REVIVING ENVIRONMENTAL PROTECTION: PREFERENCE-DIRECTED REGULATION & REGULATORY OSSIFICATION

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ABSTRACT:

Many students of administrative law have pointed to the contemporary "ossification" of the administrative state, exemplified by the lengthy and contentious rule-making/litigation process and the lack of recent congressional initiative in the area of environmental, health, and safety regulation. Some scholars look to the administrative and rulemaking processes as the cause of ossification while others argue that new regulatory tools which avoid rulemaking are needed to counteract ossification.

This Article proposes an alternative. I argue that regulatory ossification is primarily the result of stable political equilibriums that form around regulatory regimes. These equilibriums prevent regulatory regimes from being revised because politically accountable officials have incentives to defer to the status quo and the political coalitions necessary for reform are hard to form. Outdated regulatory techniques and rulemaking processes are thus a symptom, rather than a cause, of ossification.

In order to revive environmental protection, ossification must be overcome. Toward that end, I propose breaking up those stable equilibriums by encouraging "preference-directed" regulation. Preference- directed regulations are those that achieve regulatory goals by influencing consumer preferences—as opposed to regulations which either explicitly require certain conduct or change economic incentives. Because preference-directed regulations influence consumer preferences, we can expect those regulations to have impacts on the political process as well. The ever "racketing-up" of the political coalition in favor of a regulatory goal will tend to destabilize the political equilibriums surrounding particular regulatory regimes, allowing for more frequent revision and learning.

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INTRODUCTION

"He not busy being born is busy dying."[‡]

The regulatory state is not dead. Any claim to the contrary would be silly, given the prevalence of regulation in our lives. The regulatory state certainly does, however, feel awfully stagnant. The major environmental statutes were passed three decades ago. The role of OSHA in regulating the American workplace is slowly dissolving. The rulemaking process drags on in endless litigation and political fighting. Even regulatory reform measures have stalled.

[‡] Bob Dylan, *It's Alright Ma, I'm Only Bleeding*, Bringing It All Back Home (Columbia Records, 1965).

Commentators have called this process "regulatory ossification."[1] It is an apt analogy. Medically, ossification is the process where soft, flexible tissue—like cartilage—hardens into bone. Figuratively, it describes "a rigid, conventional, sterile, or unimaginative condition."[2] The federal bureaucracy may be vast and powerful, but over the last thirty years, it seems also to have become petrified.

There are, undoubtedly, a variety of political, social, and cultural factors which have led to this condition. Many prominent students of administrative law, using the analytic tools with which they are most readily familiar, have argued that an important source of the recent regulatory malaise lies in the processes of regulation. The argument is that command-and-control style regulation—which is inflexible, time consuming, and expensive—has reached the limit, or near the limit, of its usefulness. The marginal cost of an additional unit of regulation—the cost of a bit more environmental protection—is close to or has surpassed the cost that society is willing to bear. In order to reinvigorate the regulatory state, they argue, we must either substantially reform the rulemaking process to make it less burdensome,[3] or move beyond the traditional tools entirely and embrace new mechanisms, like tradable permits, which promise greater regulatory bang for our social buck.[4]

In this Article, I propose an alternative diagnosis of the causes of regulatory ossification, and suggest an alternative cure. Rather than being the result of regulatory costs equaling regulatory benefits for traditional administrative processes, I propose that regulatory ossification is the result of stable political equilibriums that form around regulatory regimes. These equilibriums form because building the political coalitions necessary to revise a regime becomes increasingly difficult the longer the regime has been in place. These stable political equilibrium result in little regulatory revision. The reliance on expensive, and perhaps outmoded, regulatory processes is thus a symptom rather than a cause of regulatory ossification. It is the overall inflexibility in the system, which makes learning less likely and renders regulatory regimes less responsive, that leads to the use of less-than-state-of-the-art regulatory tools, rather than the other way around.

In order to prevent the formation of these stable political equilibriums in the future, I suggest the use of "preference-directed" regulation. Among the regulatory tools that have been proposed as alternatives to command-and-control regulation are several that seek to alter consumer behavior as a means of achieving policy goals. Almost all regulation affects consumer behavior somehow by, among other things, increasing or decreasing prices, raising or lowering product

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[1] *See e.g.*, Thomas O. McGarity, *Some Thoughts on "Deossifying" The Rulemaking Process*, 41 DUKE L.J. 1385.

[2] MERRIAM-WEBSTER ONLINE DICTIONARY, *ossification*, http://www.m-w.com/dictionary/ossification.

[3] *See e.g.*, McGarity *supra* note 1; Richard J. Pierce, Jr. *Seven Ways to Deossify Agency Rulemaking*, 47 ADMIN. L. REV. 59 (1995); Negotiated Rulemaking Act of 1990 (codified at 5 U.S.C.A, §§ 561–570); Philip J. Harter *Assessing the Assessors: The Actual Performance of Negotiated Rulemaking*, 9 N.Y.U. ENVTL. L.J. 32 (2000).

[4] *See* Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 STAN. L. REV. 1333 (1985); ADMINISTRATIVE LAW AND REGULATORY POLICY: PROBLEMS, TEXTS, AND CASES (Richard B. Stewart et. al. eds. 2006).

quality, adding features, specifying terms of sale, or controlling risk. However, there is a special class of regulatory tools that impact consumer behavior neither by changing the product nor by changing prices, but by targeting preferences directly.

Preference-directed regulations can help de-ossify the regulatory state, but *not* by lowering the marginal cost of regulation. In fact, preference-directed regulation may often have higher marginal costs than other alternatives. Preference-directed regulation can nevertheless help de-ossify the regulatory state by allowing for more frequent regulatory revision. This occurs because of what is essentially a side-effect of preference-directed regulation: The preferences that are generated (or strengthened) by the regulation impact not only consumer behavior, but political behavior as well. Because of an ever expanding political coalition, regulation does not get "stuck" in any particular political equilibrium for too long, allowing for more frequent revision. The lessons of past experiences can then be incorporated into new versions of statues or regulations, increasing the flexibility and responsiveness of the regulatory state.

Preference-directed regulation should not be thought of as a substitute or alternative to traditional regulation, but rather as a supplement. Command-and-control regulation, and alternatives like taxation and tradable permits, achieve regulatory goals at lower marginal costs, but become mired in political equilibrium that prevent future revision. Preference-directed regulations, incorporated into broader regulatory schemes, may increase the marginal cost of achieving regulatory benefits in the short-term, but can short-circuit negative political equilibrium, allowing for greater learning and revision over the medium term, and ultimately lower costs and generating greater benefits over the longer term.

While my argument applies to regulation more generally, for the sake of clarity (and sanity) I focus on environmental regulation. The Article proceeds in three parts. Part I creates a conceptual foundation by defining the goals of environmental regulation and describing several classes of regulatory techniques that are used to achieve those goals, including traditional tools like command-and-control regulation, and alternatives like market-based incentives and preference-directed regulation. Part II discusses regulatory ossification, giving a brief overview of the effects of ossification on the regulatory system and arguing that the current understanding of the causes of ossification is flawed. I go on to offer my own theory that stable political equilibriums that build up around regimes are the cause of ossification. Part III discusses how preference-directed regulation can break up these stable political equilibrium, reducing ossification. This Part also discusses several significant drawbacks of preference-directed regulation that make it an appropriate supplement to existing regulatory techniques, rather than a replacement for them.

I. THE ENDS AND MEANS OF ENVIRONMENTAL REGULATION

A. Protecting the Environment

The purpose of any environmental regulation is to change human conduct in a such a way as to positively impact the quality and/or quantity of some environmental good (or bundle of environmental goods) vis-à-vis the unregulated status quo state of affairs. The term "environmental goods," as I use it here,[5] covers a wide range, and includes wetlands; trees; air, water, and land; fisheries; minerals; and vistas from mountain tops. Environmental regulation is specifically targeted at the interaction between human societies and these environmental goods.

We can think of the interaction between people and the environment in terms of the "uses" of environmental goods.[6] In contemporary society, we put environmental goods to a wide variety of uses. Some environmental goods we consume directly, other serve as inputs in the manufacture of other goods. We use land for building, farming, mining, and parks. We use wetlands for birding and to filter toxins. We use the air for breathing and for waste disposal. We drink, swim in, pollute, and cool industrial facilities with water. Trees are cut down for lumber or paper towels, or left standing for camping under or to provide critical habitat for spotted owls. Environmental goods can be used at multiple stages in the production and consumption of some another good. The production of a consumer good may require raw materials extracted from mining operations and waste disposal in the air and water. Consumption of the good may require additional resources like the use of landfills for the disposal of post-consumer wastes.

It is pretty clear that some uses of an environmental good will conflict with others. Those uses that do not conflict we call "non-rival"—think swimmers in the ocean. A single additional unit of use reduces its value very little for additional users.[7] Other uses do conflict—a swimmer and a city sewer sharing the same small river. We call uses that do conflict "rival"; in these cases an additional unit of use by one user can significantly reduce value for other users.[8] Where an

[5] While some limit the definition of environmental goods to the formal economic terms "common pool resources" or "public goods," *see* HAL R. VARIAN, MICROECONOMIC ANALYSIS (1992), I have a different sense that I am using in this Article: all of the goods and services that are provided by the non-human environment, regardless of who holds it or how it is regulated. *See* TOM TIETENBERG, ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS 19–21 (3d. ed. 1992) I believe this definition fits more comfortably with the lay definition of natural resources and environmental goods. *See e.g.*, WIKIPEDIA, *Natural resources*, http://en.wikipedia.org/wiki/Natural_resources. Environmental goods pose specific problem for governments because of their high value, economic importance and because they are often (or always) subject to multiple, and conflicting, potential uses, bear existence value, and are either strictly nonrenewable or can be used unsustainably.

[6] This is of course an anthrocentric worldview, where environmental goods are thought valuable only for use to human beings. There are alternatives; *see e.g.*, ANIMAL RIGHTS (Cass Sunstein & Matha Nussbaum eds. 2005).

[7] Carol Rose points out that whether or not an additional user reduces the value of the resource is a question of: (1) the character of the resource, (2) the use, and (3) the current number of users. There may be some resources that are sufficiently "under" utilized that an additional user does not diminish the value, but, as the number of users increases, we reach the point of "congestion" — where the marginal user decreases value. *See* Carol M. Rose, *Rethinking Environmental Controls: Management Strategies f or Common Resources*, 1991 DUKE L.J. 1, 5-8 (1991).

[8] Both the swimmer and the city sewer are engaged in rival uses because they are mutually exclusive. One need not pollute a natural resource to engage in a rival use: For

environmental good is subject to intensive rival uses, but where there is insufficient restriction on access or control over those uses, we get the familiar "tragedy of the commons" problem where every individual is faced with an incentive to act in a way which reduces long term value.[9]

In order to manage these uses and arrive at the optimal amount and combination of uses for environmental goods, societies implement a variety of strategies.[10] Command-and-control style bans, production standards, use restriction, tradable permits, public land leases, liability rules, taxes, information provision, and educational campaigns are all examples of regulatory tools that have been used to conserve environmental goods. Since the revolution in environmental consciousness in the last half of the twentieth century, countries have become more aggressive in using these tools in order to better manage the relationship between human activity and the environment in hopes of increasing social wealth, improving people's overall well-being, protecting wilderness areas and biodiversity, and improving the sustainability of economic development into the future.

B. Traditional Regulatory Tools

While traditional regulatory tools have come under fire in recent years, they make up the bulk of the federal regulatory apparatus. Command-and-control style regulation, with its relatively slow process, cumbersome rules, and litigation delays, has been a particular subject for scrutiny. However, these tools have made significant advances in achieving environmental goals, with some cost-benefit analysis showing staggering returns for our current environmental programs.[11] In this section, I briefly review several traditional tools, providing examples of how they work as well as scholarly critiques.

1. Command and Control

Command-and-control regimes specify the manner in which certain natural resources uses are carried out, without setting absolute limits on the amount of the resource that can be used. In the pollution control context, command-and-control rules often take the form of a requirement that emitters utilize the "best available technology"[12] to control pollution. Command-and-control requirements specify the environmental controls that must be put in place at mining sites,[13] limit

example, a small number of people using a stream for drinking water leaves the stream essentially untouched — except for the massive regulatory restrictions that would need to be in place in order to ensure that the water was safe for drinking. *See generally* Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

[9] *See e.g.*, Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968).

[10] Rose, *supra* note 7.

[11] EPA, THE BENEFITS AND COSTS OF THE CLEAN AIR ACT: 1970–1990 (1997) *available at* http://www.epa.gov/air/sect812/copy.html; EPA, THE BENEFITS AND COSTS OF THE CLEAN AIR ACT: 1990–2010 (1999) *available at* http://www.epa.gov/air/sect812/prospective1.html.

[12] *See* Clean Air Act § 111(a)(1); Clean Water Act §§ 301(b)(1)(A) & (b)(2)(A).

[13] *See* 30 C.F.R. 700-887 *available at* http://www.osmre.gov/regindex.htm.

the season and types of technologies that can be used in fishing,[14] and set out ways that hazardous wastes must be handled and tracked.[15]

A vast bulk of current federal and state efforts to achieve natural resource management goals take the form of command-and-control regulation. The Endangered Species Act targets the use of wildlife resources by prohibiting the "take" of certain listed species of animal.[16] The Clean Water Act subjects emitters to a set of technology based performance standards.[17] The Resource Conservation and Recovery Act (RCRA) and the RCRA Regulations set out detailed guidelines governing the handling and disposal of hazardous waste materials by generators and transportation, storage, and disposal facilities.[18] These programs, and many others, run the gamut of environmental media and problems.

There are many well known criticisms of command-and-control regulation.[19] Professor Richard Steward summarizes these criticisms:

> [Command and control regulation] has been criticized on the grounds that it is unduly rigid, cumbersome, and costly; fails to accommodate and stimulate innovation in resource-efficient means of pollution prevention; fails to prioritize risk management wisely; is patchwork in character, focusing in an uncoordinated fashion on different environmental problems in different environmental media and often ignoring functional and ecosystem interdependencies; and relies on a remote centralized bureaucratic apparatus that lacks adequate democratic accountability. While acknowledging its past accomplishments, critics of the command central planning system maintain that it is reaching its inherent limits and is no longer capable of ensuring sustainable environmental progress at tolerable social cost.[20]

Command-and-control regulation does, however, have its defenders[21] who argue that command-and-control regulation, despite its faults, has been successful in achieving many important environmental goals, making a significant dent in pollution, and preserving important natural resources. This debate is sure to continue, so long as command-and-control regulation has an important place in the American policy arena—likely a long time to come.

2. Public Ownership

[14] *See* Katrina Miriam Wyman, *From Fur to Fish: Reconsidering the Evolution of Private Property*, 80 NYU L. REV. 117 (2005).
[15] *See* Resource Conservation and Recovery Act (RCRA) Regulations, 40 C.F.R. 240-299.
[16] Endangered Species Act §9.
[17] Clean Water Act §301.
[18] RCRA Regulations, 40 C.F.R. 240-299.
[19] *See* Richard B. Stewart, *A New Generation of Environmental Regulation?*, 29 CAP. U.L. REV. 21, note 1 (2001) (citing several authorities).
[20] *Id.* at 21.
[21] *See id.* at note 1 (citing several authorities).

While we typically think of public ownership—where a government body maintains direct ownership over the relevant national resource and exercises the kind of control we associate with a private property holder—as a strategy associated with socialist economies, there are significant natural resources that are owned and controlled by governing bodies in the United States. National Parks are an obvious and well known example of federally owned lands, but vast areas of land are also owned by the federal government as national forest and national grazing lands. In addition, mining rights, off-shore minerals, and channels of navigation are "owned" by the government; in some cases, the common law prevents the government from alienating these properties.[22]

Public ownership preserves natural resource in a fairly straightforward fashion. As owner, the government simply limits the number and types of uses. The government may charge a fee for the use of the resource, or it may limit the number of users in some other fashion—such as a lottery. If the government is acting efficiently, it will maximize the net present value of the resource by keeping some amount in reserve or managing the resource for sustainability, depending on a calculation of the future value of the resource under different management strategies. If the government determines that the resource is under-utilized, it can even facilitate exploitation by "giving" the resource away to parties willing to invest capital and time in exploitation efforts.

Some of the criticism of public ownership mirror the criticisms associated with command-and-control regulation: it is inefficient, slow, overly politicized and insufficiently technocratic, undemocratic, and leads to unnecessary restrictions on private use.[23] Both critics and supporters have noted the most important difference between public ownership and private ownership as the introduction of politics to the, normally purely economic, net present value maximizing calculus.[24] However, it is important to note that there is significant political support for public resource ownership in the U.S.—especially in the context of lands held as wilderness—so the option of resource management through direct public ownership remains a viable, and important, regulatory strategy.

3. Liability Rules

Traditional tort and nuisance liability are a form of environmental regulation that exists within the common law, and for simple and local environmental problems, provide a mechanism to

[22] The Public Trust Doctrine is a common law principle that "that navigable waters are preserved for the public use, and that the state is responsible for protecting the public's right to the use." Black's Law Dictionary (8th ed. 2004).

[23] *See e.g.* Roger A. Sedjo, *Does the Forest Service Have a Future*, 23 REGULATION 51 *available at* http://www.cato.org/pubs/regulation/regv23n1/sedjo.pdf (summarizing criticisms of the Forest Service and offering suggestions for reform).

[24] James L. Huffman, *Land Ownership and Environmental Regulation*, 25 ECOLOGY L.Q. 591 (1999).

achieve optimal levels of resource use. Modern forms of environmental liability, most notably "toxic tort" liability and federal Superfund liability for toxic waste sites, continue to play an important role in environmental regulation.

In a simple liability regime, a person must compensate for harms caused to others through their conduct. In the natural resource context, certain resource uses are made subject to liability, so that some party can be compensated for costs incurred because of the natural resource use. This is quite clear in the context of toxic torts. For example, if an industrial facility used land and groundwater for the disposal of hazardous substances, and children exposed to those chemicals in the area developed cancer that was attributable to the exposure, then the firm may be held liable for that harm. Clearly, this places a cost on the resource use. A profit maximizing firm will calculate the costs of various disposal alternatives, including the cost of liability to potential cancer victims. A well functioning liability system[25] will result in optimal levels of pollution because firms will be forced to internalize all of the costs of the natural resource use.

The most important federal liability regime is the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or the Superfund), which deals with the remediation of hazardous waste sites. Under CERCLA, certain types of parties[26] are responsible for the cleanup of hazardous substances that are released into the environment. This liability is strict, joint and several, and is expansive, in that it includes classes of parties that would not be liable under common law and covers the cost of cleaning up the site to the limits of technical feasibilty, as opposed to merely compensating disadvantaged parties.[27] The Superfund directly limits the availability of a natural resource—land and groundwater—for the disposal of hazardous substances. Rather than restricting disposal outright and imposing some fine or other criminal penalty for violation, the Superfund requires the polluter to remediate any site containing uncontrolled toxic substances.

The Superfund program and its liability provision have both supporters and critics. Supporters of the Superfund point to its necessity,[28] the ability of the program to leverage private dollars toward public benefiting projects,[29] and to the incentives against pollution the

[25] A well functioning liability system, like the one discussed above, is perhaps more of a theoretical construct that a real world phenomenon, because, among other things, victims would have to be fully compensated—which is difficult for very grave harms like cancer and death—and transaction costs would have to be very low, which is not the case in the civil justice system generally, and certainly not in the case of toxic tort cases which raise complex issues of causation and many evidentiary problems.

[26] Comprehensive Environmental Response, Compensation, and Liability Act §107.

[27] For a criticism of the stringency of risk assessment under Superfund, see James T. Hamilton & W. Kip Viscusi, *The Magnitude and Policy Implications of Health Risks from Hazardous Waste Sites, in* ANALYZING SUPERFUND: ECONOMICS, SCIENCE, AND LAW 55, 76-80 (Richard L. Revesz & Richard B. Stewart eds.) (1995) [hereinafter ANALYZING SUPERFUND]. Note that Superfund law includes provisions relating to compensation (to the government) for natural resource damages.

