restrain state legislation. Advisory committees within the federal bureaucracy promised to be a far more hospitable

forum for the coal industry than the politics of state and local legislatures (Esposito: 283–87; Vietor: 148–49). Moreover, Senator Randolph's amendments placed federal air pollution policy firmly on the road toward seeking technological "fixes" to pollution problems as opposed to encouraging switches to inherently less polluting fuels. This bias in favor of technological solutions still dominates federal pollution policy, although its wisdom is questionable from the standpoint of sensible national policy (Ackerman and Hassler: 48–74). From the perspective of the high-sulfur coal industry, however, it is clearly preferable to have a federal EPA force electric utilities to install scrubbers than to sit idly by and watch other cities and states follow New York's lead by banning coal-burning to solve their pollution problems.

The Air Quality Act of 1967, like the Motor Vehicle Air Pollution Control Act of 1965, passed not because environmentalists were a well-organized pressure group at the federal level, but because their efforts, and the actions of local politicians, created a Politicians' Dilemma for a well-organized industry. Faced with the even less desirable alternative of a significant loss of markets through state and local legislation, the soft coal industry strongly supported passage of Senator Muskie's bill "with the addition of the amendments offered by Senator Randolph" (*Air Pollution—1967: Hearings on S. 780 Before the Subcommittee on Air and Water Pollution of the Senate Committee on Public Works*, 90th Cong., 1st Sess. 2026, 1967 [statement of W. V. Hartman, Peabody Coal Co.]) which became the Air Quality Act of 1967. According to the Ralph Nader study group on air pollution, the coal lobby was the only significant interest group which lobbied for or against the bill (Esposito: 274–75).

5.3. TIME FOUR: ASPIRATIONAL LAWMAKING

A structurally similar process also accounts for some of the surprisingly stringent provisions of the Clean Air Amendments of 1970 (84 Stat. 1205). In particular, the requirement that automobile manufacturers reduce their pollution by 90 percent within five years, and the stipulation that EPA ignore economic and technological feasibility, did not result from the success of environmentalists at organizing a strong lobbying presence of their own in Washington. Here too a Politicians' Dilemma was at work. The "prisoners" in this case were politicians, primarily Senator Edmund Muskie and President Richard Nixon. By strategically threatening these political entrepreneurs with the loss of political capital which they had previously worked to build, environmentalists were able to organize them to pass a statute more stringent than the politicians really wanted. In an ideal world both Nixon and Muskie probably would have preferred a compromise statute less likely to alienate either industry or environmentalists, but as in Prisoners' Dilemma, they were confronted with a situation in which they both had to choose the least-worst situation politically.

The structural feature which creates the Politicians' Dilemma is the fragmentation of the lawmaking system between Congress and the Executive, between House and Senate, between legislative committee and legislative committee. This division of lawmaking authority creates a situation in which various politicians can credibly claim credit for any particular law. David Mayhew has argued persuasively that most members of Congress can be thought of as "reelection maximizers." For this breed of legislator, the costs of sponsoring broad legislation such as the Clean Air Act will generally outweigh the benefits (55–60). A smaller number of legislators, however, aspire to run for higher office (75–76). These aspirants may analyze the political costs and benefits involved in environmental lawmaking in terms that are very different from the simple reelection maximizer.

If he hopes one day to gain the presidency, the aspirant must, somehow or other, gain public recognition as a serious political leader throughout the United States. And to this end, it will not suffice to sprinkle the home district with dams, post offices, and similar goodies, or to help constituents with their Social Security checks, or to return to the district for weekend orgies of baby-kissing and speechifying. To make a national impact, the aspirant must project an image as a statesman seriously concerned with the good of all Americans. And from this perspective, it *may* make sense to invest heavily in environmental lawmaking.

The aim, of course, is to make the aspirant's name synonymous in the public mind with Sensible Environmental Protection. If this can be achieved, it may be possible for the aspirant to expand the kinds of activities for which he may credibly claim credit before the American people. No longer may he merely brag to his constituents about the most recent farm subsidy he has brought to the district. He may also credibly present himself to a nationwide audience as the statesman who is trying to bring the American people relief at long last from the invisible, yet anxiety-provoking, evil of mass pollution.

