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Economics-Based Environmentalism in the Fourth Generation of Environmental Law.

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ECONOMICS-BASED ENVIRONMENTALISM IN THE FOURTH GENERATION OF ENVIRONMENTAL LAW

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I. INTRODUCTION

Developing sound and effective environmental protection inherently requires an infusion of economic thought into the development and analysis of environmental law. Principles of economic efficiency and growth are not mutually exclusive from environmental health. Indeed, economics-based environmentalism has the capacity to synergize nature's adaptability, resilience, and spontaneity with those same qualities in markets, private ordering, and individual decision-making.

Because of these characteristics, economic approaches have substantial comparative advantages over the static and constrained state-based interventionist alternatives, and as such we should develop a presumption in favor of the former and against the latter when developing the next generation of environmental rules. This brief symposium Essay defends these basic propositions. By its end, this Essay aims to show, at the very least, that those who do not work to understand and consider the role of economics in the development of environmental law and policy do so at the earth's peril, let alone to the detriment of their own arguments.

This symposium Essay is designed to look briefly at what economics, including its companion legal discipline "law and economics," can teach us about the subject "Environmental Law 4.0: Adaptive and Resilient"[1] – *i.e.* what role can economics play in evaluating the appropriate responsive regulatory design to the challenges we face as we approach a so-called "fourth generation" of environmental law. One aim of this Essay is to use the tools of economic analysis and theory to explain some of the basic challenges to the implementation of these adaptive approaches. A separate aim is to explain some of the possibilities for enhanced environmental protection and the achievement of environmental goals through embracing economics and the implementation of economically friendly approaches that incidentally provide for more effective means of protection.

[1] This Essay is adapted from remarks made at the *Journal of Environmental & Sustainability Law*'s 2014 Symposium, "Environmental Law 4.0: Adaptive and Resilient," at the University of Missouri in Columbia, Missouri, on February 14, 2014.

To a substantial extent, this Essay is intended to only introduce economic themes related to environmental law and sketch what role economic analysis might play in the emerging generation of environmental law. It will not be a full blown exposition of the merits of economics-based environmental approaches, and those looking for a more detailed analysis are encouraged to study the literature further.

This Essay will take two approaches. One is grounded in the normative side of law and economics, where there is a study of the preference for the injection of economic principles, including efficiency, into the proper or best formulation of rules. The second approach in this Essay will be generated from the modes of positive analysis in law and economics, where the purpose of the analysis is principally to describe – using economic concepts and principles – the behavior of lawmakers, institutions, and interest groups; the predicted content of rules; and the operation of law and legal systems.

Part II will briefly define and summarize the four generations of environmental law discussed in this Essay. Part III will focus on the characteristics and merits of creating rules and organizing regulatory structures based on economic principles, ideas, and approaches. Economics should play a role in generating rules and should also be a lens by which we can criticize the rules generated and the processes behind them. I hope that we can relieve ourselves of the constraints imposed by those visions of environmental gains that can see only governmental and coercive means of achieving such gains. Part IV will sketch the contours of a proposal to ensure greater economic consideration in the formulation of environmental law and policy. If we were to develop a requirement that governmental agencies must prove market failure before proceeding to more prescriptive or interventionist alternatives, economics-based environmental lawmaking might get a chance to prove itself. Finally, Part V shifts gears into the practical realities of any reform efforts, economics-based or otherwise. Applying insights from public choice and bureaucracy theories in particular, it will explain some of the inherent hurdles to reform evident in our political and regulatory systems. So, Parts III and IV focus on the contention that economics should be a substantial part of the calculus wherever decisions are being made, and Part V explains that the law and economics' lessons regarding the realities of law

creation and the operation of political institutions make any decisions made in such institutions fraught with danger and identifies institutional impediments to finding ideal environmental solutions.

As I move forward, I will not necessarily advocate in this present Essay that there be a complete reversion away from the state as a leader in developing policies or priorities for environmental protection. I am, however, *not* conceding that a *strong* state role in managing toward achieving these priorities will be necessary. For now, this Essay is just about small steps, moving economics to a more recognized position in the polycentric analysis of environmental law.

There is a need for economists and environmentalists to discourse on the mutually shared concerns for environmental protection and the next generational approach to achieve it. The importance of cross-disciplinary exchange cannot be overstated. Too often, economics and environmental law exist in their own separate silos, barely able to see the value of each other's intellectual grains or able to evaluate when their grains should mix. Dr. Matt Ridley, author of *The Rational Optimist*,[2] made the point well when he recently stated that: "Economics could learn something from Charles Darwin and ecology could evolve from revisiting Adam Smith."[3] Ridley continued that "Charles Darwin read Smith, so there is an ancestral connection between the two fields: they both stress the emergence of phenomena rather than their direction from above. And, there is much activity in evolutionary biology and ecology that is parallel to what is occurring in economics and vice versa."[4] Indeed, he concludes that "Nobel laureate F. A. Hayek knew this and went across to evolution to pinch ideas, so there is fruitful dialogue between ecology and economics and plenty of room for more."[5] These are very important reminders. We must frequently fertilize that fruitful dialogue. We

[2] MATT RIDLEY, THE RATIONAL OPTIMIST: HOW PROSPERITY EVOLVES (2010).

[3] Matt Ridley, *Ecology or Economics: Which has done more for our environmental future?*, PERC REP., Winter/Spr. 2013, at 27, *available at* http://perc.org/sites/default/files/perc_reports/WEB-PR-Win-Spr2013.pdf.

[4] *Id.*

[5] *Id.*

must challenge the idea that competition is innate between ecological and economic values.[6]

II. FOUR GENERATIONS OF ENVIRONMENTAL LAW: AN OVERVIEW

This Essay is focused on the so-called "fourth" or current and emerging generation of environmental law. For purposes of this Essay, I have chosen one vision of the fourth generation of environmental law – largely represented by the work of Professor Craig Anthony (Tony) Arnold and Professor Lance Gunderson[7] – against which to explore the comparative benefits and prudence of injecting economic analysis into the evaluation of best mechanisms and practices to accomplish shared environmental goals. To understand the fourth generation, I will very briefly identify the first three generations. Again, for ease of discussion, I will largely focus on the qualities given to each generation as identified by Arnold and Gunderson.

A lot has happened in the last 45 years when it comes to the field of environmental law. As Richard Epstein once noted, "[e]nvironmental protection was not a distinct field of law before 1970," but "[s]ince that time it has become a growth industry."[8] Indeed, a review of the usage of "environmental law" as a term – or even "environmentalism" and

[6] TERRY L. ANDERSON & DONALD R. LEAL, FREE MARKET ENVIRONMENTALISM 6 (rev'd ed. 2001) ("elements of free market environmentalism – self-interest, information, and process – also characterize the interaction of organisms in nature.").

[7] For the articles upon which I have based this summary and formulated my responsive comments, see Craig Anthony (Tony) Arnold & Lance H. Gunderson, *Adaptive Law & Resilience*, 43 ENVTL. L. REP. NEWS & ANALYSIS 10426 (2013); Craig Anthony (Tony) Arnold, *Fourth Generation Environmental Law: Integrationist and Multimodal*, 35 WM. & MARY ENVTL. L. & POL'Y REV. 771 (2011). The choice to focus on this work is, in part, because the insights within it are at the forefront of the current environmental law literature. The concentration on this work to the exclusion of some others, however, is driven by the fact that Professor Arnold was the keynote speaker at the symposium for which this Essay was generated, making his work the logical reference point for an essay of this length. *See* Craig Anthony (Tony) Arnold, *Environmental Law, Episode IV: A New Hope?: Can Environmental Law Adapt for Resilient Communities and Ecosystems?*, 21 J. ENVTL. & SUSTAINABILITY L. 1 (2014).

[8] RICHARD A. EPSTEIN, SIMPLE RULES FOR A COMPLEX WORLD 275 (1995).

"environmentalist" for that matter – reveals the currency of these terms across this short period of time.

To appreciate the evolution of the fields discussed in this Essay, I will turn briefly to the results from Google's N-gram function[9] – which has been described as "the first tool of its kind, capable of precisely and rapidly quantifying cultural trends based on massive quantities of data."[10] This tool enables users "to examine the frequency of words . . . or phrases . . . in books over time."[11] When conducting a search, the database accesses "over 5.2 million books: ~4% of all books ever published."[12] The results provide an interesting picture, at least for discussion purposes, on the usage of particular words and phrases (although it admittedly has some inherent limitations and presents only incomplete raw data).[13]

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[9] *Ngram Viewer*, GOOGLE BOOKS, http://books.google.com/ngrams (last visited June 9, 2014) [hereinafter *Google Labs Ngram Viewer*], (based on the model and database developed by Jean-Baptiste Michel, Yuan Kui Shen, Aviva Presser Aiden, Adrian Veres, Matthew K. Gray, William Brockman, The Google Books Team, Joseph P. Pickett, Dale Hoiberg, Dan Clancy, Peter Norvig, Jon Orwant, Steven Pinker, Martin A. Nowak, and Erez Lieberman Aiden, *Quantitative Analysis of Culture Using Millions of Digitized Books*, SCIENCE, Jan. 14, 2011, at 176), *available at* http://www.sciencemag.org/content/early/2010/12/15/science.1199644 (12/16/2010)).

[10] *Google Labs Ngram Viewer*, CULTUROMICS, http://www.culturomics.org/Resources/A-users-guide-to-culturomics (last visited Nov. 3, 2014). *See also* Michel et al., *supra* note 9, at 176 (describing the database and related data collection tool).