[28] JESSICA FROHMAN, ANANDA HIRSCH & ED HOPKINS, COMMUNITIES AT RISK: HOW THE BUSH ADMINISTRATION IS FAILING TO PROTECT PEOPLE'S HEALTH AT SUPERFUND SITES 1 (2004).

[29] *Id*. at 4.

program creates.[30] Opponents of Superfund liability often criticize it on the basis of perverse incentives that are created in the context of redevelopment, rather than pollution. Under the original Superfund program, the purchaser of an abandoned already polluted site could be held liability for cleanup costs. This creates a problem if the purchase and redevelopment of polluted sites creates social benefits. Opponents of Superfund liability argued that abandoned properties created externalities for the (often urban) communities in which they were located; these sites were dubbed "brownfields." With a long list of high priority Superfund sites, many polluted and abandoned brownfields have not been slated for federal Superfund remediation and could remain abandoned for many years. This argument, in part, led to the adoption of the Small Business Liability Relief and Brownfields Revitalization Act, signed into law in early 2002. The Act altered the Superfund liability scheme, making it easier to purchase polluted land and avoid Superfund liability.

C. Market-Oriented Approaches

Many economists and legal scholars now favor market oriented approaches to environmental protection.[31] By placing more decisions in market actors, these techniques reduce the burden on central regulators to process information and adapt to rapid technological change within the regulated community. They also allow for least-cost compliance techniques, which achieve regulatory benefits with less economic burden. While the use of market mechanisms has not supplanted traditional regulatory tools, they have gained a significant foothold, taking an important place in environmental regulatory regimes.

1. Tradable Permits

In a marketable permit/rights scheme, a private party is issued, by the governing body, some legal power over something, for example a piece of land (title), or a corporation (stock). In the natural resource context, the legal power is typically a right to some use of a natural resource. For the permit/right to be "marketable" it must, generally speaking, be alienable and capable of transfer from one party to another. The use covered by the permit/right may be governed by additional regulations, either contained within permit or made generally applicable. The issuing body may reserve the right to cancel the permit/right, but may also limit its ability to do so. The use of a resource without the appropriate permit is forbidden. This prohibition can be enforced by either the government or other permit holders.

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[30] Richard Revesz & Lewis Kornhauser *Evaluating the Effects of Alternative Superfund Liability Rules*, in ANALYZING SUPERFUND *supra* note 27.

[31] *See* e.g. Nathaniel O. Keohand, Richard L. Revesz, & Robert N. Stavins, *The Choice of Regulatory Instruments in Environmental Policy*, 22 HARV. ENVTL. L. REV. 313 (1998) (developing positive account of regulation in part to help explain why command-and-control regulation is prevalent when economic theory recommends market-oriented approaches).

In perfect marketable permits/rights schemes, the full costs and benefits of natural resource exploitation are "internalized" in a single decision maker, whose economic incentive is to maximize the net present value of all current and future cash flows generated by use of the resource.[32] To the extent that current exploitation generates less revenue than the present value of the lost opportunity for future exploitation, a private owner will not currently exploit (or allow exploitation of) the resource, thereby restricting the total amount of the resource that is available at any given time. In the absence of negotiating costs, the solution will be a Pareto optimal allocation.[33]

Marketable permits/rights have been implemented and proposed in a number of resource management circumstances.[34] It is important to note that these regimes are dissimilar to real property in that they typically allocate a specific *amount* of use of a *common* resource—one that cannot realistically be subdivided—to individual users, who may trade those use permits/rights. There is a strong role for the central regulator in determining what the optimal amount of use should be. This is different from a complete regime where all of the resource is allocated to private parties who, through bargaining, achieve an optimal allocation between current and current and future users. An incomplete scheme, with a strong residual role for central regulators, is necessary when there are technical or political barriers to complete division and allocation of the resource.

One of the most important recent developments in the United States in the area of marketable permits was the creation, in the 1990 Clean Air Act Amendments, of a nationwide market in sulfur-dioxide permits. Under the Acid Rain Program, the EPA issues "emission allowances" to coal burning power plants; these emission allowances form a cap, the violation of which subjects the facility to strict penalties.[35] Trades of emissions allowances are permitted, and economists have found that there is a "reasonably efficient" market in sulfur dioxide emission rights.[36] In some cases allowances have been "retired" by environmentally minded groups that hold the allowance

[32] *See e.g.* Harold Demsetz, *Towards a Theory of Property Rights*, 57 AM. ECON. REV. 347, 354 (1967) *available at* http://www.compilerpress.atfreeweb.com/Anno%20Demsetz%20Property%20Rights.htm ("an owner of a private right to use land acts as a broker whose wealth depends on how well he takes into account the competing claims of the present and the future").

[33] A Pareto optimal solution is one in which no agent can be made better off, without many any other individual worse off. *See* VARIAN, *supra* note 5.

[34] *See* ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT, TRADABLE PERMITS: POLICY EVALUATION, DESIGN, AND REFORM (2004) (surveying marketable permits in a variety of domestic settings, including New Zealand fisheries and Dutch farms).

[35] For a brief summary of the program, see EPA, The Plain English Guide to the Clean Air Act: Acid Rain, http://www.epa.gov/oar/oaqps/peg_caa/pegcaa05.html (last visited April 13, 2007).

[36] Paul L. Joskow, Rickard Schmalensee, & Elizabeth M. Bailey, *The Market for Sulfur Dioxide Emissions*, 88 AM. ECON. REV. 669. 669 (1998). For a bibliography of studies of the Sulfur Dioxide Trading Market, see Emissions Trading Education Initiative, Acid Rain Bibliography, http://www.etei.org/bibl1.htm (last visited April 13, 2007).

rather than sell them to users.[37] The program has had large success in limiting the amount of sulfur dioxide pollution at minimal costs.[38]

Legal scholars have endorsed tradable permits as a way to achieve difficult policy outcomes at lower costs.[39] Facilities that can achieve emissions reductions cheaply will be given the financial incentive to maximize their potential environmental benefit. Facilities for which emission reductions can only come at great cost can buy allowances, giving a financial incentive for continued reduction and ensuring that environmental benefits are achieved in the most cost effective manner.

There have been some important criticisms of marketable permits/rights. One important criticism is that they could lead to "hotspots" in the pollution context, which is especially problematic where there are non-linear impacts caused by a given pollutant.[40] There are also distributional concerns, which sometimes interfere with efforts to create permits/rights systems.[41] Finally, there has been some concern that marketable permit systems create a "right" to pollute or exploit natural resources, which may send an undesirable social message in conflict with a norm that society and citizens should do their best to reduce their impact on the environment.[42] However, despite these criticism, the use of marketable permits/rights continues to carry broad support in the legal academy, and has begun to find a place in the regulatory lexicon.

2. Effluent Fees

Effluent fees work similarly to tradable permits, except that instead of setting a total supply of a resource use in question and allowing the market to set a price for the permits, the regulator sets a price for the permits and allows the market to determine the total amount of the resource use that will be demanded. Effluent fees are therefore useful when a regulator has a relatively more clear idea of the per-unit

[37] For example, in 1997, the Adirondack Council received a donation of 5,000 tons of allowances from the power company, Niagara Mohawk. *See* Dean S. Sommer, *'Retiring' Pollution Credits Helps Both Business and Environment*, BUS. REV. (Albany), Mar. 19, 1999, *available at* http://www.bizjournals.com/albany/stories/1999/03/22/focus3.html.

[38] *See* Cleanairprogress.org, EPA Celebrates 15th Anniversary of the Clean Air Act Amendments, http://www.cleanairprogress.org/news/article.asp?id=91 (last visited May 19, 2007) (very brief discussion of accomplishments).

[39] *See, e.g.*, Ackerman & Stewart, *supra* note 4, at 1341-42 ("A system of tradeable rights will tend to bring about a least cost allocation of control burdens, saving many billions of dollars annually.").

[40] For an interesting proposal to deal with the "hotspot" issue without overly hampering trading markets, see Jonathan Remy Nash & Richard L. Revesz, *Markets and Geography: Designing Marketable Permit Schemes to Control Local and Regional Pollutants*, 28 ECOLOGY L.Q. 569, 614-24 (2001).

[41] *See* Wyman, *supra* note 14, at 137.

[42] *See* Rose, *supra* note 7, at 34. At the very least, the "framing" of marketable permits as empowering, rather than limiting, pollution may account for some of its underutilization. *See* Jonathan R. Nash, *Framing Effects and Regulatory Choice: The Case of Environmental Regulation*, AM. L. & ECON. ASS'N ANN. MEETING, Paper 53, 2004, at 12-13, *available at* http://law.bepress.com/alea/14th/art53.

external costs imposed by an additional increment of use, and can set the price accordingly, allowing transactions in the marketplace to determine the efficient total amount of the use.

Effluent fees are found throughout environmental policymaking. One very common example are the "tipping fees" incurred by those seeking to dispose of waste. Typically, a landfill operator—often a municipality—will charge a fee, based on the weight of the waste to be disposed, for users of the facility. This fee creates a marginal cost for waste disposal, and acts as a restriction on the disposal of waste at the facility. Effluent fees need not be set at the marginal external costs of the use—they can be set higher for revenue raising purposes or lower either because the cost is unknown or in order to subsidize use of the resource.

Effluent fees are favored by economists for many of the same reasons as tradable permits because they both encourage an efficient level of pollution, if the prices (or, for permits, the quantity) are set properly by the central regulator.[43] Similarly, opponents of tradable permits are often opposed to effluent fees, because tradable permits seem to be transferring a "right to pollute," and there is a fear that this is a socially undesirable sanctioning of inappropriate conduct.

Fines and other penalties for violating environmental statutes can be understood as a form of an effluent fee, especially where the penalty is correlated with the amount of pollution that is emitted. A fine of $1000 per ton of pollution released over some cap is identical, economically, to a $1000 per ton tax on pollution, except that the economically rational actor will discount the fine by the probability of being caught, while firms generally pay all of their legally owed taxes. Nevertheless, there is analogous impact on behavior from environmental fines and effluent fees, which create a similar set of incentives for profit maximizing firms.

D. Preference Directed Regulation

Preference-directed regulations are different from market-oriented regulations like marketable permits and effluent fees in that the latter target economic incentives, while the former change consumer preferences. By preferences, I am referring to the formal economic concept of revealed preferences, which are based on actual consumer behavior, rather than concepts like "true preferences." Revealed preferences are often preferred by economists—especially empirically minded economists—because they can be measured and verified by analyzing market transactions and, to a lesser extent, survey data. "True preferences" cannot—we never know if a consumer's choice is the result of a true preference, or has simply been caused by some information imperfection or cognitive malady. Our current best understanding of revealed preferences is that they are the product of an underlying utility function, limitations on information availability and process, and

[43] Robert Stavins & Robert W. Hahn, *Economic Incentives for Environmental Protection: Integrating Theory and Practice*, 82 AM. ECON. REV. 464 (1992).

heuristics and other "behavioral" quirks. Because I have no theory about how revealed preferences are generated, I treat the internal processes that generate the decisions of economic actors as a black box (albeit one that can be influenced in predictable ways) and assume that maximization of revealed preferences are welfare maximizing.

I discuss two mechanisms by which revealed preferences can be changed through government intervention. The first is government provision of information, the second is the creation or strengthening of norms. These are not the only ways that government could potentially alter revealed preferences;[44] however, these represent two relatively common tools.

1. Provision of Information

Information provision is the effort by policy-makers to make information available to consumers of a marketed good—either directly or by encouraging or requiring the producer or seller to provide the information. Regulations concerning the truthfulness of representations made by sellers to buyers[45] can also fit comfortably into this category. Most Americans are familiar with the effects of information regulations in the form of warnings on cigarettes and nutrition labels provided on pre-packaged foods.[46]

By mandating or facilitating the provision of information by market actors, policy makers can impact preferences.[47] Consumers are generally thought to have access only to imperfect and incomplete information about the products that they buy, a situation that can lead to inefficient consumption of a good. If the negative health consequences of a good are not broadly known, people can be expected to over-consume the good in the false belief that the product has no harmful effects. Likewise, if two products were identical in character and price, but one had negative environmental consequences that the other did not (and consumers care about the environment), it would lead to over-

[44] The processes by which preferences come about is not well understood. While the effects of information limits on markets have been the study of economic analysis for a couple of decades, (the 2001 Nobel prize in economics was awarded to George Akerlof, Michael Spence, and Joseph E. Stiglitz for work on the subject, for example) and new research in the area of behavioral economics has helped shed light on how cognitive heuristics and aspects of human psychology affect market behavior, the formation of the underlying utility function remains more or less a mystery. Work in the area of neuroeconomics and behavioral economics may eventually give greater access to the nature and origin of utility functions, opening up other avenues for beneficial preference-directed regulation.

[45] For example, common law cause of action for misrepresentation and fraud, *see* RESTATEMENT (SECOND) OF CONTRACT, §164 (1981), and truth in advertising laws.

[46] For an overview provided by the Food and Drug Administration, see Food Labeling and Nutrition, http://www.cfsan.fda.gov/label.html.

[47] For a literature review and discussion of the effectiveness of warning labels, see Ruth C. Engs, *Do Warning Labels on Alcoholic Beverages Deter Alcohol Abuse?*, 59 J. SCHOOL HEALTH 115 (1989 (offering a generally pessimistic view). The effectiveness likely depends on the label. *See* David Hammond et al., *Impact of the Graphic Canadian Warning Labels on Adult Smoking Behavior*, 12 TOBACCO CONTROL 391 (2003) (finding the Canadian warning labels increased probability of cessation behavior).

consumption of the harmful product and under-consumption of the neutral product if consumers are unaware of the difference.

It is clear that information provision alone is not enough. We assume that people care about their health, so warning labels on cigarettes calling attention to the negative health consequences of smoking *should* change the value of cigarettes. Likewise, *if* consumers prefer to purchase and use products which place less strain on natural resources, then information provision should work to decrease the value of environmentally harmful products. However, information provision measures do not necessarily have to target "green" preferences in order to be effective at reducing strains on natural resources. Where products that reduce strains on natural resources can also save consumers money in the long term, information provision efforts can be successful even without any environmental preferences.

By way of example, I discuss the EPA's Energy Star program. Introduced in 1992, Energy Star is a voluntary labeling program which provides consumers with information regarding the energy efficiency of a wide variety of products. The Energy Star program works by "partnering" with manufacturers of the products that are eligible for Energy Star certification (such as computer monitors and clothes washers), who may seek to certify that their products meet the energy efficiency criteria established by the EPA. "Partners" make a set of commitments— such as meeting performance criteria and complying with guidelines on the use of the Energy Star logo—and the Department of Energy reserves the right to conduct tests of Energy Star labeled products.[48] Partners can then display the Energy Star logo on their products—giving a third party (government) certification to its energy efficiency standard.

While the stated purpose of the Energy Star program is to "reduce greenhouse gas emissions"[49] by promoting energy efficiency, the program does not rely exclusively on preferences for environmental preservation to fuel its effectiveness. The obvious cost savings associated with energy efficiency almost certainly plays an important role. In addition, the costs savings associated with the program have become an important selling point in generating support for Energy Star.[50]

The Energy Star program has been quite successful. Over 1,400 manufacturers are Energy Star "partners."[51] It provides labels on over 40 product categories and thousands of models. The program encourages new homes to be built with energy efficient products—over 350,000 new

[48] *See e.g.*, EPA, Energy Star Program Requirements for Clothes Washers: Partnership Commitments, http://www.energystar.gov/ia/partners/product_specs/program_reqs/clotheswasher_prog_req.pdf.

[49] EPA, History of Energy Star, http://www.energystar.gov/index.cfm?c=about.ab_history.

[50] The economic benefit of energy efficiency, including cost savings to end consumers, are touted alongside its environmental usefulness. *See*, EPA, *Protection the Environment —Together: Energy Star and Other Voluntary Programs* 3, *available at* http://www.energystar.gov/ia/news/downloads/annual_report_2003.pdf [hereinafter 2003 Energy Star Report].

[51] *See id.*

homes in the U.S. have earned an Energy Star rating.[52] It also has high consumer recognition, as over half of the U.S. population is familiar with the label.[53] By increasing consumer awareness and facilitating the purchase of energy efficient products, the Energy Star program has likely generated significant reductions in greenhouse gas emissions.

We could imagine all kinds of informational efforts used to reduce the value of environmentally intensive goods. Much-discussed private efforts are targeted at increasing the value of fish and wood that is harvested in a sustainable fashion and reducing the value of those products when they are not. Likewise, the federal government's "organic" certification for food products provides the opportunity for sellers to positively identify their good, and advertise in a credible fashion the fact that their farming practices put less strain on natural resources.[54]

The most sophisticated thinking about information provision as a regulatory tool places it under the rubric of reflexive law.[55] Under a reflexive law approach, providing information to consumers has two important effects. First, it may "promote economic efficiency by making externalities more visible,"[56] so that the consumer deciding between two fish in the market—one caught in a sustainable fishery and the other farmed in an environmentally harmful manner[57]—has the information s/he needs in order to choose whether to pay a premium and avoid the externality. Without this information, the consumer will only respond to price signals, and the externality will be buried from view. The behavior of consumers can impact organizational behavior through market incentives by sending more finely-tuned demand signals that, in this

[52] EPA, Major Milestones, http://www.energystar.gov/index.cfm?c=about.ab_milestones.
[53] *See* 2003 Energy Star Report, *supra* note 50.
[54] *See* USDA, National Organic Program, http://www.ams.usda.gov/nop/indexIE.htm.
[55] *See* Stewart *supra* note 19 at 134-43 (discussing "information strategies" such as warning labels on cigarettes and eco-labels in the context of reflexive law). With reflexive law, direct command and control and market-based incentive systems as a means of controlling the "external conduct" of organizations is eschewed in favor of an approach which "emphasizes that organizations are composed of individuals with complex goals and motivations, that organizational goals and decisionmaking processes are even more complex, and that managers and employees and the organizations for which they work operate in a social and political as well as an economic environment." The end goal of reflexive law is to create the situation where organizations (and the persons that comprise them) "internalize environmental goals as goals of the organization." The means used would include the establishment of "communication channels and other structural arrangements, so that the primary conduct of businesses … would emerge from communications among and within organizations and other societal actors." *Id.* at 128-29. Towards that end, information gathering and disclosure of various forms are proposed as important steps in generating the dialogue needed to change organizational behavior. Environmental audits, where firms analyze and quantify their impacts on the environment and the success of mitigation measures, have been advanced as one important form of information gathering and disclosure. See Eric W. Orts, *Reflexive Environmental Law*, 89 NW. U.L. REV. 1227 (1995) (describing reflexive law and discussing merits of EU Eco-Management and Audit Scheme, the "purest and most consciously reflexive environmental law yet advanced").
[56] Stewart *supra* note 19 at 134.
[57] *See e.g.* Environmental Defense, Eat Smart Main Page, http://www.oceansalive.org/eat.cfm (giving consumers information on the environmental consequences of their food choices and providing lists of "eco-best" and "eco-worst" fishes).

case, are tied to the externality creating potential of a product and consumers' preferences to avoid those products.

