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Constitutive Law and Environmental Policy

Holly Doremus*

Law plays a key role in creating the world of the future: shaping its physical form, available technologies, public and private institutions, individual and community capacities, relationships, and ultimately values. The importance of designing law with some of these constitutive effects in mind has been recognized in connection with the drafting of constitutions and other organic documents, but it goes far beyond those situations. Constitutive impacts should be taken into account whenever policy choices implicate social values or occur in the face of uncertainty. The distinctive characteristics of environmental problems, in particular, call for a constitutive approach. Professor Doremus describes a constitutive approach to environmental policy that provides a principled framework for decisions, asking us to decide to the best of our ability what alternative courses of action would say about us and make of us. This framework forces us to address the problem of conflicting values, calling for examination of our values and the tradeoffs we face among them. It should help us achieve the difficult combination of temporal durability and flexibility by maximizing the likelihood that our successors will share our environmental values. That, in turn, may give us greater comfort in trusting policies based on clearly enumerated principles rather than rigid prescriptions.

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I. Introduction

Law does much more than regulate behavior. It plays a key role in knitting the very fabric of society, creating the background against which people conduct their lives. It helps to determine the technological tools we have available to address the problems we face, and how we deploy those tools. It shapes the institutions, for-
mal and informal, that govern our communities. It influences the physical form of those communities, the skills developed by community members, and relationships within the community and with outsiders. In a variety of subtle ways, law influences the values that communities espouse and follow. Law is, in a word, constitutive, meaning that it determines the essential qualities of human communities.

The constitutive qualities of law are easy to overlook, simply because they are so pervasive that we tend to take them for granted, at least outside the limited context of constitution drafting. Yet they are critically important whenever we design policies that implicate core or contested values, are intended to operate far into the future, and must be implemented in the face of substantial uncertainty.

Outside the constitutional arena, law's constitutive qualities therefore deserve greater consideration in at least some specific contexts. The distinctive characteristics of environmental problems make environmental policy one such area. Uncertainty pervades every aspect of environmental law. Environmental problems are inevitably long-term. But environmental challenges are also dynamic. We will never reach an environmental endpoint that allows us to maintain a permanent set of policy choices. We must, therefore, always be thinking about how well our current policy choices will prepare us for those we will face in the future. That means creating policies that, while durable, are also sufficiently flexible to accommodate unforeseen future conditions and changes in our knowledge. Furthermore, the bitterness with which environmental disputes have been contested for the past generation demonstrates how strongly they invoke core, and conflicting, values. Our environmental policies should recognize the importance of the values asserted by combatants on both sides of these disputes. They should encourage productive debate about the extent to which conflicting values can be reconciled, and help us make necessary trade-offs. Finally, they should communicate to future generations what we now believe is the appropriate relationship between humanity and nature, and how we arrived at that belief. Our goal should not be to determine the values of future generations, but to provide them with an understanding of our values, our best case for their continuation, and the practical opportunity to adopt them. Where we identify values that are both important and fragile, we should craft policies that favor their survival.
The goal of this article is to develop a constitutive perspective on non-constitutional law, using environmental policy as an example. Shifting to a constitutive approach to environmental policy will undoubtedly be a challenge. It will require us to address value choices that we have been reluctant to debate in the political arena. Honest talk about ethics can be polarizing when core value disagreements exist; if we even suspect such disagreements, we are likely to shy away from the discussion. As Alyson Flournoy points out, we have been able to avoid that discussion so far in the environmental policy arena through vacuous appeals to a generic ethic.¹ If we all “value the environment,” it may seem as if there is no need to discuss values.² Sweeping that discussion under the rug, however, systematically favors a particular, utilitarian perspective, which may not accurately reflect societal ethical intuitions.

Approaching law and policy from a constitutive perspective can force us toward the discussion of environmental values we so sorely need. A constitutive approach demands that we recognize and acknowledge the values at stake in our environmental decisions. It does not direct us toward particular values, but it calls for a robust public conversation about values. Once we arrive at a clearer understanding of the values that are important to us, the constitutive framework disciplines us to be true to those values. It poses the key questions of what sorts of people, individually and as a community, we aspire to be, and what sorts of values we seek to inspire in our children and in succeeding generations.

At the same time, the constitutive perspective authorizes the entire community, not just a narrow group of experts, to participate in the debate. The search for comprehensively rational decisions that typifies current environmental policy confines the debate to an elite. Shifting the discourse to what sorts of people we want ourselves and our children to be makes the conversation accessible to all. By creating such a broad-based debate, a constitutive perspective reminds the entire community of its responsibility for the future, countering the temptation to abdicate that responsibility to experts.

Finally, taking the constitutive effects of law seriously can help


² In 1990, columnist David Broder contended that the environmental policy argument was "no longer about values," because environmental values were so entrenched that there could be no opposition. David S. Broder, Beyond Folk Songs and Flowers, WASH. POST, Apr. 22, 1990, at B7.
give current form to a vague concern for the future that is widely expressed in polls but rarely seems to come to the fore in policy choices. The constitutive framework reminds us that our policy decisions reflect our care, or lack of care, for the future. If our expressed concern for future generations is to remain plausible, we must act on that concern.

Part II explains the many ways in which law generally is or may be constitutive of technologies, institutions, communities, relationships, and values. Part III focuses on environmental problems in particular, detailing their distinctive characteristics and explaining how a constitutive perspective best responds to those characteristics. This Part demonstrates that the search for objectively determinate solutions to environmental problems, despite its superficial appeal, is fundamentally misguided and potentially dangerous. A new approach is needed. Part IV reinforces the importance of a constitutive perspective on environmental law by providing an overview of the ways in which our current environmental laws are shaping society. This discussion provides specific examples of ways in which policy decisions are "sticky," having lasting, and in some cases unpredictable, effects on the future. It also notes some ways in which we are already groping toward a body of environmental policy grounded on constitutive concerns. Part V explains the advantages of a constitutive approach to environmental policy and sets out the core elements of such an approach. Part VI offers some concluding thoughts.

Although particularly well-suited to environmental decisions, the constitutive framework potentially has much broader application. It could usefully be applied any time we seek to make enduring policy choices without the ability to accurately predict their consequences. It will not make decisions easy, but it should at least increase the probability that decisionmakers will ask the right questions and engage the most important issues.

II. THE CONSTITUTIVE POWER OF LAW

The term "constitutive law" is not new. Most commonly and most obviously, it refers to constitutions, the law that shapes governmental and political institutions. In the international context, the term has similarly been used to describe the laws that define

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nations and sovereignty. It has also been applied in other circumstances, to laws or elements of law that create or establish a variety of legal and social institutions, thereby reinforcing "the basic assumptions of the social order," and "mak[ing] legally recognized practices possible."6

In this article, the term is used in the broadest possible sense. "Constitutive" means "making a thing what it is."7 As used here, constitutive law includes all the ways that law constitutes—that is, shapes—the essential qualities of individuals, groups, and communities.

A. The Inseparability of Means and Ends

The law has considerable constitutive power, playing roles both obvious and subtle in constituting individuals and society. It is no accident that the word "constitution" shares a root with "constitutive." Constitutions are understood to be the organic documents for governments, designed to shape public institutions for the long term. Constitutions also proclaim our most important values. They discipline society to adhere to those values even in the face of strong short-term incentives to the contrary. By visibly declaring the special importance of those values, constitutions help ensure that those values endure in future generations.

The "organic acts" that have created various federal agencies and public land systems are also recognized as deliberately constitutive.8 Such laws have much in common with constitutions. They define the mission of the agency or system, design its structure, and provide general principles to guide its actions.9 Like constitutions, organic acts are intended to be broadly applicable and durable, guiding agency conduct over a wide range of circumstances and a substantial period of time. They provide the agency with the power

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and direction to shape the details of its own future through regulations. Finally, they are expected to be stable for long periods, with only infrequent amendment.

Constitutive law is not, however, limited to constitutions and self-consciously "constitutional" documents. The entire spectrum of legal standards, together with the ways those standards are implemented, shape us and our society. It is widely recognized that law is an important mechanism through which societies, groups, and cultures structure themselves. To say that law is constitutive is to agree with Richard Pildes that law has cultural consequences. Law, together with the institutions it creates, provides a series of lessons for society. Those lessons are likely to be particularly powerful because they are hidden. They become part of the basic fabric of our lives, as seemingly natural, inevitable, and unquestionable as the alphabet we use.

The constitutive quality of law has important implications for the selection of means to achieve societal ends. Recognition of constitutive consequences exposes the fatal flaw in a superficially appealing approach to environmental policy decisions—the delegation of means choices to experts while goals choices are reserved to the political process. That approach sounds logical, but it is doomed to failure. The means used to address a problem cannot be cleanly separated from the ends those means are supposed to achieve, because the means affect both who we are and how we see the world. Values must be applied to the choice of means as well as ends.

The metaphor of a multi-stage journey demonstrates the inseparability of ends and means. At each stage the choice of destination is important, but it is hardly the only choice that matters. The route and mode of travel will inevitably affect the traveler, honing some skills and reinforcing some values while allowing others to lapse. Most destinations are reachable via a number of different routes, but, depending upon the route chosen, the traveler will be


different at the end of each stage of the journey. In the same way, the choice of policy instruments at the first stage affects our perception of the problem and our ability to address it at subsequent stages.

B. The Many Constitutive Effects of Law

The constitutive effects of law are many and varied. Several categories of constitutive effects are particularly relevant to environmental policy.

1. Shaping technology.

Law can encourage or discourage the development of new technologies, directly through regulations, subsidies or taxes, or less directly as a result of the effects of regulatory schemes on incentives to innovate. Technologies seen as threatening can be limited by, for example, restricting their use, taxing their use or development, or making patents unavailable. Desirable technologies can be promoted in a similarly wide variety of ways, through direct mandates, performance requirements, tax credits or deduct-
While technologies might not seem constitutive at first glance, they have important effects on society. The past has clearly taught that technology, carelessly employed, can create environmental problems that are difficult to correct. DDT is the classic example. Heavily used before its environmental costs were recognized, DDT caused precipitous declines in the populations of raptors and other sensitive birds; thirty years after DDT use was banned in the United States, deposits in sediments remain a threat to some bird populations.

Furthermore, the availability of technology is an important determinant of reactions to environmental problems. Without continuous emissions monitoring, for example, the “cap and trade” pollution-permit approach to reducing sulfur dioxide emissions would not be possible. More fundamentally, technology strongly influences our perception of problems. Before the advent of airplanes, conveying property rights to the heavens based on boundaries drawn on the soil made perfect sense. That approach, however, had to be rethought when it threatened to interfere with the budding benefits of air travel. Technology can also limit perceptions of possible solutions to a problem. It is so obvious as to be a cliché that if you have a hammer in your hand, every problem looks like a nail. Examples are easy to find. No one should be surprised, for instance, that an agency charged with overseeing the construction and licensing of power plants would not see energy installed in new buildings in the state "use no more than an average of 1.6 gallons per flush".

22. See, e.g., id. at 46,556.
conservation as a viable solution to an imbalance between electricity output and demand.  

2. Shaping institutions.

Law forms our public institutions, and determines what principles and values motivate public actions. Some connections are direct and intentional, such as the choice to create a Council on Environmental Quality in the Executive Office of the President to increase the sensitivity of the executive branch to the environmental effects of its decisions. Others are unintentional, although perhaps obvious in retrospect. In 1785, Congress directed a survey of the public lands on a rectangular grid, and division of those lands into regular sections and lots. This national survey facilitated both transfer of land into private ownership and subsequent land transactions. But the rectangular grid it established, coupled with subsequent grants of alternate sections to the railroads, have left today's federal land-management agencies with the challenge of managing holdings laid out with little relation to natural boundaries and interspersed with private lands.

Law also strongly influences the form, function, and resources available to private institutions, including corporations and non-profit organizations. Law helps to structure the relationships of voluntary associations with their members, and of their members with one another. Like our technological abilities, these institutional effects can strongly influence societal responses to environmental challenges.


Third, law, in its various forms, can encourage or discourage...
the development of particular capabilities in individuals, groups, and communities. Public schools, for example, make available what we regard as the minimum training needed for children to develop into productive members of society capable of participating in the political community. Mandatory education requirements help to ensure that all children receive that training.

The social structure law creates can also affect individual development. Bringing people into contact with members of other racial and ethnic groups, for example, through integrated schools or housing arrangements may promote tolerance by building the capacity to interact with others.32

It may also be possible to promote the development of characteristics that help people become good citizens and effective members of the political community. One of the early justifications for creating the national park system was that the kind of recreation it could provide would help create better citizens.33 Today, it is widely believed (although I do not know of any empirical evidence on the point) that creating the right kind of opportunities for public participation in government builds the capacity of community members to understand and address important societal issues.34

4. Shaping relationships.

Fourth, law constrains the ways in which people relate to one another. Law can directly place people in distinct categories, such as racial classifications, that carry not only legal consequences but also cultural significance.35 Even seemingly race-neutral laws, or the institutions they create, can facilitate the application of racial stereotypes in private or public decisions.36

The physical structures that law prescribes for communities also

32. See John Martin Rich & Joseph L. DeVitis, Theories of Moral Development 74 (2d ed. 1994) (describing evidence that college residence hall arrangements can "reduce ethnocentrism and promote greater acceptance of others").


34. See, e.g., U.S. Dep't of Agric., Comm. of Scientists, Sustaining the People's Lands: Recommendations for Stewardship of the National Forests and Grasslands into the Next Century xxi-xxiv (1999) (calling for the Forest Service to structure its planning decisions in ways that will build public stewardship capacity).


affect human relationships. On the micro scale, the imposition of design standards can support the development of neighborhood communities. On the macro level, zoning and other legal standards that shape the physical structure of communities can determine the extent to which people encounter others of different races, cultures, income levels, and values, and can affect the level of criminal activity.

Law also impacts the equities of our relationships. The process used to decide where to site polluting facilities, for example, helps determine whether society's elite will be able to impose the environmental costs of its consumptive lifestyle on poor or minority communities.

In addition to structuring our relations with one another, law structures our relationship to the physical and biological environment in a variety of ways. As with human relationships, the effects on our relationship with nature are both direct and indirect. The direct effects are obvious, as a couple of examples demonstrate. The Endangered Species Act (ESA) sharply restricts the circumstances under which we can deliberately cause extinction. We have developed legal designations, such as national parks and wilderness, which declare specific areas immune from despoliation.

But the indirect effects are just as important. Decisions to for-

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bid particular land uses in one place may simply channel those uses to other locations. Wealthy or politically astute communities, for example, often successfully oppose placement of "locally undesirable land uses," such as hazardous waste disposal facilities, within their borders. But those facilities are not eliminated; they are simply placed in poorer, or less politically powerful, communities. Our choices about where and how to protect nature will also strongly affect the ability of future generations to develop emotional attachments to nature. Enduring love of nature is often formed in childhood. Children who lack access to nature, because environmental laws and zoning codes have not kept it available near them, are unlikely to form those bonds.

5. *Shaping values.*

Fifth, by communicating, directly or indirectly, society's endorsement of particular values, law reinforces those values among members of the present generation. It also subtly encourages their adoption by succeeding generations.

*Intuitive recognition.* These effects can be difficult to demonstrate empirically, but they make obvious intuitive sense. Preferences and values are known to be malleable. They can be shaped deliberately, through advertising or similar techniques. Even without any such deliberate intent, the fabric of our lives, including our experiences and the information we constantly take

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44. See, e.g., Eileen Gauna, Federal Environmental Citizen Provisions: Obstacles and Incentives on the Road to Environmental Justice, 22 Ecology L.Q. 1, 32-34 (1995); see also Oliver Houck, Unfinished Stories, 73 U. Colo. L. Rev. 867, 907-08 (2002) (detailing how successful use by wealthy communities of law forbidding construction of federally-funded highways through public recreational areas unless there is no feasible and prudent alternative has pushed highway construction to low-income, minority communities).

45. Some research suggests that nature must be very near—minutes away—to be effective in this context. See Rachel Kaplan & Stephen Kaplan, The Experience of Nature: A Psychological Perspective 155 (1989).

46. Preference is a term used by economists to signify the "attributes of individuals that...account for the actions they take in a given situation." Samuel Bowles, Endogenous Preferences: The Cultural Consequences of Markets and Other Economic Institutions, 36 J. Econ. Lit. 75, 78 (1998). Preferences comprise a heterogeneous set of reasons for choosing behaviors: some preferences may be dependent on beliefs or knowledge, while others arise from emotional reactions or psychological factors. Id. at 79.

47. I use the term "values" to mean the beliefs and attitudes that motivate behavior.

in, shapes our preferences just as it shapes our understanding of the world outside us. The “Plastic Trees” debate of a generation ago provides an illustration. In 1973, Martin Krieger raised hackles by suggesting that we could (and should) create artificial proxy environments as substitutes for nature, using marketing strategies to imbue those artificial environments with all the cultural significance we now assign to natural ones. Krieger wrote:

What’s wrong with plastic trees? My guess is that there is very little wrong with them. Much more can be done with plastic trees and the like to give most people the feeling that they are experiencing nature. We will have to realize that the way in which we experience nature is conditioned by our society—which more and more is seen to be receptive to responsible intervention.49

Krieger’s essay touched a nerve because readers recognized, to their discomfort, that the conditioning he advocated could work. The ways in which people experience nature (and the human world as well) are strongly conditioned by society. Succeeding generations could be taught to see human artifice as a good substitute for nature. In a world with only plastic trees, people would not value nature because they would have no opportunity to do so.