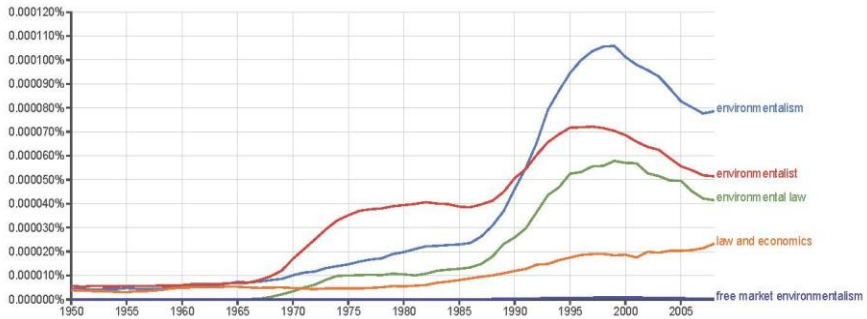
[11] *Google Labs Ngram Viewer*, *supra* note 9.

[12] *Id*.

[13] John Bohannon, *Google Opens Books to New Cultural Studies*, SCIENCE, Dec. 17, 2010, at 1600 (describing the Ngram project and its initial critics). Peer review is as of yet limited on this relatively new tool, yet even the creators warn, "[b]asically, if you're going to use this corpus for scientific purposes, you'll need to do careful controls to make sure it can support your application. Like with any other piece of evidence about the human past, the challenge with culturomic trajectories lie in their interpretation." Culturomics Website (operated by some of the creators), *available at* http://www.culturomics.org/Resources/A-users-guide-to-culturomics. Suggestions for controls are available in the main paper supporting the application. *See also* Michel et al., *supra* note 9, at 181. "Culturomic results are a new type of evidence in the humanities. As with fossils of ancient creatures, the challenge of culturomics lies in the interpretation of this evidence." *Id.* (giving a few example searches with interpretations).

Below, I have reprinted the N-gram results for several terms relevant to our discussion. The graph represents the usage of the terms or phrases environmentalism, environmentalist, environmental law, law and economics, and free market environmentalism over the 1950 to 2008 (last available date in the program) time period:

TABLE 1:
GOOGLE LABS BOOKS N-GRAM VIEWER
GRAPH "*ENVIRONMENTALISM*", "*ENVIRONMENTALIST*", "*ENVIRONMENTAL LAW*", "*LAW AND ECONOMICS*", AND "*FREE MARKET ENVIRONMENTALISM*" FROM 1950 TO 2008
FROM THE CORPUS OF ENGLISH WITH A SMOOTHING OF 3



Source: GOOGLE BOOKS N-GRAM VIEWER, http://books.google.com/ngrams (last visited June 9, 2014) (based on the model and database developed by Jean-Baptiste Michel*, Yuan Kui Shen, Aviva Presser Aiden, Adrian Veres, Matthew K. Gray, William Brockman, The Google Books Team, Joseph P. Pickett, Dale Hoiberg, Dan Clancy, Peter Norvig, Jon Orwant, Steven Pinker, Martin A. Nowak, and Erez Lieberman Aiden*. *Quantitative Analysis of Culture Using Millions of Digitized Books*. SCIENCE, Jan. 14, 2011, at 176**).**

Each line represents the unigram for these terms and phrases. The y-axis shows what percentage of all the unigrams contained in Google's sample

of books written in English include the phrase or term tested. "Usage frequency is computed by dividing the number of instances of the N-gram in a given year by the total number of words in the corpus in that year."[14] Smoothing allows for a consideration of the trends as a moving average and can be adjusted for any search.[15]

All of these terms and phrases have only appeared in a relatively small percentage of the overall books in Google's digitized collection, but Table 1 certainly shows both a notable frequency and interesting trends in usage. Obviously, this is just a glimpse at some raw data on word usage, but it helps tell part of the story regarding the relative role of each of these terms, phrases, and fields in our legal and policy discussion across the past several decades. The general rise across the first several graphed decades is consistent with the generational story discussed below for environmental law, environmentalism, and environmentalists. The general rise during those early decades also tracks the origin and rise of law and economics discussion in the literature.[16] Free market environmentalism has never been en vogue,[17] shown in Table 1 where that phrase barely registers in the frequency results.

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[14] *See* Michel et al., *supra* note 9, at 181. The Google Ngram data is "normalize[d] by the number of books published in each year." *What's All This Do?*, GOOGLE BOOKS, http://books.google.com/ngrams/info (last visited June 9, 2014).

[15] Google Books describes "smoothing" as follows:

> Often trends become more apparent when data is viewed as a moving average. A smoothing of 1 means that the data shown for 1950 will be an average of the raw count for 1950 plus 1 value on either wide: ("count for 1949" + "count for 1950" + "count for 1951"), divided by 3. So a smoothing of 10 means that 21 values will be averaged: 10 on either side, plus the target value in the center of them. At the left and right edges of the graph, fewer values are averaged. With a smoothing of 3, the leftmost value (pretend it's the year 1950) will be calculated as ("count for 1950" + "count for 1951" + "count for 1952" + "count for 1953"), divided by 4.

What's All This Do?, *supra* note 14. In addition to providing the graphed results, searches for terms and phrases also produce hyperlinks appearing below the graph, allowing one to browse through the books available that contributed to the data set. *Id.* ("Below the graph, we show 'interesting' year ranges for your query terms. Clicking on those will submit your query directly to Google Books.").

[16] Robert C. Ellickson, *Bringing Culture and Human Frailty to Rational Actors: A Critique of Classical Law and Economics*, 65 CHI.-KENT L. REV. 23, 26-30 (1989)

The slight drop in usage in the 2000's for all of the terms graphed above suggests that the 1990s may have represented a high point in the prevalence of environmental-talk in the public discourse. I will leave for another day whether there are any meaningful observations to draw from that downward slope.

But, what we do know is that across the past 40 or 50 years, environmental law has generally grown in scope and prevalence within legal debates. Across that time, it has also seen some rather significant shifts in its focus and has been characterized by different types of regulatory approach.[18] These changes have inspired some to talk about environmental law in terms of "generations," collecting and categorizing generalizable traits for specific periods of regulatory and philosophical structuring for the legal approach to environmental concerns.

None of these "generations" necessarily replaced what had come before; for the most part, each generation has built something new atop the old – although sometimes adjusting priorities and approaches in ways that displaced, discarded, or at least learned from the successes and failures of its predecessor.[19] The first generation of environmental law – emerging in the late 1960s and 1970s – largely includes features that focused on "command-and-control regulation, technology-based standards, and rule-of law litigation," along with other pollution prevention techniques[20] – what I will call primarily "hard-" or "state-based, interventionist" methods. The second generation attempted to move away from rigidity and high cost regulation to

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(examining the historical growth of law and economics movement and its increasing influence especially from the 1970s through the present in legal academic literature). *See also* Ejan MacKaay, *The History of Law and Economics*, *in* ENCYCLOPEDIA OF LAW AND ECONOMICS (Boudewijn Bouckaert & Gerrit De Geest eds., 1996).

[17] ANDERSON & LEAL, *supra* note 6, at 1 (lamenting the lack of support even from "conservatives" for the ideas of free market environmentalism).

[18] *See generally* Denis Binder, *Looking Back to the Future: A Curmudgeon's Guide to the Future of Environmental Law*, 46 AKRON L. REV. 993 (2013) (surveying and analyzing the history of environmental law, particularly the last 40 years).

[19] Arnold, *supra* note 7, at 773, 792.

[20] *Id.* at 790.

a greater sensitivity to cost and economic concern[21] and included some push for what I will call "soft intervention." The third generation focused on new processes and expanded the scope of environmental concerns and our understanding of environmental sensitivities[22] – what I will call a broadened scope of permissible intervention and a wider view of justifications for environmental law.

The fourth generation is the "what's next generation" for environmental law. The remainder of this part will focus on some of Arnold and Gunderson's analysis and predictions regarding the substantive contours of the emerging environmental legal landscape. What follows will be only a very brief summary of some of the themes that Arnold and Gunderson highlight as likely characteristics of the emerging generation of environmental law, so I encourage readers to turn to the cited works for greater detail and nuance, as well as to appreciate the full texture to each of these observations.

Arnold and Gunderson's work explaining these attributes is extensive and this brief essay can hardly claim to provide an adequate summary for completely understanding their work. What follows will, however, be a sufficient summary for this Essay's purposes. Some of the analysis later in this Essay, regarding the utility of greater infusion of economic principles into the development of environmental law, will refer back to this vision of the fourth generation to explain how economic principles can fit within it.

Among the themes examined in the fourth generation, Arnold and Gunderson focus on the resilience of environmental systems, recognizing that there is an "evolution of interconnected social, legal, and ecological systems that are complex, dynamic, and adaptive."[23] Within this evolution, adaptability is in demand and must emerge as a key feature of fourth generation environmental law.[24] Much of the current research on the future of environmental law is focused not on whether the law will adapt, taking

[21] *Id.* at 791.
[22] *Id.* at 791-92.
[23] *Id.* at 773.
[24] *Id.* ("environmental law is undergoing pressure to adapt").

that as a given, but instead is focused on *how* the law will adapt.[25] To be truly responsive to the demand for new adaptive approaches, the emerging legal systems will need flexibility.[26] Among the likely characteristics of the fourth generation of environmental law will be a rejection of fragmentation and unimodal (or one-size-fits-all) approaches[27] in favor of "integrationist multimodality."[28] This, Arnold describes as:

> The use of multiple modes or methods in environmental protection can occur in at least three different ways. Multimodality may involve the use of multiple categories of policy instruments, such as command-and-control regulation, *tort liability*, public education, and *market incentives*. Multimodality can also describe the use of more than one specific tool or mechanism for environmental protection. . . . Finally, multimodality might refer to the use of multiple institutions, organizations, groups, or authoritative entities to engage in environmental protection."[29]

The point is to integrate regulatory approaches using the best loosely-connected tools in the best combination at the right times so as to provide a way that "offer[s] coordination and synergy."[30] New approaches in this vision of the emerging system will not be "merely additive or competitive," but instead "will be a facilitative and transformative force."[31] This loose integration of multi-modal approaches allows the next generation of adaptive environmental law to be polycentric in nature, drawing on a variety of

[25] *Id.* at 792-93.