The issue-oriented committee structure of Congress permits the aspirant to hope for institutional support for his credit-claiming activity. By investing time and energy in a particular committee, he may use the committee as a forum to generate free publicity in the media as a spokesman for the environment. And by sitting on the relevant committee year after year, the aspirant may in time become its chairman, thereby gaining even greater credibility for his nationwide advertising and credit-claiming activities.

Of course, this kind of issue entrepreneurship has its hazards. First, overinvestment in national credit-claiming runs the risk of defeat by a locally oriented opponent who convinces the voters that the aspirant is ignoring the folks back home. As a consequence, the aspirant can be expected to choose his national issues carefully, trying to invest in a national public good that will *also* yield special local benefits. Second, investing symbolic capital in the environment means that the aspirant will be *unable* to invest in other potential issues of national magnitude—issues that will, in turn, be the object of investments

by competing aspirants. Since it takes years to acquire credit-claiming credibility on any particular issue, initial investments must be made under conditions of uncertainty about the future state of public opinion; the aspirant's chosen issue may not turn out to be one with which the public becomes greatly concerned. Third, even if the environment turns out to be a particularly good entrepreneurial investment, the aspirant who gets in on the ground floor of the credit-claiming competition may find his position challenged by other ambitious politicians—especially the one sitting in the White House.

Nonetheless, despite all the risks, the determined aspirant has little choice: if he wants to gain credible national credit, he cannot behave in the normal reelection-maximizing way. He must select a small portfolio of national issues, then invest as much as seems prudent in the positions that will help him credibly claim credit for a successful effort to ameliorate, or even solve, a national problem by appropriate legislation.

Throughout the 1960s, Senator Muskie carefully invested his time and legislative effort in the environment, long before the issue achieved great public attention. As the primary drafter of the federal air pollution statutes of 1965 and 1967, as well as several water pollution statutes, Muskie stood to gain from the rapid rise in importance which the voting public attached to environmental issues in the early 1970s. However, because of the separation of the lawmaking function into multiple bodies and the difficulty which the voting public has in monitoring all the lawmaking activities in Washington, Muskie was vulnerable to see "his" issue stolen by other politicians, particularly the one in the White House. In addition, because most voters do not bother to follow the details of what goes on in Washington that closely, Muskie was also vulnerable to charges from the embryonic environmental movement that he was really "Mr. Dirty," not "Mr. Clean."

The divisions of lawmaking authority, coupled with the difficulty of credibly communicating with the voters about the political significance of legislative activities, created a situation in which Nixon and Muskie were caught in a Politicians' Dilemma. The result was the passage of the Clean Air Act of 1970 in a form which was more stringent than either of them would have preferred.

The Clean Air Act of 1970. The Clean Air Amendments of 1970 (84 Stat. 1676) is a complex statute. There is no denying that a number of strands came together to contribute to its passage. One factor was the realization that the Air Quality Act of 1967 had failed to achieve its goal of cleaning up the air (Davies and Davies: 52–53; Jones: 128–29). In addition, by 1970 there had been an enormous increase in popular concern about the environment, fueled in part by the attention which the issue was receiving in the press and on television (Jones: 137–55). Finally, 1970 was different from 1967 in that a "loose coalition" of environmentalists was just beginning to organize on the national level (Environmental Action: 309–24), although environmentalists

were still nowhere near a match for even a single auto company's lobbyists, either in terms of numbers or funding (311–12).

In this political environment, it would not have been surprising for Congress to pass additional air pollution legislation of an incremental sort—perhaps an increase of funding here, or a realignment of federal and state authority there. In fact, on December 10, 1969, the leading proponent of federal air pollution legislation, Senator Muskie, introduced just such a bill, the Air Quality Improvement Act (S.3229, 91st Cong., 2d Sess.). Alfred Marcus has characterized fairly Muskie's original air quality improvement bill as "minor tinkering with the 1967 law . . . [which would] not alter its provisions fundamentally" (60). One section of Muskie's original bill was particularly noteworthy: it "specifically stated that air pollution regulations had to be kept within the bounds of technical knowledge and economic feasibility" (*ibid.*).

This is hardly the stuff from which one expects such a "dramatic plunge forward" (Krier and Ursin: 298) as the Clean Air Act of 1970 to emerge. Recall that, among other things, the 1970 act ordered the automobile industry to produce a virtually pollution-free car within five years and mandated EPA to set national pollution standards to protect all Americans against adverse effects from pollution with an adequate margin of safety *irrespective* of cost or technical feasibility. There is good evidence, moreover, that at the time the statute passed, Senator Muskie and his colleagues were well aware that these goals were unrealistic (Melnick: 253).