Law, because it plays such a large role in shaping society, is necessarily an important aspect of the conditioning process Krieger recognized. The claim that law influences values hardly needs support. Although we know little about the details of the process, it would be astonishing if something that is so much a part of our lives had no impact on our desires, beliefs, preferences, views, and tastes.50

That the political community believes law has these kinds of effects on values can be seen in the frequent fierce controversies over value-laden policy choices, such as those about the death penalty, abortion, drug use, and regulation of private property. Dan Kahan attributes these controversies largely to battles over social dominance and position.51 No doubt there is some raw status-seeking, and groups that lose political battles over such legislation may well feel that their values have been excluded from the political


50. To borrow the words of Samuel Bowles from a slightly different context, “one risks banality, not controversy, in suggesting that” legal rules which impose patterns of interaction on society “therefore influence the process of human development, affecting personality, habits, tastes, identities, and values.” Bowles, supra note 46, at 76.

community. But there is another plausible explanation for the ferocity with which people seek to have law endorse their values: they want others to share those values. They may seek to enshrine them in law because they expect that endorsement to persuade others. In other words, they may seek to align the law with their own values because they want law's constitutive power on the side of those values, rather than simply to enhance or confirm their relative social standing. Given the apparent malleability of preferences and values, such a desire would hardly be irrational.

Drawing on the intuition that law affects societal values over time, commentators have long expressed concern that the law should promote, or at least not undermine, appropriate values. In the environmental context, perhaps the leading voice has been that of Eric Freyfogle. Freyfogle has argued that traditional legal doctrines governing the ownership of land and water reinforce outmoded understandings of the proper relationship between people and nature, and among groups of people. Because he views law as playing an important role in promoting values, he has championed changes in the law with the express purpose of improving societal values with respect to the environment.52

The work of philosopher Mark Sagoff, a longtime critic of overreliance on economic evaluations of environmental policy choices, points in a similar direction. More than twenty years ago, Sagoff wrote, "We choose to save [endangered species] to prove to ourselves that we are not motivated solely by economic self interest. Rather, we act upon moral values and a sense of national responsibility to the land that we inhabit."53 It is only a small step from proving to ourselves that we are not entirely money-grubbing to wanting to encourage ourselves and our successors to value some things more highly than money.54

Understanding the connections. The vague intuition that law must affect values, of course, does not provide much guidance on how we should frame our policies to deliberately shape values. For that, we need to consider how values are formed and how law might


54. Indeed, Sagoff takes that step when he asserts that the legitimacy of the political process depends crucially upon its ability to change values. Id. at 1413-14.
contribute to that process. Two separate strands of scholarship are helpful here.

First, there is substantial evidence that the existence and form of markets, which are framed by law, affect the development of societal values, tastes, and preferences. Margaret Jane Radin has explored much of this evidence in her famous work on inalienability. Radin noted that the existence and rhetoric of markets contribute to "the texture of the human world" in ways that can negatively affect "our conception of human flourishing."\(^{55}\) The work of economist Samuel Bowles supports Radin's claims. Bowles describes the empirical evidence showing that use of a market framework affects values. He notes two connections relevant to Radin's argument. First, markets frame problems and choices, contributing to perceptions of entitlement and fairness. The market framework tends to encourage the exercise of self-regarding, rather than other-regarding, preferences.\(^{56}\) Second, by providing extrinsic rewards (payments), markets can reduce the intrinsic satisfaction people get from engaging in various activities, such as donating blood, and the likelihood that they will do those things without compensation.\(^{57}\)

In a second strand of relevant scholarship, over the past decade a number of legal scholars have analyzed how law might influence values and behavioral norms, why that potential must be considered in law reform efforts, and what values law should be used to promote. The body of work they have produced concentrates on law's "expressive" features.

Expressive law theorists begin with the non-controversial observation that law (as declared by courts, enacted by legislatures, or promulgated by agencies) does more than directly regulate conduct. It also, and inevitably, conveys endorsement or rejection not just of the conduct regulated but also of the values that inform that conduct.\(^{58}\) The messages law sends, these theorists contend, can be as important as its direct regulatory power.

Law's messages can be complex and even self-contradictory. A law prohibiting flag burning, for example, could communicate sev-

\(^{56}\) See Bowles, supra note 46, at 87-90.
\(^{57}\) See id. at 90-91.
eral different messages. Most obviously, it communicates exactly what it says: burning the flag is unlawful, and will subject the burner to specified sanctions. In addition, against the background of shared social understandings, it might convey to the public at large, or to a segment of the public, the government’s endorsement of the values of patriotism and respect for one’s country. To others, it might suggest that government must be protected from criticism, or that certain types of dissent are intolerable. To a group of lawyers, it might convey lack of respect for the values that underlie the First Amendment.

Expressive theories of law concentrate on the public perception of, and response to, these indirect messages, which together make up what might be called the “expressive,” “symbolic,” or “social” meaning of the law. As the flag-burning example demonstrates, these meanings may be contested, and may vary with the audience. Because it is so dependent on context, the social meaning of law cannot always be reliably controlled. The law may carry implicit messages intended by the lawmakers, messages merely incidental to other purposes, or even messages directly contrary to the intentions of lawmakers. The key is how the relevant audience perceives the law, not the message its creators meant to send.

The expressive dimensions of law can have constitutive effects on the values and behavior of individuals, as well as of the community or state. Katherine Bartlett made this connection several years ago. She argued that the law governing child custody disputes “implicitly encourage[d] parental possessiveness and self-centered-

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59. Unfortunately, expressive theorists have not developed a uniform terminology. For example, Anderson and Pildes use the terms “public meaning” and “expressive meaning” interchangeably. Elizabeth S. Anderson & Richard H. Pildes, Expressive Theories of Law: A General Restatement, 148 U. PA. L. Rev. 1503, 1524-25 (2000). Sunstein talks about law’s “statements.” Cass R. Sunstein, On the Expressive Function of Law, 144 U. PA. L. Rev. 2021, 2024-25 (1996). In this article, I use the terms “expressive meaning” and “social meaning” interchangeably to refer to the indirect meanings of the law, as perceived by the public at large or a smaller group.

60. See Sunstein, supra note 59, at 2023 (explaining that hate speech regulation might signify that victims, because they are weak, require special protection, or, alternatively, that it might signify the social unacceptability of bigotry).

61. Those who write about expressive law are not always clear about the relevant audience or what information that audience has before it. Because I believe these points are important to both the descriptive and the normative arguments that follow, I will try to address them explicitly.

62. See Anderson & Pildes, supra note 59, at 1512-13, 1524-25 (explaining how the public meanings of actions can deviate from the actor’s intent).
ness." Without attempting to explain the precise mechanism, she urged that law expressing a different view of parenthood would promote more desirable values. Bartlett tied this effect to the impact of law on norms "The choice of how to state our reasons for recognizing, or declining to recognize, parental claims is a rhetorical move, but nonetheless important. The law's rhetoric defines norms that parties reproduce when they articulate their claims in certain ways."

Mechanisms: Value forcing and value clarification. Recently, several theorists have offered more detailed descriptions of how the expressive dimension of law can influence behavior, with or without the mediation of social norms. Most simply, law can directly encourage or discourage behavior through subsidies, taxes, rewards, or sanctions. But the statements law makes can also encourage beliefs or attitudes that then lead or contribute to desired behavior. Laws designed to reward cooperative behavior, for example, may increase the level of such behavior directly, as people seek the offered reward. They may also indirectly encourage cooperation by increasing the expectation of cooperation from others. The stronger the terms in which the state's commitment is declared, the stronger this effect may be. We should expect, therefore, that fines—fees couched as sanctions for unacceptable behavior—will more effectively deter that behavior than prices set at the same level that do not carry a condemnationary message.

Expressive theorists have also suggested that the messages implicit in law can alter behavior by changing behavioral norms. Richard McAdams contends that law can provide a nudge toward new norms by publicizing a little-noticed social consensus. Given the general norm of compliance with law, the mere enactment of a

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64. Id. at 315.
66. See STEVEN KELMAN, WHAT PRICE INCENTIVES? ECONOMISTS AND THE ENVIRONMENT 44-45 (1981); McAdams, supra note 37, at 398. Prices also convey the message that the rights purchased are fungible with money, a message with which environmentalists may vehemently disagree.
67. McAdams, supra note 37, at 400-03.
law can change behavior without much enforcement effort, at least if the change requires little time, effort, or money to implement. Compulsory voting laws, for example, seem to increase voter turnout, even though the imposition of formal penalties is rare.\(^69\) Under the right circumstances, a relatively small nudge of publicity can set off a "norm cascade," "tipping" society to a new equilibrium, in which a much larger proportion of people acts on, or perhaps has internalized, the norm in question.\(^70\)

Norm forcing appeals to legal reformers because internalized norms can provide efficient decentralized mechanisms for governing behavior. Violations are more likely to be detected if a large group of norm holders can be enlisted in enforcement efforts. Unlike legal sanctions, moreover, informal sanctions for norm violation, such as disapproval, may be nearly costless to impose.\(^71\) Furthermore, they can be fine-tuned to fit the circumstances of the group.\(^72\) Most efficient of all, those who have "internalized" a norm will impose sanctions on themselves, ensuring perfect detection and punishment.\(^73\)

Whether the expressive qualities of law can effectively change underlying values, as well as behavior, is less clear, but a plausible connection can be drawn. If law expresses a strong condemnatory message by, for example, imposing stringent penalties on certain behavior, it might cause citizens to internalize that condemnation, changing their values as well as their behavior.\(^74\) Changes in behav-

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71. See, e.g., Robert D. Cooter, Decentralized Law for a Complex Economy: The Structural Approach to Adjudicating the New Law Merchant, 144 U. PA. L. REV. 1643, 1668 (1996) ("Informal sanctions like gossip and ostracism are cheap pain."); Hasen, supra note 69, at 2149 (noting that people enjoy sanctioning, both positive and negative, through such mechanisms as gossip and encouragement); McAdams, supra note 37, at 365; Philip Pettit, Virtus Normativa: Rational Choice Perspectives, 100 ETHICS 725, 739 (1990) (pointing out that violators can be punished through the attitudes of others).
73. See, e.g., Hasen, supra note 69, at 2147.
ioral norms might therefore lead indirectly to changes in values as people internalize the new norms.

It seems likely that true value-forcing would work only incrementally; the mere enactment of a law is unlikely to undermine strongly held core values or to deter behavior that provides a strong financial or other benefit. Indeed, enactment of laws intended to be value- or norm-forcing carries real risks. If the general tendency to comply with law is not sufficient to counteract the desire to engage in the forbidden behavior, violation may be widespread. Laws that run counter to deeply ingrained norms or values are likely to prove spectacular failures. Widespread violation could signal that the law does not reflect a genuine consensus, encouraging even more violation. That cascade would not only undermine the expressive value of the law in question, it might even threaten to undermine the general norm of compliance with law.

Prohibition provides a cautionary example. The Eighteenth Amendment to the Constitution, prohibiting the manufacture, sale, or transportation of alcoholic beverages, surely made a bold statement about the moral acceptability of drinking. But rather than end drunkenness, Prohibition led to rampant bootlegging and pervasive corruption among those charged with its enforcement. The failure of Prohibition suggests that law alone cannot drive radical changes in norms or values. Political forces will ordinarily forestall law that diverges significantly from the social consensus. But when those forces fail, as they apparently did in the case of Prohibition, the law is not likely to change the pre-existing consensus.

Nonetheless, law may be useful in strengthening weakly held values, or in pushing the undecided toward one of a pair of closely contested values. In addition to being incremental, value forcing is likely to be slow, since children are probably more susceptible to inculcation with new values than their parents.

Law can also change behaviors by persuading people that ac-

75. U.S. CONST. amend. XVIII.
76. Prohibition passed overwhelmingly, both in the Congress and in ratifying states. That could have happened in the absence of a true consensus against alcohol consumption, because vociferous proponents created the impression of a consensus, making opponents reluctant to voice their opposition for fear of being labeled immoral. See, e.g., Michael Munger & Thomas Schaller, The Prohibition-Repeal Amendments: A Natural Experiment in Interest Group Influence, 90 PUB. CHOICE 139, 144-45 (1997). Prohibition thus illustrates both the potential power and the limits of expressive framing in the political arena.
77. See McAdams, supra note 37, at 381 n.147.
tions they once thought harmless actually contradict their values. Law can communicate an authoritative community determination that certain behaviors create harmful spillover effects. That message, in turn, may lead individuals to reconsider the ethical acceptability of those behaviors. For example, laws forbidding cigarette smoking in public places could, if carefully framed, force smokers to recognize that their behavior is harmful to the health of those around them. That could persuade smokers who already believe that physically harming others without strong justification is unacceptable that smoking in public is wrong. The resulting change in behavior would reflect a change in the understanding of how a particular action relates to values already held, rather than a change in the underlying values themselves. In other words, law could serve as a mechanism to clarify moral responsibility, helping to show people that certain behaviors are inconsistent with the values they claim to hold. We might expect such laws to be highly effective in modifying those behaviors.

A constitutive perspective on values. The spate of scholarship on expressive law has drawn much-needed attention to some of the ways in which law can be constitutive. However, this work is too narrowly focused on law as a mechanism for communication to provide a wholly satisfying explanation for the interaction between law and values. Values are at least as likely to be molded by the characteristics of the physical, institutional, and social world that law creates as they are to be determined by law's messages. In many cases the messages of law are ambiguous, contested, or even invisible to the public, making them poor candidates for shaping values. That is especially true in environmental law, which is full of dauntingly complex statutes and regulations, the details of which are difficult for even experts to understand. The physical and so-

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78. *Cf.* id. at 407-08 (explaining how law requiring parents to use child safety seats in cars can give concrete content to an underlying abstract norm of good parenting).
cial structure of the world we live in, however, cannot help but shape us. Thus, expressive messages are one way law shapes our world, but by no means the only one.

Another limitation of expressive law scholarship is its strong focus on the prevention of “expressive harms” to people.\(^1\) Two leading advocates of expressive theories of law, Elizabeth Anderson and Richard Pildes, have explained that their focus on harm to people rests on their assumption that “from a moral point of view, people are what is fundamentally valuable.”\(^2\) They claim that is merely a simplifying assumption, asserting that nothing in their analysis would change if animals, ecosystems, or other things were also deemed morally valuable.\(^3\) But animals, ecosystems, the atmosphere, and other manifestations of nature cannot receive social messages. They cannot, therefore, suffer expressive harm in the same way that people can. A more general approach than that of the expressive law theorists is needed.

Anderson has shown the path to a broader approach, although not in her work on law. She has articulated an expressive ethic that can be broadly applied. At the center of this ethic is the notion that persons should act in ways that adequately express their attitudes toward the people and things they care about.\(^4\) Anderson’s ethic embodies the truism that actions speak louder than words. Only by putting our attitudes into action can we make them real. If we claim to love someone but act in ways inconsistent with love, the object of our supposed affection might fairly accuse us of not in fact loving them at all. Although Anderson terms her ethic expressive, it can be more accurately characterized as constitutive.

Anderson argues that individuals, and by implication communities, should choose actions that adequately express their attitudes. Anderson recognizes that the consequences of actions matter.\(^5\)

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\(^2\) Anderson & Pildes, supra note 59, at 1509.

\(^3\) Id. at 1509 n.8.

\(^4\) ELIZABETH ANDERSON, VALUE IN ETHICS AND ECONOMICS 18 (1993).

\(^5\) Critics can be forgiven for their confusion about the extent to which Anderson truly cares about consequences. She spends a great deal of effort and ink denying the primacy of consequences, to refute a particular brand of utilitarianism that focuses only on consequences measurable on a single scale, such as welfare or preferences. See id. at 30-38. This focus leads to rhetoric that denies the importance of consequences more strongly than is necessary, and perhaps more strongly than Anderson intends. In their collaborative
She emphasizes, however, that the morality of a particular action depends as much on the context as on its consequences. Anderson offers the example of a mother who feeds her child only a single cup of milk. The material consequences of that action are the same whatever the context: the child is just as poorly nourished. But the context, particularly whether the mother has ready access to more milk, strongly affects our view of the action’s morality. It would be strange indeed to condemn a mother as immoral on the grounds that she had not done the impossible for her child. If she had access to only a single cup of milk, the mother could only choose to feed the child all, some, or none of the milk. Under those circumstances, feeding the child a cup of milk fully expresses maternal affection, whereas it would not if the mother had access to gallons of milk and the child remained hungry.

In this example, the consequences for the child are starkly clear but not wholly within the mother’s control. She can choose her actions by asking which of the options available to her best expresses her love for her child. Or, with the same range of options, she could make her choice solely by reference to the consequences for the child. Either path would lead to the same conclusion. In environmental policy, however, the consequences of societal choices are far more difficult to foresee. In the context of that kind of uncertainty, the alignment of our actions with the attitudes we claim to hold can supply a decision rule that consequences alone cannot.

Anderson’s example raises an important point for policy choices, although she does not explore it. The context within which actions are taken is not necessarily static. Efforts to change that context may be ethically required. While no one would condemn the mother for failing to feed her child milk she does not have, we might well fault her for failing to explore all possible avenues for finding food for her child. If she did not look for a job, declined to apply for food stamps, or turned down a gift of milk from a friend or relative, her actions might not adequately express her claimed maternal affection. It is not enough, in other words, to

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article, Anderson and Pildes further this confusion when they argue that state actions that express improper attitudes are wrong “without regard to further concerns about [their] cultural or material consequences.” Anderson & Pildes, supra note 59, at 1531. Perhaps they mean that with respect to state actions that expressively harm persons, since they view expressive harm in itself as a serious consequence. But other types of consequences seem to undergird their concerns about, for example, expressive federalism. See id. at 1556-64.