[26] Arnold & Gunderson, *supra* note 7, at 10427 ("Rapid and often nonlinear transformations in ecosystems and social systems, though, require social institutions – including legal institutions – that are flexible and adaptive to these types of change").

[27] *Id.* at 10434 (describing integrationist multimodality and the "toolbox approach, facilitating multiple actors' selection from among a variety of instruments, methods, and tools to respond to complex problems" with "[l]oose connections or networks").

[28] *Id.*; *see also* Arnold, *supra* note 7, at 792-97.

[29] Arnold, *supra* note 7, at 794 (emphasis added).

[30] Arnold & Gunderson, *supra* note 7, at 10434.

[31] Arnold, *supra* note 7, at 775.

different tools in the solutions' set to work together to find optimal outcomes.[32]

Note that Arnold and Gunderson list things like tort liability (a private ordering method) and market incentives as part of the toolbox. Nonetheless, they retain at the outset an equally-weighted place for command-and-control regulation as part of what those authors are defining as a polycentric mix. As will be discussed in the next Parts, we should favor a fourth generation that emerges along these lines but with greater emphasis on the economic, private ordering, and market approaches. I contend that market and other economics-based approaches should receive priority status, where those tools are utilized first and only if those methods objectively fail would the state move in to use more interventionist parts of the toolbox.

There may be a greater opportunity for economics to play a role in the fourth generation of environmental law especially if it has as one of its primary characteristics the embracing of adaptivity in rule development. Perhaps economics will be more welcome in the conversation if that is the case and if policymakers can begin to see the synergy between economics and optimal adaptation techniques. As defined, the fourth generation is unlike the first generation, which rested on ideas that economics was the disease. Also, while the second generation is sometimes characterized as the point where economics was indeed embraced in environmental policy, many of these economics-based reforms were surface level and designed to inform rather than actually mandate or induce economically friendly outcomes or alternatives.

The mirage of these second generation reforms is also perhaps their most dangerous characteristic. The existence of cost-benefit analyses, small business analysis, and other such procedural "check the box" requirements create an inaccurate perception that economics is already being effectively taken into account. That belief creates a false complacency, thereby pushing out support for more robust economic environmental approaches. Few existing laws require that economic justifications be established prior to

[32] Arnold & Gunderson, *supra* note 7, at 10432 ("Adaptive law is polycentric, utilizing multimodal and multiscalar responses to problems that are loosely integrated.").

authorizing state interventionist action. Rather than rest on these rather toothless means of occasionally taking economics into account, perhaps we should employ or, indeed, require that more economics-based regulatory models be implemented.[33] What is needed is a true infusion of economic principles as a primary driving force in the creation of the next generation of environmental rules.

There is a need to aim for adaptability in environmental law. Indeed, it should receive substantial emphasis. My concern, as will be developed in more detail in the next Part, is with the methods employed to achieve that adaptability. Environmentalism can be set in its ways and invested in certain approaches.[34] In some ways, I fear that environmental advocates may be afraid of getting their narrative and philosophy a little messy by accepting other-modal alternatives to save the earth. Perhaps advocates of economic approaches are also a little afraid of getting their economic cloaks soiled and need to overcome that fear by listening to the claims of traditional environmentalism too. These are critiques that should be taken seriously if an actual, constructive dialogue is to occur between the fields.

This fourth generation, as it has been framed here, seems to, perhaps, invite more discussion of economic principles into environmental policy than the previous three generations. After all, a multi-modal, polycentric approach looks to a diverse set of inputs, including those generated out of economic ideas. Part of my exercise in the next Parts of this Essay will be to justify economics having a seat at the table of any fourth generation discussions and designs of policy. I will, at times, also push the boundaries of that invitation to that discursive dinner when I make the claim that, once invited, economics should perhaps become the host, the chef, the menu-setter, and the server of the fourth generation policy meal.

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[33] *See infra* Part IV.

[34] *See, e.g.*, M. Neil Browne, Kathleen Maloy, & Jessica Pici, *The Struggle for the Self in Environmental Law: The Conversation Between Economists and Environmentalists*, 18 UCLA J. ENVTL. L. & POL'Y 335, 355-56 (2000/2001) ("Resistance to economic thinking is primarily responsible for the fascination among environmentalists with the idea of sustainable development.").

There is no doubt that we have a better environment today than we had before environmental concerns became a focal point for governmental policy. Over time, we have made improvements. In part, state intervention has directed our attention and concerns toward the environment in important ways. However, that partial credit for spurring environmental concern does not provide a basis for sticking with the state as the optimal means to achieve such ends. Claimed interventionist success stories alone should not be a reason to rely on top-down governmental approaches in setting future policy. There certainly is not proof that a heavy governmental regulatory hand is the best option for the alleviation and prevention of environmental harm – or, at the very least, there is not proof that it is the best option in all cases. In fact, as we approach a new generation of environmental law and policy, one of the key questions that policy makers should ask is whether environmental regulation as presently constituted, with its locus in *governmental* regulation, holds us back from optimal environmental protection.

Is there room for greater environmental protection? Absolutely. Can we do more to protect the environment? Of course. The debate is over the comparative advantage of the means for such improvement.

III. ECONOMICS-BASED ENVIRONMENTALISM

One of the goals of this Essay is to set forth the proposition that environmental protection and economic concerns are not mutually exclusive. Economics-based environmentalism involves improving the environment but from a slightly different angle than the traditional approach that often first comes to mind where the necessity of governmental intervention is often presumed. Much of what this Essay discusses applies to the fourth generation of environmental law but is not unique to it. Having been left out of much of the discussion (or at least received less attention) in past generational developments, my hope is that these economic principles will resonate more in this emerging generation.

There are a variety of mechanisms that could come into play in the economics-based approach to environmental law. I will only briefly suggest a few of these to give a sense of the environmental possibilities from embracing economics in the fourth generation of environmental law.

On the normative side of economic analysis of environmental law and policy, economics-based environmentalism is concerned with how economics can actually influence the creation of legal rules, how we can achieve the optimal legal rules, or how we might otherwise infuse economic principles into the decision-making that chooses the rules. That will be the focus of this Part. The positive-side, institutional analysis in this Essay focuses on what economics can teach us about the possibilities of actually achieving environmental reform – regardless of whether it be of the type that I propose from a normative economics-based preference or whether it is driven by any of a variety of alternative perspectives. That will be the focus of final Part of this Essay.[35] So, back to the normative-side analysis for now, where we will focus largely on how and why economics should be infused into the environmental discussion.

Economics-based environmentalists contend that the advantages of using economic principles come from the benefits available in private ordering, markets, property rights, liability regimes, and incentive structures that will better protect the environment than alternative approaches based in state-centered interventionist, prescriptive rules that lack the adaptability and tailored effect of economics-based rules. Economics-based environmentalists explain that environmental protection can be accomplished if the government sets rules that allow private markets to price resources, establishes enforceable rights in those resources, and allows individuals to freely trade such rights.[36]

The economic approach also focuses on creating valuation of economic harms to aid compensation mechanisms that allow for the assessment of liabilities against wrongdoers and work as deterrents to

[35] *See infra* Part V.

[36] *See, e.g.*, ANDERSON & LEAL, *supra* note 6, at 5 (discussing the "integral role" that government has to play in market-based environmentalism in, for example, setting up and enforcing systems of property rights). *See also* Fred L. Smith, Jr. & Kent Jeffreys, *A Free-Market Environmental Vision*, *in* MARKET LIBERALISM: A PARADIGM FOR THE 21ST CENTURY 397 (David Boaz & Edward H. Crane ed. 1993) (describing the government's role in establishing and enforcing property rights and their relation to managing environmental resources).

environmental harm.[37] Polluters should be made to pay, for example, through tort liabilities or perhaps through pollution tax systems.[38]

To the extent that the state is unwilling to surrender substantial control to private actors and the market, economics-based environmentalism calls for the injection of these economic standards into the development of state-based regulatory law, hoping that those state laws will try to harness the economic ideas. If the governmental actors take these ideas into account even when establishing interventionist or prescriptive rules, it might allow for their (imperfect, but relatively superior to the status quo) replication by, or mimicking in, the state-based regulatory form (to the extent such replication or mimicking is possible).

Some Thoughts on Fit for Economics-Based Environmentalism Within the Fourth Generation Environmental Law Paradigm: Adaptive Approaches and Spontaneous Order

As a general matter, if you want an adaptive and flexible approach to environmental law, economic tools best provide those attributes. Arnold and Gunderson explain the necessity of developing an adaptive approach to environmental law in the fourth generation.[39] Current environmental concerns are far too complex to understand and address in some type of unimodal approach. The tunnel-vision, silo-like approach that has sometimes characterized past environmental law paradigms is insufficient to meet adaptive demands. This call for adaptability should place economics at the forefront of the discussion.