One writer has used the term "policy escalation" to refer to the process by which Muskie's weak, original proposal was transformed into a more extreme final statute (Ingram: 35); another has called it "speculative augmentation" (Jones: 175–210). Whatever one calls it, what happened was essentially as follows: on February 10, 1970, two months after Muskie had introduced his Air Quality Improvement bill, President Nixon transmitted his own air pollution proposals to Congress (Nixon: 164–67). Nixon's proposals called for major structural changes in existing federal air pollution statutes, including national standards for extremely hazardous air pollutants and a requirement that states develop abatement plans to meet mandatory federal air quality standards within one year (167).

The next significant event occurred in May 1970, when a Ralph Nader task force published a report harshly criticizing Muskie as being soft on industry (Esposito: 290–92). The flavor of the report is summed up by a sentence displayed prominently on its dust jacket: "Sen. Muskie's sub-committee on pollution and the federal laws for which it was responsible have resulted in a 'business-as-usual' license to pollute for countless companies across the country." The Nader report went on to claim that Muskie should be "stripped of his title as 'Mr. Pollution Control'" (290) and to demand that he resign his chairmanship of the air and water pollution subcommittee (292). Muskie was

clearly stung by Nader's public criticism (Davies and Davies: 54–55; Lippman and Hansen: 143–54).

In August, Muskie's subcommittee reported out a revised air quality bill which essentially followed the outlines of Nixon's proposal but was tougher at every turn than what the president had proposed: where Nixon's proposal would have allowed states one year to develop their implementation plans, Muskie's bill allowed only nine months (S. REP. NO. 1196, 91st Cong., 2d Sess. 12, (1970); where the administration proposed that the auto companies be given until 1980 to achieve a 90 percent reduction in emissions, Muskie's subcommittee cut the deadline to 1975 (25–27); where Nixon proposed nationwide federal air quality standards, Muskie's subcommittee added the requirement for an additional "margin of safety" and the protection of especially sensitive groups (10); where Nixon had proposed that we do what "we can do within the limits of existing technology" (Nixon: 164), Muskie deleted technological or economic feasibility as a constraint (Bonine: 1975).

These surprisingly tough provisions of the Clean Air Act of 1970 did not result from organized lobbying by environmentalists, at least not in the conventional sense. As a result of the Nader report, which threatened Muskie with the loss of his national reputation as "Mr. Clean," both Nixon and Muskie found themselves trapped in a Politicians' Dilemma. Both were forced to support legislation more stringent than either would have preferred (Environmental Action: 318–19).

That Nixon wanted a more moderate bill which would have imposed less of a burden on industry is clear from the memoirs of his White House environmental adviser (Whitaker: 93–95). On reflection, it should also be clear that the Clean Air Act of 1970 was tougher than Muskie would have wanted in an ideal world. Normally, no rational politician wants to write legislation which unnecessarily offends any group of "relevant political actors," including industry (Mayhew: 39; Fiorina: 43–44, 71).⁸ Ideally, a rational politician wants to be perceived as conferring benefits on as large a group as possible, while harming as few as possible. The best possible outcome for Muskie would have been to write legislation like the Air Quality Improvement Act which he proposed initially: moderate, incremental legislation which allowed him to retain his public reputation as "Mr. Clean" while imposing as small a burden as possible on industry. In fact, until 1970, Muskie had followed this strategy of accommodation with great success. Muskie had a long record of working out private compromises with industry in his subcommittee; as a result, he avoided controversy, and his pollution control bills usually passed unanimously (Lippman and Hansen: 145–50).

8. The exception occurs when there are electoral benefits to be garnered from cultivating an image as the scourge of an unpopular group, such as Communists in the case of Senator Joe McCarthy or the drug industry in the case of Senator Estes Kefauver.

Muskie wrote a "tough" pollution statute in 1970, one which ran a serious risk of alienating industry, only when he was threatened with an outcome which was even worse from his perspective—the loss of his reputation with the public as a crusader to clean up the environment; Nixon went along, reluctantly, because the adverse political consequences of vetoing the bill were perceived as greater than those of signing it.