86. See Anderson, supra note 84, at 80.
claim that lack of resources prevents an action that one would otherwise take. A vigorous search for resources can be an essential aspect of ethical action.

Anderson’s perspective on ethics can easily be translated into constitutive terms. A constitutive perspective calls for society to choose actions consistent with societal values. Choices should be based, however, not solely or even primarily on the *expressive* effect of actions (what they tell others about our attitudes) but on their *constitutive* effect (what they make of us). Our actions reveal and realize our attitudes. If we do not act in accordance with our proclaimed values, we cannot sincerely claim to hold them. Perhaps we can sometimes act inconsistently with values we sincerely hold, but we cannot do so routinely. Actions that conflict with our attitudes of caring may undermine those attitudes through a kind of cognitive dissonance, or simply through attrition. Over time, if we consistently act in opposition to our claimed values, we will find it more and more difficult even to convince ourselves that we hold those values.

There is likely to be a strong connection between the expressive dimensions of law and its constitutive effects. Law modeling appropriate attitudes, or making it more likely that people will engage in actions that model those attitudes, should encourage adoption of those attitudes. Law of that sort can publicize and reinforce an existing tentative or unrecognized consensus. Government policies that adequately reflect society’s values are likely to reinforce those values among the present generation and will help future generations develop them. By the same token, societal values not adequately reflected in policies may atrophy.

III. **Why Environmental Policy Demands Attention to the Constitutive Dimensions of Law**

As time frames grow longer and uncertainty grows more extreme, law’s influence on the characteristics and values of present and future generations becomes increasingly important. The peculiar characteristics of environmental problems make it essential that we understand the constitutive aspects of environmental law, and desirable that, to the extent possible, we employ its constitutive qualities to shape the world of the future.

Environmental problems share four distinctive features that make them especially intractable. First, they are characterized by high levels of uncertainty. Second, they present conflicts between
socially contested yet strongly held values. Third, solving them requires collective action. Fourth, to be effective, solutions to environmental problems must be durable over unusually long periods of time, but flexible enough to respond to new information and changing conditions. Together, these characteristics make objectively determinate solutions tantalizingly appealing yet impossible to achieve. Environmental problems cannot simply be turned over to experts for solution through application of an algorithm. They can, however, be tackled by deliberation with careful attention to their constitutive effects.

A. The Distinctive Characteristics of Environmental Problems

1. Pervasive uncertainty.

The most universally recognized feature of environmental problems is the pervasive uncertainty that surrounds them. Uncertainty arises from, or is exacerbated by, several characteristic features of environmental problems. First, environmental harms can manifest themselves at substantial geographic distances from the events that cause them.\(^87\) Pollutants, for example, can travel long distances in air or water. Acid rain is a good example: sulfur dioxide emitted by Midwestern power plants reacts with water and oxygen in the atmosphere to form sulfates that can be transported hundreds of miles by the prevailing winds before being deposited as acidic rain or snow in the Northeast. Power plants in the Ohio River Valley cause the acidification of lakes, streams, and soils hundreds of miles away in upstate New York and New England.\(^88\)

Second, environmental harms can take many years to manifest, or for their full scope to become apparent.\(^89\) The carbon dioxide emitted from our cars, power plants, and other fossil-fuel-burning sources today will affect the global climate far more in the future than it affects us in the short run.\(^90\) The long time lags associated with many environmental harms mean that actions may set in motion irreversible environmental damage before their consequences


\(^{89}\) See, e.g., Lazarus, supra note 87, at 746.

are recognized. That possibility substantially complicates the task of choosing an appropriate path. Furthermore, time lags between cause and effect can decouple the costs and benefits of environmental protection. Actions taken today to reduce carbon dioxide emissions will have immediate economic costs, but their environmental benefits will primarily inure to future generations. Economic self-interest (at least in a narrow sense) is not likely to effectively motivate preventive or protective measures unless the people responsible for making decisions expect to be around to reap the benefits and apply a low discount rate to those benefits.91

Third, environmental damage frequently results from multiple causes.92 It can be very difficult to sort out the extent to which each independent cause contributes to the problem, much less to assign responsibility. Environmental problems are typically problems of excessive pressure on a resource, rather than of unambiguously harmful actions. Individual actions, standing alone, can be entirely benign, yet combined they can create substantial, even catastrophic, harm. The near demise of the North American bison at the end of the nineteenth century is illustrative. The bison could tolerate some hunting pressure; the mere act of killing a bison did not threaten the species' existence. But when too many people shot too many bison in too short a time, the population crashed from many millions to just a few small herds.93

These myriad uncertainties make environmental problems exceptionally difficult to solve. We often cannot be sure that policy steps are necessary or will have the desired effect. Even when we are fairly confident that our policy choices will ameliorate environmental harm, we are often uncertain whether their benefits will outweigh their costs.94 Furthermore, we cannot be sure that we are placing responsibility on the right actors, or that the distribution of costs is equitable.

On a more subtle level, uncertainty increases the difficulty of addressing environmental problems because it makes it easier to ignore them. Human beings are prone to wishful thinking, tending to underestimate the seriousness of problems, to overestimate the

92. See Lazarus, supra note 87, at 747.
effectiveness of efforts to solve them, and to assume that the future will make them easier to solve.\(^9\) We tend to take advantage of uncertainty to interpret data in ways that serve our own interests and suit our own preconceptions,\(^9\) which often means convincing ourselves that someone else is to blame for the problem or that we do not need to take immediate costly or painful measures to address it.

2. *Intractable value conflicts.*

The second complicating characteristic feature of environmental problems is that they implicate contending, fiercely held values. Value conflicts, as much as economic conflicts, drive the heated controversies that so often accompany environmental disputes. These value conflicts complicate environmental policy decisions by polarizing the debate. They make it easy for the contesting sides to demonize each other, and hard for them to find common ground. They tend to encourage both sides to look for alternative “objective” grounds for decisions. Yet they make that search more difficult, by encouraging people to cling tenaciously to any evidence that supports their view, by making it difficult for people to communicate with one another, and by frustrating the search for a common measure of value.

*Conflicts about valuing.* Value-based conflicts over distribution of societal resources, of course, are commonplace. Even when values are widely shared, individual judgments about priorities among those values frequently differ. As a result, federal, state, and local legislators wrestle constantly with decisions about how to prioritize available funds: they must determine whether schools should come before public safety, highways before job training programs, and the like.

Value conflicts in the environmental arena are more fundamental, and therefore more difficult to resolve, than many others in two respects. First, environmental conflicts are often zero-sum, meaning that no win-win solution is possible. Choices between schools, hospitals, highways, and missiles are often wrenching, but


increasing economic prosperity can increase the funds available for all of them. While the conflicts between goals are real, they can be reduced by pursuing policies that maximize our ability to reach all of them. These goals compete for limited resources, but are not inherently contradictory. Natural resources are different. We cannot increase the amount of air, water, land, or minerals on the earth. Use of those resources for one purpose precludes their use for another. We cannot avoid conflicts by expanding the pie.

Second, because people disagree about how to value environmental resources and benefits, it is very difficult to decide which trade-offs are justified. One aspect of the dispute over valuation is disagreement about whether adequate substitutes for environmental resources exist or can be developed.

As a dramatic illustration of this debate, consider the bet between economist Julian Simon and ecologist Paul Ehrlich. In 1980, Simon, known for his rosy view of the future, offered to bet $1,000 that the price of any natural resource would fall in the future. Ehrlich, with two other ecologists, accepted the bet, choosing five metals and a time frame of ten years. Simon won when prices fell, in large part because demand declined as substitute materials became available.

The Simon-Ehrlich bet has been described as one on “whether the world is getting better or going to the dogs.” Environmentalists, however, would disagree with an economist’s reading of the result. The bet, of course, was stacked in Simon’s favor. Economists are well aware of the development of substitutes, and emphasize the fungibility of resources. Environmentalists, by contrast, strongly deny that there can be any substitute for the esthetic, recreational, and non-use values of nature. From Simon’s perspective, perhaps the price of metals is a good measure of quality of life, but most environmentalists would view it as marginally relevant, at best. From their perspective, Ehrlich should have demanded a different bet, directly tied to changes in things they see as important to a fulfilling life and lacking any substitute. Had Ehrlich and Simon bet on the change in the number of species, extent of the

97. See Alex Kozinski, Core Wars, 100 MICH. L. REV. 1742, 1752 (2002).
99. Id.
rainforest, or availability of uncrowded wilderness, Ehrlich would have won.

Another familiar aspect of the valuation dispute focuses on how to determine the value of environmental resources, and how to compare that value to other things society might desire. This disagreement underlies the argument about whether or not cost-benefit analysis should determine environmental policy.101 Cost-benefit analysis creates virtual markets that assign "shadow" prices to goods and services not traded in real markets. Its proponents argue that it enables society to make the most efficient use of limited resources, and to prioritize among demands upon those resources. Opponents, however, argue that some things cannot be meaningfully monetized, and that those non-fungible resources will be systematically undervalued if their value must be expressed in monetary terms. They also worry that a market model, even one that relies on virtual rather than real markets, will shape the way society values those things.102

Individualism versus collectivism. Another value conflict focuses on whether individual or societal interests should take priority. This conflict is perhaps most apparent in disputes about the regulation of private property. One side paints private property ownership as a pillar of individual civic virtue, the foundation of investment and economic activity, and a necessary fortress of autonomy against a potentially overreaching government.103 To this group, property ownership is principally about individual freedom. The other side emphasizes the extent to which property use affects the surrounding community.104 To this group, responsibility to the community is the touchstone of property ownership. They see


102. See supra notes 55-57 and accompanying text.


property rules as tools for achieving the greater social good, as defined by the community. Of course, intermediate views are possible, and many thoughtful commentators have emphasized the dialectic nature of property, which juxtaposes individual and community interests.

Distribution of costs and benefits. The third fundamental conflict underlying environmental controversies deals with who ought to bear the costs of correcting environmental problems. This dispute is illustrated by the frequent filing of lawsuits claiming that environmental regulations amount to unconstitutional takings and by the recent flurry of legislation requiring compensation in situations where the Constitution would not. The argument about costs reduces to one about entitlements and responsibility. There is general agreement that people who impose harms on others should bear the cost of correcting those harms. But it can be difficult to distinguish harms caused by individual action from benefits illegitimately demanded by society. Even when there is a consensus that harm has been caused, the uncertainties of environmental problems make it difficult to determine who is responsible.

3. The need for collective action.

The third challenge posed by environmental problems is that they typically cannot be solved by any one person's individual choices. Environmental amenities often are "commons," susceptible to destruction by a large number of people and activities. Control of all of these activities is necessary for environmental

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110. See supra Part III.A.
protection to succeed. To make it rational for any one person to take protective action, environmental policies need to provide some assurance that others will also do so.

Consider global warming. Everyone who relies on the combustion of organic matter for heat, transportation, or electricity contributes to the buildup of carbon dioxide in the atmosphere. The impacts of that accumulation are potentially disastrous; the blue-ribbon Intergovernmental Panel on Climate Change projects an increase in global mean temperature over the next hundred years of anywhere from 1.4 to 5.8 degrees Celsius (2.5 to 10.4 degrees Fahrenheit), raising sea level by nearly a meter and greatly altering global weather patterns. Those changes are expected to increase flooding in many areas, exacerbate drought in others, decrease global agricultural productivity, irreversibly change both aquatic and terrestrial ecosystems, and increase the geographic range of many human infectious diseases.

No matter how concerned any individual is about global warming, there is little he or she acting alone can do to prevent it, because each individual’s contribution to the problem is insignificant. Even if I stopped driving altogether and installed a solar power system in my house for electricity and heat, emissions of carbon dioxide in the United States and the world would not change noticeably. I would incur significant financial and lifestyle costs, but would not bring the world closer to my goal of preventing global warming. Since I can see that my efforts would be futile, I am not likely to feel motivated to greatly reduce the emissions within my control.

Solving environmental problems requires that large numbers of people change their behavior in concert. If everyone in the United States drove twenty miles less per week, heated or cooled their homes one degree less, or used more efficient appliances, emissions could be significantly reduced without extreme individual sacrifices. Collective action can be achieved through governmental mandate, governmental or community exhortation, or, in some cases, through the mediation of market incentives by privatizing the commons. Whatever the mechanism, confidence that others

111. See IPCC Working Group I, supra note 90, at 13-16.
will also contribute to the solution is likely to reduce resistance, and may even motivate those who care most deeply to make extra sacrifices.\textsuperscript{113}

Although markets can sometimes align private choices with collective needs, solutions to collective action problems can never be wholly private. Government intervention is an essential foundation for solutions to commons problems. The government defines and enforces property rights, and structures markets in ways that encourage or impede internalization of global environmental effects. Thus, government creation of transferable sulfur dioxide emission credits has enabled private market decisions to reduce acid rain. No individual could similarly modify the market to align the incentives of market participants with environmental costs or benefits.

The inability to realize certain values by individual action might gradually erode those values. If individuals forego action they perceive as futile, environmental protection will not occur even if most community members value it highly. The lack of incentive for private action not only undermines progress toward the goal, it may also eventually cause society to turn away from the goal. Noticing that others do not behave as if they value environmental protection, people may wrongly conclude that environmental protection is not widely valued. That conclusion may cause them to doubt whether they should value it. Alternatively, people may decide directly that, because certain values cannot be realized, it makes no sense to adhere to them. Government intervention can reinforce such vulnerable values both by signaling that they are widely shared and by providing reassurance that measures taken to further them will not be in vain.

4. \textit{The need for durable and dynamic solutions.}

A final characteristic of environmental problems is that they require solutions that are robust over long periods of time.\textsuperscript{114} In one

\textsuperscript{113} The United States' most vociferous objection to the Kyoto Protocol, which would limit carbon dioxide emissions to combat global warming, rests on the fact that developing nations such as China and India would not initially be required to reduce emissions. The Bush administration contends that the disparity in expectations would systematically disadvantage U.S. economic interests. See Donald A. Brown, \textit{The U.S. Performance in Achieving Its 1992 Earth Summit Global Warming Commitments}, 32 Envtl. L. Rep. (Envtl. L. Inst.) 10,741, 10,753-59 (July 2002).

\textsuperscript{114} Daniel Farber is one of the few legal scholars to directly point out the importance of crafting durable, or in his word "sustainable," environmental law. See Farber, supra note 94, at 199, 202.
sense, this characteristic flows inexorably from the recognition that environmental harms often operate over long time horizons. For example, because high-level radioactive wastes remain dangerous for many thousands of years, the structures, regulations and institutions established to contain them must persist for similar periods.\footnote{See Heinzerling, supra note 91, at 2064. EPA regulations require that high-level radioactive waste disposal facilities meet human exposure limits for 10,000 years. 40 C.F.R. § 197.20 (2002). Although that is an extraordinarily long period of time to expect any human endeavor to persist, it may not be nearly long enough to address the problem. A National Research Council committee concluded that “some potentially important exposures might not occur until after several hundred thousand years.” Comm. on Technical Bases for Yucca Mountain Standards, Bd. on Radioactive Waste Mgmt., Comm’n on Geosciences, Env’t, and Resources, Nat’l Research Council, Technical Bases for Yucca Mountain Standards 55 (1995).}

But the need for temporal durability is more complicated than that. It simply would not make sense to put substantial amounts of time and money into addressing many environmental problems if the solutions were only transitory. Restoration of degraded natural systems provides an illustration. The United States is currently engaged in a massive, and very costly, reengineering of the Florida Everglades.\footnote{For a brief description of the Comprehensive Everglades Restoration Plan, see http://www.evergladesplan.org/about/rest_plan.cfm (last visited Mar. 30, 2003). Costs are estimated at $7.8 billion. Id.} The cost and disruption accompanying this effort would seem senseless if the restoration efforts were reversed in twenty, fifty, or even one hundred years in order to maximize the human population of Florida.\footnote{The money spent will be similarly wasted if global warming, which is not addressed by the restoration plan, causes a rise in sea level that frustrates restoration efforts.}

At the same time that they must be durable, solutions must also be flexible enough to adapt to new, or newly recognized, conditions. As a rule, environmental problems are dynamic rather than static. Few, if any, can be permanently solved by action at a single point in time. Because pressures on the environment tend to result from human activities, environmental protection policies must continually counter those pressures or remediate their environmental impacts. For example, effective protection of endangered species requires preservation of their habitat from destruction not just for a short time, but forever.\footnote{See Holly Doremus, Delisting Endangered Species: An Aspirational Goal, Not a Realistic Expectation, 30 Envtl. L. Rep. (Envtl. L. Inst.) 10,434, 10,449 (June 2000).} The law must also respond to increasingly more difficult challenges, keeping pace with growing pressures from a human popu-
lation that continues to grow, and to seek more consumptive lifestyles. In the 1960s and 1970s, when they were crafting federal endangered species law, legislators tended to assume that controlling hunting of a relatively small number of species would address much of the problem. Today we know that preventing extinction requires far more. We must maintain substantial quantities of habitat, much of it on private land. We must limit withdrawals of water from streams in the arid West for irrigation and municipal use. We must control or reverse invasions by exotic species. We might even have to solve the global warming puzzle if we are to maintain our biological resources.