Arnold & Gunderson explain that some "problems may require quick and agile responses."[40] Market-oriented economic approaches best fit that

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[37] *See* Jonathan H. Adler, *Conservative Principles for Environmental Reform*, 23 DUKE ENVTL. L. & POL'Y F. 253, 275-78 (2013) (discussing polluter pay principles).

[38] RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW §13.5 at 396-97 (7th ed. 2007) (discussing polluter pays and pollution tax principles).

[39] Arnold & Gunderson, *supra* note 7, at 10437 (discussing the recognition of "the need for adaptive management, but also the need for express legal authority for administrative agencies and natural resource managers to use adaptive management methods").

[40] *Id.* at 10434.

need, rather than the clunky machinery of bureaucracies and legislatures. The bungling in government programs is a matter of bureaucratic apparatus but also psychology and ideology. Political and regulatory systems are by their very nature resistant to adaptation and therefore inferior if your goal is to embrace enhanced adaptability.[41]

Environmentalists too, along with environmental regulators, will often be resistant to a change of any kind because it is asking them to have faith and let go of some of the constant control that gives them a sense of security. For the very same reasons, those holding on to a belief in the superiority of the traditional environmental law paradigm will be more likely to resist models of environmental law that allow adaptation on the ground and in the moment.

Getting all stakeholders to agree to move toward any reform effort has intrinsic difficulties. The status quo has biases in favor of unimodal regulation.[42] We have people who are invested in the rules that they have helped design or have lobbied to create. We have regulators who have developed expertise in existing rules and wish to capitalize on that expertise rather than have it devalued by replacing the existing regime of rules (for which those regulators have no special experience or developed skills that they can offer toward it).

We can never count on the planners to replicate the flexibility of individualized private actors inside the private, self-ordering and self-adjusting systems of markets and other economics-based sets of rules. As Hayek has warned, "[t]he curious task of economics is to demonstrate to men how little they really know about what they imagine they can design."[43] Planners plan. Planners design. Planners think it is possible to plan and design. Planners become invested in their plans and designs and in their beliefs that they know what is best. These characteristics do not fit well with an adaptive, flexible, and agile environmental law that is capable of regular

[41] *See infra* Part V.

[42] Arnold, *supra* note 7, at 822-23.

[43] F.A. HAYEK, THE FATAL CONCEIT: THE ERRORS OF SOCIALISM 76 (W.W. Bartley, III ed. 1991).

adjustment. State-based action is generally "slow and unable to respond to changing circumstances."[44] But a well-structured market-based system learns as it goes. It adjusts automatically. And it rejects any need for some initial "design" beyond setting up the basic architectural structure of identifiable rights and neutral enforcement systems.

If you are on the ground in a management scheme designed to operate within and utilize economic forces, you can change things immediately. You do not need to go through bureaucratic machines to get authorization. The smooth and seamless adaptation that non-bureaucratic approaches can provide is, by definition, more capable of effecting adaptation than models that require state approval.

The speed and agility with which economic systems can adapt is best explained as based in the existence of spontaneous order within unconstrained markets. Spontaneous order – a cornerstone of economics-based and market-based approaches – provides the optimal adaptability.[45] The essence of spontaneous order is that where there is an absence of hard control, things work themselves out in an efficient manner so long as the right incentives exist. Inside such an "order-less order", there is an ability to react instantaneously and spontaneously to both expected and unexpected events. In the absence of planning, efficiencies emerge. Each market participant acting in her own self-interest ultimately serves the greater good.[46] In contrast, with the presence of planning and prescriptive rules,

[44] Smith & Jeffreys, *supra* note 36, at 395.

[45] F. A. HAYEK, LAW, LEGISLATION AND LIBERTY 50, 35-52 (1973) ("It is because it was not dependent on organization but grew up as a spontaneous order that the structure of modern society has attained that degree of complexity which it possesses and which far exceeds any that could have been achieved by deliberate organization.").

[46] As Adam Smith described the related "invisible hand" concept:

> Every individual is continually exerting himself to find out the most advantageous employment for whatever capital he can command. It is his own advantage, indeed, and not that of society, which he has in view. But the study of his own advantage naturally, or rather necessarily, leads him to prefer employment which is most advantageous to the society . . . . [H]e intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he

roadblocks to private experimentation regularly emerge while adjustment and adaptation to changing circumstances is impeded by rigid structures and commitments to a pre-set design and pre-determined order.

If you have an objective in mind, set a goal, and set market forces loose, individuals will find on their own what the most effective and efficient "order" is to achieve such goals or objectives spontaneously and without the need for direction ex ante.[47] This order is capable of adapting as it goes along and you get *natural* feedback loops[48] – through the price system and other measures – rather than requiring them to be produced through some regulatory structure or command.

Adaptive and integrationist approaches have their merits. But the aims of these approaches are best served by non-interventionist alternatives. Markets and economic approaches have a comparative advantage in adaptability. Markets are the most adaptive and flexible. Markets are capable of making quick adjustments. Markets foster tailored solutions.

If you can indeed find the market solutions, then they are likely to have these characteristics. I do not take on the ambitious task of defining all such market solutions in this Essay nor do I set forth a comprehensive plan for their implementation. I also do not pretend that there will be easy answers to the logistics of infusing such market approaches into a state-dominated regulatory field. This brief Essay has a modest scope and will only provide a few examples of the options. I invite the fourth generation architects, however, to take the characteristics and advantages of economics-based environmentalism into account and work hard to find solutions that

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> frequently promotes that of the society more effectually than when he really intends to promote it.

ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS, bk. IV, ch. 2, 397, 399 (D.D. Raphael ed., 1991) (1776). *See also* Jan Narveson, *The "Invisible Hand,"* 46 J. BUS. ETHICS 201 (2003).

[47] SMITH, *supra* note 46, at 399.

[48] Arnold and Gunderson stress the importance of feedback loops to a well-functioning adaptive system. Arnold & Gunderson, *supra* note 7, at 10437-440 ("Feedback loops are essential to aiding decision-makers in assessing whether any particular decision or action is adaptive or maladaptive: to monitor, assess, learn from, and adapt to the action's impacts.").

draw on these comparative advantages of economics, the market, and private ordering.

The topic of adaptive lawmaking and management is certainly one where there is an opportunity for a fruitful dialogue between the fields. Economics is about adaptation. It is about flexibility, independent decision making and responding to changes as they emerge. Because of these characteristics of economics, we should see great value in grounding many environmental decisions in an economics-oriented policy structure. There should be a "weighted" approach to environmental decision-making where economics has a primary place in the development of adaptive environmental rules.

The Danger of Crowding Out the Economic Approach and Its Adaptive Benefits When Implementing a Polycentric Structure

One concern about the adaptive approach and even the polycentric approach, as Arnold and Gunderson describe it, is the possibility that it will crowd out market solutions. If you start to believe that economics can play a significant role – perhaps even a primary role – in the formulation of environmental policy and law, then you should have concerns about a polycentric approach, which presupposes the existence of some governmental regulation.

The mere existence of some federal, some state, some local, and some other governmental approaches will minimize the number of available market options. The polycentric law as described in Arnold and Gunderson lacks safeguards against duplication and inefficient multijurisdictional and multifaceted approaches. Furthermore, resources could be diverted so that there is not enough focus or leeway given to market experimentation or, more likely, some policy approaches will become more command-and-control dominated eliminating some of the possible options to take market approaches which may in fact be made unlawful or otherwise legally unavailable by the governmental components of the mix. In a fully polycentric paradigm as described by Arnold and Gunderson, for example, markets and other economic options may be placed in an inferior position because they will be deprived of the open space they need to operate effectively. Flexibility and the freedom to experiment without legal

constraints will be impaired if we insist on obtaining a full polycentric "mix" of authorities and approaches.

Selected, Specific Themes and Features in Economics-Based Environmentalism

The remaining portions of this Part are devoted to talking a bit more specifically about a few particular themes, characteristics, and features of some of the economic approaches that can be implemented to achieve environmental gains. This is hardly an exhaustive treatment of the topic. Instead, a few economics-infused ideas related to environmental protection have been selected for discussion to give the reader a sense of the role for economic thought in the emerging generation of environmental law.

Externalities

I will start with some basics on the economic principles regarding the control of externalities and the importance of allocating property rights and liabilities for harms. Many issues in environmental law can be boiled down to the control of negative externalities.[49] Negative externalities occur when one uses her property and fails to carry the full burden of the costs of her action (yet usually has a monopoly on the benefits of her action).[50] The negative consequences of using one's property are not internalized. Externalities' control is essentially the implementation of the maxim underlying the right to exclude – *sic utere tuo ut alienum non laedas* – meaning that "each one must so use his own as not to injure his neighbor, . . . [which] is the rule by which every member or society must possess and enjoy

[49] HENRY N. BUTLER & CHRISTOPHER R. DRAHOZAL, ECONOMIC ANALYSIS FOR LAWYERS 25-26 (2d ed. 2006) (describing the efficiency costs of externalities).

[50] *See, e.g.*, Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 348 (1967) ("'Internalizing' such effects refers to a process, usually a change in property rights, that enables these effects to bear (in greater degree) on all interacting persons.").

his property."[51] Each of us, in using our own property, has a duty to internalize the costs of our own actions.[52]

Alternatively stated, we must respect others by not imposing negative externalities, while we can expect that others will be under a reciprocal obligation to treat us, and our property, the same.[53] The freedom from negative externalities and the enforcement of the right to exclude lie at the heart of property law,[54] and the economics of property law is often seeking means to incentivize the internalization of the costs of one's actions.[55]

Cutting and Cahoon provide a very useful example of the externality problem when discussing pollution. When pollution exists, there are persons who generate pollutants (generators) and persons who receive negative externalities from such generation (receptors).[56] In attempting to control the negative trans-boundary effects,[57] the question becomes whether the law should hold generators liable to compensate receptors for any possible imposed harms.[58] The primary question becomes whether we recognize systems of private enforcement like torts and the establishment of well-defined property rights together with trading systems as sufficient to control against these negative externalities,[59] or whether there are flaws in such private and market-based solutions that necessitate the existence of government, top-down intervention.