The second type of effect generated by disclosing environmental information to consumers is more loosely associated with the demands of the marketplace. Here, the personal desires of the owners, managers, and employees of the firm, coupled with public opinion and the potential for increased government scrutiny are mobilized to bring the organization's conduct more in line with social desires. Employees may loose prestige if the firm they work for becomes known for its environmental malfeasance. The owners of closely-held corporations may not with to be associated with a "bad" firm. Shareholders may conduct proxy-voting campaigns or sell shares of firms selling products that harm the environment. Picketing, negative news reports, potential defacement of public advertising media, and even condemnation from politicians and other public figures could all potentially follow from widespread disclosure of socially unacceptable practices. The cumulative impact of these non-market social forces can generate significant pressure for change.[58] The flip side of the equation is where firms endorse an "environmentally friendly" business practice, which can be expected to generate informal social rewards, for example, the corporate policy of Home Depot is to avoid buying wood products made from trees in environmentally sensitive areas, resulting in positive reinforcement by environmental groups.[59]

Reflexive law, then, provides an account of how information provision, as part of a strategy for reducing pressure on natural resources, works through market and non-market mechanisms to impact the behavior of organizations. To summarize, regulatory goals are brought about by activating the environmental social norms found in consumers, and its effects are compounded by the norms of other interested stakeholders, including employees and owners. We might speculate that disclosure of information to consumers alone may trigger certain actions and arguments from interested stakeholders, which gain credibility and greater force if the disclosure leads to measurable effects in the marketplace. However, it is important to note that we do not *need* the second non-market effects in order for information disclosure to consumers to be effective—as long as some consumers respond to the information, we can expect some change in firm behavior based purely on market incentives.[60]

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[58] *See* Robert A. Kagan, Neil Gunningham, & Dorothy Thornton, *Explaining Corporate Environmental Performance: How Does Regulation Matter?* LAW & SOC'Y. REV. [forthcoming] (discussing "social license").

[59] Home Depot, Inc., Wood Purchasing Policy, http://corporate.homedepot.com/wps/portal/Wood_Purchasing (last visited May 19, 2007).

[60] For more information on reflexive law, see generally, Stepan Wood, *Environmental Management Systems and Public Authority in Canada: Rethinking Environmental Governance*, 10 BUFF. ENVTL. L.J. 129 (2002); Sanford E. Gaines, *Reflexive Law as a Legal Paradigm for Sustainable Development*, 10 BUFF. ENVTL L.J. 1 (2002); Richard B. Stewart, *Administrative Law in the Twenty-First Century*, 78 N.Y.U. L. REV. 437 (2003); Gunther Teubner, *Substantive and Reflexive Elements in Modern Law*, 17 LAW & SOC'Y REV. 239 (1983); Warren A. Braunig, Note, *Reflexive Law Solutions for Factory Farm Pollution*, 80 N.Y.U. L. REV. 1505 (2005); Holly Doremus, *Constitutive Law and*

2. Norm-Creation

Norm creation involves the conscious effort by policy makers to establish or strengthen some community-wide norm that is in some important sense auto-enforcing. For example, there is thought to be strong community norms concerning property rights in the United States. These community norms create social and psychological effects on actors that violate those norms, for example, by stealing. Those social and psychological effects sometimes act together with the state enforcement apparatus to ensure that those norms are not generally violated, but need not. Violations of some community norms are not illegal at all, and their only sanction comes from social opprobrium or personal psychological discomfort.[61] The creation or strengthening of norms can be understood as a way to shape the preferences of the population where they impact patterns of behavior without changing the external incentive structure to which agents are subjected.

There are a number of mechanisms that can be used to achieve norm creation. For example, a law passed by Congress might endorse a new norm, which may be taken up by members of the public who respect Congress's views, so that it impacts behavior apart from the threat of enforcement. Public declarations by the President may also have a similar effect.[62] We often hope that community members will internalize the norms expressed by the law. For example, we might think that a person drives below the speed limit not simply because of the threat of fine—or the risk of civil liability in negligence for any injuries caused—but because it is safer to obey the speed limit, and the driver feels that

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Environmental Policy, 22 STAN. ENVTL. L.J. 295 (2003); Michael P. Vandenbergh, *From Smokestack to SUV: The Individual as Regulated Entity in the New Era of Environmental Law*, 57 VAND. L. REV. 515 (2004); *see also* GUNTHER TEUBNER, LINDSAY FARMER, & DECLAN MURPHY, ENVIRONMENTAL LAW AND ECOLOGICAL RESPONSIBILITY: THE CONCEPT AND PRACTICE OF ECOLOGICAL SELF-ORGANIZATION (1994); GUNTHER TEUBNER, LAW AS AN AUTOPOETIC SYSTEM (Zenon Bankowski ed., 1993).

[61] For a humorous account of such a community norm, see Michael Luo, *'Excuse Me. May I Have Your Seat?' Revisiting a Social Experiment, and the Fear That Goes With It*, N.Y. TIMES, Sept. 14, 2004, at B1 (describing study conducted by Dr. Stanley Milgram, in which researchers asked riders in the New York City subways for their seats and report experiencing high levels of psychological distress at violating an established social norm).

[62] For example, in the wake of Hurricanes Katrina and Rita, President Bush asked Americans to conserve gasoline by carpooling. *See* Bikas Rajaj, *Bush Urges Conservation as Retail Gas Prices Rise*, N.Y. TIMES, Sept. 26, 2005, *available at* http://www.nytimes.com/2005/09/26/business/26cnd-gas.html?ex=1285387200&en=269e4111645152cb&ei=5088&partner=rssnyt&emc=rss. This call represented something of a shift in the Administration's position towards conservation and energy policy. *See, e.g.,* Press Briefing by Ari Fleischer, Office of the Press Sec'y (May 7, 2001), *available at* http://www.whitehouse.gov/news/briefings/20010507.html (responding to a reporter's question of whether Americans "need to correct our lifestyle to address the energy problem" by stating: "That's a big no. The President believes that it's an American way of life, and that it should be the goal of policy makers to protect the American way of life. The American way of life is a blessed one." However, Mr. Fleisher did go on to note the President's support for some energy conservation measures, and noted the President's belief that "given the right incentives … [the American people] will make their own right determinations….").

s/he *should* drive safely, even if there was no threat of any penalty whatsoever for unsafe drivers. Norm internalization benefits society by reducing the cost of enforcing those norms.[63]

In the environmental area, recycling campaigns provide a nice example of government effort to create a community norm in order to reduce demand for intensive use of a natural resource. In order for recycling programs to work there must be widespread voluntary compliance with the program, which is generally not rewarded through any kind of financial incentive.[64] Over the past century, at least, numerous steps have been taken by a wide variety of governmental actors to create and strengthen a community norm in favor of recycling.[65] These effort have seen significant gains in the past decades, with large increases in the total amount and percentage of the waste stream recycled.[66]

Two other statutes are worth mentioning in this context: the Endangered Species Act[67] and the Wilderness Act.[68] Both use straight-forward regulatory techniques to achieve preservationist goals. The Endangered Species Act conserves species primarily by limiting the power of federal agencies to "jeopardize" endangered species through its actions[69] and by banning the "take" of endangered species by all persons.[70] The Wilderness Act sets aside areas of federally owned land to be free from even the limited development that takes place in national parks.[71] However, it can be argued that another purpose of these congressional acts was to strengthen a preservationist norm. Much of the land in the United States is owned by private landowners, who place demands on that land that cover a tremendous range—from leasing of land for disposal of hazardous disposal, to building of residential homes, to maintenance of the land as a private nature preserve. The government is setting an example for private landowners with its own behavior towards endangered species and wilderness areas, and by creating an (under enforced) norm about how others should act towards endangered species. These examples can be construed as attempts to alleviate

[63] The idea that people follow the law because it is law—not merely because of a threat of force—has been a mainstay of legal philosophy since introduced by H.L.A. Hart in THE CONCEPT OF LAW (1961).

[64] Ann E. Carson, *Recycling Norms,* 89 CAL. L. REV. 1231, 1241 (2001).

[65] *Id.* (examples include advertising campaigns linking recycling to patriotic duty during World War II, and the use of the manager of the New York Yankees in contemporary times to promote recycling). Professor Carson, however, takes a pessimistic view of the ability of government to effectively create and strengthen social norms, *id*. at 1275-85, finding that most efforts would be better spent facilitating ease of compliance rather than attempting to strengthen the norm. Carson does, however, find some governmental efforts to successfully strengthen the norm, especially "face-to-face" tactics. *See id*. at 1285-91.

[66] *See, e.g.,* N.Y. State Dep't of Envtl. Conservation, *The New York State Recycling Bulletin* (1999) 2-3, fig. 1, fig. 2 (showing huge increasing in recycling in New York between 1987 and 1997).

[67] Codified at 16 U.S.C. §§ 1531–44.

[68] Codified at 16 U.S.C. §§ 1121, 1131–36.

[69] Endangered Species Act § 7(a)(2) (codified at 16 U.S.C. § 1536(a)(2)).

[70] Endangered Species Act § 9(a)(1)(B) (codified at 16 U.S.C. § 1538(a)(1)(B)).

[71] Wilderness Act §4(c) (codified at 16 U.S.C. § 1133(c)) ("there shall be no commercial enterprise and no permanent road within any wilderness area").

pressure on these natural resources by changing the norms and preferences of the private landowners that are often in the best position to protect them.[72] The government augments its *regulation* of consumption of the resource by attempting to control demand for resource intensive uses by changing norms, and therefore preferences.[73]

There has been significant scholarly attention paid to the norm-creating and expressive function of law. Building on important work on the role of social norms in controlling behavior without the use of formal legal sanctions[74] theorists have challenged the basic assumption of law and economics that actors behave fully rationally and the primary role of law is creating incentive structures within which agents maximize their pre-determined preferences.[75] Instead, law can have an important role in shaping preferences rather than simply structuring incentives. In this literature, norms are thought to be the primary mechanism through which law impacts preferences.[76]

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[72] The opposite result is possible. Fears that the Endangered Species Act may have spurred private landowners to eliminate protected species from their lands in order to avoid regulation shows how changing the incentive structure could potentially negatively impact community norms..

[73] *Cf.* Robert A. Hillman,, *The Rhetoric of Legal Backfire*, 43 B.C.L. REV. 819 (2002) (arguing against legal backfire claims, including the claim that the Endangered Species Act has so inflamed private landowners that it has harmed the species the Act was designed to protect). I would also like to add anti-tobacco advertising as third example of preference shaping, although the effort to reduce smoking is not, strictly, an environmental concern. For a good example of government using mass communications media in order to shape the preferences of the population *see* EPA, Indoor Air – Smoke-free Homes Program, http://www.epa.gov/smokefree (last visited May 19, 2007). Just as private firms use advertising to increase the desirability of their products through a variety of mechanisms government can use the same tools to shape preferences in ways that are socially beneficial: In the case of tobacco, reducing a public health problem and discouraging behavior that results in externalities (second-hand smoke). For an early work discussing the psychological component of advertising, *see* Walter D. Scott, *The Psychology of Advertising*, 93:555 ATLANTIC MONTHLY 29 (1904). *See also*, Ronald H. Wozniak & Walter Dill Scott: *The Psychology of Advertising*, http://www.thoemmes.com/psych/scott.htm (explaining the importance of Scott's work in promoting what was the minority view among advertisers at the time, the belief that consumers were not rational and that "to be effective, advertising had to make a strong impression, appealing less to readers' understanding than to their wishes and desires."). It is probably useful to draw a distinction here between adverting that is primarily "informational" and advertising that is more "preference shaping" – although these categories will certainly bleed into each other. In the tobacco context, we might think of a "smoking is bad for your health" message as paradigmatically informational, and "smoking isn't cool" message as paradigmatically preference shaping. In the resource context, the same tools can theoretically be used to reduce demand for resource intensive uses/goods.

[74] *See e.g.* ROBERT ELLICKSON, ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES (1991).

[75] Alex Geisinger, *A Belief Change Theory of Expressive Law*, 88 IOWA L. REV. 35, 39 (2002); Kenneth G. Dau-Schmidt, *An Economic Analysis of the Criminal Law as a Preference-Shaping Policy*, 1990 DUKE L.J. 1 (1990); Daniel A. Farber, *Toward A New Legal Realism*, 68 U. CHI. L. REV. 279, 288 (2001)).

[76] "[T]he concept of norm internalization and preference change are synonymous." Geisinger, *supra* note 75, at 43 (citing Robert E. Scott, *The Limits of Behavioral Theories of Law and Social Norms*, 86 VA. L. REV. 1603, 1626 n.51 (2000)).

Within the field of scholars interested in the "expressive" function of law[77] a number of theories have been proffered to explain how law changes social norms.[78] Lawrence Lessing has discussed the role that law can play in constructing "social meaning"[79] and therefore bringing about a set of accepted and orthodox norms. Cass Sunstein has discussed the possibility of law, either enforced or not, being used to alter the "reputational utility" and therefore the expressive content of an act, which if sufficiently widespread can lead to "norm cascades, as reputational incentives shift behavior in new directions."[80] There have also been attempts to offer more formal accounts of how law changes norms, which rely on, for example, the signaling function of law for the purpose of solving non-cooperative coordination games[81] or the status effects of contributions to a public good.[82] Theories of norm internalization have also been offered in the expressive law context.[83]

Even though no consensus has developed around a causal account linking law to preferences, and some law and economics thinkers prefer to maintain the assumption of preferences as exogenous,[84] there is a significant body of literature that has developed endorsing the idea that law can be usefully analyzed and understood as a means for shaping norms and preferences. Efforts to put this literature to use in the environmental area are already under way. For example, Michael Vandenbergh, a professor at Vanderbilt University Law School and former Chief of Staff at the U.S. E.P.A. has recommended norm activation as a mechanism for regulating hard to control individual behavior, and for building political will in favor of more intrusive

[77] Elizabeth S. Anderson & Richard H. Pildes, *Expressive Theories of Law: A General Restatement*, 148 U. PA. L. REV. 1503, 1504 (2000) ("Expressive theories of law are interested *inter alia* in evaluating the normative appeal of law by analyzing whether they "express appropriate attitudes toward various substantive values."). *See generally*, Anderson & Pildes *supra*; Matthew D. Adler, *Expressive Theories of Law: A Skeptical Overview*, 148 U. PA. L. REV. 1363 (2000). *See also*, Richard H. McAdams, *A Focal Point Theory of Expressive Law*, 86 VA. L. REV. 1649, 1651 (2000) (stating thesis of expressive theorists as: "[L]aw works by what it says in addition to what it does.").

[78] *See* Geisinger, *supra* note 75 at 44-50, (reviewing competing theories). Geisinger offers his own theory as well. *Id.* at 55-63.

[79] Lawrence Lessig, *The Regulation of Social Meaning*, 62 U. CHI. L. REV. 943, 951 & n. 20, (1995) (defining social meaning as "the semiotic content attached to various actions, or inactions, or statuses, within a particular context" similar to Pildes' notion of the "expressive dimension" of an action and giving an account of how law can change social meaning). *See also* Lawrence Lessing, *Social Meaning and Social Norms*, 144 U. PA. L. REV. 2181 (1996).

[80] Cass Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021, 2032 (1996).

[81] McAdams, *supra* note 77.

[82] *See* Oren Bar-Gill & Chaim Fershtman, *Public Policy with Endogenous Preferences*, 7 J. PUB. ECON. THEORY 841, 843 (2005) (using status as a driver in a formal model which finds that subsidizing contributions to public good reduces preferences for contributing). For more on the difficulty of using subsidies to change environmental preferences, see Andrew Green, *You Can't Pay Them Enough: Subsidies, Environmental Law, and Social Norms* (University of Toronto Legal Studies Series Working Paper No. 10-05, 2005).

[83] *See e.g.* Robert Cooter, *Do Good Laws Make Good Citizens? An Economic Analysis of Internalized Norms*, 86 VA. L. REV. 1577 (2000).

[84] See Geisinger, *supra* note 75 (citing, among other works, Richard A. Posner, *Social Norms, Social Meaning, and Economic Analysis of Law: A Comment*, 27 J. LEGAL STUD. 553 (1998)).

regulatory tactics.[85] Distinguishing between social norms—which are effective in "close-knit" groups with sufficient opportunity for repeat contact and application of informal social sanctions—and "personal norms," which can operate without informal sanction, Professor Vandenbergh forwards a proposal to increase information disclosure by the government of the effects of individual behaviors (he discusses individual toxic releases) in order to change the consumption and disposal practices at the individual level.

II. OSSIFICATION & ITS CAUSES

A. Environmental Protection Gets Ossified

In this section, I discuss the ossification of environmental protection in the United States in the last thirty years and provide a theory for its causes.

1. Rule-making, Litigation, and Political Inaction

Many administrative law scholars have documented the slow pace of agency regulation. Developing and justifying complex regulations can take years—even decades; sometimes the important regulations stall altogether in this process.[86] Rules are accompanied by lengthy preambles, setting out justifications for agency action, as well as expensive and time consuming regulatory impact analysis, including cost-benefit analysis. The public notice and comment process has become a drag on agency resources, as staff time is devoted to analyzing and responding to arguments from opponents from across the political spectrum. Agency initiative is stifled by risk-averse bureaucratic culture and the knowledge that innovation carries significant costs in time and resources.

Commentators typically point in two directions when placing blame for the ponderous pace of rulemaking. They first look to the analytic requirements imposed by the executive branch, especially the role of Office of Management and Budget (OMB) in overseeing agency decisions.[87] Under Executive Order 12,866, agencies must submit major rules to OMB. Agencies must also evaluate costs and benefits as well as alternative rules. OMB has established guidelines on how agencies are to carry out cost-benefit analysis, and plays a significant role in both reviewing agency decisions at the end of the rule-making process and working informally with agencies throughout the process on important rules. The net result of OMB's role is to slow down, and sometime stop, agency action.[88]

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[85] Michael P. Vandenbergh, *Order Without Social Norms: How Personal Norm Activation Can Protect the Environment*, 99 NW. U.L. REV. 1101 (2005).
[86] This happened in the case of asbestos, where decades were spent researching a justifying an asbestos ban which has never come into being.
[87] *See* Pierce, *supra* note 3 at 62-63; McGarity *supra* note 1 at 1405.
[88] *See* Nicholas Bagley & Richard Revesz, *Centralized Oversight of the Regulatory State*, 106 COLUM. L. REV. 1260 (2006).

The second popular locus of blame for burdensome requirements placed on agencies in the courts. In the words of one scholar: "With the exception of a few agencies, the judicial branch is responsible for most of the ossification of the rulemaking process."[89] Courts are blamed for turning the procedural requirements of the APA and substantive statutes into time wasting, unproductive, difficult, and lengthy hurdles that discourage agencies from engaging in rulemaking at all.[90] In addition, because courts often do strike down agency rules, the expected value of engaging in rule making is significantly reduced.[91] While steps have been taken to loosen judicial review of agency decisions,[92] and some scholars challenge the mainstream narrative of courts imposing undue burdens on agencies,[93] courts continue to be seen as an impediment to effective agency action.

The ponderous pace of rulemaking is often equated with regulatory ossification. Agencies are unable to respond quickly and nimbly to new information because of the difficulty of the rulemaking process. The information processing burdens of agencies are so great that they cannot generate efficient regulation in the number of areas where regulation would be useful. Fear of adverse judicial or OMB review keeps agencies hemming closely to the status quo, fearful of innovation. Where innovation is possible, it takes the form of guidance documents, case by case administrative adjudication, or other informal mechanisms that lack the transparency or democratic legitimacy of the rulemaking process.

While it is undoubtedly true that agency rulemaking has become ossified, it is important to remember that other sources of law—most importantly Congress—are ossified as well. Since the spate of environmental legislation in the 1970s and early 1980s, there has been only one really major piece of environmental legislation in Congress—passage of the 1990 Clean Air Act Amendments which, *inter alia*, set up an emission trading mechanism to combat acid rain.[94] This failure of congressional action has left the agency unmoored from the political support that periodic democratically legitimated legislative review and revision would supply. Instead, agencies muddle along under decades-old legislative directives. Advances in scientific understanding and changes in voters preferences have not been reflected meaningfully in the statutory law, and agencies are given inadequate feedback from the political process.