A similar story could be told about every one of our environmental goals. When the modern Clean Air Act was passed in 1970, Congress optimistically anticipated that pollution would fall to acceptable levels across the country in just a few years. While many of the pollution-control strategies of the Clean Air Act have been quite effective, population growth and increases in polluting activities have prevented nationwide achievement of the goal of healthful air. Consider, for example, cars, a major source of several of the criteria pollutants. Tailpipe controls have dramatically reduced emissions from individual cars. But the progress toward environmental protection represented by those controls has been nearly


120. See Doremus, supra note 118, at 10,443.


125. Criteria pollutants are those for which NAAQSs are set. They are substances which "may reasonably be anticipated to endanger public health or welfare" and which are produced by "numerous or diverse mobile or stationary sources." 42 U.S.C. § 7408(a) (2000). There are currently six criteria pollutants: nitrogen dioxide, carbon monoxide, particulate matter, ozone, sulfur dioxide, and lead. See 40 C.F.R. § 50 (2002).
countered by the increases in cars and the miles they travel.\textsuperscript{126} The net result is that more than 120 million Americans are still breathing unhealthful air.\textsuperscript{127}

The need for durable, yet flexible, efforts to protect the environment raises both institutional and philosophical problems. Institutionally, we must confront the difficulties of binding ourselves to a policy path while maintaining the flexibility to respond to nature's surprises. Philosophically, we must face questions about whether it is appropriate to seek to commit future generations to the path of environmental protection, not knowing what other challenges they may face or how they may value the environment. For legal, moral, and practical reasons, we cannot force the future to share our values. But to provide our attempts to address environmental problems the temporal durability they need, we must ensure that future generations have the opportunity to share our views.

Durability is important today, as well as in the future. The extent to which we are confident of our ability to persuade future generations to share our chosen course is likely to influence our own willingness to sacrifice other things in order to protect the environment. No one wants to play the sucker. To the extent that the present value of environmental protection exceeds its present costs, the current generation will be inclined to protect it without regard to the future. But the long-term nature of environmental problems means that present costs will often exceed present benefits. Protecting environmental resources for selfless reasons is considerably harder to justify if we think those resources are doomed in the long run anyway. The likelihood of adopting protective policies, therefore, depends in part upon the degree of confidence that they will persist.

B. The Vain Search for Objective Solutions

For more than a hundred years, advocates and critics of environmental protection have wrangled over the appropriate roles of


objective some might say rational or universal) analyses, based on economics and science, and subjective (some would say emotional or personal) analyses, resting on moral convictions or esthetics, in evaluating environmental problems and the policies developed to address those problems. Environmental advocates long battled for recognition that ethics or esthetics, aside from the ethics implicit in economics and the esthetics recognized in market choices, had any role to play in public decisions affecting the environment.

Today, advocates of environmental protection have joined advocates of development in touting the merits of objective decisions, although the developer is more likely to call on economics and the environmentalist on natural science. The nearly uniform call for objective decisions is understandable. Appeals to quantitative, or what Theodore Porter calls "mechanically objective," criteria promise transparency, predictability, and consistency. They offer confidence that neutral principles, rather than the personal biases of the decisionmaker or other extraneous factors, account for the decision. Objective criteria are particularly appealing when a large fraction of the decisions that matter are delegated to

128. I use the term "objective" here in the sense of "not influenced by personal feelings or prejudice; unbiased." RANDOM HOUSE WEBSTER'S COLLEGE DICTIONARY 933 (1995). I mean it to convey the sense scientists have about their work, that any person anywhere in the world, regardless of political views, culture, or values, could repeat it and get the same answer.

129. See, e.g., Aldo Leopold, The Land Ethic, in A SAND COUNTY ALMANAC 240 (1949) ("Quit thinking about decent land-use as solely an economic problem. Examine each question in terms of what is ethically and esthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."); John Muir, Preface, in OUR NATIONAL PARKS (1901) ("I have done the best I could to show forth the beauty, grandeur, and all-embracing usefulness of our wild mountain forest reservations and parks, with a view to inciting the people to come and enjoy them, and get them into their hearts, that so at length their preservation and right use might be made sure.").


administrative agencies. We hope that objective criteria will produce consistent decisions, independent of the individual bias of the official to whom they are entrusted.

The value conflicts characteristic of environmental problems enhance enthusiasm for objective criteria. It is more comfortable to debate the science or economics of environmental conflicts than to grapple with the underlying values. Where society is, or even appears to be, divided on the underlying values, people on both sides of an issue may suspect that arguments couched in the objective language of science or economics will be more persuasive, or will appeal to a larger share of the audience, than an open appeal to one side of the value debate.

Unfortunately, appeals to objectivity are frequently disingenuous, misguided, or both. At the level at which political decisions are required, environmental problems simply are not susceptible to objective, value-free resolution. To borrow a term from the policy literature, environmental problems are “wicked.” In 1973, Rittel and Webber coined that term to describe city-planning problems. They meant primarily that this class of problems cannot be objectively characterized; observers with different perspectives and values describe them very differently. Because these problems cannot be objectively defined, no finite set of solutions can be identified, and there is no objectively right or wrong answer. To make matters worse, measures that might be taken to address wicked problems are not readily reversible, so that trial and error is a high-cost, high-risk approach.

Planning problems are wicked because of the strongly constitutive nature of planning. The problems are difficult to define, because their definition requires the community to determine what it wants to be in the future. That determination cannot be made by science, and frequently members of the community will strongly disagree about the right result. Furthermore, implemented plan-

133. See Kahan, supra note 51, at 445 (explaining that we have a weak social norm against public moralizing).
135. Id.
136. Geist and Galatowitsch draw a slightly different, but similar, picture of wicked problems, listing five characteristics: “(1) interconnection and complexity of components; (2) uncertainty; (3) ambiguity of definition; (4) controversy; and (5) societal constraints.” Cathy Geist & Susan M. Galatowitsch, Reciprocal Model for Meeting Ecological and Human Needs in Restoration Projects, 13 CONSERVATION BIOLOGY 970, 971 (1999).
ning measures are “sticky,” that is, difficult to reverse, because they create facts on the ground like roads and structures that are costly to remove and that foreclose other possibilities.

Environmental problems are wicked in much the same way, with the added problem of greater uncertainty. Typically we do not know the costs, benefits, or other consequences of alternative responses to environmental problems. Of course, the level of available information varies. We may be able to produce rough estimates, and perhaps to map out uncertainties. But in many cases, the level of information realistically attainable simply will not support objective choices among the possible alternatives, even without the added complication of ambiguous goals.

Because environmental problems are wicked, they cannot be solved objectively. The definition of environmental problems is notoriously indeterminate. People mean different things when they describe air pollution or the decline in biodiversity as a problem, depending upon the lens through which they view the world. Air pollution may be a problem because it exceeds some theoretically efficient level that would be produced by a perfectly operating market. Or it may be a problem because it threatens morally unacceptable levels of harm to some human population or some non-human aspect of the environment. Biodiversity decline may be a problem because biodiversity is an intrinsic good that should not be lost, because it threatens to undermine ecosystem services, or because it deprives people of the opportunity to satisfy their desires to see, study, or use biotic resources. Leaving the statement of the problem ambiguous may seem like a good way to gather political support for addressing it, but it makes it impossible to obtain agreement on how to address it.

The indeterminate nature of environmental problems necessarily implies similar indeterminacy about solutions. No finite set of possible solutions among which to choose can be universally agreed upon, because what counts as a solution depends upon how the problem is defined. Because we lack an objective measure of success, solutions we might attempt cannot be categorized as “right” or “wrong;” they are only better or worse, depending upon the point of view of the observer. We cannot know definitively that the problem has been solved; rather, in general, we should expect that environmental problems will not ever be solved. Environmental problems are iterative; while we are addressing one manifesta-
ution of a problem, other activities may exacerbate the problem, or another aspect of it may become apparent.

Our attempts to solve environmental problems are like stones tossed into a still pond, generating ripples that travel out to the edges of the pond and bounce back. They generate consequences and ramifications that are difficult to foresee, making it difficult to predict how effective a particular solution will be.\textsuperscript{137} The classic American trial and error, or "muddling through," experimental approach\textsuperscript{138} to policymaking might therefore seem especially appealing. Two other features of environmental problems, however, make it difficult to address them through guesswork and experimentation. One is the possibility of irreversible environmental harms if experiments prove ineffective.\textsuperscript{139} Extinction is an obvious example, but even theoretically reversible impacts can be practically irreversible. Because we do not know how to scrub carbon dioxide from the atmosphere, for example, the effects of global warming will persist for hundreds of years after we stabilize greenhouse gas emissions.

Even if their impacts are reversible, policy experiments themselves may prove not to be. Like planning decisions, environmental policy choices tend to be sticky, carrying lasting consequences that may be difficult to foresee and are certainly difficult to reverse.\textsuperscript{140} The 1970 Clean Air Act, for example, established less stringent tailpipe emission limits for light trucks than for passenger cars, in part on the assumption that light trucks were peculiarly suited for delivery and farm uses and would never constitute a substantial portion of national fleet. In the 1980s and 1990s, however, pickup trucks, minivans, and SUVs became all the rage, subsidized in part by the less stringent emission requirements. Channelization of the Missouri River is another example: beginning in the 1940s, the river was dramatically altered for flood control and navigation pu-


\textsuperscript{140} Rittel & Webber, \textit{supra} note 134, at 160-67. In the context of environmental law, Professors Daniel Esty and Richard Stewart have both recently argued that there are substantial impediments to altering the regulatory status quo, even when it no longer serves our environmental protection needs well. \textit{See} Daniel C. Esty, \textit{Next Generation Environmental Law: A Response to Richard Stewart}, 29 \textit{CAP. U. L. REV.} 183, 190-93 (2001); Richard B. Stewart, \textit{supra} note 119.
poses. But flood reduction greatly increased the value of land in the flood plain, creating a nearly unbreakable cycle of increased flood plain investment followed by ever-stronger demands for flood control.141

Because of the interconnections typical of both the environment and the economy, these sorts of ripples can sometimes exacerbate other environmental problems. Chlorinating water, for example, is a highly effective disinfection strategy, protecting against waterborne bacterial diseases. But that solution itself causes new problems; chlorination produces toxic organochlorine by-products that may increase risks of miscarriages, birth defects, and some cancers.142

Ripples from steps taken to address environmental problems can also touch many other aspects of society. Past decisions to subsidize water development and natural resource extraction gave rise to dependent communities that have proven extraordinarily difficult to wean from those subsidies.143 By the same token, today’s emphasis on pollution control has produced a substantial, and politically effective, pollution-control industry.144 The presence of that industry—whether its effects are seen as positive or negative—will not be easy to undo.

The tools of science and economics, which presuppose an objective definition of the problem, are not sufficient to address wicked problems. In the environmental context, the quest for objective certainty is more likely to produce paralysis than improved policy decisions. The obsessive search for objective bases for decisions also creates a temptation to disguise non-objective decisions as scientific, a practice that skews the political process and can interfere with our ability to achieve our real goals.145 Where science or economics cannot provide the answers that policy decisions require, seemingly objective criteria are more likely to hide than to overcome the biases of decisionmakers, and are not likely to pro-

144. See infra note 171.
duce consistent or predictable decisions.\textsuperscript{146}

That our decisions cannot be objectively determined by any mechanical rule or formula, however, does not mean they cannot be guided by articulable principles. The process will not be easy, but useful principles can be found, through explicit analysis of societal goals and underlying value assumptions.

C. \textit{How a Constitutive Perspective Can Help}

Many thoughtful commentators have recognized that both objective and subjective perspectives have roles to play in environmental policy. However, none has yet articulated a set of coherent principles for integrating the two. A constitutive approach can help solve this knotty but crucial problem.

Daniel Farber has been a leader in trying to marry emotional and rational perspectives on environmental protection. In his thoughtful book \textit{Eco-Pragmatism}, Farber notes the impossibility of separating ethics from economics. He argues for "a sense of balance," taking both economic and environmental values seriously.\textsuperscript{147} Farber candidly acknowledges the complexity of the task of balancing those values, and declines to set firm rules for conducting it.\textsuperscript{148} He suggests that economics can act as a useful check on overzealous environmental regulation, but cautions against falling into the economist's traps of eliding long-term consequences or ignoring non-market values. Farber proposes a general presumption of environmental protection, rebuttable by a showing that the costs of protection are grossly disproportionate to its benefits.\textsuperscript{149}

Farber's pragmatism reminds us of the importance of including multiple perspectives in our analysis, and of the fallacy of expecting determinate solutions to complex environmental problems. He has made a significant contribution simply by pointing out the importance of developing "a mode of analysis that allows us to incorporate our values as intelligently as possible,"\textsuperscript{150} and crafting "an analytic framework to help structure the process of making environmental decisions."\textsuperscript{151} Farber's work makes a strong beginning

\begin{footnotesize}
\textsuperscript{146} See, e.g., Doremus, \textit{supra} note 130; Wagner, \textit{supra} note 145.
\textsuperscript{147} See \textit{FARBER, supra} note 94, at 201-05.
\textsuperscript{148} See, e.g., \textit{id.} at 199-201.
\textsuperscript{149} See \textit{id.} at 12, 94.
\textsuperscript{150} \textit{Id.} at 92.
\textsuperscript{151} \textit{Id.} at 10.
\end{footnotesize}
on such a framework, but falls short of completing it.

Ultimately, Farber's pragmatism rests on a thin sketch of the environmental values at stake. He notes the impressive extent to which our political community has adopted legislation embracing environmental protection beyond that which could be justified by cost-benefit analysis.\(^1\) This pattern, he concludes, represents the unmistakable endorsement of environmental norms.\(^2\) For him, any conversation about values is apparently over, and we have all the information we need to proceed. But that conclusion ignores the wicked, ambiguous nature of environmental problems. There may be many reasons for valuing the environment, and values other than those captured in cost-benefit analysis may stand opposed to environmental protection. An open discussion of the values people see in the environment, and the values they fear may be lost due to environmental protection is essential to arriving at a principled framework for decisionmaking. To claim the mantle of principle, such a framework should be understandable even to those who do not share the values that underlie it.

Robert Verchick endorses Farber's call for pragmatism in environmental decisions, and suggests an alternative mechanism for its implementation, an ethics-friendly "civic" form of economics.\(^3\) Verchick calls for a pragmatic version of economics and environmentalism, which would avoid absolutism, be open to multiple perspectives, recognize the importance of context, and reject oppressive results. He makes a determined effort to give his recommendations concrete form, but his discussion illustrates the difficulties of doing so. For instance, Verchick explains that avoiding absolutism would require that costs not be considered in setting air pollution standards under the Clean Air Act. He concedes that ruling out costs appears absolutist, but argues that economic analysis, if allowed at all, would choke out all other perspectives.\(^4\) Perhaps he is right, but surely the opposite conclusion, that cost should play a role in these decisions, could follow just as easily from the principles he articulates.

The lack of accessible principles is a serious gap in previous proposals for including ethics in environmental decisions. Simply

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152. See id. at 103-04.
153. Id. at 94.
155. See id. at 137.
directing that environmental values be factored into decisions, without articulating the principles that should inform that process, leaves the decisions entirely opaque and potentially subject to the whim of the decisionmaker. It squelches reasoned public conversation or debate about those decisions.

Recognizing the need for consistency and transparency, Victor Flatt has suggested a step-by-step process agencies might follow in making environmental decisions. He would have them explicitly make the difficult trade-offs between environmental and other values. While Flatt’s approach offers the substantial advantage of encouraging agencies to make their value choices explicit, it seems narrowly addressed to agencies implementing discernible congressional commands. Where Congress has failed to articulate the values that matter, or (as is so often the case) has offered only a laundry list of potentially conflicting values, Flatt does not purport to offer a guide for how the agency should make value choices or translate the values it articulates into decisions.

The problem, then, is to find a principled, transparent basis for environmental policy choices. The constitutive dimensions of our choices can provide a guide that is intuitively understandable, albeit not precise or “objective,” and that provides a framework for comparing competing values. Our understanding of the constitutive effects of law should play two distinct roles in our environmental policy choices. First and most simply, when deciding how to implement our societal goals, we should always be thinking about the long term, and how this step will prepare us for the next. Second, our goals themselves should reflect the community we wish to constitute. We should ask ourselves what kind of people we would show ourselves to be, and what kind of people we, and our children, would become, if we made one choice instead of another. Both of these steps require critical appraisal of the skills we might develop, the future world we might find ourselves in, and the values we would display and reinforce through our choices.

In our individual lives, we necessarily make these sorts of calculations frequently. Elizabeth Anderson offers the example of a woman faced with a choice between pursuing a career as a ballet dancer and taking a more mundane job. Of course the financial consequences of the alternative choices will be different, although

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157. See ANDERSON, supra note 84, at 57.
they may be quite difficult to predict—will she be a star or an ordinary dancer?\footnote{Anderson's example assumes that the woman "has equal prospects for leading either life successfully." \textit{Id.}} How likely is she to succeed at her other career option? But even if it were predictable, the economic outcome is unlikely to be the only factor the woman considers. Surely she will also ask how life as a dancer, as opposed to life in an ordinary job, will shape her as a person. She will develop different skills, meet different people, and see different things. All of those differences in her life path will affect the values she develops.\footnote{See \textit{Bowles}, \textit{supra} note 46, at 96-97 (citing studies demonstrating that the work people do and the tasks they perform affect their values).}

Choosing between the two occupations, therefore, requires her to look critically at what she values, how strongly, and why. Although she is likely to be torn, when she evaluates the intuitions pulling her in the two different directions, she may find that some better reflect her values than others. Those are the intuitions to which she should give the most weight. She might, for example, be drawn to the relative safety of the ordinary job but believe that the artistic life of a dancer would be the culmination of all she has worked for so far. Or, she might be drawn to the adventurous life of the dancer, but find that love of family and friends points to the more settled option.\footnote{See \textit{id.} at 60.} The ultimate question is which decision will better allow her to become the kind of person she wishes to be, living her life with continuity and integrity.