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[51] Munn v. Illinois, 94 U.S. 113, 145 (1876).

[52] LUDWIG VON MISES, HUMAN ACTION: A TREATISE ON ECONOMICS 655 (4th rev. ed. 1996), *available at* https://mises.org/Books/humanaction.pdf (discussing the need to hold owners liable for externalities so as to incentivize good behavior and the prevention of harms).

[53] Demsetz, *supra* note 50, at 347 (explaining the assignment of liabilities for externalities).

[54] *Id.* at 348.

[55] *Id.* ("primary function of property rights is that of guiding incentives to achieve a greater internalization of externalities").

[56] Robert H. Cutting & Lawrence B. Cahoon, *Thinking Outside the Box: Property Rights as a Key to Environmental Protection*, 22 PACE ENVTL. L. REV. 55 (2005).

[57] *Id.* at 58-59.

[58] *Id.*

[59] *See* Smith & Jeffreys, *supra* note 36, at 397.

The law should embrace methods that encourage internalization of harms from one's use of property.[60] Economics-based environmentalism is possible when there are well-defined and enforceable property rights' systems. As Demsetz explains, "property rights specify how persons may be benefited or harmed, and, therefore, who must pay whom to modify the actions taken by persons."[61] With such systems, it becomes easier to incentivize protection of resources, control against depletion of environmental goods, control pollution, and otherwise assess responsibility for environmental harms.[62]

Property Rights

The property issues in economics-based environmental protection mechanisms include the identification of harm, traceability to its source, the allocation of property rights (including in environmental resources), liability and compensation regimes for bad acts, and free exchange and tradability of environmental property rights once allocated.[63] We should develop and create property rights in environmental resources so as to provide a more effective means of protecting environmental concerns and to achieve a better allocation of resources in an environmentally positive way.

Property rights and assignment of the same fit into the core of an economics-based environmentalism approach. Secure and certain property rights facilitate investment in conservation.[64] An economics-based pollution control system is possible if property rights can be identified and liabilities for harms imposed.[65]

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[60] James L. Huffman, *Environmental Protection and the Politics of Property Rights: The Public Interest in Private Property Rights*, 50 OKLA. L. REV. 377, 380 n.11, 383-84 (1997).

[61] Demsetz, *supra* note 50, at 347.

[62] *See* Adler, *supra* note 37, at 271-75; Smith & Jeffreys, *supra* note 36, at 397. *See also generally* Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968).

[63] *See generally* Steven Eagle, *A Prospective Look at Property Rights and Environmental Regulation*, 20 GEO. MASON L. REV. 725 (2013).

[64] *Id.*

[65] ANDERSON & LEAL, *supra* note 6, at 147.

Anderson and Leal have explained the utility of property rights toward incentivizing protection of environmental resources:

> It is useful to reiterate the importance of the evolution of property rights and the common law. As clean water and air become more valuable, entrepreneurs have a greater incentive to define and enforce rights to the resources. If we continue to subsidize the use of these resources and to subsidize the costs of disposal, however, entrepreneurs will not be getting the right signals. . . . There is no guarantee that property rights will evolve, but we should not stand in the way of environmental entrepreneurs who try to develop them.[66]

One of the problems that has plagued the advocacy for market-based controls of resources like air and water, for example, has been the limits on (1) allocating property rights in such resources; and (2) identifying contributors to pollution of such resources, *i.e.* addressing the traceability problem. As one set of market-oriented authors explained:

> In terms of applying a market solution to environmental problems, few areas are more troublesome than water pollution. Because polluters are often difficult to identify and because rights to clean water are not vested in individuals or clearly specified organizations, the costs of garbage disposal into streams, lakes, or oceans can be easily passed on to others. Under these circumstances, a free market solution to water pollution seems elusive.[67]

Despite some of the problems associated with markets and the control of externalities, there is really no reason to presume that governments will be any better at overcoming the difficulties of traceability and otherwise be able to efficiently assess liability and manage risks of negative externalities.[68] We

[66] *Id.* at 150.

[67] ANDERSON & LEAL, *supra* note 6, at 138-39.

[68] *See* Terry L. Anderson, *Markets and the Environment: Friends or Foes?*, 55 CASE W. RES. L. REV. 81 (2004) (explaining why there should not be a presumption that government

should strive to find new and innovative ways to assign property rights in resources where no assignment has been made before and do so in a way that capitalizes on the incentive structures created when such rights are allocated.

Take Advantage of Emerging Technology

Increasingly, economic approaches can utilize new technologies to assist in the creation, allocation, and enforcement of private rights. As Professor Jonathan Adler has contended, "[e]nhanced technologies and greater understanding of ecological conditions make it possible to conceive of property rights today where once they were the stuff of ecological fantasy."[69]

New technologies not only open up opportunities for new regulatory approaches, but also, some of the skepticism about the capability of market mechanisms to control for environmental harms is now being challenged as we develop technologies that can harness the market. For example, new technologies are allowing us to better assign property rights to particular environmental values.[70] New technologies can help us create more sophisticated property rights' regimes and facilitate a more exacting allocation of rights in resources and more targeted injunction rights against pollutants.[71] New technologies decrease traceability and causation problems in pollution that previously may have existed as impediments to private, tort-based regulation of environmental harm.

Property rights-based solutions may not be available for all environmental concerns, but it certainly should be possible to utilize them to a substantially greater degree in the fourth generation than we have before, especially as aided by new technologies. If we can isolate rights to air and

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regulation is the better approach to externality problems).

[69] Adler, *supra* note 37, at 263.

[70] *Id.*

[71] Bruce Yandle & Andrew P. Morriss, *The Technologies of Property Rights: Choice Among Alternative Solutions to Tragedies of the Commons*, 28 ECOLOGY L.Q. 123, 128-129 (2001) (examining means to use technology to define and thereafter enforce property rights in different resources).

water resources, for example, we can allocate the property rights in these resources and allow them to be tradable.[72] The owners of the rights will have incentives to preserve their value, including maintaining the environmental character of the resource and bringing actions against those that would harm it.

The Common Law, Compensation Methods, and Liability Systems

We should use common law remedies to allocate responsibility to culpable private actors.[73] This will involve the creation of more robust tort schemes.[74] Utilizing and expanding existing nuisance and trespass doctrines and encouraging more experimentation in the use of common law remedies for environmental harms should be encouraged.[75]

It will necessitate more sophisticated identification of wrongdoers and assessment of costs. This more targeted liability allocation will better assign responsibility and make more sense than sweeping up all industry participants in one-size-fits-all regulation. The creation of these polluter-pays based compensation schemes would incentivize the internalization of harms and encourage individuals to take actions to avoid being held liable.[76]

This targeting will be increasingly more effective as traceability and the isolation of contributions for harms are improved, including the use of newly emerging, enhanced technologies to identify and trace the appropriate wrongdoers rather than imposing the less efficient industry-wide compliance costs associated with most environmental laws. With greater abilities to identify wrongdoers, there will be increased incentives for reputable

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[72] Smith & Jeffreys, *supra* note 36, at 397.

[73] *See generally* THE COMMON LAW AND THE ENVIRONMENT: RETHINKING THE STATUTORY BASIS FOR MODERN ENVIRONMENTAL LAW (Roger E. Meiners & Andrew P. Morriss eds. 2000).

[74] *See* EPSTEIN, *supra* note 8, at 276-80.

[75] *Id. See also* Henry N. Butler, *A Defense of Common Law Environmentalism: The Discovery of Better Environmental Policy*, 58 CASE W. RES. L. REV. 705, 710 (2008) ("better environmental policy requires a rediscovery of the benefits of the common law").

[76] Butler, *supra* note 75, at 711-714 (discussing the common law means to force internalization of costs of externalities).

companies to prevent pollution and other harms so as to keep themselves out of court.

Common law remedies undoubtedly face some obstacles to their capability to fully carry the lantern for environmental protection, but they have more merit than they have been given credit for and offer more possibilities than have been effectively tapped by environmental advocates. An economics-based approach will need to focus on developing valuation methods and ways to identify wrongdoers. Valuation of harms becomes important because if you cannot figure out what the actual harms are worth then you cannot properly assess liabilities. The compensation schemes can only work effectively with such valuation capabilities. Again, this will be difficult but we should make every effort to make such calculations to facilitate these market and private enforcement opportunities. We cannot make perfect the enemy of good.[77] We need to, at the very least, try, and thereafter fail, before we reject. That is the basis for the proposal discussed later in this Essay as well.[78]

However, if one believes that the environment is a bit too complex for a common law substitution for regulation then at least these principles of matching responsibility with cost/liability should inform the formation of regulation.[79] As stated previously, the discussion of economic principles, even if not leading to express adoption of the economics-based alternative, still has the chance of beneficially rubbing off a bit on the formation of rules.

Embrace Consumer and Individual Responsibility to Purchase Environmental Preferences

Economics-based environmentalism also tries to maximize the influence of all private ordering opportunities. For example, consumers can

[77] *Id.* at 714 (describing this pursuit of improved regulation and citing Harold Demsetz, *Information and Efficiency: Another Viewpoint*, 12 J.L. & ECON. 1, 1 (1969)).