This ossification has had real substantive effects. Regulatory tools that have broad support and offer environmental protection at lower social costs—like pollution taxes and emission trading schemes—have

[89] Pierce, *supra* note 3.
[90] *Id*.
[91] *Id.* at 65.
[92] *Id*. 66.
[93] *See e.g*. William S. Jordan, *Ossification Revisited: Does Arbitrary and Capricious Review Significantly Interfere With Agency Ability to Achieve Regulatory Goals Through Informal Rulemaking?*, 94 NW. U. L. REV. 393, 397 (2000).
[94] Amendments to the Superfund program were also important, but did not really forward an environmental goal. The purpose of the amendments were primarily to lift some of the liability burden from certain classes of titleholders. See *supra* section II.B.3.

not been adopted. Scientific knowledge has been incorporated at a slow pace, regulatory loopholes have not been filled, and "win-win" changes to the regulatory apparatus have not been made. For example, the Clean Air Act has provisions allowing for the grandfathering of old, high emission power plants. The idea at the time of passage was that older plants would eventually become obsolete, and newer plants which were governed by the best-available technology regime would replace them. However, it turns out that the costs of complying with the Clean Air Act requirements are greater than efficiency costs of running older equipment, and many of the very old and highly polluting grandfathered plants are still online. By granting the old plants tradable emission permits at levels below their current emissions, but whose value is greater than current profits, a greater amount of energy could be produced with less pollution and low economic costs. While some voices might oppose such a reform, it is clearly cost-benefit justified, is win-win from a social perspective, and would be undertaken by any rational and semi-responsive regime. The fact that such reforms remain on the table, waiting to be picked up, is strong evidence that something is wrong with the regulatory process. Agencies, Congress, and the courts all share responsibility for these failures of ossification.

2. Reforms: De-ossification Proposals

Commentators have offered several reforms geared at reducing ossification. There are two general categories of reform. The first class of proposals suggests altering the rulemaking process, either by easing up analytic requirements or changing how agencies make rules. The second class calls for shifting from command-and-control to flexible market-based mechanisms which require less centralized coordination.

The rulemaking process, including judicial review, is for many commentators the source of regulatory ossification, and their proposals to reduce ossification reflect this view. Perhaps the most sustained, and ultimately successful, effort has been aimed at reducing the scope of judicial review over agency decisionmaking. The hope of proponents of this view is that if judicial review is reduced, agencies will spend less time and effort complying with strict procedural and analytic requirements. Furthermore, agencies will have less fear that their rules, which require substantial agency resources to formulate, will ultimately be struck down by a reviewing court.

Chevron v. Natural Resources Defense Council[95] set off a string of cases in which both the Supreme Court and the D.C. Circuit indicated that there would be less interference with agency decision-making by the courts. With *Chevron*, the Court greatly increased the amount of deference that agencies would receive when interpreting ambiguous provisions of statutes they administer. *Lujan v. Defenders of Wildlife*[96] and several other cases constricted standing doctrine, limiting the types of individuals and organizations that could bring challenges against regulations. The D.C. Circuit's decision to more frequently employ

[95] 467 U.S. 837 (1984).
[96] 504 U.S. 555 (1992).

remand without vacatur when invalidated agency decisions has also given the bureaucracy greater flexibility in dealing with the courts.[97]

The actual success of these reforms in reducing regulatory ossification is a subject of debate. *Chevron* itself has spawned a cottage industry of analysis,[98] and has both its supporters and detractors. What remains clear is that judicial review remains an important part of the regulatory process, and regulatory ossification remains a fixture of the administrative process. While the scope of judicial review has been reduced somewhat, that alone does not seem to have been the cure to the problem of ossification.

Another potential source of ossification that has been a target of critics is OMB review. Cost-benefit analysis is seen by some as fruitless number crunching, which tends to delay agency action, or stymie it altogether, without producing any significant increase in the efficiency or rationality of regulation.[99] By increasing the analytic burdens on agencies, OMB and the cost-benefit analysis requirement tend to slow down the regulatory process and divert resources that could be spent broadening the agency's agenda. The apparent view that the OMB is designed to check the regulatory excesses of agencies tends to reinforce the view that it contributes to ossification.[100]

There have been proposals to change the roles of OMB and cost-benefit analysis so that they serve a more neutral role vis-à-vis potential regulations. These proposals have included increasing the transparency of OMB action,[101] lessening the delay associated with OMB review,[102] revising the mission of OMB to include spurring underachieving agencies and checking overzealousness,[103] as well as providing more of a coordination and centralization role than an oversight role.[104] The Clinton Executive Order, which replaced the original Reagan Order, included some of these reforms, including important provisions to increase the transparency of OMB decisionmaking and improve the neutrality of OMB. However, there continue to be legitimate concerns that there is a structural bias within OMB review against regulation.

The final set of proposals for changes to the rulemaking and review process advocates for a shift to less formal rulemaking processes. For example, many commentators have viewed regulatory negotiation—"reg-neg"—as a potentially useful alternative to the more formal rulemaking process.[105] In regulatory negotiation, the lengthy agency driven rulemaking process, with its public participation requirements and

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[97] Kristina Daugirdas, Note, *Evaluating Remand Without Vacatur: A New Judicial Remedy for Defective Agency Rulemakings*, 80 NYU L. REV. 278 (2005).
[98] *See e.g.* Cass Sunstein, *Law and Administration After Chevron*, 90 COLUM. L. REV. 2071 (1991).
[99] Alan Morrison, *OMB Interference With Agency Rulemaking: The Wrong Way to Write a Regulation*, 99 HARV. L. REV. 1059 (1986).
[100] *See* Bagley & Revesz supra note 88. *See also* John F. Morrall, "In Defense of Ossification" PowerPoint presentation given on March 16, 2005, http://www.american.edu/rulemaking/morrall_files/frame.htm.
[101] Morrision, *supra* note 99.
[102] *Id*.
[103] *See* Bagley & Revesz supra note 88.
[104] *Id*.
[105] *See e.g.* McGarity, *supra* note 1.

rounds of notice and comment, is replaced by a consensus building process among interested stakeholders. By bringing affected parties together at the same table, agencies hope to avoid a contentious and litigious rulemaking process that can cause delays and ultimately thwart agency action altogether. Agencies have implemented reg-neg in some instances, and a significant literature has developed weighing the pros and cons of this approach.[106] However, even the strongest supporters of reg-neg acknowledge that it is not appropriate in all contexts, so there will continue to be rulemaking in the traditional sense. Further, reg-neg tends to produce its own attendant delays and difficulties. While reg-neg has shown promise as a tool of avoiding some of the causes of regulatory ossification, it has not proven to be a cure-all.

The second general solution to the problem of ossification comes from proponents of market-based approaches to environmental regulation. The theory is that command-and-control style regulation places an incredible burden on agencies to collect and process information and develop rules in response to changing scientific, engineering, and economic data. In order for agencies to develop rules that are even roughly efficient, they must have intimate knowledge of evolving and dynamic economic sectors and rules must have relatively fine-grained calibration to the point where case-by-case analysis becomes necessary. Because no centralized bureaucracy can collect and process data or act with the necessary speed, command and control regimes are doomed to inefficiency, slowness, and a perpetual "catch-up" mentality. The bluntness of a rule based approach, which does not take individualized economic or engineering conditions into account, results in large degrees of waste and inefficiency as firms achieve environmental output goals through less-than-least-cost means. While our administrative process may be particularly slow and cumbersome, no administrative process is up to the task of centrally regulating the economy.

The solution to the general problem of centralization in command-and-control regulation is to decentralize through market-based regulatory tools. Market based tools harness the power of economic incentives and leave large numbers of compliance decisions in the hands of the engineers, managers, and owners that best know a firm's individualized situation. Centralized regulators determine the goals of the system, and the overall outputs of the regime, but almost all of the technical decisions are left to firms and market actors. This decentralized approach vastly reduces the information collection and processing burdens on the bureaucracy, and frees agencies from the constant updating and "catch-up" that is necessary to react to dynamic economic actors. In this way, it is hoped that ossification can be relieved by reducing an ultimately untenable workload burden on the central bureaucracy.

Market-based tools have been adopted in some cases, though certainly not at the rate that their proponents would like. However, even in cases where market tools are used, there remains a very significant role for the agency. Most importantly, the program has to be conceived,

[106] *See e.g.* Harter, *supra* note 3.

developed, and justified. The kinds of market-based regulations that are envisioned typically involve, *inter alia*, defining new marketable instruments, developing mechanisms to facilitate the trade of these instruments, and creating mechanisms to monitor compliance. All of these are difficult and time-consuming tasks that must be done at a centralized level before any market can be created. Second, the markets that develop around these new marketable instruments can remain thin, requiring agencies to continue to play a role in developing and supporting the market. So, while market mechanisms may reduce the burdens on agencies in the long run, in the short-term they are not necessarily easier to design and bring about than command-and-control style rules.

Perhaps the most important criticism of market mechanisms as a tool to "de-ossify" environmental protection is that environmental protection needs to be de-ossified before market mechanisms can really be implemented. Since one of the primary symptoms of ossification is a failure to develop and implement innovative regulatory structures, this symptom would seem to thwart the market-mechanisms cure. Before market mechanisms can be expected to be implemented on anything like the large scale necessary to reduce the burden of command-and-control regulation, ossification will have to be reduced. Because the failure to adopt market mechanisms is a result of ossification, they do not seem to provide the answer to the problem of underachieving agencies.

B. The Legislative Side of Ossification

In this section, I discuss why ossification should be defined to include stagnation in the legislature, as well as in the bureaucracy, and go on to provide two related theories of how stable political equilibrium tend to prevent legislative action.

1. Legislatures Matter

The standard "cures" for regulatory ossification reflect the view that the causes of ossification are failures in the regulatory process, primarily slow, litigious, and information-intensive agency rule-making. Attempts to streamline the rule-making process or to introduce more innovative and decentralized regulatory tools have either failed to fully solve the problem of ossification, or have failed to be implemented on a large scale. Given this state of affairs, a reassessment of the pathology of regulatory ossification may be in order.

Ossification has traditionally been understood as an ailment of the bureaucracy. The term is sometimes used simply as a pejorative way to describe the slow pace and cumbersome nature of informal rule-making under the Administrative Procedure Act. But to really find the root causes of ossification, we need to understand that bureaucratic activity takes place in a broader context. Any regulatory regime is ultimately the product of all three branches—looking only to the bureaucracy that manages these regimes blocks out an important part of the picture. We cannot hope to understand ossification in the bureaucracy by looking to the bureaucracy alone.

An unrestrictive definition of ossification refers to the failure of any governmental body (or set of governmental bodies), charged with the task of managing a regulatory/legal regime, to continuously update that regime to reflect new information, a condition which results in outdated methods, inefficient rules, and general stagnation. The mere publication of additional rules does not disqualify a regime from a diagnosis of ossification. Rather, those rules must reflect more state of the art approaches, engineering, scientific, and political developments, and lessons learned in order to avoid this classification. Flexibility, updating, and change are hallmarks of regimes that are not ossified.

This definition is not limited to bureaucratic ossification, but describes a condition of stagnation in any governing body. In regimes that are governed by the coordinated action of several bodies—as they often are—ossification can occur because of the breakdown of any necessary actor, or because of a failure of coordination between the actors. While it is possible that the bureaucracy is the sole culprit in the ossification of our environmental regimes—which are governed by all three branches of government—that finding goes against the weight of the evidence.

When we expand the scope of our inquiry a bit, to include actors such as the legislature, it is easy to see that ossification is not merely a symptom of the bureaucracies. It is easily identifiable within the legislature as well. In legislatures, ossification will be reflected in infrequent legislation, legislation that is insufficiently specified or is symbolic rather than substantive, and legislation that resorts to status quo approaches in the face of contrary experience. Congress is susceptible to all of these maladies, which amount to failures of the legislature to adequately update and revise a regime to reflect changing circumstances and knowledge.

In the following discussion, I will provide two explanations for ossification in legislative regimes. The first incorporates ideas from public choice theory, and examines the ways in which the "imperfections" of our political system result in the ossification of legislative regimes. The second describes how even a "perfect" legislature may find regime revision more difficult than regime creation. Both describe how stable political equilibriums form around the status quo, hindering the ability of legislatures to flexibly manage regimes.

2. Public Choice Explanations for Legislative Ossification

Public choice provides several important ideas for why legislative ossification will occur. First, in order for legislative regimes to continually update, legislatures must act on a periodic basis, and those actions have to be substantive rather than symbolic. However, there is substantial support for the idea that rational legislators will generally eschew the substantive provision of public goods, because the gains (to the legislator) from such are outweighed by the costs. This occurs because rational voters have very little incentive to monitor the behavior of their elected officials, as they have relatively little to gain or lose in a particular legislative fight. However, industry or other concentrated

special interest groups can be greatly impacted by specific legislation.[107] The time that the average voter will spend monitoring a legislator is much less than that of a special interest group, and these groups have financial incentives to invest funds in lobbying and campaign contributions in order to win over a legislator's vote. If a legislator can make symbolic statements that are supported by voters, but deliver substantive results for special interest, he will be able to maximize his re-election changes. Public choice pathologies, then, may make it difficult for publicly minded regime changes to be implemented.

Second, because of the checks and balances system, it can be difficult even for special interests to successfully push through changes. In any complex regime, there are often several competing interests, some of which are more powerful than others. In the classic collective action model, there are concentrated industry interests and diffuse public interests.[108] But it is often the case that there are several competing special interests, in addition to competing diffuse public interests, all seeking to forward conflicting changes. Because the checks and balances system favors inertia, it is far easier for a special interest—or even a diffuse public interest—to "capture" one of the necessary actors, such as a committee, a powerful leader, or a bloc of votes in the House of Representatives or the Senate. The capture of a single actor can be sufficient to block action, while a much greater expenditure of resources is necessary to "capture" the whole Congressional apparatus. Because special interests can capture some relevant actor, without having to control all of Congress, it is relatively easy for concentrated interests to stop some public minded law outside of public view by delaying it indefinitely in the obscure machinations of the legislative process. This is especially the case where public attention to the issue is limited and temporary.

Both of these public choice problems will tend to effect both the creation and the revision of regulatory regimes. However, there are good reasons to believe that it is easier to overcome these pathologies in the case of regime creation than in the case of regime revision. Public choice pathologies are not complete—clearly the government is capable of (partial) public spirited action at least some of the time. A relatively standard supply-side story focuses on the potential gains to politicians who act as political entrepreneurs. A political entrepreneur, similar to a business entrepreneur, identifies latent demand in the marketplace, and acts as a first-mover to fulfill this demand. In the legislative context, political entrepreneurs identify potentially successful coalitions that would support a particular regime. These coalitions could be purely comprised of special interests, but they can also include public interests as well. Entrepreneurs pick-up the first-mover gains by being closely associated with the new regime, and the political coalition in favor of creation is sometimes strong enough to carry the regime through the legislative process. While public choice difficulties indicate that regimes will be undersupplied, the gains to political entrepreneurs are

[107] MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS (1971).
[108] *Id*.

occasionally sufficient enough to outweigh the costs of taking substantive action, allowing regimes to be created.

However, the gains to political entrepreneurs for substantive action are likely to be less in the revision context than in the creation context. During regime creation, entrepreneurs can claim credit for action in a wholly new area, capturing the public's attention with the novelty of the issue and the regime. However, revision is much less salient work, involving more arcane technical details and smaller issues. It also involves the admitting of mistakes, which we generally think politicians are adverse to do.

Regimes will also tend to build their own public choice inertia because they will generate special interest forces which have an interest in preserving the status quo. Many regimes have the potential of creating "side industries" that rely on the existing regime for their survival. Further, once existing businesses have adapted to the new regime, complex regulations and procedures can serve as entrance barriers protecting established firms from competition from new entrants. These special interests can be expected to spend money on lobbying and campaign contributions in order to protect the status quo. Given the ease with which change can be stopped, the special interest forces that build up around any regime can be a difficult hurdle for any revision effort.

Despite the special problems faced by regime revision, in some cases, large revision campaigns can be salient. This was the case during the Reagan candidacy and the 1994 Republican revolution, when the regulatory state as a whole was an object of attack. However, these revision campaigns seem to be relatively infrequent, and deal with many issues simultaneously. Large amounts of pressure and dissatisfaction had built up with the existing order before revision was sufficiently salient to reward political action. Waiting for this level of dissatisfaction is both inefficient and can lead to overcorrection.

3. The Multiplication of Legislative Preferences

In addition to public choice pathologies, there are reasons why even a perfectly virtuous legislature, with legislators seeking to maximize the welfare of their constituents rather than responding to special interest pressure, will have difficulty providing optimal levels of regime revision. The reason is that as the preferences of legislators become more heterogeneous and highly articulated, it becomes increasingly difficult for voting procedures to meaningfully aggregate those preferences. The results can be either preference cycling[109] and

[109] In the late 18th century, the Marquis de Condorcet discovered what has come to be called "Condorcet's cycles" in which majority voting procedures result in cyclical preferences. A Condorcet cycle develops when pair-wise comparisons of three or more alternatives result in no winner. A Condorcet cycle has the following structure:

Voter 1: A>B>C
Voter 2: B>C>A
Voter 3: C>A>B

In a vote of A vs. B, A wins, because Voters 1 & 3 vote for A. In a vote of A vs. C, C wins, because Voters 2 & 3 vote for C. In a vote of C vs. B, B wins, because Voters 1 &

incoherent regimes; or more likely, gridlock. And, as regimes age, preferences tend to become more heterogeneous and highly articulated, making ossification a real threat.

There are several reasons why preferences will become heterogeneous and articulated over the life of a regime. First, in any piece of complex legislation there may be "imbedded" policy decisions of which legislators are unaware. For example, command-and-control style regulation was assumed to be the best way to achieve outcomes when the major environmental laws were passed thirty years ago. The decision to adopt command-and-control, then, was imbedded in the legislation, even though it was not really a choice; legislators had no preferences for command-and-control regulation versus others, because the alternatives had not really been proposed and aggressively forwarded. These imbedded decisions will become apparent over the course of the regime.

Second, areas that legislators left intentionally vague in order to reach a compromise during regime creation will be decided over the course of a regime, placing those issues firmly on the table during a revision period. A standard may be set in statute at a "reasonable level," thereby avoiding a specific fight over the exact level of stringency. However, during revision, the contours of the "reasonable level" as interpreted by agencies and courts will be clearer. Once these vague terms have taken concrete form in regulation and judicial decisions, they represent specific issues on which legislators can have preferences, leading to increased multidimensionality.

Finally, new proposals are floated, different lesson can be learned from similar experiences, and a range of potential revisions can crop up over the lifetime of a regime. Each component of the regime will have become more finely articulated, developing sets of "mini-debates" which each add dimensions to the debate. These mini-debates can be expected to multiply over time.

The number of choices over which legislators will likely have preferences are, thus, much greater in the regime revision context than in regime creation. It is not necessarily that there are in fact more choices, but that those choices will present themselves more readily to legislators, and there will be time over which legislators can form preferences with respect to those choices. The increasing number of choices makes it more difficult for legislators to be placed on a singled-peaked scale,[110]

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2 vote for B. Thus B>C>A>B. The voting procedure could repeat indefinitely. Kenneth Arrow in his famous impossibility theorem expanded on Condorcet's insight to show that any fair method of aggregating individuals values can result in cycles. The evil associated with Condorcet cycles is that voting procedures can be developed such that the order that proposals are put to the floor dictates that outcome of the voting procedure, giving immense power to the "agenda setter" in a legislature. Note that not all preference sets generate Condorcet cycles. For example, if Voters 3 preferred C>B>A, then in the above voting, proposal B would be the "Condorcet winner" and would be preferred to both C and A in pair-wise comparisons.