The particular structural feature of the lawmaking system which environmentalists were able to exploit to create the Politicians' Dilemma was the division of lawmaking authority between president and Congress. Because of this division (and other similar divisions, such as between the House and Senate), it is never entirely clear to the voters that a particular politician is responsible for particular legislation. In these circumstances, aspiring politicians have incentives to compete with one another for credit with the public for having passed "strong" environmental legislation. The Nader report was able to compound the pressure on the politicians by exploiting the difficulty that the public has in identifying the politicians who deserve credit for enacting legislation in response to a perceived need.

It is important to recognize that the surprisingly strong environmental legislation in 1970 did not result from superior organization by environmentalists. Indeed, it is possible to speculate that if environmentalists had been more tightly organized as a conventional pressure group in 1970, as they later became (Crandall), the Clean Air Act amendments might have been less, rather than more, stringent. Had there been a well-organized environmental lobby in 1970, Muskie could have deflected Nader's charges by giving in to its demands. And it is quite likely that this lobby would have settled for far less than the Great Leap Forward achieved by the Clean Air Act. In 1970, however, no group yet existed with whom to bargain. In these circumstances, Muskie had no way of knowing how much would be enough. He did about all that he could have done to prove that he was more "pro-environmental" than Nixon: he proposed a bill which was essentially Nixon's, only more so on every point.

REFERENCES

- Ackerman, Bruce A., and William T. Hassler. 1981. *Clean Coal/Dirty Air*. New Haven: Yale University Press.
- Aranson, Peter H., Ernest Gellhorn, and Glen O. Robinson. 1982. "A Theory of Legislative Delegation," 68 *Cornell Law Review* 1.
- Arrow, Kenneth. 1963. *Social Choice and Individual Values*. New Haven: Yale University Press.
- Axelrod, Robert. 1984. *The Evolution of Cooperation*. New York: Basic Books.
- Bateson, Gregory. 1979. *Mind and Nature: A Necessary Unity*. New York: Bantam Books.

- Bonine, John E. 1975. "The Evolution of 'Technology-Forcing' in the Clean Air Act," *Environment Reporter*, Monograph 21. Washington: Bureau of National Affairs.
- Bonine, John E., and Thomas O. McGarity. 1984. *The Law of Environmental Protection: Cases—Legislation—Policies*. St. Paul: West Publishing Co.
- Buchanan, James M., and Gordon Tullock. 1967. *The Calculus of Consent*. Ann Arbor: University of Michigan Press.
- Clark, Robert. 1977. "The Morphogenesis of Subchapter C: An Essay in Statutory Evolution and Reform," 87 *Yale Law Journal* 90.
- Crandall, Robert W. 1983. "Air Pollution, Environmentalists and the Coal Lobby," in Roger G. Noll and Bruce M. Owen, eds., *The Political Economy of Deregulation: Interest Groups in the Regulatory Process*. Washington: American Enterprise Institute.
- Currie, David. 1970. "Motor Vehicle Air Pollution: State Authority and Federal Pre-Emption," 68 *Michigan Law Review* 1083.
- Davies, J. Clarence, and Barbara S. Davies. 1977. *The Politics of Pollution*. Indianapolis: Bobbs-Merrill Co.
- Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper and Row.
- Elliott, E. Donald. 1983. "Anthropologizing Environmentalism," 92 *Yale Law Journal* 888.
- Environmental Action, Inc. 1971. "Clean Air Bill: Analysis of Pressure," in Sam Love, ed., *Earth Tool Kit: A Field Manual for Citizen Activists*. New York: Pocket Books.
- Esposito, John C. 1970. *Vanishing Air: The Ralph Nader Study Group Report on Air Pollution*. New York: Grossman Publishers, Inc.
- Fiorina, Morris P. 1977. *Congress: Keystone of the Washington Establishment*. New Haven: Yale University Press.
- Gilmore, Grant. 1977. *The Ages of American Law*. New Haven: Yale University Press.
- Hardin, Russell. 1982. *Collective Action*. Baltimore: Johns Hopkins University Press.
- Hayek, F. A. 1973. "Rules and Order," in *Law, Legislation and Liberty*. Chicago: University of Chicago Press.
- Holmes, Oliver Wendell, Jr. 1936. "Herbert Spencer: Legislation and Empiricism," in H. Shriver, ed., *Justice Oliver Wendell Holmes: His Book Notices, Uncollected Letters, and Papers*. New York: Central Book Co.
- Ingram, Helen. 1978. "The Political Rationality of Innovation: The Clean Air Act Amendments of 1970," in Ann F. Friedlaender, ed., *Approaches to Controlling Air Pollution*. Cambridge, Mass.: MIT Press.
- Jones, Charles O. 1975. *Clean Air: The Policies and Politics of Pollution Control*. Pittsburgh: University of Pittsburgh Press.
- Knowles, Clayton. 1965. "A Soft Coal Curb in City is Urged." *New York Times*, October 14, 30.
- Krier, James E., and Edmund Ursin. 1977. *Pollution and Policy: A Case Essay on California and Federal Experience with Motor Vehicle Air Pollution, 1940–1975*. Berkeley: University of California Press.
- Lippman, Theo, Jr., and Donald C. Hansen. 1971. *Muskie*. New York: W. W. Norton & Co.
- Lowi, Theodore J. 1969. *The End of Liberalism: Ideology, Policy and the Crisis of Public Authority*. New York: W. W. Norton & Co.
- Marcus, Alfred. 1980. *Promise and Performance: Choosing and Implementing an Environmental Policy*. Westport, Conn.: Greenwood Press.