[78] *See infra* Part IV.

[79] Adler, *supra* note 37, at 277.

dictate how businesses behave. If they want businesses to improve their environmental practices, they can pressure them to do so.

Ludwig von Mises has explained this power of consumers, as market bosses, to effectuate changes in business behavior:

> The direction of all economic affairs is in the market society a task of the entrepreneurs. Theirs is the control of production. They are at the helm and steer the ship. A superficial observer would believe that they are supreme. But they are not. They are bound to obey unconditionally the captain's orders. The captain is the consumer.[80]

Consumers may need to pay (through higher prices) for the environmental improvements and commitments by businesses that they demand, but that is a superior way of identifying preferences for environmental goods and for assessing the costs of environmental protection because it imposes costs on willing market purchasers of the environmental gain rather than coercively and uniformly imposing costs on all members of society. It is also a means for better ensuring that people truly demand, desire, and value these outcomes.[81] Businesses "will supply a product that naturally arises in a market where consumers demand products that are socially responsible and are willing to pay for any additional cost for the production of that demanded product."[82] If adding an environmentally friendly element to a good or service makes the provision of those things more expensive, the businesses can pass on the costs to the willing and

[80] MISES, *supra* note 52, at 269-70.

[81] *Id.* at 649. Mises explains:

> All market phenomena are ultimately determined by the choices of the consumers. If one wants to apply the notion of power to phenomena of the market, one ought to say: in the market all power is vested in the consumers. The entrepreneurs are forced, by the necessity of earning profits and avoiding losses, to consider in every regard . . . the best possible and cheapest satisfaction of the consumers as their supreme directive.

Id.

[82] Donald J. Kochan, *Corporate Social Responsibility in a Remedy-Seeking Society: A Public Choice Perspective*, 17 CHAP. L. REV. 413, 427-28 (2014).

desirous consumers.[83] As I have stated elsewhere, "[w]hether it is a demand for 'green' and recycled toilet paper, non-GMO corn, fuel efficient vehicles, energy conserving appliances, or similar products, if purchasers exist, then the corporations will label, market, and supply these products."[84] This capitalizes on the economic principles of individual responsibility and individual choice. In this context, consumers use their own finances to encourage more environmentally friendly activities.

Consumers have substantial power. As Mises further explains: "Their buying and their abstention from buying decides who should own and run the plants and the farms. They make poor people rich and rich people poor. They determine precisely what should be produced, in what quality, and in what quantities."[85]

If consumers truly have a demand and desire, businesses will also become innovative and entrepreneurial in finding new ways to offer more "green" products and services to their consumers out of their self-interested desire to gain a competitive edge. When, however, there is a dominance of state-based interventionist environmental law, much of this consumer-driven market for environmental protection is impeded.[86] Consumers may not know that they should demand such goods and services.

These consumers are also lulled into a false security that they need not make such demands in the marketplace because they have an ill-conceived notion that government will handle the task of environmental protection. Businesses, therefore, see more limited opportunities to profit because the signals to change toward more environmentally sensitive behaviors are not being generated as readily by consumers. More demand for

[83] *See generally* Aneel Karnani, *The Case Against Corporate Social Responsibility*, WALL ST. J., June 14, 2012, at R1, *available at* http://online.wsj.com/news/articles/SB10001424052748703338004575230112664504890.

[84] Kochan, *Corporate Social Responsibility*, *supra* note 82, at 428.

[85] *Id.*

[86] EPSTEIN, *supra* note 8, at 275 (discussing how the complexity and ad hoc nature of environmental law confuses observers and has attributes that "conceal" the problems in the approach).

many of these environmentally friendly outputs would be generated if the state were to lessen its role. If the state steps back, this kind of consumer-driven environmentalism will have more room to operate.

Encourage More Private Contracting as a Means of Changing Business Environmental Behavior

Some fascinating new work by Professor Michael Vandenbergh highlights the growing use of "private environmental law" in which businesses' environmental behavior is altered by the associational contracts they enter into.[87] Much like the consumer-driven analysis above, interconnected networks and affiliations in our modern complex society afford innumerable opportunities for environmental preferences to be expressed and enforced in contracts. I highly recommend anyone interested in finding private solutions to the public problems of environmental harm look closely at this research to see the possibilities for private ordering through contracts toward environmental ends. Again, if indeed environmental protection is valued and desired, it can be demanded and we can see positive results wholly apart from requiring the state to act as an intermediary coercively demanding behavioral alteration.

End Subsidies and the Misallocation of Resources

We should also end the inefficient subsidization of both dirty and so-called green behaviors. There is a misallocation of resources in this society when the playing field is not level. Planning and picking winners and losers simply does not work, and subsidies are no different than other forms of failed social engineering.[88] Subsidies of every kind lead to artificial and inefficient allocations of resources.[89] No planner can decide accurately what

[87] *See* Michael P. Vandenbergh, *The Emergence of Private Environmental Governance*, 44 ENVTL. L. REP. NEWS & ANALYSIS 10125 (2014); Michael P. Vandenbergh, *Private Environmental Governance*, 99 CORNELL L. REV. 129 (2013).

[88] *See, e.g.*, *Wind Industry is Full of Hot Air*, INV. BUS. DAILY, Apr. 23, 2014, at A12 [hereinafter "*Hot Air*"], *available at* http://news.investors.com/ibd-editorials/042214-697939-wind-industry-in-trouble-despite-massive-subsidies.htm?p=2 ("The federal government has spent some $100 billion in taxpayer subsidies on green energy since 2006. Now we are seeing the flimsy and declining returns on that investment.").

[89] *See* Nicolas Loris, *The Wind Production Tax Credit and the Case for Ending All*

activities are most valuable. Instead, we should allow market investors to help set those values. Indeed, subsidizing certain behaviors can sometimes have unintended negative environmental consequences. Take, for example, certain farming subsidies. Regardless of whether farming seems like a good thing that we should encourage, farming subsidies, according to Adler, have contributed to "the destruction of wetlands and species habitat, increased chemical use, and dramatically altered the American landscape."[90]

Other subsidies, like those for oil companies, decrease the costs of production and thereby lead to over-exploitation and dis-incentivize pursuit of alternative energy sources.[91] If you eliminate these subsidies, you may eliminate waste and also actually cause businesses to start more aggressively thinking about alternative, less-costly means of producing energy.[92] If you own a business and you are cozy and comfortable because your profit is guaranteed by the existence of subsidies, you are less likely to innovate.

Other recent subsidies, like those to Solyndra and Fisker, manipulate the markets for alternative energy, pumping money into unproven and inefficient enterprises.[93] We should end all of these subsidies – whether they are for green industry or black gold and Texas tea.[94] Economics counsels

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Energy Subsidies, 23 DUKE ENVTL. L. & POL'Y F. 323, 324-25 (2013) ("Subsidies are bad economic policy because they misallocate resources and reward political connectedness as opposed to sound economic ideas.").

[90] Adler, *supra* note 37, at 267 (citing J.B. Ruhl, *Farms, Their Environmental Harms, and Environmental Law*, 27 ECOLOGY L.Q. 263 (2000)).

[91] Loris, *supra* note 89, at 341 (discussing the "economically destructive nature of energy subsidies" including those for "[c]oal, natural gas, oil, and renewable energy sources").

[92] Smith & Jeffreys, *supra* note 36, at 401 ("subsidies encourage people to 'consume' more of those public resources than they would be likely to in a market system" and " subsidies for favored providers of environmental amenities tend to squeeze out private alternatives").

[93] *Hot Air, supra* note 88, at A12 ("government has to stop picking industry winners and losers — if only because it has such a dreadful track record. How many more hundreds of millions of dollars does Uncle Sam have to lose on a Solyndra or a Fisker to figure this out?").

[94] *Id.* ("if oil and gas are subsidized, better to also get rid of those handouts instead of creating an energy subsidy arms race that taxpayers always lose.").

private investment driven by private incentives and private monitoring. A real level playing field would actually more effectively encourage innovation and experimentation in things like alternative energy. I contend that we should become equal opportunity subsidy-enders.

Simply Work to Encourage Economic Growth

Finally, the most prosperous nations also have the highest level of environmental protection and the greatest concern for environmental values. A variety of reasons have been stated explaining this phenomena. For one thing, there are greater amounts of disposable income on the part of wealthy nation's citizens so that they can afford to spend money on environmental protection and the preservation of environmental goods. Other reasons include the greater protection of human rights and an understanding of incentives to conserve, the existence of property rights which limits overexploitation of resources, and the rule of law which allows such rights and decisions to be respected and enforced.[95] Market-oriented economies use resources more efficiently.[96] With more disposable income, people are willing to pay for environmental protection.[97] Vibrant and free economies develop new technologies, including things like land sparing technologies (using less land for food production), synthetics that replace the need for natural fibers or fuels, lighter construction materials, and other efficiency-enhancing techniques with incidental benefits to the environment.[98]

Thus, by encouraging economic growth generally, a happy externality of that growth is greater concern and protection for the environment. As a general matter, we should focus on improving the economy because environmental improvements tend to come along for the ride.

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[95] *See, e.g.,* NATHAN ROSENBERG & L.E. BIRDZELL, JR., HOW THE WEST GREW RICH: THE ECONOMIC TRANSFORMATION OF THE INDUSTRIAL WORLD 304 (1987) ("The Western achievement has surely opened new possibilities of advancing many other values, among them those embraced within the connotations of social justice, environmentalism, and equality.").

[96] Adler, *supra* note 37, at 270.

[97] *Id.* at 269-70.