[110] "Single-peaked" preferences avoid the problem of cyclical majorities. *See* William Riker, *The Justification of Bicameralism*, 13 INT'L POL. SCI. REV. 101, 105-107 (1992) (citing Duncan Black, THEORIES OF COMMITTEES AND ELECTIONS (1958)). Where all preferences can be placed on a single axis, such that for all voters there is a single "peak" representing their most favored policy point, Condorcet cycles are impossible. *Id*. at 106-

making it more difficult for coherent decisions to be made.[111] In the case of bicameral legislatures, the result is gridlock.[112]

C. Stable Political Equilibriums in Bureaucratic Regimes

The behavior of bureaucratic governmental agencies is often modeled along the lines of a principal agent problem, where the principals are elected officials—either a legislative body or the president—and the bureaucracy acts as the agent. Under these models, the problem lies in monitoring the bureaucracies to ensure they do not act opportunistically and instead implement the principal's goals. Significant administrative law scholarship has focused on how the law helps solve these principal agent problems.[113]

There are two ways that the principal agent model sheds light on ossification in the bureaucracy. First, principal agent problems can result directly in a tendency for bureaucrats to "shirk" when they are insufficiently monitored by principals, leading to agency inaction. The greater the monitoring problem, the greater the ossification. Secondly, in our political system, where multiple parties have some, admittedly imperfect, ability to hold agencies to account, risk-averse bureaucrats will tend toward status quo inaction, so that even when principals can monitor, if there are too many principals with conflicting agendas, the result is also ossification.

1. Bureaucrats behaving badly?

One of the controversies in models of agency behavior is exactly what agencies "do" when they act opportunistically. One influential theory of agency opportunism posits that agencies, when faced with imperfect political oversight, will engage in "empire-building" by seeking to increase both their budgets and their mandates, expanding their power more pervasively throughout economic and social life.[114]

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109. Standard left-right American politics is an example of a single peaked array of preferences. One might be far right, right-leaning, middle of the road, left-leaning, or far right. Your most preferred point is some peak, and all other points lie continuously below points closer to the peak.

[111] Problems arise when preferences are not single-peaked, and this is more likely to occur when politics are multi-dimensional. Whenever politics become multi-dimensional, the probability of cyclical preferences "increases dramatically." *Id*. at 107.

[112] Bicameral legislatures avoid the problem of cyclical preferences by reducing the set of non-Condorcet winning proposals that can be passed. *See* Riker, *supra* note 110 at 110-113. It turns out that when politics are multi-dimensional, the effect of bicameralism is similar to that of a super-majority rule—non-Condorcet winning legislation is much harder to pass. However, when politics are single-peaked, bicameral legislatures behave similarly to single house legislatures. Thus bicameralisms avoid the evils associated with majority rules (i.e., Condorcet-cycles and the possibility that agenda control dictates outcomes) while also avoiding the evils associated with super-majority rules (i.e. that genuine Condorcet-winners will be rejected). They do this by becoming paralyzed in the face of multidimensional preferences. However, this feature of bicameralism also tends to reduce the ability of legislatures to engage in learning and regime revision. *Id*.

[113] *See* Richard B. Stewart, *The Reformation of American Administrative Law*, 88 HARV. L. REV. 1667 (1975).

[114] *See, e.g.,* William A. Niskanen, Comment, *Bureaucrats and Politicians*, 18 J.L. & ECON. 617 (1975); Ronald Wintrobe, *Modern Bureaucratic Theory*, *in* PERSPECTIVES ON

Bureaucrats are motivated by desires to increase their prestige, sense of influence, and their income. By maximizing the size of their agency's budgets and mandates, they gain personal satisfaction, potentially at the expense of the principals to whom they are responsible. Under this model, the greater leeway that agencies are given, the more powerful they become. Agencies tend towards greater and greater outputs, and the point of administrative law, and executive oversight, is to rein in these tendencies.[115]

There are now important counter-arguments against the empire building theory of agencies.[116] There is good reason to believe that bureaucrats have little incentive to actively increase their budgets or mandates—there is certainly little reason to believe that is a systemic condition.[117] The empire-building theory amounts to an assumption about what bureaucrats might do; perhaps not entirely implausible, but without any real empirical support either.[118] There are many possible alternative motivations other than self-aggrandizement, such as maximization of leisure time or non-pecuniary benefits like travel or intellectually challenging work. The empire-building theory has not proved to be particularly useful at explaining agency behavior.

In several standard economic models of versions of the principal-agent problem, the opportunistic behavior that must be guarded against is "shirking," or a failure of the agent to perform at his/her maximum capacity. For example, under the theory of "efficiency wages," firms pay higher than optimal wages to employees, in order to increase the penalty for being fired.[119] This structure is used to increase the incentive for employees to work as hard as they can. This model assumes, consistent with standard economic theory, that work creates disutility for the laborer, and wages are used to (over)compensate employees for this disutility. Principal-agent problems arise when wages cannot be effectively tied to outputs—piecemeal style—so agents have incentives to collect wages while shirking to avoid the disutility of work.

Absent a compelling alternative explanation for opportunistic behavior of agencies in principal agent problems, it seems wise to tentatively adopt a somewhat modified shirking framework. In the standard framework, agents seek to reduce the disutility of work by failing to work hard. Thinking of bureaucrats as potential shirkers does not require us to develop exotic theories of bureaucratic motivation—like all workers in an economic model, they seek to maximize the benefits of labor, while reducing its costs. The disutility associated with working hard is generally accepted as one of the costs of labor, but in the bureaucratic context, we might view reprimand from oversight officials

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PUBLIC CHOICE: A HANDBOOK 429, 451 (Dennis C. Mueller ed., 1997) (application of empire-building theory).

[115] *See* Bagley & Revesz *supra* note 88 at 19–42 (citing empire-building as well as several other, largely discredited, explanations for why agencies will tend to over-regulate).

[116] Daryl J. Levinson, *Empire-Building Government in Constitutional Law*, 118 HARV. L. REV. 915 (2004).

[117] *See* Bagley & Revesz *supra* note 88.

[118] *See* Levinson, *supra* note 116.

[119] *See* Carl Shapiro & Joseph E. Stiglitz, *Equilibrium Unemployment as a Worker Discipline Device*, 74 AM. ECON. REV. 433 (1984).

as another significant cost associated with their work; so we can assume that bureaucrats, all else being equal, will seek to reduce that cost when they can.

Richness can be added to the principal-agent model of agencies by looking to how bureaucrats can increase the benefits of their work—including increasing future job prospects, travel, educational opportunities, and, perhaps, political influence. However, this richness comes at the cost of simplicity, and there is likely little to be gained from cataloguing all of the potential idiosyncratic personal motivations of bureaucrats. We are interested in systematic behavior; individual motivations which are not widely shared are unlikely to have large scale impacts on agency behavior.

We are thus left, as a first cut, with a fairly straightforward connection between the principal-agent problem in the federal bureaucracy and regulatory ossification. Agents have an incentive to decrease or alter their outputs in order to avoid reprimand from oversight officials, to the extent that principals cannot monitor the agents work to detect these efforts. This problem will be pervasive, and will exist within the bureaucracy as well as vis-à-vis the agency and elected officials acting as principals. At every level of supervision, managers incapable of full supervision will be unable to elicit maximum work product from employees—agents who are perhaps engaged in non-controversial busy work—decreasing the overall efficacy of the institution. This problem is significantly exacerbated when agents are subject to more than one principal.

2. Many Masters

In our political system, the principal agent problem takes an unusual form. The problem is not only that principals have incomplete control over agents. In addition, there is an overabundance of principals, each with various incomplete mechanisms to bring agencies to account. I believe that this arrangement tends to bring out a particular kind of opportunism from agencies such that risk-averse bureaucrats, facing many potential forms of accountability when they act but relatively few when they do not act, will tend toward inaction. Because blatant shirking will not be tolerated by any of the principals, agencies will engage in cloaked shirking, hiding their lack of productivity under bureaucratic busy work. When these bureaucrats do act, they will tend toward the status quo and eschew innovation, because the risks associated with innovation dwarf any potential benefit that might be gleaned.

In the federal system, there are several potential mechanisms whereby political actors can hold agencies accountable for actions they do not like. Congressional committees, the White House, and the courts are the three key institutional actors, but the media, and to a lesser extent the public and businesses, can all punish agencies and agency actors. While the jobs of civil service level employees are relatively safe, political appointees do not enjoy a similar advantage, and the careers of bureaucrats are all, to some degree or another, determined by their ability to keep these various constituents happy. Additionally, agencies

themselves can see rewards or demerits in the form of their budgets, their mandates, and their esteem among the public and business communities.

The role of congressional committees in overseeing agencies, and holding them to account, is well established.[120] Congressional committees conduct close oversight over agencies and have the ability to haul agency heads and other bureaucrats into hearings on agency behavior. In addition, these committees have the ability to influence agency budgets and mandates. Congressional committees can also make life difficult for agency heads by subjecting their actions to public scrutiny, as well as advertising their displeasures in the media. The combination of these oversight mechanisms have lead some scholars to conclude that agencies are closely accountable to congressional committees.[121]

As the head of the executive branch, the President wields enormous amounts of power over the agencies. Although some have pointed out that the President's power is far from complete, we should nevertheless remember that the President has important mechanisms of control over agencies. Of course, Presidents have the power to hire and fire the top level bureaucrats in an agency, thus ensuring that agency heads share political ideology with the President.[122] These political appointees have great power over the bureaucratic apparatus, setting agendas, allocating resources, and determining the career trajectories of employees during the duration of their term. In addition, since Ronald Reagan's executive order, the White House has exercised greater centralized control in the form of OMB review of significant new regulations. The While House is thus able to exert considerable influence over the direction of agencies.

The role of courts in monitoring agencies has been the object of significant discussion. Courts are responsible for conducting review of agency decisions and this review process has played an important role in shaping agency behavior. Agencies have no choice but to comply with the procedural and analytic requirements that are placed on them by courts; in this respect they are near perfect agents for courts. In addition, the large and complex body of administrative law leaves some room for judges to impose their personal preferences on agencies—overturning rules with which they substantively disagree for procedural reasons, as well as giving procedural passes to "good" rules. While the role of judges' preference in determining cases is the subject of debate,[123] there is no arguing that judges have an important oversight role over agency action.

Other actors also hold agencies accountable when they are displeased. The media plays an important role in monitoring agencies; they can publicize agency errors and subject agency heads to increased scrutiny. The compliance of the regulated community is often largely voluntary, and large scale non-compliance that needed to be policed

[120] *See* Barry R. Weingast, *The Congressional-Bureaucratic System: A Principal Agent Perspective (with Applications to the SEC)*, 44 PUBLIC CHOICE 147 (1984).
[121] *Id* at 181-83.
[122] *See* Bagley & Revesz, *supra* note 88.
[123] *See e.g.* Harry T. Edwards & Linda Elliott, *Beware of Numbers (and Unsupported Claims of Judicial. Bias),* 80 WASH . U. L.Q. 723 (2002).

would be a major headache for any agency. Bureaucrats have to be careful to not act in such a way as to trigger wholesale rebellion within the regulated community. Finally, public opinion and reputational concerns can also play a role in holding agencies to account.

While there are many actors that can exact a toll on agencies when they act, it is often quite difficult for any actor to hold an agency to account for inaction. Judicial review kicks in, for the most part, when the agency acts; however, there is very little review of agencies for inaction. While congressional committees can haul in agencies for whatever reason they desire, Congressmen are busy and have intense demands on their time, including the legislative process, meeting with lobbyists, raising money, and generating press. Agency action is salient, especially if it involves risky measures or innovation; agency inaction is boring and unlikely to land a member of Congress on the evening news. Likewise for the media: agency mistakes make for more interesting news that agencies that do nothing. Of all of the actors, the President has the most review over inaction; however, OMB review of agency inaction is virtually non-existent[124] and it is easier for bureaucrats to stall the White House than to take significant action against its wishes. All of this leads to relatively little review of agency inaction.

Risk averse agency actors, then, have relatively little incentive to act at all, while they face a gamut of difficulties if they do act. In such a system, we should not be surprised if agents tend to shirk. Of course, this shirking does not take the form of outright refusal to work—that would be too obvious and would invite the intervention of one of the principals. Rather, agencies produce voluminous amounts of "work," but end up accomplishing very little. Instead of moving forward with new regulations, they study them, create working groups and blue ribbon committees, and engage in large amounts of paper production. The agencies are, in fact, very busy, yet they are also careful to do very little that can subject them to outright oversight. Because some kind of oversight mechanisms is triggered whenever an agency does something useful, and especially if they do anything usefully novel, agencies—rationally—shy away from those behaviors.

III. THE POWER (AND LIMITATIONS) OF PREFERENCE DIRECTED REGULATION

A. Regulatory Choice

A typical analysis of the choice between regulatory approaches—say between a command-and-control regime or an incentive based system—uses standard cost-benefit criteria to determine the superior method.[125] Under these analyses, the correct regulation is that which maximizes net benefits by equalizing marginal benefits and

[124] Under John Graham, the former Office of Information and Regulatory Affairs (OIRA) director, OMB has issued "prompt letters," encouraging the agency to act in new areas. However, these prompt letters have been few and far between, and have addressed issues that were largely already on the agencies agenda.

[125] *See e.g.* Martin L. Weitzman, *Prices* vs. *Quantities*, 41 REV. ECON. STUD. 477, 480 (1974) (classic article advocating the benefits of market-oriented regulation).

marginal costs—selection of this regulation will maximize aggregate social welfare.[126] Regulations that pass cost-benefit muster are thought to approximate the optimal outcome—that which would obtain in the absence of market failures.[127]

Cost-benefit analysis has its detractors. Some believe that calculating the benefits of environmental regulation is immoral because it requires placing a dollar value on reductions in mortality risks and the preservation of natural resources.[128] Further still, others believe that the efficiency criteria used in cost-benefit analysis is morally irrelevant[129] or that the distributional impacts of regulation cannot meaningfully be ignored.[130] Other critics claim that the uncertainties in cost-benefit analysis render it worthless as an analytic tool, especially when employed by central regulations to analyze actual proposed regulations.

In this Article, I evaluate the choice between preference-directed regulation and other kinds of regimes with an eye toward the cost-benefit criteria of maximizing social welfare. In general, regulatory ossification tends to reduce the efficiency of regulatory regimes.[131] This means that ossification interferes with the ability of government to pursue its chosen ends. When those ends are maximizing net benefits, regulatory techniques that tend to reduce ossification will often win out in cost-benefit comparisons with techniques that tend to increase ossification. In this context, whether the ossification reducing techniques are cost-benefit justified depends on the cost of using that technique (as opposed to another, cheaper regulation) versus its benefit delivered in terms of ossification reduction.

However, I am mindful of criticisms of the cost-benefit methodology. It is important to note that no matter what rational criteria is used to evaluate regulatory choices, ossification, in general, should be

[126] Cost-benefit analysis generally uses a Kaldor-Hicks efficiency criteria to determine when policies maximize aggregate welfare. Under the Kaldor-Hicks model, a regulation is efficient if the "winners" under the regime could theoretically compensate the "losers," even though actual compensation is unnecessary. Kaldor-Hicks criteria demand that we maximize the net benefit by equalizing costs and benefits on the margin.

[127] *See e.g.* Louis Kaplow & Steven Shavell, Property Rules vs. Liability Rules (1996) *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=56405.

[128] *See e.g.* FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING (2005).

[129] MATTHEW D. ADLER & ERIC A. POSNER, NEW FOUNDATIONS FOR COST-BENEFIT ANALYSIS (2006).

[130] Duncan Kennedy, *Cost-Benefit Analysis of Entitlement Problems: A Critique*, 33 STAN. L. REV. 387 (1981).

[131] However, it is possible that ossification actually *helps* economic efficiency by stopping legislatures and regulators, captured by special interests, from creating rules that reduce overall efficiency. In this case, reducing ossification will actually be bad for economic efficiency. This perspective takes a fairly dim view of government intervention in the economy so much so that a crippled government is better than one that functions well. In my view, if the goals of most legislative programs were carried our well, society would be better off—our democratic system is good enough for that. It is in the details where the devils reside. Reducing ossification, which will—by definition—help achieve legislative goals more effectively, will result in increases to aggregate welfare. My argument, then, is not purely cost-benefit oriented, but instead takes the position that more efficiently achieving legislative goals would be a good thing. If this is not true, and forward legislative goals reduces welfare, then we should take steps to increase, rather than decrease, ossification.

avoided. Ossification tends to thwart regulatory goals by interfering with learning and regime adaptation. This takes place regardless of whether those goals are increasing aggregate wealth, or some other social end such as redistribution or the protection of individual rights. Ossification, then, is not only a drag on economic efficiency, but is generally disfavored regardless of the government goal being pursued.

The one case where ossification is favored is when government is promoting a bad end—such as a morally reprehensible policy like oppressive racial segregation—or has been captured by special interest to such a great degree that government regulation tends to have negative aggregate net benefits. If these are the case, measures that slow down government and make it less effective will make people better off. The hope is that, in general, government action tends to forward some legitimate social goal. If we believe that is not the case (and that ossification may therefore be a good thing) the appropriate remedy is probably not to fight efforts to make government more efficient, but rather to take democratic action to force government to forward morally legitimate goals.

Below, I will discuss how preference-directed regulation can help break up the stable political equilibriums in legislatures and bureaucracies that tend to produce ossification. I do this by paying attention to how this class of regulatory techniques tend to change political preferences and thus alter the political dynamic surrounding a regime. In a democratic system, there is a closed loop that starts from a regulation, through the preferences of citizens, and back through the political process to the regulation. In the current system, stagnation tends to result, as the political process (including the bureaucratic process) tends to settled into stable states. Preference-directed regulation can help move the political process out of these states.

Evaluating potential regulatory techniques in terms of their influence on the political process is a relatively novel approach. I use it here to investigate ossification, although there are many potential applications of this methodology. To a certain extent, we should be thinking about how regulatory choices impact the political process generally, in both cost-benefit analysis and other forms of regulatory evaluation. Effects on the political process are a real result of regulation—understanding these effects will help us better choose our regulatory styles in the future. In this Article, I look to the effects on ossification of a particular regulatory choice. However, there are other kinds of effects on the political process—such as effects on political participation, trust between the government and citizens, and democratic or deliberative democratic goals—that we should be mindful of when selected regulatory regimes.

B. The (Side)Effect of Preference-Directed Regulation

Preference-directed regulation can help reduce ossification by breaking up the stable political coalitions that form around existing regimes. This is possible because preference-directed regulations will have (to a greater or lesser extent) effects on the political preferences of citizens. The effects of these changes in political preferences will have

consequences so long as citizen preferences matter in the political system. Even the most cynical commentators realize that the demands of the public are not irrelevant in our political system. While there is good reason to think that we may not see optimal legislation or regulation, there is also reason to believe that outcomes bear some relationship to the needs and wants of the electorate.

1. From Consumers to Voters

There are several ways that preference-directed regulation can change not only consumer behavior, but political behavior as well. Consumers and citizens are roles that people play in our society, and while we sometimes assume a strict separation between these roles,[132] the individuals performing them are the same. Information acquired in a consumer role is not embargoed from use in the political context and values that are manifested in political processes can also play a role in consumer choices.[133] Changing consumer behavior via preferences should be fully expected to change political preferences because there is no bright line separating consumer from political preferences. The same beliefs, information, values, and blind spots inform behavior in both the consumer and the political contexts.

Preference-directed regulation, especially of the information generating variety, can impact political behavior simply by increasing the pool of information that is drawn upon by voters when making political choices. Voters, just like any decision-maker in the real world, are faced with the problem of making choices under conditions of imperfect and incomplete information. They have a set of goals they wish to maximize, but must decide between competing candidates and policy proposals based on their best understanding of the world. Information generation regulation, by making more information available to voters, can alter their political behavior to the extent that this information is relevant to their goals.

Preference-directed regulation can also change political preferences by making certain issues more salient and by directing consumer attention to particular social concerns. Even when no "new" information is contained in a label or a public service announcement, the issues discussed become more salient and available in the mind of the audience. Information campaigns, when effective, are designed to communicate in a compelling fashion, which can mean translating obscure data into narratives, visual imagery, and mnemonic devices. All of these tools tend to increase the salience of information, making it more likely that it will be processed during a political choice. In addition, reminders and other tools of directing consumer attention toward a particular issue will also bleed over into the political context—

[132] S*ee*, MARK SAGOFF, THE ECONOMY OF THE EARTH: PHILOSOPHY, LAW, AND THE ENVIRONMENT 50–74 (1988) (arguing that people can behavior quite differently in public and private roles).