The same questions can inform societal policy choices, in the environmental arena and beyond. Consider, for example, current disputes about the desirability of "living wage" legislation. We cannot readily predict the full economic consequences of a law that requires the government, employers receiving government support, or employers in a particular political jurisdiction to pay full-time workers enough to support a minimum standard of living. We cannot even predict with confidence the consequences of living-wage laws for the people intended to be the primary beneficiaries, because effects on the number and type of jobs available are likely to be complex. That is particularly true if we are concerned not just about short-term, but also about long-term consequences. We probably cannot forecast how, for example, a living wage law will affect people's inclination to pursue the kind of training that will
We might endorse a living wage law, however, on the basis of its constitutive dimensions. We may strongly believe that people who make the effort to find and work at full-time jobs should be able to enjoy a decent standard of living without government assistance. A living wage law would implement that attitude. We might rationally assume that the law would reinforce those values for the future, and that declining to act in accordance with them would undermine them. Moving toward a world in which all full-time workers can live decent lives, and each consumer bears his or her share of the costs of assuring that minimum standard of living through the price of goods and services, might seem more consistent with our societal values than wrangling over precisely how many jobs might be lost in the short term.

The constitutive framework does not make choices easy. We may well find ourselves in circumstances where values we hold dear point in different directions. But at least the lens of constitutive law can help us see the choices we are making more clearly. Instead of asking merely which of two conflicting values we prefer, it tells us to ask which is more strongly implicated by the choice. That determines what values we express through the choice, and what the choice will make of us. Reframing the question in this way can help us understand when there really is an unavoidable conflict and when we can find a compromise. Choices made following this approach will never be “objective” in the scientific sense. But we can reduce the potential for decisionmakers to indulge their individual biases by ventilating the decisions in public, requiring (and facilitating) constitutive explanations, and involving groups representing all sides of the value debate in the decisionmaking process.

D. Is a Constitutive Approach to Policy Legitimate?

One reason that values have not played a clearer role in political debates about environmental policy to date is that we are inclined to assume that each individual is entitled to choose his or her own values without the intervention of the state. It is easy to worry, borrowing Mark Brandon’s terminology, about the state “over-constituting” civil society and future generations, effectively
leaving no room for dissent or alternative choices.\textsuperscript{161}

That concern could be raised as an objection to the extension of Anderson's constitutive ethic,\textsuperscript{162} which was developed as a guide to individual action, to government decisions. One might well endorse the idea of individuals guiding their actions by reference to who they are and who they would like to be in the future, but see the community as different in an important respect. Community composition evolves over time as individuals enter and exit the group. It is not surprising that there is some discomfort with the notion of today's community members making decisions with the explicit intention of shaping the future community. It is worth taking the time, therefore, to explain why a constitutive policy approach is legitimate.

One justification is strictly pragmatic. The state simply cannot avoid shaping the capabilities, attitudes, and values of its future residents. Every policy decision we make has some constitutive repercussions.\textsuperscript{163} Because every policy decision we make changes the world within which our values are formed, every decision changes, if only slightly, the likelihood that we and our successors will adopt and adhere to particular values. Our choices can teach our successors to see plastic trees as adequate substitutes for natural ones or to make a distinction between the two. There is no neutral third choice. In sum, our policy choices can never be truly neutral with respect to the characteristics and values of the future community. Since we are going to affect those choices anyway, it seems healthiest to do so openly, consciously, and in the light of public debate.

Furthermore, a constitutive approach does not deprive our successors of the power of self-determination. Indeed, it can maximize their options by disciplining us to preserve the fragile opportunities for future generations to pursue our vision of the good life. It reminds us, to the extent we believe that a caring relationship with nature is an element of a satisfying human life, to leave a physical world that facilitates development of such a relationship by our successors. It also calls upon us to determine which elements of our environment are irreplaceable, so that they might be bequeathed to future generations. Future generations, moreover, will also have the benefit of our constitutional democratic tradition.


\textsuperscript{162} See supra notes 84-86 and accompanying text.

\textsuperscript{163} Cf. Pildes, supra note 11.
They will remain free to reject the vision of community we pass down to them, should they choose to do so. In other words, a constitutive approach to policy should make it possible for succeeding generations to share our values, but it does not give us the power to mandate that they do so.

Finally, a constitutive approach would be undertaken for the right reasons, reflecting our professed attitude of caring for future generations. Succeeding generations are not strangers we have no business trying to influence. They are our children, the successors to institutions we care deeply about, and they will be in a position to destroy or radically alter a world we have spent our own lives constructing. We express our caring for succeeding generations by leaving a legacy that gives them both the opportunity and the reason to share our pride in, love for, and concern about those institutions and that world. The constitutive framework helps us focus on the kind of legacy we want to leave. So long as we make our decisions with a caring attitude and do not attempt to systematically advantage ourselves at the expense of the future, they are wholly legitimate.

There is nothing radical about this thought. Parents work constantly to teach their children the values they hold dear. So do the local community, the state, and the nation, albeit perhaps less directly. We think nothing of subtly, and not so subtly, using public actions to suggest to our children that they should grow up loyal, patriotic, honest, and drug-free. There is no reason to be more reluctant to promote environmental values we decide that we hold dear as a society. Indeed, we owe our successors a sense of our values. We would fail in our duty to them, as parents would fail in their duty to their children, if we did not seek to communicate to them those values we have concluded are important, and to give them the opportunity to cultivate and implement those values.

The type of constitutive law I propose here is not "symbolic" in either of the two senses that have rightly been much criticized. Law is inappropriately symbolic if its primary purpose is to reinforce a social caste system, designating certain people as immoral or as less than full members of the political community. Laws defining

marriage as the union of a man and a woman, precluding homosexuals from entering into that relationship, are symbolic in this sense. It is difficult to see how a same-sex marriage could affect the ability of those who disapprove of homosexual behavior to realize their own values. They have only, it would seem, to choose to marry a person of the opposite sex and express within that relationship what the institution of marriage signifies to them.

Laws limiting environmental degradation do not fall in the same class, although members of the regulated community may sometimes see them that way. Environmentalists who call for limits on irrigated agriculture where it conflicts with the protection of endangered fish species, for example, do not seek a declaration that farmers are immoral persons who must be exiled from the social community. They seek instead to ensure that they, their children, and their children's children have the opportunity to experience, or perhaps simply to respect, the fish. They cannot realize that attitude of respect if the fish become extinct at the hands of the farmers, nor will they have the opportunity to pass it along to their children. Limiting the farmers' access to irrigation water directly protects the legitimate efforts of the environmentalists to lead a full and rewarding life, and to pass their values on to future generations.

Of course, the farmers, too, may feel that their values are at stake. If so, they need to make clear in the political debate precisely what those values are, so that the impact of the law on them can be evaluated. If their claim is simply economic, that they cannot make a living without access to irrigation water, the answer may be for the government to buy their land, to provide retraining assistance, or simply to say that in a capitalist society everyone must be prepared to adjust to changing market conditions without a claim for government assistance. If the farmers' claim is that they cannot realize or pass on the values of continuity in a particular location, the answer may be that long-term continuity can only be achieved through a sustainable lifestyle, which perhaps the government should help them achieve. At a minimum, however, it is clear that the environmentalists' claim is not motivated simply by illegitimate status-seeking.

Nor is this type of law symbolic in the sense of making a statement simply to gather political rents, with no intention of actual implementation. A number of commentators have chronicled the pathologies of that kind of symbolic law, which declares a policy
goal without the intention of actively pursuing that goal, in the hope of fooling the voters or making an empty statement about values.\textsuperscript{6} Law truly adopted for its constitutive dimensions would be precisely the opposite. Constitutive law asks whether the law, not only as written but also as actually implemented, adequately expresses our consciously adopted values and attitudes. Symbolic law, therefore, would be pathological from a constitutive perspective.

IV. The Journey So Far: A Brief Taxonomy of Constitutive Environmental Law to Date

The constitutive effects of environmental law have not entirely escaped notice. The roles of law in determining our technological capabilities, molding our institutions, and setting the path for our individual development have occasionally been discussed and even deliberately targeted by our existing environmental laws. However, for the most part we have resisted discussing the role of law in shaping societal values.

A systematic examination of the constitutive aspects of our current environmental policies serves as a powerful reminder of the extent to which those policies are shaping the future. In order to achieve our environmental goals over the long term, we must keep those constitutive effects clearly in mind when making our policy choices. By evaluating our experiences to date, we can also learn quite a bit about how to bring a more systematic constitutive perspective to bear on environmental policy.

A. Advancing Technological Proficiency

Since the dawn of the environmental regulation era in the early 1970s, we have frequently used the law to advance our technical capacities, by directly or indirectly "forcing technology" in ways designed to reduce our adverse effects on the environment. We have used non-regulatory strategies in efforts to enhance both the supply of and the demand for "environmentally-friendly" technology. On the supply side, we have created government-funded prizes, tax

credits, and direct subsidies for research and development.\textsuperscript{166} On the demand side, we have tried to strengthen the market for those technologies through labeling requirements and certification schemes designed to inform consumers of the environmental impacts of their market choices.\textsuperscript{167}

We have also employed regulatory technology-forcing strategies, incremental in some instances, radical in others. Incremental examples include requirements that industrial sources utilize the best available technology to control pollution,\textsuperscript{168} and that new sources meet more stringent standards than existing ones.\textsuperscript{169} These requirements create a market for pollution-control technologies, thereby encouraging innovation, and prevent sources from gaining a competitive advantage by refusing to adopt pollution-control technology. Incremental technology forcing has produced substantial declines in industrial emissions to air and water.\textsuperscript{170} It has also fostered the growth of a pollution-control industry, which has become a lobbying force in favor of ever more stringent pollution-control requirements, partially countering the political voice of polluting industries.\textsuperscript{171}

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\textsuperscript{171} For example, the Institute of Clean Air Companies (ICAC), a national associa-
However, the effectiveness of incremental technology forcing has been limited by the general regulatory assumption that technology is "available" only if it is economically feasible to install. That limitation greatly complicates the regulatory task of identifying available new technology.\(^\text{172}\) Moreover, if the polluting industry controls innovation, incremental technology forcing can, at least theoretically, have the counter-intuitive effect of discouraging technological innovation.\(^\text{173}\) As a practical matter, it appears that incremental technology-forcing has encouraged the spread of existing pollution-control technologies, but that it has not changed the basic ways that polluting industries operate.

Radical technology forcing is the imposition of environmental standards in the absence of any demonstrated ability to meet those standards.\(^\text{174}\) Perhaps the most familiar example in environmental law is the aggressive approach taken by the early Clean Air Act to automobile emissions. As adopted in 1970, the Act required that automobile manufacturers reduce tailpipe emissions of hydrocarbons and carbon monoxide by 90% within five years, and nitrogen oxide by 90% within six years.\(^\text{175}\) When it instituted those standards, Congress knew that the technology to achieve them did not then exist.\(^\text{176}\) The courts\(^\text{177}\) and Congress\(^\text{178}\) subsequently extended the deadlines in order to avoid wholesale disruption of the automobile industry, but by the early 1980s those radical reductions in

\(^{172}\) Economic feasibility analysis requires determination of what the industry can afford. This is a challenging task, given that industry largely controls information about both the technical and the financial ability to institute particular technologies.


\(^{174}\) See McGarity, supra note 170.


\(^{176}\) See Schroeder, supra note 126, at 34-36.

\(^{177}\) International Harvester Co. v. Ruckelshaus, 478 F.2d 615 (D.C. Cir. 1973).

tailpipe emissions had been achieved. Subsequently, Congress and EPA have continued to incrementally tighten automobile emission controls.\textsuperscript{179}

California has implemented another radical technology-forcing experiment. In 1990, California mandated that automobile manufacturers sell specified quotas of zero emission vehicles (ZEVs), beginning with 2% of their total sales in 1998, and increasing to 10% by 2003. The early deadlines were later dropped, and the 10% mandate was softened by allowing some credit for sales of very low, but non-zero, emission vehicles. So far, though, California regulators have refused to drop the 10% deadline, or even to extend it beyond 2003.\textsuperscript{180}

The ZEV program, coupled with California’s voracious market for cars, has encouraged manufacturers to venture into electric vehicle production. Several models have been produced, but they remain considerably more expensive than comparable internal combustion cars, and ill-suited to long-distance travel.\textsuperscript{181} Hybrid gas-electric vehicles have been more of a market success, and do have considerably higher gas mileage and lower emissions than comparable gas-only models.\textsuperscript{182} Furthermore, the mandate has also encouraged research into fuel cell technology, which many now see as the most promising route to decreased automobile pollution.\textsuperscript{183} On the whole, the ZEV mandate must be judged at least a partial success, inducing automobile manufacturers to seriously


\textsuperscript{181} Automobile manufacturers once offered as many as six freeway-worthy electric vehicles, but all have been discontinued. David Danelski, Automakers Pull Plug on Electric Cars After Success in Slowing the Drive for Low-Emission Vehicles, PRESS-ENTER. (Riverside, Cal.), Mar. 3, 2003, at A1. The only electric cars currently on the market are two-seater, low-speed “neighborhood” cars. Id. Because sales of those models have been below expectations, Ford is discontinuing their production. See Marc Ferris, Power Parking: The Little Neck Train Station Plugs in to an Electric Car Experiment, NEWSDAY (New York, NY), Dec. 29, 2002, at G4.

\textsuperscript{182} See, e.g., Schroeder, supra note 126, at 45.

\textsuperscript{183} See, e.g., Pamela Najor, Bush to Shift Auto Research Funds to Fuel-Cell Plan to Save Oil, Cut Pollution, 33 Env’t Rep. (BNA) 69 (Jan. 11, 2002); Sheila Schimpf, Concept for Pollution-Free Fuel Cell Car Announced as GM Suggests Federal Role, 33 Env’t Rep. (BNA) 76 (Jan. 11, 2002).
look beyond the internal combustion engine for the first time in their history. Other successful examples of radical technology forcing include the elimination of lead from gasoline, and the replacement of mirex, a persistent and potentially carcinogenic insecticide used against fire ants, with less toxic alternatives.\(^\text{184}\)

Where clear statutory authority has been lacking, however, the courts have sometimes refused to countenance radical technology forcing. A notorious example is EPA's attempt to ban asbestos under the Toxic Substances Control Act (TSCA).\(^\text{185}\) Section 6 of TSCA allows EPA to prohibit the manufacture or distribution of chemical substances to the extent necessary to protect against an unreasonable risk to human health or the environment, but requires that EPA use the "least burdensome" regulatory alternative to do so.\(^\text{186}\) In 1989, EPA, concluding that substitutes for asbestos already existed or could soon be developed, issued a rule calling for the phase-out of asbestos in most commercial uses. The Fifth Circuit, however, struck down the rule, finding that EPA had not shown that a less burdensome approach would not ameliorate the risks of asbestos.\(^\text{187}\)

Radical technology forcing has produced some important technological advances that have substantially reduced the environmental impact of certain human activities. Nonetheless, technology forcing is far from a complete answer to environmental problems. It is politically challenging, because it depends on Congress or the regulatory agency persuading industry that it might be shut down if the new technology is not forthcoming. Perhaps more critically, technology forcing may encourage a kind of technological optimism, the confidence that continual improvements in technology can keep our environmental impacts within acceptable boundaries. That, in turn, may discourage us from taking a hard look at lifestyle changes that might prove more effective in the long run.

B. Shaping Institutions

A well-known example of deliberate institutional modification in environmental law is the National Environmental Policy Act\(^\text{188}\)

\(^{184}\) See McGarity, supra note 170, at 945-52.


\(^{186}\) See id. § 2605(a).


(NEPA), and its many state and international analogues. NEPA's action-forcing heart, the requirement that federal agencies prepare an environmental impact statement (EIS) prior to engaging in actions likely to affect the environment, was intended to ensure that the purposes of NEPA would actually find their way into agency decisions. "Emphasis—perhaps over-emphasis—upon environmental concerns was considered a necessary means of instilling the new policy into an uncongenial decisionmaking process in which the support of the administration was uncertain and federal agencies were wedded to their own missions and to economic efficiency." NEPA might seem a curious vehicle for inspiring agencies to adopt a new mission of environmental protection. It strongly declares a national policy of promoting harmony between man and the environment, but that policy is implemented only by requiring that agencies evaluate the environmental impacts of their activities and consider alternatives. The federal courts have long held that NEPA is a strictly procedural statute, which does not allow courts to second-guess the substantive decisions agencies make. One might suppose, then, that agencies hostile to the environment could prepare a detailed EIS, then simply ignore it. Indeed, NEPA critics have leveled precisely that charge.