[98] *See, e.g.*, Ridley, *supra* note 3, at 24-25.

Intermediate Concluding Thoughts on the Mix of Economics and Environmental Protection in the Fourth Generation

Economics-based approaches should be a component of fourth generation polycentrism. As described earlier, by necessity, the integrationist multimodal or polycentric approach will require more inclusion of private ordering and market-driven solutions.[99] Within this framework, if done honestly as described, policymakers would need to give serious credit to and evaluate possible economics-based tools to solve environmental problems. However, the risk lies in the fact that economic concerns and private ordering are only a *non-weighted* part of a polycentric approach. There is no thumb on the scale, *i.e.* there is no preference for market solutions over others.

There is, of course, also a risk that too many of the anti-market biases and bureaucratic turf protection will pervade any integrationist approach. When there are well-established ways and set preferences on the part of policymakers, coupled with a continued role for leading environmental activists in the formulation of policy, there is a risk that anti-market tendencies will nonetheless dominate the debate even if that debate is framed as occurring within a polycentric approach. When you go to the polycentric toolbox, the economic approach may be inside but will be hidden below the more interventionist tools.[100] Methods should be developed to ensure that these economic principles are given fair consideration.

Because the economic approaches are not weighted or favored and do not have special significance or standing in the polycentric approach that Arnold and Gunderson describe, there is always the risk that they will be under-utilized or even marginalized. My proposal is to change that situation. There should be a thumb on the scale in favor of economic approaches and then only if we see market failures and market incapacity to solve environmental problems should we actually turn to other tools in the polycentric toolbox. This idea embraces the adaptive model proposed as the

[99] *See generally supra* notes 39-48 and accompanying text.

[100] Arnold and Gunderson recognize some of these concerns of potential conflicts between advocates of differing modes of action. Arnold & Gunderson, *supra* note 7, at 10435; Arnold, *supra* note 7, at 870.

foundation of the fourth generation of environmental law as described by Arnold and Gunderson, but with certain preferences for economics at the outset. Only if you see market failures and find that the market is incapable of adapting to such failures do you then have cause to move to other polycentric approaches.

IV. A PROPOSED RULE REQUIRING IDENTIFICATION OF MARKET FAILURE AND THE INCAPACITY OF MARKET SOLUTIONS

Getting economics-based environmentalism to be taken seriously in the policy debate may require a procedural rule that requires that state actors (agencies and agency officials) study and convincingly reject economics-based alternatives before they are allowed to proceed with any more prescriptive or interventionist-type regulatory approaches. Obtaining the legislation, executive order, or other authority to make such a demand on agencies will not be easy. The mechanics of obtaining, as well as the express details of, such authority are beyond the scope of this Essay. Nonetheless, a discussion of the basic characteristics of this proposal follows in this Part.

We cannot always assume that the state must act in order to protect the environment, as this Essay has already started to explain. "The mere fact that pollution causes physical harm," for example, "does not mean that it necessarily constitutes some legal wrong;"[101] and the mere availability of state intervention does not immediately make it the most attractive alternative to control against harm. The mere existence of externalities is often trumpeted as the reason for governmental intervention, yet that alone is seldom proof of a market failure.[102] Sometimes the state does not even pretend to find a market failure to justify interventionist environmental regulation but instead proceeds on some other justificatory basis. Other times, when a market failure is claimed, it is used too loosely to justify such intervention. There should be a way to try to hold regulators to a verifiable

[101] EPSTEIN, *supra* note 8, at 277.

[102] BUTLER & DRAHOZAL, *supra* note 49, at 186 ("[t]he existence of externalities is not, by itself, justification for government intervention to correct the externality."). *See also* Richard B. Stewart, *Controlling Environmental Risks Through Economic Incentives*, 13 COLUM. J. ENVTL. L. 153, 154 (1988) (explaining that externality problems cannot be effectively managed long term through command and control mechanisms).

standard for proving their case regarding the necessity of interventionist approaches and justifying their choice of regulatory action.

The prerequisite to regulation that I envision would have 5 major components. This filtering rule would weed out the unjustified (by economic terms) regulatory actions. Before an agency may impose a new regulation, it would be required to take several key steps. First, an agency should be required to make some determination of the existence of a market failure and identify it with specificity. The proposed rule would require agencies to study and make certain findings – before proceeding with any rulemaking – not just on economic impacts of regulations but instead on regulatory necessity. In forming its conclusions, an agency should also be required to provide *evidence* of market failures. This would be in the same vein as the review by the Office of Information and Regulatory Affairs currently required at the federal level for many rules,[103] but with more rigor and breadth. The proposed filtering rule should also be considered for adoption at all levels of government.

Second, the agency should be required to identify, with specificity, the market incompatibility with the goal set before proceeding with a non-market or interventionist type of alternative approach to solving an environmental problem. Thus, the proposal would require that an agency identify, specifically, an actual market failure or market incompatibility that absolutely requires governmental intervention before proceeding to propose any major rules.

Third, the agency must study the possibility of using *or creating* market mechanisms (such as the creation and allocation of property rights in a resource to be protected) to achieve the environmental goal. It may only proceed with a non-market or non-economics-based alternative if it determines that those preferred mechanisms will be ineffective and provides evidentiary findings for the same. The idea of requiring an agency to consider creating an initial legal infrastructure for market operations is important. Even where there is "market failure" perceived at first, it might be

[103] Exec. Order No. 12,866 §§ 2(b), 6(b), 58 Fed. Reg. 51,735 *et seq.* (Sept. 30, 1993).

correctable by the state creating and protecting market mechanisms. The agency should be required to study and make findings that some market mechanism, not currently recognized by law, cannot be legally created to solve the perceived failure – such as in the governmental creation, assignment, or recognition of property rights. A classic case for this role is with overgrazing, where the allocation of tradable property rights might resolve the tragedy of the commons.[104]

If an agency can make findings in all three categories rejecting market approaches, then and only then would it be able to move into some other alternative method of state action. That decision-making process, however, should not be insulated from outside review. Therefore, the final two components of the proposal are designed to ensure accountability.

The fourth component would require that these determinations be open to some public, external review, complete with the opportunity for economists to comment on (and support, question, or refute where appropriate) the agency's economic determinations. Finally, as the fifth element of the proposal, the agency would be required to respond to these comments in much the same manner (or perhaps even a more rigorous one) that they must respond under the Administrative Procedure Act to comments posed in notice-and-comment rulemaking.[105]

In the fourth and fifth components of the proposal, an agency should be required to make its analysis and its conclusions public and open to comment with a comment period similar to that required for proposed rules and with obligations on the agency to respond to comments and/or adjust their approach in light of comments. Only then – after having found no less intrusive a mechanism to achieve the desired environmental goal – would the agency be allowed to proceed with some other manner of interventionist or prescriptive regulatory approach. At this point in the process, all of the principles of the polycentric and integrationist multi-modal approaches could be taken into account in developing the regulatory structure.

[104] *See generally* Hardin, *supra* note 62. *See also* Adler, *supra* note 37, at 259-63.
[105] *See* 5 U.S.C. § 553 (2012).

The difference between this proposal and the Arnold and Gunderson suggestion for an adaptive approach[106] is that – at least as preliminarily formatted here – this proposed rule would accept that the polycentric, integrationist multimodality approach should be utilized but only after the proposal's required analysis is complete and always coupled with a presumption for, and thumb on the scale in favor of, a market solution. In other words, the agency would be required to truly prove the market failure before they could proceed to other polycentric tools. This type of priority and filtering rule would add rigor to the environmental rulemaking process and ensure that a market solution be chosen when it can be accomplished. We should put the onus on those favoring state-based, interventionist, non-market regulation to prove the necessity of it.

This proposal has a variety of benefits. This type of market failure and market alternative review would hopefully create rules with narrower levels of government intervention. It would also force regulators to focus on objectively studying where government is needed and where market alternatives or soft intervention is more appropriate than hard intervention into the markets and human decision-making. By doing so, we are more likely to get a process more tailored to the polycentric model Professor Arnold proposes but with a wider economic foundation at its base and fewer of the other tools from the box being utilized.

It should not be surprising that I am not the first to propose a rule designed to sway regulation toward market solutions and to focus on justifying regulation by proof of market failure.[107] Executive Order 12866, "Regulatory Planning and Review," has required consideration of economic effects in certain agency actions since 1993, although it does not mandate

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[106] *See generally* Arnold & Gunderson, *supra* note 7.

[107] See Susan E. Dudley, *Perpetuating Puffery: An Analysis of the Composition of OMB's Reported Benefits of Regulation*, 47 BUS. ECON. 165, 165-67 (2012) (discussing executive orders and OMB Circular A-4 and their role in economic review of regulations), *available at* http://www.palgrave-journals.com/be/journal/v47/n3/pdf/be201214a.pdf; Susan E. Dudley, *Lessons Learned, Challenges Ahead*, REGULATION, Summer 2009, at 6-11 (discussing OIRA and its review of the economic impacts of regulation), *available at* http://object.cato.org/sites/cato.org/files/serials/files/regulation/2009/6/v32n2-1.pdf.

economically-sensitive *action* be taken but instead is designed to work as a look-before-you-leap procedural safeguard.[108] Executive Order 12866 review has included in its considerations the existence of market failure,[109] along with the completion of regulatory impact analyses for economically significant regulations by regulating agencies with review of those analyses conducted by the Office of Information and Regulatory Affairs ("OIRA") in the Office of Management and Budget ("OMB").[110]

In 2003, the OMB issued Circular A-4[111] – a guidance document designed to aid agencies in complying with the requirements of Executive Order 12866. Circular A-4 includes several sections discussing the importance of market failure review. In fact, at one point the Circular concedes that "[g]overnment actions can be unintentionally harmful, and even useful regulations can impede market efficiency."[112] It continues that, "[f]or this reason, there is a presumption against certain types of regulatory action,"[113] but then it proceeds to list only the most extreme types of regulatory market intervention like price controls, production quotas, and the like as those worthy of requiring some "particularly demanding burden of proof" in light of that presumption.[114] Moreover, the Circular states that "[c]orrecting market failures is a reason for regulation, but it is not the only reason,"[115] and it proceeds to list very broad categories of "[o]ther possible

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[108] Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993).