[133] In fact, the connection between consumer behavior and political behavior appears to be pretty robust. One example: Chevy owners tend to vote Republican. *See* Tom Hamburger and Peter Wallsten, *Parties are Tracking Your Habits*, L.A. TIMES (July 24, 2005), *available at* http://www.csulb.edu/~astevens/posc322/files/gopdata.html.

if a particular environmental issue is on the minds of consumers, it will likely also be on the mind of voters.

The importance of a particular issue can also be signaled by preference-directed regulation. There are many potential political issues calling for people's attention; these issues need to be sorted by some kind of relative priority ranking. Information-generating regulation, by increasing the prominence of some issue in the marketplace, signals that that issue is a matter of social concern, and deserving of attention on the part of consumers, and by extension voters.

There is no reason to believe that norms that are created and strengthened for consumers will not operate equally, or even more strongly, in the political context. Norm-creation regulations affect consumer behavior to the extent that people allow their values and moral ideas to influence their purchasing decisions. There are plenty of examples from the marketplace that people's consumer behavior is in fact influence by moral considerations—the strength of vegetarianism in America is only one. However, many believe that values will tend to be manifested even more in the political process, when individuals are acting as citizens rather than consumers.[134] Regulations which seek to achieve environmental goals through the strengthening of norms, then, may have even greater influence on the political process.

Perhaps the most important role that preference-directed regulations, if they are successful, will have in altering political behavior is through habit. If regulations change how actors behave in the marketplace, individuals will become habituated to these new behaviors—for example, buying energy efficient appliances and organic produce, and recycling paper products. They become habituated to behaviors motivated by concern for specific environmental issues—energy conservation, pesticide control, land and water conservation. Habits of thought and action built in the consumer area can be expected to manifest in the political arena as well—the selection of an organic product is not so different from the selection of an organic-friendly legislator.

This is only a short elaboration of the mechanisms by which changes to consumer preferences can influence political preferences as well. Many others are imaginable. In fact, the connection between consumer behavior and political choices has become a ripe area for the political parties to research, in order to better target their fundraising and voter motivation efforts.[135] What is relatively clear is the preference-directed regulation can be expected to have some influence on the political system; in the next two sections, I will argue that this influence may turn out to be quite positive.

2. Stabilizing the Legislature

Because legislators' preferences do not perfectly track their constituents, there is the question of whether, even if preference-directed regulation changes the political preferences of voters, there will be any

[134] *See* SAGOFF, *supra* note 132.
[135] *See supra* note 133.

impact in our imperfect democracy. Legislators are responsible to their special interests clients, the public is largely uninvolved in the day to day minutia of law making, and there are strong incentives to shy away from public minded legislation in favor of smaller measures directed at favored interests. In this system, preference changes among the population may have little effect on actual legislative outcomes.

However, even in a public choice nightmare, the preferences of the public are not irrelevant. While we might see less public spirited revision that we might in a perfect system, it is difficult for legislators to ignore their constituents entirely. This is the case especially for relatively salient issues, where voters actually are paying attention to the political process, or where there is higher levels of agreement about a particular issue. Special interests take great pains at associating themselves with some version of the public good;[136] when that is impossible, and a political dynamic boils down to a special interests against a broadly recognized public good, the chances of special interest success decrease.

Preference-directed regulation can counter-act the stable public choice equilibriums in a number of ways. First, by continually directing voter attention to a particular issue, it is more difficult for legislators to respond with symbolic moves rather than substantive results. Shifting attention is a key reason why symbolic legislation works—"something" is done about the issue when it is in the public eye, but the eye soon shifts elsewhere, before the fact that the legislature has not made any substantive progress becomes apparent. Continually reminding voters about some environmental concern keeps the issue in the public eye, making it difficult for legislators to escape blame for government failures.

Additionally, when an issue is continually raised in the public consciousness , it becomes more difficult for status quo interest to capture one of the relevant pieces of the Congressional apparatus. The ability of a particular bloc of votes, powerful leader, or congressional committee to block popular legislation acts more as a flood wall than a permanent dike. These political actors can take a specific amount of damage in the public eye, in order to please important special interest constituents. However, when that damage becomes more long lived, the political harm tends to spread, so that party leaders and a political party more generally can be damaged by the actions of specific members or groups of members. By maintaining a relatively high level of pressure over time on the political process to show results, preference-directed regulation can help overcome the stagnating tendency of fragmented lawmaking power.

Also, preference-directed regulation can help increase the salience of revision efforts, by continually reminding the public about the underlying public policy goal being pursued. Endless discussion of regulatory technicalities are not the stuff of television drama; asking individual citizens to follow the back-and-forth of public policy

[136] For example, during the debate about reforming the Superfund liability scheme, industry gained the support of small businesses and home owners who were impacted by the law, and used them as the public relations face of their reform coalition.

deliberation during on-going revision of regulatory regimes is likely to be fruitless. However, when preference-directed regulations are placing information in the marketplace and strengthening norms in order to achieve environmental goals, the salience of the social effort to combat environmental ills increases, so that interest in the more technical aspects of regulation may increase as well. Additionally, background information about the environmental problem will be more available to voters, so that they can more easily evaluate the effectiveness of measure currently in place and under consideration. Further, because citizens are closer to the underlying issues, it is easier for political entrepreneurs to educate citizens about revision efforts, lowering the threshold for when these efforts will generate political pay-offs for legislators.

Finally, although preference-directed regulation cannot prevent the creation of a status quo coalition of new industries and protected old guard, the harmonization and ratcheting up of preferences for substantive results among voters makes it more difficult for these forces to defend ineffective regimes. These status quo forces can be expected to have the most success when opposed only by a divided, ill-informed, and uninterested public. To the extent that preference-directed regulations can change that condition, by adding information, building agreement, and strengthening norms, then they will reduce the ability of special interests groups to exploit public choice pathologies to protect the status quo.

3. Agreeing on the Ends of Regulation

Even where public choice problems are not prevalent, preference-directed regulation can help avoid legislative gridlock. Because increased heterogeneity and articulation of preferences lead to cyclic preferences and stalemate in bicameral legislatures,[137] if preference-directed regulation can lead to greater areas of agreement, these stalemates will become less likely. A legislature that agrees on more is more likely to be able to act effectively.

This line of argument is not all that dissimilar from certain deliberative democratic arguments.[138] The aggregation of preferences in a voting procedure is very difficult in a society of people with massively heterogeneous preferences. To the extent that deliberation and political

[137] See *infra* notes and accompanying text.

[138] *See* John S. Dryzek & Christian List, *Social Choice Theory and Deliberative Democracy: A Reconciliation*, 33 BRIT. J. POL. SCI.. 1 (2003) (formal discussion of how deliberation can overcome voting paradoxes); Jack Knight & James Johnson, *Aggregation and Deliberation: On the Possibility of Democratic Legitimacy*, 22 POL. THEORY 277 (1994); David Miller, *Deliberative Democracy and Social Choice*, 40 POL. STUD. 54 (1992) (arguing that "process of discussion tends to produce sets of policy preferences that are 'single peaked'"). For empircal work, see Cynthia Farrar et al., *Experimenting with Deliberative Democracy: Effects on Policy Preferences and Social Choice* (presentation at the ECPR Conference, Marburg, Germany, September, 18-21, 2003) *available at* http://cdd.stanford.edu/research/papers/2003/experimenting.pdf; Iain S. McLean et al., *Does Deliberation Induce Preference Structuration? Evidence from Deliberative Opinion Polls* (presentation at the American Political Science Association meeting in Washington, DC August 30-September 4, 2000) (*draft available at* http://cdd.stanford.edu/research/papers/2000/structuration.pdf).

participation can result in more shared understanding then the irrationality of a majority rules system is decreased.

With preference-directed regulation, we view the government as a potential player in the preference formation process. As public deliberation may result in greater agreement, preference-directed regulation, by influencing behavior in the consumer environment, can have the beneficial side-effect of decreasing preference heterogeneity with respect to particular environmental goals. The result will be less heterogeneity of preferences in the political process, leading to more rational legislative results and freeing bicameral legislatures from preference cycling and paralysis. Thus, while regime aging may result in new issues arising, with preference-directed regulation, other issues can be put to rest. By, at least, reducing the rate at which potential preference dimensions multiply, we can allow for greater learning in the future, and the ability to deal with these new issues as they arise.

Preference-directed regulation will be most helpful in generating greater preference homogeneity on the goals of regulatory regimes. The process whereby some social condition is transformed into a problem capable of solution is social.[139] While there is no perfect agreement about the appropriate goals of a regulatory regime, there is hope that deliberation can help facilitate increased levels of agreement.[140] The goals of a regime are related to risk-perceptions and risk-tolerances as well as underlying values and concerns. Preference-directed regulation, by providing a consistent signal in the marketplace, can help to unify voters around particular regulatory goals. Access to similar information on a social problem and the generation and strengthening of shared norms goes directly to formation of preferences about the appropriate goals of a regulatory program.

Preferences about the means of regulation are less susceptible to change through preference-directed regulation. In general, individual citizens will not have preference with respect to the exact mechanisms of regulation; that is why they pay politicians, bureaucrats, academics, and public interest lobbyists. It will be difficult for preference-directed regulation to generate consensus about these kinds of technical and arcane matters, about which the average voter has little expertise. It is not clear, for example, that an information campaign about the dangers of climate change will change people's ideas about whether a carbon tax or a cap-and-trade mechanism for stationary sources will lead to a superior policy outcome.

However, preferences about regulatory means can be expected to be more susceptible to change through technocratic deliberation. There is hope that deliberation within the policy community can produce greater consensus on these more technocratic decisions. Epistemic communities in the policy arena, like public health officials, engineers, and economists, while they are far from perfect agreement, do tend

[139] William L.F. Felstiner, Richard L. Abel, & Austin Sarat, *The Emergence and Transformation of Disputes: Naming, Blaming, Claiming …*, 15 LAW & SOC'Y REVIEW 631 (1980).
[140] See *supra* note 138.

towards agreement on the important questions.[141] This is especially the case when information and empirical experience with different regulatory tools provide insight into the kinds of approaches that are more successful than others.

Preference-directed regulation, then, can decrease heterogeneity about regulatory ends, while technocratic deliberation can hope to decrease heterogeneity about regulatory means, especially where regimes can engage in experimentation to test different theories about effective regulation. The result is a lowering of the total heterogeneity of legislative preferences, which will help alleviate gridlock.[142] The hope is that this results in a virtuous cycle, where greater flexibility in the legislative process yields greater adaptation and a heightened ability to process information, which yields even greater agreement about regulatory means as the results of different techniques are seen. [143] This

[141] Economists might be the most divisive, but there are actually wide areas of agreement in the economics community. *See e.g.*, Robert Whaples, *Do Economists Agree on Anything? Yes!*, 3:9 ECONOMISTS' VOICE (2006) *available at* http://www.bepress.com/ev/vol3/iss9/art1.

[142] To see how this works, imagine two voting periods: creation and revision. During creation, there was an imbedded question about command-and-control vs. market-mechanisms, and command-and-control was selected. The only question was whether standards would be weak (W) or strong (S). The preferences of the legislators in period one are:

Voter 1: S>W
Voter 2: S>W
Voter 3: W>S

Therefore, Strong wins. During revision, market oriented approaches are on the table. There are four possible proposals, Strong-Market (SM), Strong-Command (SC), Weak-Market (SM), Weak-Command (SC). Preferences are:

Voter 1: SC>WC>SM>WM
Voter 2: SM>WM>WC>SC
Voter 3: WM>WC>SM>SC

Voting leads to a Condorcet cycle: e.g. SC vs. SM: SM wins; SM vs. WC: WC wins; WC vs. WM: WM wins; WM vs. WM; SM wins. If, however, the first legislation included a preference-directed campaign which resulted in voters in districts 1, 2 & 3 agreeing that stronger standards were better than weaker standards, legislator's preferences would change as well. Stronger outcomes are now always preferred to weaker. Their preferences for command-and-control vs. market, however, are unchanged.

Voter 1: SC>WC>SM>WM
Voter 2: SM>SC>WM>WC
Voter 3: SM>SC>WM>WC

Here, strong market based controls are the Condorcet winner. (E.g.: SC vs. WC: SC; SC vs. WM: SC: SC vs. SM: SM; SM vs. WC: SM; SM vs. WM: SM). It is important to note here that I am *not* arguing that the reduction of preference dimensions is a formal necessity of the use of preference-directed regulation. I am arguing, instead, that it is a possible consequence, one that can, perhaps, be predicted and anticipated to arise under certain conditions.

[143] Of course, it is possible that his cycle could lead to too much regulatory revision, reducing legal stability and causing economic losses. However, we are far away from this problem, given the current state of ossification. Further, the problems associated

virtuous cycle is only possible where greater agreement about legislative ends helped ease ossification in the first place. Preference-directed regulation, then, can help get the cycle started by generating higher levels of agreement about regulatory ends.

3. Destabilizing the Bureaucracy

As discussed above, stagnation within the bureaucracy is partially a result of the conflicting interests of the large numbers of principals present in the American administrative state. Because they are subject to accountability mechanisms by Congress, the President, and the courts, agencies have little incentive to act, and have less incentive to innovate. Because agencies expose themselves to punishment by acting, and especially by taking risks, but rarely can be held to account for inaction, self-interested and risk-averse bureaucrats will rationally avoid action. Instead, appearing busy while doing little is the strategy that maximizes their interests.

Preference-directed regulation can help elevate ossification within the bureaucracy. Most importantly, by reducing the gridlock within the legislature by reducing the multidimensionality of legislative preferences, while maintaining the salience of specific environmental issues within the public, preference-directed regulation increases the chances that agencies will have greater feed-back and direction from the legislature. Periodically updating the democratic mandate behind an environmental regime frees agencies from concerns that its policies are grossly out of line with the wishes of most Americans, and allows the agency more space for innovation and risk-taking to achieve those policy goals. When statutes have been on the books, and essentially unrevised, for years, an agency's mandate tends to stale, and disconnects can arise between the governing statute and preferences in Congress and among the electorate. Even when preferences are relatively stable, there exists an expression gap, so that bureaucrats, who are effectively isolated from the public, are given little to show that their agency goals remain fresh and supported by the public. By periodically refreshing these mandates, while making substantive changes to programs and offering agencies guidance about past successes and failures, greater legislative action will tend to free agencies from isolation from periodic political affirmation of their missions.

In addition, preference-directed regulation, if it is successful, can be expected to bring greater harmony among the political actors exercising accountability power over the agency, making it more difficult for agencies to shirk. Conflict among principals is a key reason why agencies have greater ability to shirt; it reduces the ability of any given principal to direct the agency, and creates a disincentive for agency action—no matter what they do, some principal will find fault. However, if principals are in greater agreement, there is a broader field where agency action can be expected to find support from all principals. This situation creates a dynamic where certain agency action is

with economic instability should be taken into account in the selection of legislative means.

universally rewarded, incentivizing action rather than paralysis. While harmonization will be far from perfect, to the extent that areas of overlap or agreement are created by preference-directed regulation, there will be potential agency actions that will satisfy all principals.

Finally by subjecting political decision-makers to heightened standards of substantive success, for example by keeping an environmental issue in the public consciousness, preference-directed regulation will encourage legislators to fulfill more productive oversight roles vis-à-vis agencies. A standard public choice criticism of current legislative-agency dynamics is that legislators do best when they pass symbolic, or largely symbolic, laws that delegate most decisions to agencies. They receive the pay-off associated with having acted in an area of public interest, while forcing the agencies to make the unpopular specific decisions. Legislators further gain by criticizing the agency about the effects of individual regulations on constituents, and use their oversight role to forward special interest causes, thereby increasing their ability to raise campaign funds from these parties. Preference-directed regulation changes this dynamic by increasing the oversight that ordinary voter perform, thereby increasing the probability that the substantive success of a program will result in rewards for legislators, and substantive failure will result in punishment. The oversight role of Congress cannot be dedicated entirely to pursing the agenda of special interests if a regime's success in providing public goods is translated into election results—rational legislators in that case can be expected to perform public spirited oversight as well, increasing the pressure on agencies to deliver substantive results. This increased positive oversight means that, not only will agencies be faced with a set of principals in broader agreement, but that oversight over their inaction will increase.

Preference-directed regulation is not a panacea for the difficulties within our political system. Public choice pathologies will certainly persist, as will some level of paralysis and inaction. However, by continually building the political coalition in support of regulatory goals and harmonizing the preferences of relevant actors in the political system, some of the malaise can be lifted. The success of preference-directed regulation on this score should be measured in relative rather than absolute terms—so long as it can increase the flexibility and adaptability of regimes, it is useful.

C. Drawbacks

While preference-directed regulation can be useful in reducing ossification, it comes at a cost. Many times, these kinds of regulation will result in increased marginal costs of regulation—each unit of environmental protection will come at a higher price. Preference-directed regulation should be thought of as a supplement to, rather than a substitute for, other kinds of regulatory tools. Preference-directed regulation, then, has a long-term benefit, but comes a cost. Achieving the right mix of traditional regulatory tools, market incentives, and preference-directed regulation entails a careful consideration of the long and short term mix of costs and benefits of these different approaches.

In this section, I discuss three difficulties associated with preference-directed regulation. The first deals with the spurring of technological development, the second with the effect of preference directed regulation on surplus, and the final with normative problems presented by preference-directed regulation that should limit its uses.[144]

1. Technological Change

Academic commentators have long focused on the ability of a regulatory intervention to "force" technological development as an important aspect of its effectiveness.[145] Technological development helps reduce the cost of complying with environmental regulations, thereby reducing the overall economic harm associated with environmental protection. Without technological change, the only way to conserve natural resources is through a reduction in consumption—new technologies can help attain environmental goals while maintaining relatively high levels of satisfaction. Some regulation will create incentives for technological develop, others will not. In analysis of traditional command-and-control regulation, commentators have noted that "performance based standards," where regulators set emissions limits based on best available technology but do not require any specific technology to be used, are superior to "design based standards," where regulators stipulate the technologies that firms must use.[146] However, even performance-based standards have drawbacks; for example, there is often no benefit for over-complying with an environmental regulation.[147]

Many potential preference-directed regulations do not create an incentive for the development of new technologies. For example, measures to encourage gasoline conservation would create no incentive for car manufactures to develop technologies that would reduce the per

[144] It is worth noting that the first two criticism of preference-directed regulation go directly to whether they are cost-benefit justified. Because of the surplus effects and effects on technological development, preference-directed regulations do not fare well against alternative according to cost-benefit criteria. Without the ossification argument, or something similar, it would be difficult to justify preference-directed regulation on cost-benefit grounds. This also opens the possibility that preference-directed regulations that were targeted purely at political preferences might be cost-benefit superior. However, because it is not easy to separate consumer and political preferences, *see supra*, and because of the relatively greater experience we have in shaping consumer preferences, as well as the relatively greater moral difficulties associated with directly and exclusively targeting political preferences, I think preference-directed regulation targeted at consumer behavior, with predictable impacts on political behavior, is both more likely and more desirable.

[145] *See e.g.* David Gerard & Lester B. Lave, *Implementing Technology-Forcing Policies: The 1970 Clean Air Act Amendments and the Introduction of Advanced Automotive Emissions Controls*, 72 TECH. FORECASTING & SOC. CHANGE 761 (2005) (discussing technology forcing, which is when regulators specify "standards that cannot be met with existing technology")..

[146] *See e.g.* NEIL GUNNINGHAM & PETER GRABOSKY, SMART REGULATION: DESIGNING ENVIRONMENTAL POLICY 442 (1998).