NEPA's architects apparently believed that if agencies understood the environmental cost of their decisions they would, as rational actors, select less environmentally damaging alternatives. The developers of NEPA may also have hoped that courts would play a more active role in reviewing environmental decisions. And they seem to have assumed that, at a minimum, even agencies hos-

189. Id. § 4332(2)(C).
192. See id. § 4332(2)(C), (E).
194. See, e.g., Lynton K. Caldwell, The National Environmental Policy Act, An Agenda for the Future (1998); Richard E. Levy & Robert L. Glicksman, Judicial Activism and Restraint in the Supreme Court's Environmental Law Decisions, 42 Vand. L. Rev. 343, 372 (1989) ("As a solely procedural statute NEPA may serve some functions, but the absence of any meaningful substantive review by the courts allows affected agencies to 'jump through the hoops' of NEPA's procedural requirements without giving any real weight to environmental consequences.").
tile or indifferent to the environment would be reluctant to invest heavily in projects saddled with the liability of a publicly available document revealing heavy environmental consequences.  

Whether or not legislators realized it at the time, a more subtle but far-reaching dynamic seems to have been at work. Compliance with NEPA's procedural requirements necessitated changes in the structure and standard operating procedures of federal agencies. Many agencies established environmental review units for the first time; others expanded existing units. Those units brought in new personnel with strong personal commitments to environmental values. At the same time, NEPA provided a new forum through which outsiders who cared about the environmental impacts of agency actions could access the decisionmaking process. These changes could alter the internal political balance and agency norms, creating an enduring increase in agency respect for environmental values.  

As Robert Bartlett has pointed out, no one should expect this sort of institutional change to occur quickly. At this point, however, more than thirty years after NEPA's enactment, we should be in a position to evaluate the law's "institution forcing" success. Unfortunately, we lack robust data to support such an evaluation. We know how many EISs and environmental assessments (EAs) are prepared each year, how many are challenged in court, and how many are overturned. It is more difficult to measure agency values, or to prove a causal link between NEPA and a change in either values or projects. It is possible that increased societal sensitivity to environmental impacts would gradually have infiltrated federal

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196. See Dreyfus & Ingram, supra note 190, at 254-55.  
198. See Wichelman, supra note 197, at 287.  
200. An EIS is the "detailed statement" required by NEPA for all federal actions significantly affecting the quality of the human environment. 42 U.S.C. § 4332(2) (C) (2000). An EA is a less detailed study carried out to determine whether an action will have significant environmental impacts and therefore requires an EIS. 40 C.F.R. § 1508.9 (2002).  
201. See, e.g., Andrews, supra note 195, at 90; Rhey M. Solomon et al., Public Involvement Under NEPA: Trends and Opportunities, in Environmental Policy and NEPA, supra note 199, at 261, 265-67.
agencies even without NEPA. Most observers, though, seem to agree that NEPA has significantly altered agency behavior, leading to the modification of many proposals, halting others, and pushing new proposals in a more environmentally benign direction.

Yet even NEPA's strongest admirers believe the law has not realized its full potential. Several factors stand in the way of radical agency change through NEPA. Many agencies have delegated preparation of most or all of their environmental studies to outside consultants, reducing the extent to which NEPA has altered internal structures. Furthermore, NEPA has not completely revamped either the internal or the external political landscape. The bulk of every agency's structure remains unchanged, as do those of the congressional oversight committees and the regulated community. Perhaps most significantly, NEPA is implemented on individual decisions, largely after broad agendas have been determined. It does not appear to have significantly increased the power of environmental interests at the highest level of decisionmaking.

Law also molds private institutions, and can do so in ways that either impede or facilitate the achievement and maintenance of our environmental goals. Industries, for example, are encouraged to develop the capacity and inclination to prevent or limit pollution by the requirement, imposed by the Toxic Release Inventory (TRI) provision of the Emergency Planning and Community Right to Know Act, that they track and disclose their discharges of pol-


203. See, e.g., D A N I E L A. M A Z M A N I A N & J E A N N E N I E N A B E R, C A N O R G A N I Z A T I O N S C H A N G E? E N V I R O N M E N T A L P R O T E C T I O N , C I T I Z E N P A R T I C I P A T I O N , A N D T H E C O R P S O F E N G I N E E R S 1 8 4 - 8 7 (1979); T A Y L O R , s u p r a n o t e 1 9 7 ; R i c h a r d N . L . A n d r e w s , T h e U n f i n i s h e d B u s i n e s s o f N a t i o n a l E n v i r o n m e n t a l P o l i c y , i n E N V I R O N M E N T A L P O L I C Y A N D N E P A , s u p r a n o t e 1 9 9 , a t 8 5 , 9 0 ; L y n t o n K . C a l d w e l l , B e y o n d N E P A : F u t u r e S i g n i f i c a n c e o f t h e N a t i o n a l E n v i r o n m e n t a l P o l i c y A c t , 2 2 H A R V . E N V T L . L . R E V . 2 0 3 , 2 0 7 (1998); see also W e n d y N e l s o n E s p e l a n d , B u r e a u c r a t i z i n g D e m o c r a c y , D e m o c r a t i z i n g B u r e a u c r a c y , 2 5 L A W & S O C . I N Q U I R Y 1 0 7 7 (2000) (concluding that NEPA has significantly changed the decisionmaking process at the Bureau of Reclamation by opening that process to public participation and forcing the hiring of planners, biologists, and social scientists).

204. See, e.g., Caldwell, supra note 203, at 207.

205. See Andrews, supra note 195, at 91.

206. See id.

207. Id.

lutants to air, water, and land. This disclosure mandate forces them to collect and make public information they otherwise could easily ignore, and makes it easy to compare their performance to that of competitors. By requiring firms to track their performance internally, and allowing potential customers or critics to track it externally, the TRI has generated substantial pollution reductions without mandating either such reductions or the use of any particular technology.209 Eric Orts calls this sort of strategy “reflexive law.”210 It increases the ability and incentives of industries to critically examine their environmental impacts, with the goal of encouraging them to think creatively about ways they can minimize those impacts.

C. Determining Individual and Community Capabilities

Environmental law has sought to increase the ability of individuals to play a significant role in environmental policy decisions through information disclosure requirements, public participation avenues, and citizen suit provisions. At one level, these various provisions simply allow already interested citizens to put their existing capabilities to use in the policy process. But on another level they could act as an incentive for the development of new capabilities in the citizenry. Information disclosure could encourage members of the public to understand, and ultimately take responsibility for, the environmental consequences of their marketplace decisions. The dearth of market choices,211 however, as well as the difficulty of boiling down complex impacts into information that can be presented in a simple, understandable format,212 limits the efficacy of informing the public.

Avenues for public participation in government decisions could also encourage the development of “civic virtue,” the ability and willingness to reason critically and respectfully, together with other members of the community, in a search for the public good.213 We could hope that NEPA—the paradigmatic public participation stat-

212. See Karkkainen, supra note 209, at 331-35; Rechtschaffen, supra note 211, at 327-28.
ute—would serve that goal. However, Jonathan Poisner has pointed out that, as presently implemented, NEPA's public participation framework fails to encourage development of civic virtue. Commenters are not directly engaged in a deliberative dialogue. Instead, individuals or groups submit their comments in writing, and the agency responds in its final EA or EIS. Commenters never meet one another, nor do they have the opportunity to reflect critically on each other's point of view. Even when there is a public hearing, comments are taken sequentially and are required to focus on the technical aspects of the agency decision; there is little, if any, give and take between agency and citizen participants or among citizen participants. The process focuses rather narrowly on the environmental impacts of specific proposed actions and the alternatives acknowledged by the agency, rather than more broadly on the reasons for, and the values underlying, the decision or the agency's chosen goal.

We might also hope that opportunities for citizen participation would encourage citizens to share the responsibility for achieving environmental goals. The Committee of Scientists charged with recommending changes to the Forest Service's planning regulations has aptly summed up the promise of effective citizen engagement: "For these truly to be the 'people's lands,' the people must understand the lands' condition, potential, limitations, and niche in resource conservation in this country and must be willing and able to help achieve sustainability." Citizens who participate in resource planning or the formation of other types of environmental policy will learn much about the need for, and challenges of, framing environmental policy. They may well come away from the experience with both heightened appreciation of the difficulties of developing acceptable policy and increased commitment to the goals embodied in that policy.

The ability to oversee agency and private actions through citizen suits also could spark increased interest in, and an accompanying sense of increased responsibility for, societal decisions affecting

214. Id. at 84-92.
215. Cf. Espeland, supra note 203, at 1099-1100 (describing the NEPA-based public participation process as misrepresenting the stakes to a Native American community of construction of a proposed dam by putting the effect of flooding their land in the same category as other, strictly economic, costs and benefits of the project).
the environment. The citizen suit device has been remarkably successful in holding reluctant or hard-pressed agencies to the difficult task of pursuing the goals of environmental statutes.\textsuperscript{217} It has turned environmental advocates across the country into additional enforcement resources for chronically under-funded agencies. High-profile lawsuits can be powerful devices for communication and education, leading to political mobilization with lasting impacts well beyond the specific legal claims asserted.\textsuperscript{218}

However, the constitutive potential of citizen suits has not been fully realized. Citizen suits, which require substantial human and financial resources, are typically initiated and pursued by an elite cadre of environmental attorneys rather than by ordinary citizens. Sometimes they truly reflect attempts to achieve the public good, but in other cases they are pursued out of the self-interest of the individual or group.\textsuperscript{219} They do not seem to have increased the average individual's sense that he or she plays an important role in national environmental policy.

Communities, rather than individuals, can also be the targets of capacity-building efforts. Social justice advocates have long recognized the importance of community-building as a long-term approach to disparities of wealth and influence.\textsuperscript{220} By the 1980s, they had come to see law, or at least the dominant ways in which law was invoked, as a barrier to the creation of self-reliant communities capable of looking after their own interests. They pointed out that litigation, even when it produced short-term gains, was dominated by the strategies of lawyers external to the community. That model tended, they argued, to discourage bottom-up community initiatives, subordinate the community's own understanding of its story, and divert resources from community-building efforts.\textsuperscript{221}

These activists sought to create a new model of social justice lawyering that would actively promote community empower-


\textsuperscript{218} See Houck, \textit{supra} note 44, at 878-79 (describing the Storm King case as the beginning of "a new strategy for environmental protection that used litigation—as did the civil rights movement—as part of a larger educational and political process").


\textsuperscript{221} See \textit{id.} at 453-59.
They have applied this approach to environmental justice conflicts, among others. Environmental justice activists committed to community empowerment continue their efforts to make the public participation avenues of environmental law better suited to that goal.

Environmental law also can attempt more directly to build the capacity of affected communities to play a meaningful role in environmental decisions. EPA, for example, has a program devoted to promoting and facilitating community-based environmental protection efforts. Under this rubric, EPA has funded local watershed groups, community efforts to achieve sustainability, and minority or low-income community responses to environmental justice concerns.

It is not yet clear how durable or broadly successful these efforts will be. Some social justice scholars have questioned the ability of local grassroots strategies to generate lasting institutional structures. Furthermore, any attempt to build community capacity must grapple with the difficult questions of how to define and bound the relevant community, and how to deal with the frequently non-majoritarian structures of self-defined and self-organized communities.

D. Shaping Societal Values

NEPA has been an important experiment in trying to make agencies more sensitive to particular values. It is difficult, however,
to evaluate the extent to which NEPA has altered agency values. The decisions of virtually every federal agency do appear far more sensitive to environmental impacts than they were before NEPA's enactment, but that change may not be attributable to NEPA. Surely overall societal attention to environmental impacts has increased since 1970.

To the extent that NEPA has changed agency values, those changes seem likely to be attributable to its constitutive effects, the changes in process and agency structure it brought about. NEPA created conduits through which societal views about environmental protection could be brought into the decisionmaking process. The public comment procedure is one such conduit. The institutional restructuring that brought more people who care about the environment into agency employment is another.

Experience with NEPA provides reason for pessimism about the ability of expressive law to alter values. Section 101 of NEPA declares a national policy for the environment in a provision with no direct regulatory force. That structure is the paradigmatic expressive law, sending a message about societal values but not directly imposing sanctions for deviating from those values. Despite the urging of commentators, this policy declaration has been ignored by the courts and is little recognized by the agencies.

There appear to be two main reasons for this failure. First, NEPA's declaration of policy is sufficiently equivocal to provide little guidance. It calls for creating "conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations." It also sets out six more specific aims for the nation: fulfilling responsibilities to future generations; assuring all Americans of pleasing surroundings; attaining the widest range of beneficial uses of the environment without degradation; preserving important historic, cultural, and natural aspects of the national heritage and maintaining diversity and variety of individual choice; balancing population and resource use to permit high standards of living; and approaching the maximum attainable recycling of de-

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pletable resources. However, it makes all of these goals subject to consistency “with other essential considerations of national policy.” Taken as a whole, NEPA’s declaration of policy makes it clear that environmental values matter, but provides essentially no guidance on how much they matter or when they should take priority over conflicting values, such as economic prosperity or national security. Messages that do not direct the recipient toward a choice when values conflict are unlikely to systematically modify the recipient’s values.

Second, the Supreme Court quickly took the position that only the procedural requirements of NEPA (notably the EIS requirement) are judicially enforceable. Assured that the courts would not oversee the substance of their environmental choices, agencies have been free to disregard, or to view as cynically symbolic, NEPA’s declarations of national policy. Aggressive executive branch policing of agency adherence to NEPA’s declared policies probably could bring its message more strongly home to the agencies, but has not been forthcoming. The NEPA experience suggests that the norm of compliance with the law, while it may apply without strong enforcement efforts, can be undermined by high-profile declarations of unenforceability. Alternatively, it might be viewed as demonstrating that agencies, a fairly sophisticated audience for law’s messages, will discount messages that are not backed up by enforcement mechanisms.

Evaluation of NEPA supports the conclusion that structural changes to institutions have been more effective in altering environmentally destructive behavior than indirect changes in values. Ann Carlson’s thorough study of recycling behavior supports a similar conclusion. Carlson identifies a number of ways in which law has been used over the past twenty years to promote recycling behavior, including mandating recycling; setting waste diversion goals for local governments; requiring them to track recycling rates; banning disposal of certain recyclable materials in landfills; providing curbside pickup of recyclables; providing financial incentives for recycling such as bottle deposit bills and volume- or weight-based pricing for garbage pick-up; and education about, or

233. Id. § 4332.
234. Id. § 4331(b).
promotion of, recycling.\textsuperscript{237} She finds that the wealth of available data on recycling behavior strongly supports the conclusion that making recycling more convenient increases participation.\textsuperscript{238} Other effects are weaker. Efforts to persuade apparently can increase recycling, but face-to-face efforts by neighbors are more effective than blanket promotional campaigns.\textsuperscript{239} Financial incentives can also increase recycling, but if not carefully crafted they can create perverse incentives; unit pricing of garbage disposal, for example, may encourage illegal dumping.\textsuperscript{240} Carlson's study, like our experience with NEPA and the evidence of market effects on values, reminds us that we cannot manage values independently of the physical and social structure of the world within which those values are exercised. The physical, social, and institutional form of the world we create is likely to play a stronger role in the values of succeeding generations than our self-consciously educational strategies.

V. Taking the Next Steps: Consciously Constitutive Environmental Policy

Environmental law has enjoyed dramatic success over the past generation, constituting our society in ways that have substantially reduced its environmental footprint. Emissions of criteria air pollutants, for example, have fallen dramatically since 1970, despite considerable growth in population and economic activity.\textsuperscript{241} Water pollution from point sources has been greatly reduced.\textsuperscript{242} The slide of many species toward extinction has been recognized and at least slowed.\textsuperscript{243} Government, at state, local, and federal levels, now considers environmental impacts when making decisions.

\begin{itemize}
\item \textsuperscript{237} Id. at 1262-70.
\item \textsuperscript{238} See id. at 1275-80.
\item \textsuperscript{239} See id. at 1285-91.
\item \textsuperscript{240} See id. at 1292-93.
\item \textsuperscript{241} See U.S. Env'tl. Prot. Agency, Latest Findings on National Air Quality: 2000 Status and Trends 3, 5 (2001). Among the criteria pollutants, only emissions of nitrogen oxides have increased over that period. Id. at 3.
\item \textsuperscript{242} Robert W. Adler et al., The Clean Water Act 20 Years Later 16 (1993).
\end{itemize}
Despite these gains, we have hardly reached an acceptable endpoint. Air quality remains unhealthful for many millions of Americans.\footnote{244} A large proportion of our streams remain impaired by pollution.\footnote{245} Hundreds of native species are in danger of extinction.\footnote{246} At the same time, environmental pressures continue to grow as our population and per capita resource consumption levels increase. We cannot rely on the existing environmental policy paradigm to take us on the next step of our journey. Instead, we must look for a new paradigm. More conscious attention to law's constitutive qualities provides several useful lessons about where we can go from here.