- Martin, Robert, and Lloyd Symington. 1968. "A Guide to the Air Quality Act of 1967." 33 *Law and Contemporary Problems* 239.
- Mayhew, David R. 1974. *Congress: The Electoral Connection*. New Haven: Yale University Press.
- Melnick, R. Shep. 1983. *Regulation and the Courts: The Case of the Clean Air Act*. Washington: Brookings Institution.
- Nixon, Richard M. 1970. "Environmental Quality: The President's Message to the Congress Recommending a 37-Point Administrative and Legislative Program," *Weekly Compilation of Presidential Documents* 160 (February 16).
- Noll, Roger G., and Bruce M. Owen. 1983. *The Political Economy of Deregulation: Interest Groups in the Regulatory Process*. Washington: American Enterprise Institute.
- Olson, Mancur. 1965. *The Logic of Collective Action*. Cambridge, Mass: Harvard University Press.
- Posner, Richard A. 1982. "Economics, Politics and the Reading of Statutes and the Constitution," 49 *University of Chicago Law Review* 263.
- Rapoport, Anatol, and Albert M. Chammah. 1965. *Prisoners' Dilemma: A Study in Conflict and Cooperation*. Ann Arbor: University of Michigan Press.
- , Melvin J. Guyer, and David G. Gordon. 1976. *The 2 × 2 Game*. Ann Arbor: University of Michigan Press.
- Rose-Ackerman, Susan. 1981. "Does Federalism Matter? Political Choice in a Federal Republic," 89 *Journal of Political Economy* 152–65.
- Schuck, Peter. 1981. "The Politics of Regulation," 90 *Yale Law Journal* 702.
- Shubik, Martin. 1964. "Game Theory and the Study of Social Behavior: An Introductory Exposition," in Martin Shubik, ed., *Game Theory and Related Approaches to Social Behavior: Selections*. New York: John Wiley & Sons, Inc.
- Simon, Herbert A. 1976. *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organizations*. New York: Free Press.
- Trivers, Robert L. 1971. "The Evolution of Reciprocal Altruism," 46 *Quarterly Review of Biology* 35–57.
- Trubek, David M. 1978. "Environmental Defense, I: Introduction to Interest Group Advocacy in Complex Disputes," in B. Weisbrod, J. Handler, and N. Komesar, eds., *Public Interest Law: An Economic and Institutional Analysis*. Berkeley: University of California Press.
- , and William J. Gillen. 1978. "Environmental Defense, II: Examining the Limits of Interest Group Advocacy," in B. Weisbrod, J. Handler, and N. Komesar, eds., *Public Interest Law: An Economic and Institutional Analysis*. Berkeley: University of California Press.
- Truman, David D. 1951. *The Governmental Process*. New York: Knopf.
- Vietor, Richard H. K. 1980. *Environmental Politics and the Coal Coalition*. College Station: Texas A & M University Press.
- Whitaker, John C. 1976. *Striking a Balance: Environment and Natural Resources Policy in the Nixon-Ford Years*. Washington: American Enterprise Institute.
- Wicklein, John. 1970. "Whitewashing Detroit's Dirty Engine," 2 *Washington Monthly* 10.
- Wilson, James Q. 1980. "Introduction," in James Q. Wilson, ed., *The Politics of Regulation*. New York: Basic Books.