[147] *Cf. id.* at 414-415 (stating that companies have incentives to over-comply for their own purposes, such as improved company image and development of new technologies, but have not done so).

gallon emissions of target pollutants.[148] Likewise, reducing the demand for electricity will not create any incentive for the development of better emission control technology. Reducing the demand for fish will not spur the development of mechanisms to reduce by-catch. Lowering the overall demand for wood will not shift production away from old growth forests, unless it happens to involve the highest cost of harvesting.

A simple model shows how this works. A firm has two production process choices: Process 1 and Process 2. Process 2 pollutes less than Process 1, but has a higher marginal cost. The marginal cost of production for Process 1 is x; and the marginal cost of production for Process 2 is x + c. Our firm is in a competitive marketplace, so must take the price set by the market, which is y. The profit of the firm for Process 1 is y – x. The profit for the firm for Process 2 is y – (x + c). For all positive c, the payoff for Process 1 is higher than Process 2, and will be selected.

A traditional regulatory tool might increase the marginal cost of Process 1 but leave the cost of Process 2 unchanged because it limits access to some natural resource that is used to a greater extent in Process 1 than in Process 2 (by definition). That additional cost is t. If t exceeds c, then the payoff from Process 2—which is y – (x + c)—will be greater than Process 1—which is y – (x + t). An effluent fee, tradable emission permit, or command and control restriction governing Process 1 can all lead to this result. This encourages the use of Process 2, which we can think of as a technological innovation.

A preference-directed regulation that reduces demand for the end product will have a different impact. In a competitive market, a reduction in demand will result in a reduction in both the market price (y) and the marginal cost of production (x). However, this does not change the outcome, because y – (x +c) is always greater than y – x (for all positive c); irrespective of the magnitude of y and x. Therefore, a simple preference-directed regulation that reduces demand will not encourage the use of Process 2—the more efficient technology.

To illustrate, imagine two different systems for controlling pollution caused by electricity production. The first is a preference-directed measure, and consists of advertisements asking people to unplug their mobile phone chargers when not in use. If many people did not know that mobile phone charges continued to use electricity while plugged in, and are willing to incur the inconvenience of unplugging them in order to conserve electricity, this may have some impact on overall demand for electricity. The result will be a shift downward in prices, and also a shift downward in total consumption, and therefore a reduction in pollution. This measure, however, creates no incentive for technological development (except, perhaps, mobile phone chargers that are easier to unplug). Importantly, the amount of pollution per unit of electricity produced will be unaffected.

The second is a market-oriented measure where the government imposes a tax on emissions. Here, firms have the incentive to invest in

[148] *Cf.* RICHARD A. POSNER, CATASTROPHE: RISK AND RESPONSE 157 (2004) (discussing difference between emissions tax and consumption tax with respect to their relative effects on technology forcing).

pollution control. For example, if current technology dictated that 1 ton of carbon dioxide was emitted for every kilowatt of electricity, and the tax was set at $100 for every ton of carbon dioxide, firms would be indifferent towards paying a dollar per kilowatt to the government for the right to emit 1% of a ton of carbon dioxide, or paying a dollar per kilowatt for pollution control that resulted in a 1% reduction in emissions. A market would therefore be created for pollution control technology. The higher the emissions tax, the more money firms will be willing to spend on pollution control technology. Expenditures to research, development, and market pollution control technologies would likely be made, if the tax were sufficiently high that feasible technologies would be cost-justified.

The effect in the above example is a result of the different substitutions that take place in the market because of the policy intervention. With the demand control measure, people choose to substitute time unplugging chargers for some other activity that they learned was less productive. To the extent that the consumer and environmental savings exceeded the advertising costs, that substitution was efficient, and resulted in greater overall welfare. With the supply restriction measure, firms choose (or at least had the incentive to choose) to substitute investment in pollution control technology for the tax paid to the government. Under the preference directed regulation, there was no plausible technological substitute; the market-incentive measure included the option of a plausible technological substitute.

Not every market-incentive or traditional regulation will create an incentive for technological development. However, whenever a regulation imposes a marginal cost for each unit of natural resource use, there will be an incentive to substitute away from that use by changing the production process. The substitution may be alternative natural resources with lower marginal costs, labor, or to technology which increases the efficiency with which the resource is used (i.e. increases output per unit of natural resource uses). The mix of these substitutes will, naturally, depend on the specific circumstances, but there will always be an incentive to develop technology so long as there is a marginal cost to the resource use.

Some preference-directed regulations, however, can also impose technology-forcing marginal costs for resource use—however, they need to be specially designed to do so. Many preference-directed regulation will target specific *products*. They will seek to reduce demand for things like electricity, gasoline, paper or fresh water. Sometimes, the link between the demand reduction and the targeted resource is quite clear: reducing demand for paper to save trees for example. Sometimes the link is more attenuated: reducing demand for paper to save landfill space. These measures cannot be expected to force changes in the production processes of firms—if effective, their best result is a reduction in the total amount of their consumption, and some related natural resource use. The ratio between the amount of the end product consumed and the amount of the natural resource use will be unchanged.

However, *process*-based preference-directed regulations[149] can have an impact on production technologies. Process-based measures seek to reduce demand depending on how the product was made, rather than simply for the end product. For example, a process-based measure would seek to increase demand for recycled paper, and reduce demand for non-recycled paper. Rather than basing the measure on the product's specifications, they are based on how the product was manufactured. These process-based measures have the capacity to encourage firms to use less resource intensive methods of production.

Using our simple model above, we can see how this works. Remember, the firm has two choices, Process 1, at cost x, or Process 2 (less polluting) at cost (x + c). The effect of a *process*-based measure is to create two prices: y and (y + g). The good produced with Process 1 will bear a price of y, and the good produced with Process 2 will bear the price y + g. The magnitude of g will be determined by how much greater demand is for Process 2 goods than Process 1 goods, and may depend on the amount of the consumer subsidy for Process 2 goods, or the preference for "green" products. The payoff for Process 2 is y – x and the payoff for Process to is y + g – (x + c). If g > c, then the firm will opt for the environmentally friendly technology.

In the area of international trade, the paradigmatic process-product distinction case is in the area of dolphin-safe tuna.[150] Imagine there are two tuna catching technologies, one which costs $100 per tuna, but results in two dolphins killed for every 10 tuna caught. An alternative technology costs $200 per tuna, but results in only one dolphin killed for every 10 tuna caught. As is obvious, the fishers employing the first technology will be able to sell tuna for as little as $100 (their marginal costs). Firms employing the second technology will be forced to either close shop or switch to the first technology.

A product-based measure would be, for example, an effort to reduce overall tuna consumption. If 1000 tuna are consumed every year, and the first technology is used, 200 dolphins are killed every year. If the measure successfully reduces consumption to 800, then 160 dolphins will be killed every year; but there is no incentive to switch to the alternative technology. A *process*-based measure, however, can create incentives for a switch. Tuna could be labeled as either "dolphin safe" or "dolphin deadly." If people had preferences to avoid harming dolphins, they will pay more for the dolphin safe tuna and will prefer more expensive dolphin safe tuna to cheaper dolphin deadly tuna. Some fishers will switch to capture the part of the market that is willing to pay $200 or more for dolphin safe tuna. If the label is very effective, say, and half the market goes to dolphin safe tuna, then 1000 tunas will still be consumed, 150 dolphins are killed—better than the product based measure both because fewer dolphins are killed, and because consumers do not lose out on 200 tunas per year.

[149] For more information on the process/product distinction, and a defense of consumers' interest in how the products they consumer are made, see Douglas A. Kysar, *Preferences for Processes: The Process/Product Distinction and the Regulation of Consumer Choice*, 118 HARV. L. REV. 525 (2004).

[150] *See generally,* United States - Restrictions on Imports of Tuna (DS21/R), Report of the Panel, Sept. 3, 1991 (discussing restrictions on the importation of tuna).

Two other aspects of the relationship between preference-directed regulation and technological development bear mention. The first is that while product based measures do not create incentives for producers in that market to move to less resource intensive processes, they can create incentives in alternative markets for development of alternatives. For example, a campaign to reduce gasoline consumption creates no incentive to reduce the per gallon emissions of cars, but does increase the incentive to create electric cars, or better mechanisms of public transportation. I do not discuss these general equilibrium effects because they will be complicated and will be highly context specific. But, it is important to note that some product-based measures may lead to technological development in other markets, depending on the circumstances.

The second point worth noting is the difficulty of process-based measures. Process based measures have some of the problems associated with design standards in best available technology regimes. Regulators have to be diligent in order to "stay on top" of technological process, approving new processes that are environmentally beneficial as they become available. If regulators do not do this, then process-based regimes will ultimately lead to technological stagnation, as the incentive to develop even more environmentally friendly technology is reduced by the slow pace of administrative approval. Regulators can attempt to overcome this problem by adopting a performance oriented process based measure by using, for example, a "dolphin safety meter" label that informs consumer of the average dolphin by-catch of a manufacturer rather than a label based on some specific approved technology. This kind of mechanism avoids the problem of technological stagnation, but can increase the information processing burden for both regulators and consumers.

2. Surplus Effects

In a competitive market, both producers and consumers enjoy "surplus" from market transactions. This is because most goods are sold for a higher price than their reservation price,[151] and most good are purchased for less than their reservation prices.[152] When policymakers intervene in the marketplace, some of the consumer and producer surplus is destroyed, because some transactions that would have taken place in an unregulated marketplace do not take place. This loss of surplus can be a major cost of a regulatory intervention.

Preference-directed regulations, especially those that are product based rather than process based, tend to reduce consumer and producer more than traditional regulation and market incentives. This occurs when preference-directed regulations result in downward shifts in the demand curve, while leaving the intensity of production—the amount of negative externality produced per unit of produce—the same. In these

[151] A producer's reservation price is the lowest price that s/he would be willing to sell for; i.e. the marginal cost of production.

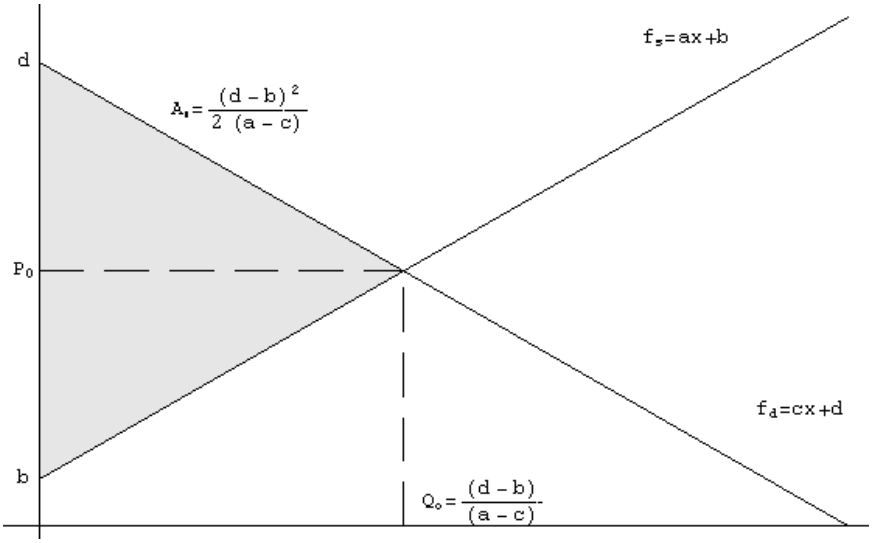
[152] Likewise, a consumer's reservation price is the highest price that s/he would be willing to purchase the good, its marginal benefit.

cases, preference-directed regulation tend to fair poorly as a regulatory choice, based on surplus criteria.[153]

The First Case

In the first and simplest case, the only effect of a regulatory intervention is a shift in the demand or the supply curve in the target market. This would be the case where no technological development takes place—either because there was no incentive (i.e. the regulation was a product based demand control measure) or because there was no possible technological development. Preference-directed regulations are targeted at the demand side of the equation, and are often designed to reduce demand for a resource intensive good; they will shift the demand curve to the left, *reducing* quantity supplied and the price paid of the good. Traditional tools typically target the supply-side, such as command-and-control measure limiting access to a natural resource. Likewise, many market-incentive regimes are targeted to the supply side, attempting to create a marginal costs per unit of environmental good used. For example, an effluent fee that is paid by a producer will shift the supply curve to the left in proportion to the fee, thereby *reducing* the quantity supplied and *increasing* the price. These will shift the supply curve.

In this simple case, the change in consumer and producer surplus that results from a given demand shift is equal to the change in surplus from a supply shift of equal magnitude, assuming no shift in elasticity. This is easiest to show using a linear model.

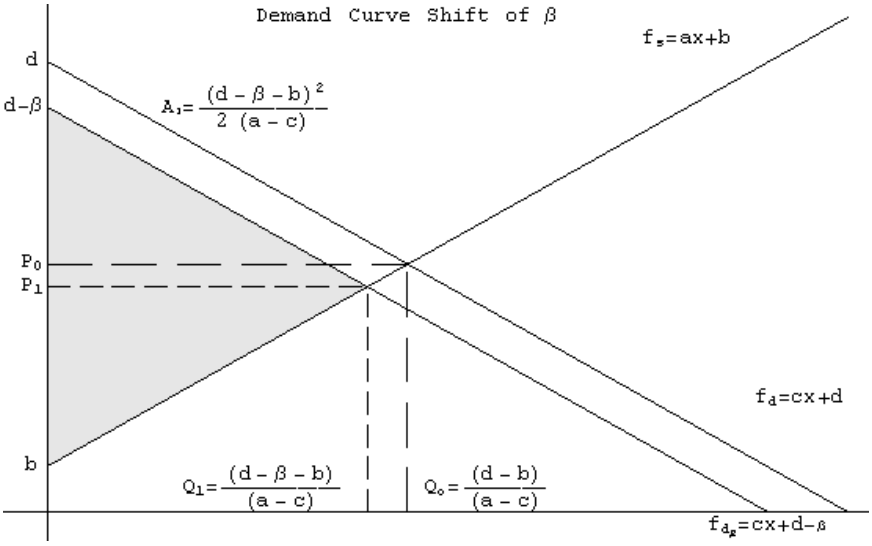


(figure 1)

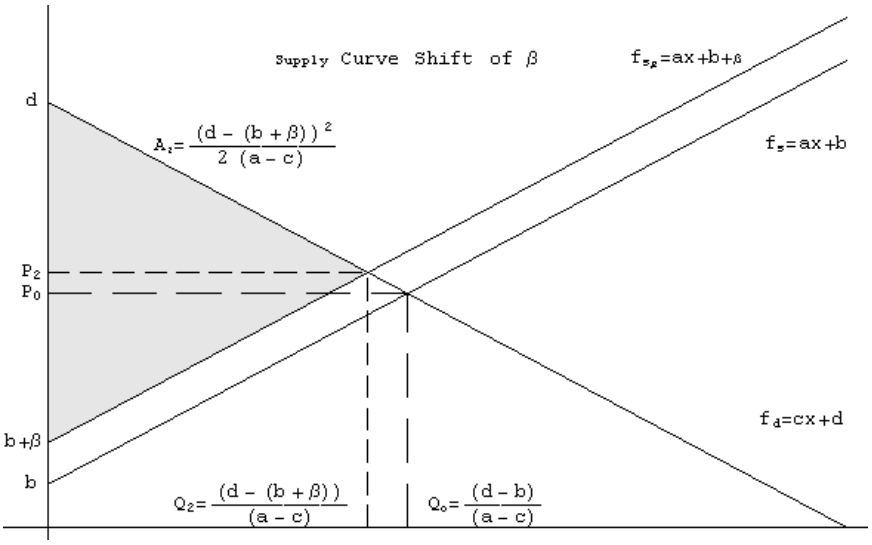
[153] It should be noted that in the following models, I am comparing surplus across two states, after preferences have been changed. It is possible that such comparisons are meaningless. For example, using Kaldor-Hicks criteria, does one use the preference before, or the preferences after the regulation? In any case, I assume that surplus can be meaningfully compared between the two states, although I recognized that this is contestable.

The Q_0 and P_0 are the quantities and prices in equilibrium, respectively. The shaded region A_0 is the consumer and producer surplus.

In this case, we assume that our demand and supply shifts do not affect elasticity, so with a shift of the supply curve by β we get on of two cases:



(figure 2)

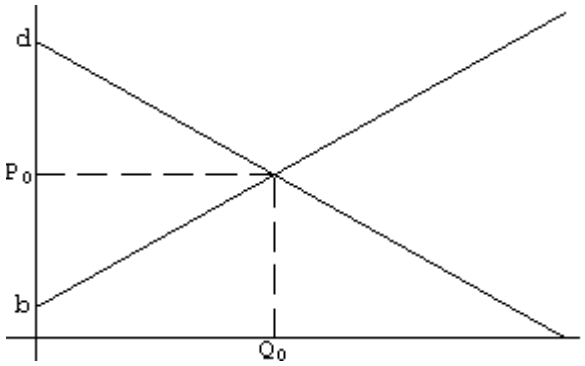


(figure 3)

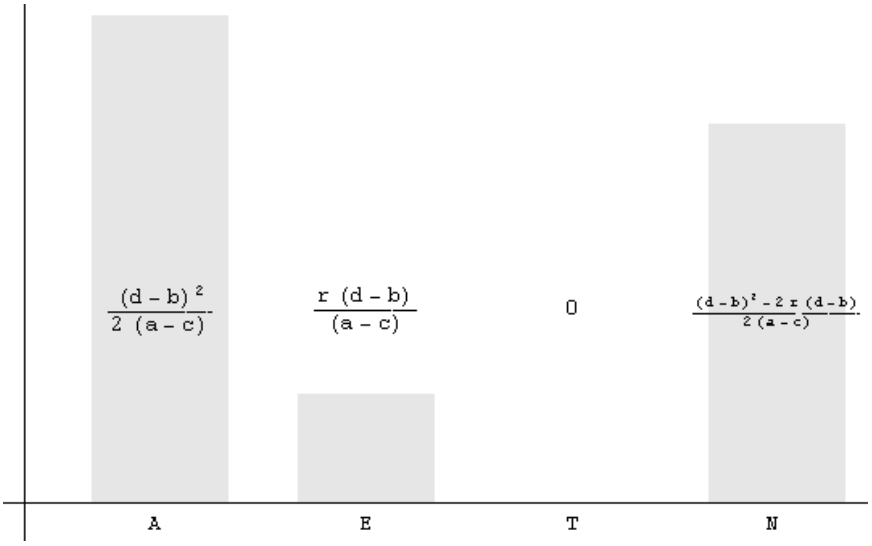
As is clear graphically, and can be seen by comparing A_1 and A_2 there is no surplus difference of supply and demand shifts of the same magnitude.

However, the mechanism used to shift supply or demand does matter. For example, if the demand or the supply curve is shifted due to taxation, then government gains the revenues, partly making up for surplus losses. That is why a tax equal to the per unit cost of the externality will lead to a net welfare increase.

To illustrate this graphically figure 4 shows the equilibrium price and quantity, while figure 5 shows the surplus, externality, tax (of zero) and net (which is the surplus plus minus the externality) in the unregulated marketplace.