A. The Benefits of a Constitutive Policy Approach

Many "second-generation" environmental policy reformers, focusing on the uncertainties that complicate environmental policy choices, have tended to focus on increasing our knowledge base to improve our ability to make rational (objective) decisions. Daniel Esty, for example, optimistically forecasts that, "[t]o the extent that a high degree of uncertainty plagues good environmental policymaking, the prospect of better data, clearer environmental indicators, and more sophisticated cost-benefit and risk analyses, makes the promise of a higher decree [sic] of rationality in addressing environmental challenges a reasonable bet."\footnote{247}

Many kinds of data certainly have great value for environmental policy. But information alone is not the answer to our policymaking dilemmas. Much of the data we would like to have as a basis for environmental policy is expensive to gather, or unavailable on a time frame relevant to our current decisions. The detailed environmental impacts of global warming, for example, will not be clearly understood until we can observe climatic and other changes over a longer period of changing temperatures. The life cycles and needs of many endangered species are so poorly understood that we could spend billions of dollars and many years on research before we were confident of our ability to sort out the relative importance of multiple environmental stresses.\footnote{248}

\footnote{244} See id.\footnote{245} See U.S. ENVTL. PROT. AGENCY, NATIONAL WATER QUALITY INVENTORY: 1998 REPORT TO CONGRESS (2000).\footnote{246} See PRECIOUS HERITAGE: THE STATUS OF BIODIVERSITY IN THE UNITED STATES (Bruce A. Stein et al. eds., 2000).\footnote{247} Esty, supra note 140, at 202.\footnote{248} The ongoing, extremely expensive, attempts to determine which of many envi-
In the absence of robustly convincing information, efforts to resolve these problems on an “objective” scientific basis will exacerbate, rather than dampen, controversy. Because of biased assimilation, which causes people to accept evidence consistent with, and reject evidence conflicting with, their pre-existing beliefs, mixed evidence on a topic about which people feel strongly actually polarizes their views. Rather than creating common ground, then, demands for “rational” decisions are apt to entrench starting positions and exacerbate the opposing sides’ distrust of one another.

Even if perfect information about environmental conditions and the consequences of actions we might take were available, many of the distinctive challenges of environmental law would remain. Information cannot resolve value conflicts, assure collective action, or increase the durability of solutions to environmental problems. In the environmental arena, the quest for comprehensive rationality is a wild goose chase. It is more likely to stall policy initiatives than to advance them. It encourages us to shelve the difficult questions that we must answer in order to create durable policies, in favor of less important questions that we cannot hope to definitively answer.

A constitutive approach to environmental policy holds greater promise. First, it recognizes the inevitability of uncertainty and provides a framework for action under uncertainty, asking us to decide to the best of our ability what alternative courses of action would say about and make of us. Second, it forces us to address the problem of conflicting values, calling for a difficult but crucial examination of our values and the ways in which we might choose among them when they conflict. That process can produce the social commitment essential to collective action. Third, by calling attention to environmental assaults is primarily to blame for the plight of salmon in the Columbia River system is a good example. The devotion of many millions of dollars and many years to studies have produced little more than competing scientific reports, which have simply strengthened the determination of the contending interests that everyone else is responsible for the problem. See Nat’l Research Council, Upstream: Salmon and Society in the Pacific Northwest (1996); Independent Scientific Group, Return to the River: An Ecological Vision for the Recovery of the Columbia River Salmon (1998).

249. See Rachlinski, supra note 96, at 304-05.
250. See supra Part III.B.
251. Current proposals to amend the ESA take a comprehensively rational approach, calling for independent scientific review of decisions to list species and jeopardy opinions, but not of decisions not to list species or no-jeopardy opinions. See Sound Science for Endangered Species Act Planning Act of 2002, H.R. 4840, 107th Cong. §3 (2002). It is clear that the intention is more to impede protective decisions than to ensure scientific credibility.
the future, a constitutive approach holds the potential for creating more durable policies. Finally, a constitutive approach offers the promise of allowing the flexibility that policies will need in order to respond to unforeseen circumstances. If we frame our legacy in such a way that we believe we have maximized the probability that our successors will share our environmental values, then we will feel less need to bind them to the details of particular policy approaches.

So far, we have been creating the future unreflectively through our environmental policies. Perhaps we can continue to muddle through in the short run as we have been doing. But we may be taking ourselves further from what should be our long-term destination. To evaluate the extent to which we are truly making progress on our long-term journey, we must expand our focus, and our ambitions. We need to judge each step not just by where we think it will put us, but by whether it will help us develop the skills, capacities, and senses we will need to take the next one.

B. The Essential Elements of a Constitutive Approach

Looking to constitutions and organic acts, our most consciously constitutive law, can help us understand what a constitutive approach to policy requires. Constitutive law must: articulate core principles; focus on the future world the law will create and the impact that future will have on the core principles; design for the long term; and provide sufficient flexibility to respond to new information or changed conditions.

1. Articulate core principles.

Constitutive law must operate over a long time, yet be flexible enough to adapt to unforeseen circumstances and new information. The tension between stability and flexibility is best accommodated by law that focuses on articulating key principles to be pursued, rather than on establishing narrow prescriptions.

There is an even more fundamental reason for constitutive law to focus on core principles. The constitutive approach uses values to guide decisions under uncertainty and choices among incommensurables. For our vision of our societal future to guide our decisions, we must necessarily generate that vision and express it explicitly. The key principles we identify should be written into the law both as a form of discipline for us, to ensure that we mean and
stick to the values we declare, and as a way to keep that vision in front of our successors as a guide to their future choices.

To articulate the principles that must be at the heart of constitutive law, we need a deep sense of our social goals and values. Gaining that understanding is the most difficult challenge of a constitutive approach to law. Attaining deep self-knowledge is not easy for individuals; it may seem next to impossible for a large, heterogeneous community. Under the best conditions, that kind of community self-understanding and shared vision can arise from the process of developing or amending a constitution. Consequently, the possibility of sparking a public conversation about important values, goals, and principles may well be the best argument in favor of attempting to enshrine environmental protection in the constitution.

Whether societal self-understanding can be arrived at outside the constitutional context remains an open question. We can draw encouragement, though, from the debates over the ESA in the mid-1990s. The claims of resource-dependent communities that the law wrongly favored insignificant creatures at the expense of human needs seemed to be gaining political purchase. But a coalition of religious organizations took to the newspapers and editorial pages to remind the electorate of the irreversibility of extinction, societal obligations to future generations, and broader stewardship responsibilities. A strong public response ended the amendment threat. This is an unusual example, because it addresses an issue on which we seem to have fairly strong societal agreement: whether people should have the right to deliberately cause the extinction of other creatures without careful, explicit consideration of what would be gained and lost by doing so.

We will need to think more deeply about how to set constitutive goals in closer cases. Nonetheless, the ESA example offers reason for optimism. It shows that robust societal debate over values can occur, and that such debate may reveal a consensus that had not been apparent. In this case, discussion in the halls of Congress and in the media brought a social consensus in favor of preventing extinction to the fore at a time when many politicians and anti-con-

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ervation advocates believed that consensus had evaporated. The political process, flawed as it undoubtedly is, did not preclude that kind of deliberation.

In the short term, demanding serious value discussions will surely complicate the political process. But such short-term concerns should not overwhelm long-term priorities. Without the societal self-understanding a constitutive debate can generate, we cannot set sensible long-term goals, know whether we are moving in the right direction, or have confidence that we are not, through inattention, losing environmental opportunities and qualities that merited saving.

We can incrementally approach the necessary conversations through our design of institutions and through capacity-building. Our institutions should not hide environmental value choices behind a false cloak of objectivity and expertise. They should welcome broad public participation through mechanisms that encourage participants to articulate not only their immediate concerns, but also the values that underlie those concerns.

Identifying some of our core environmental values should be relatively easy. For example, opinion polls routinely show that Americans agree by large margins that extinction should be avoided, and that the environment should be protected even if that protection conflicts with economic growth. But those principles take us only so far. To craft coherent, effective policies, we need to know more about why we believe in preventing extinction, and what we mean by protecting the environment.

Our endangered species policy strikingly illustrates the need for a deeper discussion of values and goals. When the ESA was adopted, legislators and voters assumed that the problem was easily

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254. Given recent events, no one would suggest that environmental protection is currently the highest priority for most Americans. Nonetheless, Americans continue to express strongly pro-environment attitudes in polls. In November 2002, for example, 57% of respondents agreed with the statement "Protecting the environment is so important that requirements and standards cannot be too high and continuing environmental improvements must be made regardless of the cost." Survey conducted by CBS News/New York Times, available in Westlaw Poll database, Question ID USCBSNYT.112502 R49. In the same poll, 62% of respondents thought the federal government should do more to regulate the environmental and safety practices of business, while only 7% thought it should do less. Question ID USCBSNYT.112502 R48. In a March 2002 poll, 58% of Americans said that we should take some additional actions to protect the environment, and another 26% felt that we must take immediate, drastic action or face major environmental disruptions. Question ID USGALLUP.02MARC4 R21. In April 2002, even with the memory of September 11 fresh in their minds, 78% of poll respondents objected to proposals to exempt the Defense Department from environmental laws. Question ID USZOGBY.042902 R1.
defined—anthropogenic pressures were causing many species to decline and even go extinct. Science could identify the problems and the solutions. Thirty years later, however, we have been forced to recognize that there is no objective way to identify either the groups to be protected or the point at which protection is appropriate.255

A constitutive approach could help us begin to develop answers to those questions. As a society, we have never asked ourselves the constitutive questions about nature protection. They would include: What role would the biota play in the future to which we aspire? What do our endangered species policy choices say about our attitudes toward nature? What attitudes and qualities will those choices tend to instill in future generations? Focusing on questions of this kind would help us perceive the implications of choices we can no longer put off.

Consider, for example, the current controversy over whether hatchery fish should be considered distinct from the wild cousins with which they are capable of interbreeding. The ESA permits listing of distinct population segments of vertebrate species,256 but does not further define the term “distinct population segment.” The National Marine Fisheries Service (NMFS), one of the agencies responsible for making ESA listing decisions, has issued policies interpreting that term. NMFS’ general policy calls for protection of Evolutionary Significant Units (ESUs), defined as stocks that are substantially reproductively isolated from others and represent an important component of the evolutionary legacy of the species.257 Later, NMFS issued a second policy, specific to the treatment of hatchery fish. The hatchery policy provided that hatchery fish, even if they belonged to the same ESU as wild fish, would not be included within an ESA-listed group, unless the hatchery fish were considered essential for recovery.258 In 1995, NMFS determined that wild and hatchery Oregon coastal coho belonged to the same ESU.259 Applying its hatchery policy, the agency

255. See Doremus, supra note 130.
259. See Endangered and Threatened Species, Proposed Threatened Status for Three
subsequently listed the wild fish despite an abundance of hatchery fish. In *Alsea Valley Alliance v. Evans*, the federal district court overturned that decision, ruling that the hatchery policy was inconsistent with the statute.261

A constitutive analysis of the *Alsea Valley Alliance* decision would focus on the extent to which the ESA, as interpreted by NMFS in its two policies, implements and cultivates the values that motivated its passage. Viewed in that light, the District Court decision was wrong. The ESA responds to congressional findings that dwindling species merited protection for their "esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people."262 It should be implemented in ways that will not only protect those values but also ensure that future generations have the opportunity and ability to appreciate them. NMFS’ hatchery policy does that better than its earlier ESU policy. Hatchery fish are under the control of, and dependent on the continued assistance of, the human beings who operate the hatchery. Fish that do not breed and survive the rigors of early development on their own in a competitive environment do not provide the same esthetic, ecological, educational, historical, recreational, or scientific value as truly wild fish. Over time they are likely to diverge biologically from the wild fish, becoming weaker and less able to survive without human intervention.263 Hatchery fish are, by definition, a poor substitute for wild fish; they are a step on the road to plastic fish. Allowing an abundance of hatchery fish to forestall protection of the few remaining wild ones would undermine the values the ESA purports to protect. No conscientious person who actually valued the qualities of coho salmon that the ESA claims to protect would accept hatchery fish as a good substitute for their wild counterparts. It follows that the hatchery policy correctly implements the ESA. Where the hatchery policy conflicts with the ESU policy, the latter should give way.


261. The judgment has been stayed pending appeal to the Ninth Circuit. See David Foster, *In Oregon, Hatcheries Spawn a Salmon Struggle*, WASH. POST, Apr. 21, 2002, at A6.


Other questions we are beginning to face about ESA implementation are more difficult, because they are less clearly answered by reference to the list of values articulated in the legislation. Knowing what values we are trying to protect can help a great deal in determining what groups merit protection, but does not tell us how many members of any group we ought to maintain, or how widely they ought to be distributed. Forestalling extinction requires some minimum number of individuals or populations, but society might want more than that minimum.

Exactly what it is we want becomes important, for example, in evaluating the proposal of the Fish and Wildlife Service to delist the gray wolf in California, Florida, Nebraska, Nevada, and New Jersey, places that lie within the species' historic range but are not now occupied.\(^{264}\) Essentially, the Service has decided that it will never be possible or desirable to allow wolves to return to these locations. But the agency apparently has not yet given up hope that some day gray wolves might howl in the suburbs of Denver or New York City; the proposal would leave wolves listed in those locations.

The gray wolf is, at present, in no real danger of disappearing from the face of the earth. Gray wolves are abundant in Canada, and populations in Minnesota and the Yellowstone area appear secure. But the very real questions of how common we think the gray wolf should be, and over what range it should exist, remain. Those questions will never be easy to answer. One way we might approach them, though, would be to ask what we value about gray wolves or our ability to experience them, what other values might conflict with their presence in certain areas, and how we would prioritize those conflicting values. We might value the esthetic experience of seeing and hearing a wolf, an animal which has come to be virtually synonymous with wildness. That would counsel the broadest possible distribution, affording the largest number of people the opportunity to experience encounters with wolves. We might also value the self-restraint, humility, and tolerance we would demonstrate and cultivate by sharing our world with wolves. Again, this would counsel broad distribution of the species. On the other hand, we

might value, for instance, a loving relationship with our pets, which teaches and encourages concern, responsibility, and a notion of care extending beyond ourselves. This value might argue for a narrower distribution of wolves, limiting the extent to which their populations would come into conflict with domestic pets. Ultimately, we cannot make considered decisions about what constitutes endangered species recovery without some societal discussion of those contending viewpoints.

Of course, it is not enough merely to determine and declare our principles. A constitutive approach requires that we be prepared to live by the principles we proclaim. Decisions about funding, implementation, and enforcement are just as constitutive as decisions about the language of legislation or regulations. A society truly concerned about protecting dwindling species, for example, would not impose a funding bottleneck at the threshold decision of whether species receive any protection.\footnote{265. In 1995, Congress temporarily barred the use of federal funds for listing endangered species. See Emergency Supplemental Appropriations and Rescissions for the Department of Defense to Preserve and Enhance Military Readiness Act of 1995, Pub. L. No. 104-6, 109 Stat. 73; see also Restarting the Listing Program and Final Listing Priority Guidance, 61 Fed. Reg. 24,722 (Dep’t of Interior, Fish & Wildlife Serv., May 16, 1996). Chronically low budgets for ESA listing activities serve as a hidden but effective check on the effectiveness of the Act.}

That does not necessarily mean that all our laws must provide for full and vigorous enforcement at the behest of any affected person, or that we must devote all our resources to any one problem. We might place other values ahead of those served by protecting endangered species when funding choices must be made. But we cannot rely simply on symbolic laws that we have no intention of implementing or no means of enforcing. When we are distributing our limited resources, we must make explicit the value conflicts and their resolutions. Doing so ensures that we carefully and consciously balance the conflicting values, and increases the likelihood that resources diverted from one goal (such as endangered species protection) are actually devoted to another we truly prefer.

The value conflicts described earlier\footnote{266. See supra Part III.A.2.} suggest that it may not be possible to arrive at a single vision of how our human society should relate to nature. That does not mean, however, that the constitutive examination I suggest would be meaningless.\footnote{267. As Elizabeth Anderson suggests of her expressive ethic, the value of the constitutive framework "is confirmed, not undermined, by the thought that [it] may leave one deeply conflicted and ambivalent because one holds attitudes that require incompatible
could provide a clearer window on those value conflicts by forcing advocates on each side to articulate not only the principles upon which they rely, but also the connection between those principles and the societal actions sought. Ultimately, even if we cannot agree upon a single vision of the environmental future, we may agree that a range of options and opportunities should be left open for individual choice, in this generation and in the future.

2. Explicitly consider effects on the future.

A constitutive approach to environmental policy requires that we undertake a concerted effort to understand the future our policies will create. We must ask whether that future adequately expresses, and will facilitate rather than undermine, the core principles we have articulated. To make this inquiry easier, we should focus on increasing our knowledge base in different ways than we would if we were seeking comprehensively rational policy. Of course, more information about biological and economic conditions will often be useful. But what is really needed for a constitutive approach is more information about human responses to law. We should devote substantial resources not only to the study of climate and the biota, but also to the study of how values are formed, what determines institutional and individual behavior, and how best we can build institutional and individual capacities to respond to environmental challenges. Although much more study is needed, our experience with environmental law, which now measures at least forty years, already allows us to draw some important lessons.

The physical future. We can be confident that the physical form of our future environment will affect the ability and inclination of our successors to share and realize our environmental values. Assume, for the moment, that one of our core goals is to maintain the opportunity for people to develop satisfying emotional relationships with nature. Achieving that goal would require that we maintain a world in which opportunities to experience nature in a way that leads to such relationships are widely distributed. We should not rely upon technology to provide that kind of experience. Nature-oriented television programs, magazines, calendars, and web pages are all worth encouraging. But they are by no means

projects.” Anderson, supra note 84, at 17. If the constitutive framework can bring conflicts into the open and focus discussion on how to resolve them, it will have served a very useful purpose.
good substitutes for a walk in the woods, a morning watching birds in a garden, or the direct sight of a meadow full of wildflowers in the spring.

The current controversy about the use of snowmobiles in Yellowstone National Park is an example of a choice that will affect the extent to which the physical future will accommodate options our core principles may tell us to protect. The National Park Service recently decided to phase out the use of snowmobiles in Yellowstone National Park, arousing considerable controversy in the gateway community of West Yellowstone, Montana. The Bush administration, bowing to that pressure, announced that it would undertake further study, and develop a plan that would require cleaner-burning, quieter engines but allow continued use of snowmobiles in the parks.

The impacts of snowmobiles and their riders on park wildlife are fiercely contested, but the effects on the quiet, and the clean air, people expect to find in a national park is not. Snowmobiles vastly expand the areas of the park that are accessible in winter to people of average physical fitness, serving the purpose of allowing people to experience these inspirational areas. But their noise and fumes counter that effect, diminishing the park experience for those hardy enough to ski or snowshoe in. Snowmobiles also encourage their riders to move rapidly through the landscape in a cocoon of artificial noise and exhaust, reducing the extent to which their senses are open to the inspirations of nature. These conflicts could be resolved by permitting snowmobiles only in organized, ranger-led tours of limited size. Such tours could take advantage of the mobility that snowmobiles provide while ensuring that they are used in a way that provides their riders an opportunity to experience nature as only the park can present it. Restricting snowmobile use to specified times and routes would also protect other visitors' opportunities to experience the deep silence and sense of isolation available only in Yellowstone and a handful of similar areas.

The technological future. We can also predict that technology can be both a boon and a threat to long-term environmental protec-

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\[\text{270. See Special Regulations, Areas of the National Park System, 67 Fed. Reg. 69,473 (Dep't of Interior, Nat'l Park Serv., Nov. 18, 2002).}\]
tion efforts. Radical technology forcing is consistent with a constitutive approach motivated by concern for the environment and confidence in our abilities to learn. It declares that if we cannot adequately control the environmental impacts of a technology, we will do without it. We can even leave ourselves an “out”: if it turns out that, despite our best efforts, we cannot devise a way to soften the environmental impacts and we conclude that the values served by using the technology outweigh those expressed by protecting the environment, we can extend deadlines or even free ourselves of the artificial constraints of technology-forcing laws. But any such “out” should not be easily available. Experience tells us that if we are firm in requiring results, they can be delivered. In order to keep us disciplined to our task, any extension or exemption should require a considered, articulated determination of why the technology-forcing goal cannot be met.

While technology forcing can be a useful and effective strategy, we must not let it lull us into an unwarranted and counterproductive technological optimism. The past success of our technological responses to environmental problems can easily encourage us to assume that we need not make changes in our lifestyles, because continual improvements in our technology will solve our environmental problems. That is a message we are all too inclined to hear. But there are almost certainly points beyond which technology alone cannot take us. If we do not rein in the continual increases in our impacts on the environment, in the long run they will exceed our technological prowess. In fact, that day may not be far off. If, as seems certain, technology alone will not be able to maintain environmental protection, we should plan our journey with that in mind. We should wean ourselves from excessive reliance on technology earlier rather than later, when the jolt is likely to be more painful. Adopting policies that highlight and reinforce messages of individual responsibility can help us do so.

Furthermore, technological optimism can encourage us to view the creation of technological substitutes for nature as an accept-

271. See supra Part IV.A.


273. Nitrogen oxide emissions, for example, have increased in recent years despite substantial investments and improvements in automobile emissions technology. See supra note 241.
able, and less painful, alternative to protecting habitats and wild creatures. At Pyramid Lake in Nevada, for example, an elevator lifts endangered cui-ui fish up over a dam to their spawning ground in the Truckee River.\textsuperscript{274} In the Pacific Northwest, fish produced every year at hatcheries are offered as equivalent to wild-spawning fish.\textsuperscript{275} Hatcheries and fish elevators may be essential last-ditch interventions to save foundering runs. But fish that require continual human intervention to spawn will always be on shaky ground, at the mercy of, among other things, short-term budget constraints. If we cannot fully trust ourselves and our successors to sustain continual inputs on behalf of the fish, we should seek more robust solutions. This vision of the future, then, returns us to debate over core principles. Part of that debate must be the extent to which we are willing to accept creatures produced through human artifice as substitutes for truly wild creatures.

\textit{The institutional future.} Our experience also allows us to draw some lessons about the design of institutions to support environmental policy. Through increasing the transparency of environmental decisions and bringing environmental specialists into every agency, NEPA and its state analogues have constituted our governmental institutions in ways that make environmental protection more likely. In the next stage of our journey, information remains essential to encouraging the broad debate on values we need to set our constitutive goals. Information is also the most promising tool for encouraging institutions to be more responsive to our environmental values.

Difficulties in accessing information still significantly limit the ability of concerned citizens to play a role in or oversee agency decisions. We could use the power of the Internet to make government decisions more open and responsive. Many agencies are now posting NEPA documents online. But many other environmental documents are far less accessible. Habitat conservation plans (HCPs) prepared in support of incidental take permit applications under the ESA,\textsuperscript{276} for example, are remarkably difficult to obtain. There is no central repository of plans, nor can one consistently rely on their being available through the Fish and Wildlife Service.

\textsuperscript{274} See Eric Brazil, Indians, Government Square Off Over Fish, S.F. CHRON., Apr. 5, 2001, at A8.


Monitoring reports prepared under the plans are even less accessible; they must generally be requested from the permit holder. Given existing technologies, there could be no serious practical objection to requiring submission of HCPs and monitoring reports in electronic form, or to having the agency post them on a publicly accessible website.

There are also steps we could take to improve private institutions, making them more aware of, and responsible for, their environmental impacts. Information disclosure as a guide to consumer action has some value, but it has proven remarkably difficult to translate the complexities of environmental impacts into the simple information consumers crave.\textsuperscript{277} Certification systems can, at least in theory, navigate this information gap.\textsuperscript{278} Expert certification personnel can closely examine a firm's processes and assure consumers that they meet some minimum standard. But as a strategy for an ongoing journey, that kind of minimum standard certification is not particularly promising unless there is a mechanism to continually ratchet up the threshold standard. A strategy with greater promise for the future would be comparative audits, in which firms within an industry are examined and ranked in some way.\textsuperscript{279} Such a system would provide continuous incentives for firms seeking to stay at the top of the environmental rankings to improve their environmental management systems and performance. It is difficult to imagine such a ranking system developing within an industry as a cooperative undertaking, however. It would probably have to be externally imposed, either by government or by a sufficiently funded consumer group.

There may be more promise at this stage of the journey in attacking the problem from another angle. Instead of directing information at consumers, we might focus on bringing it sharply to the attention of industry. Mandates for pollution-prevention planning, for example, can reduce pollution simply by bringing economically wasteful practices such as excessive use or loss of toxic materials to the attention of managers.

\textsuperscript{277} See generally Karkkainen, supra note 209; Rechtschaffen, supra note 211.


\textsuperscript{279} Karkkainen has pointed out how the ability to compare performance across an industry, provided by the Toxics Release Inventory, can and has led to improvements in pollution-control performance. Karkkainen, supra note 209. Other measures could capitalize on the numerous benefits of comparability.
3. Equitably allocate responsibility.

A constitutive policy must provide for equitable distribution of costs. Equitable distribution of burdens is a prerequisite for durable collective-action solutions to environmental problems. People who know that everyone is being required to do their part are more likely to accept the burdens they are asked to bear. Equitable distribution of responsibility means requiring that all sectors that contribute to an environmental problem participate in its solution. It also means attending to the objections of communities that claim they have been “targeted” to bear excessive environmental-protection burdens which others are allowed to escape. Those claims may ultimately be rejected, but only if society can explain either why those communities bear special responsibility for the problem or how equivalent sacrifices are being demanded of others.

A current example illustrates the strains that result from incomplete allocation of responsibility. The Klamath Basin, at the boundary of Oregon and California, was the scene in 2001 of an unprecedented event, the closing of the headgates of a federal irrigation project to protect endangered fish, leaving project farmers without irrigation water.\(^{280}\) The resulting outcry led to a National Research Council review of the science that justified the shut-off, to proposals to amend the ESA, and to a lawsuit seeking more than $1 billion in damages from the United States.\(^{281}\) The Klamath problem is a complex one, but it is clear that so far the burden of solving it has fallen solely on farmers dependent on the federal irrigation project. Spreading the burden of solving the problem to all those who contribute to it, such as other irrigators upstream of the federal project, would increase the likelihood that the fish will recover; at the same time, it would increase the durability of the ESA both in this location and more broadly.

Assigning responsibility to the various activities that implicate our core principles is also a key foundation for learning to act in accordance with those principles. The law should promote both individually and societally constitutive action by helping people to face up to the ways in which their choices threaten inconsistency with the values they claim to hold.


\(^{281}\) See id.
Richard McAdams uses norms language to explain this process. He contends that norms come in two types: abstract norms, which may be internalized but do not necessarily guide conduct; and concrete norms, which focus on behaviors, designating actions as either complying with or violating the internalized norms. Stated another way, our values are often quite abstract and do not by themselves determine our behaviors. We need intermediary guidance to recognize specific behaviors as consistent with or in conflict with them. In appropriate circumstances, the law can help draw these connections. McAdams offers the example of a law requiring the use of child safety seats in cars. Even without enforcement, such a law may induce substantial compliance by conveying the message that parents who do not use child safety seats are not behaving as "good parents" would.

Our current reluctance to discuss values stands in the way of this linkage between norms and behavior. Recycling policy is one clear example. The current emphasis on recycling has been sharply criticized on the grounds that recycling is inefficient, that is that its costs exceed its monetizable benefits. Recycling advocates have responded with criticisms of the calculations, and have emphasized that recycling might not be profitable until robust markets are developed for recycled products. Neither side has openly discussed the values that might underlie recycling.

That silence is fairly typical. Neither side talks about values because both sides believe they are uncontested. For the critics of recycling, efficient use of our financial resources is the keystone value. Recycling enthusiasts, on the other hand, assume that efficient use of natural resources, particularly but not only those that are not renewable, is the primary goal. But other values may be implicated by policies regarding recycling and garbage disposal. Recycling, and "pay as you throw" pricing for garbage service, can enhance awareness of one's consumptive choices. The more people consume, by and large, the more they throw away. Both recycling mandates and quantity-based pricing, therefore, impose greater costs on those who consume more. In so doing, they may encourage a sense of personal responsibility for consumption. Re-

282. McAdams, supra note 37, at 382-86.
283. See id. at 407-08.
cycling mandates might be desirable, even if their financial costs exceed those of landfilling, because they frame the world in a way that encourages people to be aware of the extent of their resource consumption.

Our experience also reinforces the importance of accounting for all contributions to a problem in designing a solution. Wholesale exemptions of indefinite duration are always inappropriate from a constitutive perspective, unless they reflect a considered judgment that the exempted parties bear no responsibility for the problem. Otherwise, exemptions inequitably shift costs to others, limit our ability to address the problem by allowing the exempted sector to absorb gains wrung from other sectors, and squander opportunities to encourage the learning and adaptation that can lead to a better future.

California is painfully learning this lesson. In 1976, when it thought imposing permit requirements on traditional industrial sources could solve its air pollution problem, the state enacted a law exempting agricultural equipment from permit requirements. Today, because of that exemption, the state is facing withdrawal of EPA approval of its permit program under Title V of the Clean Air Act, as well as the need to cope with an air pollution problem in the San Joaquin Valley that is among the worst in the nation, largely due to agricultural operations. Essentially no effort has been devoted in twenty-five years to improving the air pollution performance of agricultural operations, and farmers do not recognize their responsibility for the area's air problems.

We are learning similar lessons about the responsibility of drivers, and not just automobile manufacturers, for mobile source pollution. Exemptions from comprehensive pollution-control initiatives undermine the opportunity and incentive to explore ways of making disparate goals, such as environmental protection and national defense, compatible. In fact, California's experience with agricultural exemptions argues strongly against recent propos-

288. In 1990, Martin Bern pointed out how the Clean Air Act seemed to absolve drivers of responsibility. Bern, supra note 272. Not much has changed since then, even though mobile source emissions account for about 70% of the air pollution problem in such severely polluted locations as Sacramento, California. See Sacramento Metropolitan Air Quality Management District, Regional Data and Info: Your Regional Spare the Air Resource, at http://www.sparetheair.com/regional_data.html (last visited Feb. 7, 2003).
als to provide wholesale exemptions from environmental laws for the Defense Department. Environmental law can allow for variances and exemptions in specific circumstances, but should do so only after an individualized determination of justification, and only for a limited period of time. All sectors should be expected to move toward shouldering their share of society's burdens.

4. **Design for the long term.**

The key principles constitutive law embodies should be embedded in the law, making it institutionally difficult (though not impossible) to renounce them or to make decisions that contradict them. Constitutions do that by imposing stringent requirements for amendment. Those impediments assure that short-term political passions do not distract society from the core principles that the Constitution embodies.

Constitutive law should carry a similar commitment to its principles, erecting procedural and substantive barriers to overlooking or abandoning them. One good example is the ESA's "God Squad" exemption procedure, which requires a super-majority of a committee composed largely of cabinet secretaries to find that the proposed action is of at least regional significance and that its benefits clearly outweigh those of alternative courses of action. Another example is the public trust doctrine, interpreted by the California Supreme Court in the Mono Lake case to bar the state from extinguishing public rights to navigable waters by conveying land or water to any individual, unless the state explicitly determines that doing so is necessary to achieve other important public aims.

5. **Facilitate flexibility and adaptation.**

The temporal durability of environmental policy must be ac-
Flexibility is promoted by framing the law in terms of underlying principles, allowing it to adjust to conditions that are newly recognized as invoking those principles. The common law has long been capable of such adjustments. For example, the venerable public trust doctrine, originally established with an eye toward navigation and fishing, was adjusted in 1971 by the California Supreme Court to cover the preservation of ecological integrity, newly recognized as an important public interest.294

Flexibility also requires special efforts to fight the unavoidable entrenchment of the status quo. The psychological phenomenon of loss aversion is by now quite familiar; it causes people to resist the loss of what they have more strongly than they would seek to gain the same thing if they did not currently have it.295 Loss aversion helps to account for the extraordinary tenacity of subsidies and exemptions. They quickly become viewed as entitlements whose withdrawal is fiercely resisted.

Limiting exemptions and subsidies can reduce entrenchment. If used sparingly and always with explicit sunset dates, they can ease transitions, offering time to learn how to conduct activities in a more environmentally friendly manner. But used carelessly, they can easily become effectively permanent, unfairly leaving other sectors responsible for more than their share of the solution. We should also be cautious about providing protection from regulatory change through such mechanisms as “no surprises” assurances in ESA incidental take permits,296 or interpreting the Takings Clause to require compensation for regulations well after their enactment.297 Understanding that environmental protection is a perpetual journey that never becomes easier, we should craft our policies to encourage everyone responsible for environmental degradation (which means all of us) to continuously adapt to new, more stringent protective steps. Regulatory assurances tend, in-

294. See Marks v. Whitney, 6 Cal. 3d 251, 259-60 (1971).
stead, to encourage people to cling to old habits even when those habits are no longer environmentally acceptable.

The ability of the status quo to constrain our view of problems and their potential solutions gives it a powerful grip on society. We are far more likely to consider marginal changes in our existing institutions or operations than more radical ones. Reducing over-reliance on marginal solutions requires us to create institutions that force us to consider a broad range of alternatives. This problem can also be addressed by increasing our willingness to employ policy experiments, trying a variety of steps to see which ones work and what their costs truly are. We should not, however, experiment blindly. Experiments are useful only if we undertake them with clear goals in mind, carefully monitor them to see if those goals are being achieved, and factor the results into future decisions.

VI. CONCLUSION

Law plays important roles in shaping our technology, our institutions, our social relationships, future generations, and ourselves. Because solutions to environmental challenges must extend over long time frames, those constitutive effects play a crucial role in environmental policy.

Attention to the constitutive effects of law can both help us identify our environmental goals and increase our ability to achieve those goals. We have tried to use the constitutive effects of law to move us toward our environmental goals in a few isolated ways. Broader awareness and consideration of those effects could, however, take us further.

In light of the uncertainty that pervades environmental problems and our inability to define either the problems or solutions objectively, we need a guide other than science or economics. The constitutive qualities of law can provide that guide. They provide a framework that can free us from excessive reliance on objective assessments of alternatives without leaving us entirely rudderless or unable to explain the principles that justify particular choices. They can also help us productively evaluate apparent and

298. See, e.g., Idaho Dept. of Fish & Game v. Nat'l Marine Fisheries Serv., 850 F. Supp. 886, 893 (D. Or. 1994), vacated as moot, 56 F.3d 1071 (9th Cir. 1995) (noting that NMFS biological opinion focused on the perceived capabilities of the Columbia River dam system rather than on the needs of endangered salmon).
real conflicts between values, and make choices when faced with unavoidable conflicts.

The constitutive approach calls for evaluating policy choices in terms of the values they express, cultivate, and reinforce. That analysis can help us implement our values by forcing us to confront the extent to which our actions are consistent with those values. It can also make us aware of the extent to which our actions today will determine the opportunities and values of succeeding generations. It encourages us to focus on the legacy we will leave for the future in terms of the kinds of relationships with nature and with each other, that our successors will have the opportunity to enjoy.

Given the constitutive qualities of law, we must clarify, and openly debate, the values underlying environmental law. Our political system typically does not promote such debate, and may even quite powerfully impede it. Those who wish to see the journey of environmental policy succeed should resist the forces that tend to squelch discussion of values. When environmental policy choices are framed in terms of the values they reveal, and their likely effects on current and future society, we can see more clearly how to take the next steps in our continuing journey. We may decide that protection of other important values limits the extent to which we are willing to take environmental action, but at least we will be aware of, and required to face the implications of, those trade-offs. We might even find that we are closer to a consensus on the key values at stake than we currently realize.
Note