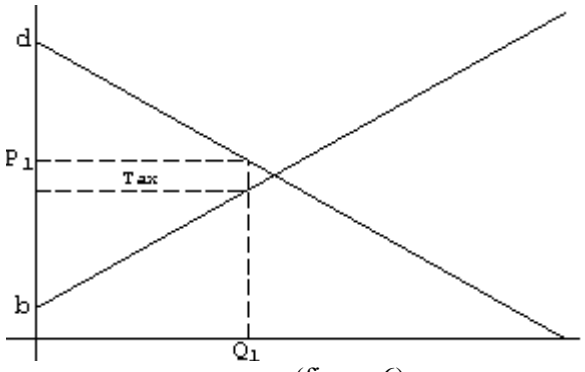
(figure 4)



(figure 5)

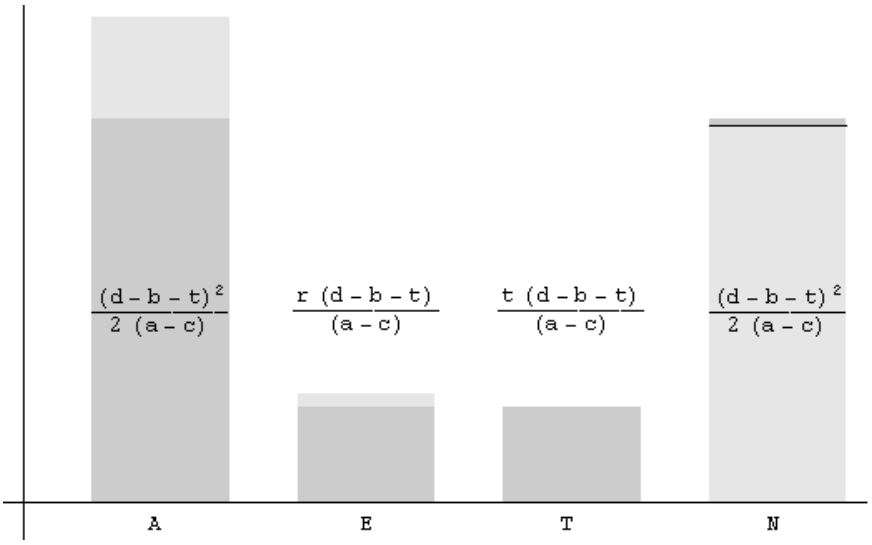
The rate of the externality—r—is the rate that the quantity produced translates into a cost on third parties.

With a consumer tax—t—set equal to the externality, we have the following result:



(figure 6)

Figure 6 describes the equilibrium prices and quantity; while figure 7 again shows the surplus, externality, and net effects. The lighter shade of gray are the results from the pre-tax market, the darker shades are the post-tax results. Note the slim difference on the top of the new net, where it overlaps the old net.



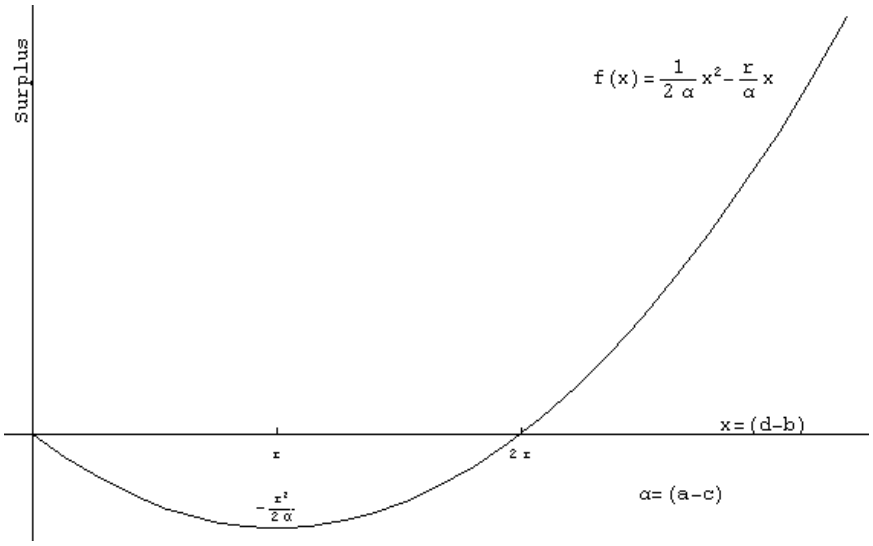
(figure 7)

The difference between the net surplus with the tax and without the tax, when the tax is set equal to the externality, is:

$$\frac{t^2}{2(a-c)}$$, where t = r.

Setting the tax equal to the externality is net maximizing because, if the tax is set higher or lower than r by some number δ, then the difference between the net surplus with and without the tax is:

$\frac{r^2 - \hat{o}^2}{2(a-c)}$, which means that the best strategy is to set t = r.



(figure 8)

Without the tax we merely have the supply or demand curve shift from figures 2 and 3. In those cases, no revenue is generated through taxation. Figure 8 shows the net surplus (surplus minus externality) as a function of the length of (d-b). Whenever (d-b) is less than 2r—twice the externality rate—there is no net surplus from the market—the externality is greater than the consumer and producer surplus. When (d-b)>2r, no movement to the left along the curve (accomplished by a demand or supply reduction) will increase net welfare. Likewise, if r<(d-b)<2r, then no leftward movement will increase net surplus until (d-b)≤r. The only time a demand curve shift downward will increase net surplus is when (d-b)≤r. In those cases, reduction in demand will decrease the negative net surplus. It is worth noting that in those cases, net surplus is maximized when demand is reduced to zero, and the market is eliminated. One hopes that in most cases, the net surplus of the market is positive, so that consumer and producer surplus is greater than the negative externalities. In these cases, welfare gains can be maintained through taxation, while preserving the market, but demand reduction (through preference shaping), in order to reduce the externality, will not be welfare maximizing.

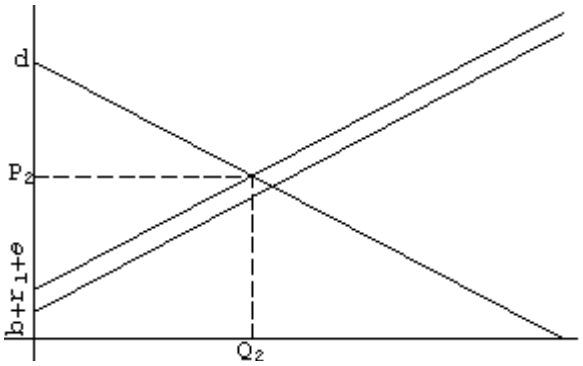
To restate: in this simple case, there is no difference in the surplus effect from a shift in the demand curve versus an equal shift in the supply curve; the choice of a product based preference-directed regulation and traditional tools then, is a matter of indifference. However, taxes—which generate revenue—are preferred to revenue

neutral (or negative) measures to shift the demand or supply curve.[154] The only case where shifting the demand curve through preference directed regulation will be benefit maximizing is when the market produces more externalities than consumer and producer surplus—in that case, net benefits can be maximized by eliminating the market.

Finally, neither a preference directed regulation nor a consumer tax will induce technological change. That is why the rate of the externality was the same in both the pre-regulation and post-regulation states. In the next case, we will examine the impact of an effluent fee, which does have the potential to induce technological change.

The Second Case

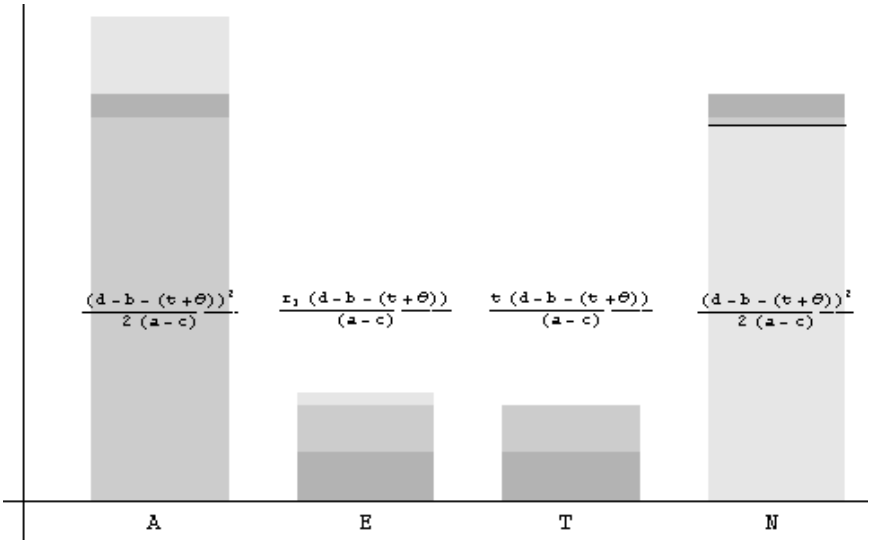
In the second case regulators place an effluent tax on the resource use equal to the value of the externality associated with the pollution. Here we will we will assume that there is technology that will reduce the resource intensity of production from r to r_1. The per unit of production tax will depend on whether the firm utilizes the technology. Where the cost of the technology is less than the difference in the tax rates, all firms will use that technology, so that the supply curve will shift upwards by—θ—the cost of the technology, plus the net tax—t— set to r_1. In figure 9, we see the results, an upward shift in the supply curve by the cost of the technology, plus the tax associated with the new (lower) externality rate.



(figure 9)

Figure 10 shows us the surplus effects of the effluent fee.

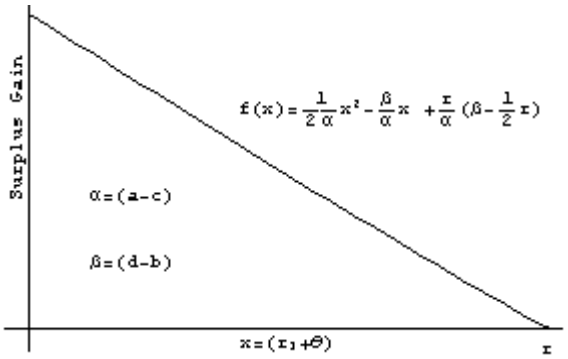
[154] There are some other possibilities. For example, a preference-directed regulation could theoretically result in a non-linear demand curve, such that it would remain identical to the original demand curve up to an optimal point, and then slope vertically downward. This would result in the same outcome as a tax, except that consumers and producers would realize a smaller surplus loss (equal to the surplus loss under the vanilla model, plus the amount of taxation revenue).



(figure 10)

The lightest gray is the pre-tax market, the mid-gray is the consumer tax, and the darkest gray is the effluent fee, with technological development. Note that the effluent fee with technological development presents the highest net surplus.

Where the tax is set to the externality, the difference in the surplus with effluent fee versus the surplus with the consumer tax is shown in figure 11.



(figure 11)

Firms will adopt a new technology when the new tax (set to the externality with the technology) plus the cost of the technology is less than the cost of the tax set to the old externality: $(r_1+\theta)<r$. The benefit of using the effluent fee versus the consumer tax in those circumstances is:

$$(r-(r_1+\theta))\frac{(d-b)}{(a-c)}-\frac{r^2}{2(a-c)}+\frac{(r_1+\theta)^2}{2(a-c)}\,.$$

The maximum benefit, when the technology is cost free and reduces the externality to zero is:

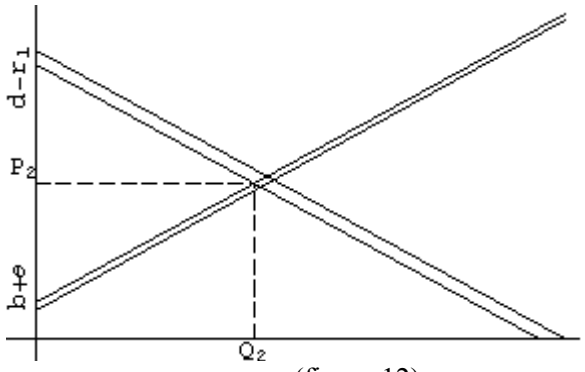
$$r\frac{(d-b)}{(a-c)}-\frac{r^2}{2(a-c)}\,.$$

This is the original externality, minus the extra surplus derived from the consumer tax.

The benefit of using the effluent fee when there is technology available is that it acts as a consumer tax by lowering consumption to the efficient level, while at the same time reducing the rate of the externality. This dual effect accounts for why the effluent fee is, all other things equal, superior to a consumer tax. *A fortiori*, the effluent fee outperforms process based preference directed regulation.

The Third Case

The third case is a mixture of the two, and shows that even a process-based preference-directed regulation will maximize welfare less than an efficient effluent fee. Figure 12 shows the effects of the process-based preference directed regulation. Here, consumer demand the produce with the lower externality rate, compelling producers to use the new technology. Consumer demand is then reduced by the rate of the remaining externality.



(figure 12)

The quantity produced is the same, but as in the case of the consumer tax example above, there are not tax receipts to off-set the loss of consumer and producer surplus.

These short illustrations show that preference-directed regulations fare relatively poorly against traditional regulation, and even worse against market-incentive regimes, in terms of consumer and producer surplus effects. These surplus effects are a regulatory cost associated with preference-directed regulation, and must be measured against its benefits when designing a regime. It should be repeated that all of these examples are simple cases, which do not account for general equilibrium effects associated with these taxes, technological changes, and shifts in preferences.

I do not examine hybrid systems, where both preference-directed regulations and other tools are used, but generally speaking, these will be preferred, for intuitive reasons. Attaining environmental goals through preference-directed regulation can be expected to be very expensive;

even if the advertising campaigns, norm-reinforcing rules, and labeling requirements were costless, which they are not, the surplus effects—i.e. reduction in the demand curve and therefore consumer and producer welfare—would have to be large to achieve significant environmental goals. Furthermore, the process directed measures needed to spur technological development would require significant centralized resources, and would also tend to reduce surplus in the interim. Preference-directed regulation, then, is actually a quite costly tool to achieve environmental outcomes.

However, when coupled with a lower cost regulatory tool—like an effluent fee—preference-directed regulation has an important place. By helping to reduce ossification, if not achieve environmental goals, a preference-directed regulation can free up legislatures and agencies to learn from their mistakes, process new information, and revise the regime to reflect new circumstances. This will increase the long-term efficacy and efficiency of the regime. In many cases, the long-term benefit of reducing ossification will be worth short-term costs associated with preference-directed regulation.

3. Overcoming Ossification

One of the problems associated with market-oriented regulation, as a solution for ossification, is that fact that in order to get market-oriented regulation, ossification would have to largely have been overcome. It is possible that the same holds for preference-directed regulation. If the regulatory and legislative system is sufficiently ossified that new regulation is impossible, then that condition would seem to effect preference-directed regulations as much as any other regulatory approach.

However, there are several reasons why preference-directed regulation should be easier to achieve that a general reorganization of our regulatory apparatus toward market-based approaches. First, preference-directed regulations can be done piecemeal and one-off; they need not be part of a general reorganization. Market-oriented regulation involves a ground-up transformation of how regulation is conducted at the federal level. While new programs can be structured around economic incentives, a very large number of regulatory regimes are structured on a command-and-control basis. A large push would be needed to re-tool these programs around a market-oriented approach.

Second, there is likely to be less organized resistance to preference directed regulation, especially when they do not require compliance on the part of any regulated industry. Preference-directed regulations are somewhat non-controversial, they do not involve a large outlay of funds by regulated industry, and they likely show their effects slowly over longer periods of time. They do not involve economic shocks. For these reasons, there is likely to be less organized resistance to many preference-directed regulations.

Third, agencies acting independently, outside the confines of informal rule-making, can generate preference-directed regulation, including information campaigns. Avoiding the lengthy and costly rule-

making process is a significant advantage for preference-directed regulation.

Finally, and perhaps most importantly, there are potential gains for political entrepreneurs to engage in preference directed-regulations. By helping to build the political coalitions necessary to pass election-probability-increasing legislation, preference-directed regulation are a key tool for political entrepreneurs. For these reasons, smart political actors should seek out and forward preference-directed regulations.

4. Normative Implications

Government efforts to change people's preferences raises important moral issues. While morality should provide important constraints on the kind of preference shaping activities that that government can engage in, there are morally permissible steps that government can take to alter preferences.

Certain kinds of governmental interference with preferences are clearly unacceptable. Strong-arm tactics, including threats and intimidation, interfere with personal liberty and cannot be justified by a desire to "re-educate" the public. Regimes that engage in these kinds of tactics are legitimately subject to criticisms for being totalitarian and illiberal.

Even more subtle forms of manipulation can also run afoul of moral considerations. Subliminal messages, systemic rewards to particular belief structures, brow-beating propaganda, and misinformation campaigns, are all the kinds of things that we do not expect from liberal democracies. In addition, limits on the speech of dissenters are clearly impermissible.

However, equally clearly, not all kinds of preference shaping by government are impermissible. Few would complain that efforts on the part of the government to encourage seat-belt wearing by advertising its merits, or would argue that efforts to reduce racial bias through anti-discrimination statements from elected officials or awards and honors given to champions of civil rights, are impermissible. Further, some influencing of preferences is unavoidable in even the most minimalist state—for example choosing penalties for breech of contract can influence preferences about fairness in business transactions.[155] It is nonsensical to argue that the state should have no influence on preferences whatsoever, because it is impossible so long as there is a state. Further, education and other core aspects of the modern state are unavoidably preference-shaping; paying close attention to the preference effects of government policy is basic to making rational choices about these policies.

The Treasury of the United Kingdom recently visited the moral considerations of preference-shaping in its *Economics of Climate Change: The Stern Review*.[156] The review argues that some degree of

[155] *See generally*, Oren Bar-Gill & Chaim Fershtman, *Law and Preferences*, 20 J. L. ECON. & ORG. 331 (2004) (discussing a market game, which adjusts rules to individuals' preferences such as fairness concerns, to test reactions to different legal rules).

[156] NICHOLAS STERN, CABINET OFFICE, HER MAJESTY'S TREASURY, THE ECONOMICS OF CLIMATE CHANGE: THE STERN REVIEW (2006).

preference-shaping will be necessary to counteract climate change, especially in the areas of housing, transportation, and food consumption decisions.[157] The review also recognizes that, because large scale and long term action at the international level is needed to counter climate change, political preferences must also be shaped to facilitate cooperation. The review argues that while "[c]rude attempts by government to 'tell people what's best for them' tend to fail, and in any case raise ethical problems"[158] certain kinds of efforts are permissible, and will be more effective. The review embraces, what it refers to as, John Stuart Mill's views on "government by discussion."[159]

The *Stern Review* argues that "action to promote understanding of climate change [is] appropriate,"[160] and I believe many would agree. Education campaigns, leading by example, information labels, and the strengthening of generally agreed to moral norms should all, at least, be permissible. Finally, policy-makers should simply be aware of the preference-shaping impacts of their actions; "preference-impact analyses" of governmental action would be perfectly appropriate. While there are important moral limitations on the kinds of preference-shaping activities that can be engaged in by a liberal democratic society, there are plenty of useful mechanisms that are not off-limits.

In addition, there is an irreducibly normative component to many preference-shaping actions, such that we cannot escape making substantive decisions about the kinds of preferences that government should promote. In the context of preference-directed regulation with political consequences, the stakes are particularly high. For example, advertising in the "war on drugs" has probably had political consequences in addition to consumer consequences. Given the controversial results of this "war," the role that preference-directed regulation has played in generating and maintaining its political support could be viewed as morally troubling. The same might be said for preference-directed regulation associated with the "war on terror"—including the color-coded alert scale. While it is nothing new for policy-makers to have to engage in normative reasoning as a prerequisite of discharging their duties, preference-directed regulations, because they have political consequences, make it doubly important that they do so in the knowledge that their decisions will have very real consequences.

CONCLUSION

In this Article, I have argued that preference-directed regulation can help reduce regulatory ossification in the long-term by destabilizing the political equilibriums that form around the status quo. The benefits of reducing ossification are manifest, and include increasing the efficiency and efficacy of the federal regulatory system and delivering

[157] *The Stern Review* states, "Dangerous clime change cannot be avoided solely through high level international agreements; it will take behavioural change by individuals and companies, particularly in relation to their housing, transport and food consumption decisions." *Id*. at 395.
[158] *Id.* at 396.
[159] *Id*.
[160] *Id*.

greater benefits at reduced costs. If we are going to, as a society, continue and expand our social commitment to protecting the environment, reducing ossification is of the utmost importance.

To conclude, I note that Article suggests an important research agenda. The connection between preference-directed regulation and ossification is empirical, and should be subject to empirical verification. Given the large number of regulatory regimes, some of which, I point out above, already have some preference-directed provisions, there is ample data from which to build an empirical analysis. While there are some hurtles—such as coding for ossification, identifying successful preference-directed provisions, and measuring the preference impacts of regulatory provisions—these do not seem insurmountable. I offer a hypothesis for how and why preference-directed regulation may influence the long-term success of regulatory regimes; testing that hypothesis is an important next step.