[109] Section 1(b)(1) of Executive Order 12866 reads:

> (b) *The Principles of Regulation.* To ensure that the agencies' regulatory programs are consistent with the philosophy set forth above, agencies should adhere to the following principles, to the extent permitted by law and where applicable: (1) Each agency shall identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action) as well as assess the significance of that problem.

Id.

[110] *See* Dudley, *Perpetuating Puffery*, *supra* note 107, at 165-67 (describing OIRA regulatory review).

[111] Office of Mgmt. & Budget, Circular No. A-4, Regulatory Analysis (2003), *available at* http://www.whitehouse.gov/omb/circulars_a004_a-4.

[112] *Id.* pt. B.

[113] *Id.*

[114] *Id.*

[115] *Id.*

justifications," including as examples "improving the functioning of government, removing distributional unfairness, or promoting privacy and personal freedom."[116] There is very little governmental action that could not be rationalized in these "other" categories. Thus, the words of Circular A-4 and related executive orders start to acknowledge market failure but hedge at times and otherwise fail to establish strict prohibitions on regulatory behavior that is grounded in something other than market failure or that might in some ways impede market efficiencies.

Moreover, in practice, the agencies tend to either ignore or manipulate this guidance in a way that favors the side of regulation over that of restraint. Susan Dudley, for example, has determined that the methods used to comply with the executive orders and Circular A-4, along with the resulting "cost/benefit" analyses, are problematic because "agencies do not appear to be approaching the problem objectively,"[117] and they overstate the benefits while understating the economic costs because "[a]gencies have strong incentives to demonstrate through analysis that their desired regulations will result in benefits that exceed costs."[118] This last problem is, of course, one of the main reasons for this Essay's proposal to subject any agency economic analysis to more stringent review from the public, economists, and others.

A short-lived Executive Order 13422 made effective in 2007 also seemed to put the determination of market failure in a more prominent position by amending Executive Order 12866 and requiring that agencies make a finding of market failure (rather than just suggesting its consideration) and identify that market failure in writing before proceeding with certain covered regulations,[119] although there is no indication that much

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[116] *Id.*

[117] Dudley, *Perpetuating Puffery*, *supra* note 107, at 175.

[118] *Id.*

[119] Exec. Order No. 13,422, 72 Fed. Reg. 2,763 (Jan. 18, 2007). Executive Order 13422 required an agency to identify a market failure rather than just a reason for action that could be a market failure. *Id.* It amended Section 1(b)(1) of Executive Order 12866 to read:

> (1) Each agency shall identify in writing the specific market failure (such as externalities, market power, lack of information) or other specific problem that it intends to address (including, where applicable, the

changed in terms of practice. President Obama swiftly revoked Executive Order 13422 in his second week in office in 2009 with Executive Order 13497;[120] and later, in 2011, President Obama added his own stamp on regulatory review in Executive Order 13563 (which supplements Executive Order 12866 and calls for some considerations of economics-based principles much like those included in Executive Order 12866, but it does not mandate their implementation, and it adds no new references to, or direct consideration of, market failures).[121] This executive order ping pong match has allowed each new administration to tweak the regulatory review provisions to fit its own agenda. The 2003 Circular A-4 remains effective today, as does Executive Order 12866 as amended by Executive Order 13563.

Although this Essay's proposal has some similarities with some of the provisions in these various executive orders and Circular A-4, this Essay's proposal goes farther than these documents because this Essay proposes giving the economic considerations of market failures a primary role with rule-blocking status. Moreover, this Essay's proposal seeks to overcome some of the previously-mentioned institutional barriers to aggressive adherence to the concept of market failure as a realistic constraint on regulatory behavior.

Furthermore, the reality of executive order ping pong counsels in favor of grounding a market failure filtering rule proposal in something more durable than an executive order, such as a statute. Of course, statutes are harder to obtain given the realities of bicameralism, presentment, and the other hurdles of the legislative process, so securing such legislation will be hard but worth a try. And even if the proposal does not emerge as an enforceable legal standard, perhaps simply the consideration of this proposal could move the conversation of the role of economics in a positive direction. The mere deliberation on the proposal might contribute to that fruitful

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> failures of public institutions) that warrant new agency action, as well as assess the significance of that problem, to enable assessment of whether any new regulation is warranted.

Id.

[120] Exec. Order No. 13,497, 74 Fed. Reg. 6,113 (Jan. 30, 2009).

[121] Exec. Order No. 13,563, 76 Fed. Reg. 3,821 (Jan. 18, 2011).

dialogue discussed at the outset of this Essay and have some positive influence on future decision-making.

V. THE LIMITS OF LEGAL CAPACITY TO SOLVE ENVIRONMENTAL PROBLEMS: INSIGHTS FROM LAW AND ECONOMICS

In this final Part, this Essay's analysis will focus on the roadblocks to any reform, no matter what direction the substance of that reform takes (although I will at times comment on some additional hurdles, especially in optics, that make economics-based approaches to environmental concerns even more difficult to obtain). Here, I will discuss primarily institutional and interest group concerns. What are the barriers that exist from the realities of institutions and the realities of interest group pressures? This will be an equal opportunity critique. Regulators, business interest groups, and environmental interest groups each can pose barriers to effective policymaking for productive, efficient, and environmentally friendly legislative and regulatory outcomes. Each of these groups is incentivized to look out for their own independent self-interests, and, consequently, each may present obstacles to environmental reform no matter how you phrase the substance of environmental reform efforts or create the desired architecture for reform. Competing interest groups are not likely to be pushing the most enlightened reforms but instead will favor laws that are self-serving; and existing regulators will be resistant to change, often pushing for reforms only when it expands their regulatory power and reach.

Bureaucracy Theory

To begin, even if the law changes in the fourth generation to give agencies more authority to be adaptive, they may not use it. If we are going to talk about resilience as an issue for the environment, we must equally recognize *law's resilience* as a barrier to reform. In their work, Arnold and Gunderson recognize some of these limits, acknowledging that "[w]hile the U.S. legal system can change and adapt in theory, the system is resistant to change."[122] As a result of some of the resistance mechanisms and

[122] Arnold & Gunderson, *supra* note 7, at 10427.

preferences for the status quo that develop in legal systems, "[t]he maladaptive nature of law can allow, facilitate, or even mandate pathological choices and behaviors with respect to ecosystems."[123] Moreover, Arnold explains that psychological forces in the legal system sometimes favor unimodal approaches rather than multimodality.[124] These forces may be difficult to overcome and may make improving environmental law difficult as well.

Much has been said about the need for adaptation in the environmental law context to harness the environment's resilience.[125] The idea of resilience as applied in a different context may be a bad thing. When applied to the ecology of political and regulatory institutions, resilience may be the enemy of adaptation in the legal sphere. Let us start with the definition of resilience provided in one work by Professor Gunderson and several coauthors: "Resilience is the capacity of a system to experience shocks while retaining essentially the same function, structure, feedbacks, and therefore, identity."[126] A new adaptation model of regulation in the fourth generation of environmental law constitutes such a disturbance or shock to the existing regulatory structure to which existing systems will respond. Government agencies and bureaucracies have demonstrated substantial capacity to resist adaptation in order to preserve their core functions, structure, and identity. Yet, we do not want outmoded legal systems to have such resilience at the expense of progress.

Bureaucracies and bureaucrats are self-interested. As Ronald Reagan aptly stated in 1964 during one of his most influential speeches: "No government ever voluntarily reduces itself in size. So, governments' programs, once launched, never disappear. Actually, a government bureau is

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[123] *Id.* at 10427.

[124] Arnold, *supra* note 7, at 822-23 ("the tendency to propose or adopt unimodal solutions to problems runs deep in human nature and social dynamics. Psychological forces facilitate unimodality.").

[125] Arnold, *supra* note 7, at 876 ("every effort to adapt to these changing conditions in environmentally beneficial and resilience-building ways should be undertaken").

[126] Brian Walker et al., *A Handful of Heuristics and Some Propositions for Understanding Resilience in Social-Ecological Systems*, 11 ECOLOGY & SOC'Y 1, 2 (June 2006), *available at* http://www.ecologyandsociety.org/vol11/iss1/art13/ES-2005-1530.pdf.

the nearest thing to eternal life we'll ever see on this earth."[127] Studies have concluded that Reagan was correct that bureaucracies exhibit tendencies to perpetuate themselves – they want to preserve job security, will work to justify their own existence, wish to capitalize on their developed (sometimes monopolistic) expertise in a certain regulatory field (*i.e.*, they are the ones that know all the code to the regulatory machine), wish to expand their budgets, hope to expand personnel and thereby gain allies, desire an ever-broadening scope of authority, and otherwise wish to entrench themselves and solidify their reason for existence.[128] None of these motivations is consistent with a tolerance for change, and all of these tendencies will see alternatives to their existence (such as through economics-based replacement approaches) as threats worthy of determined resistance.

More regulation equals more work, which expands the need and justification for the agency and its officials. There is seldom an incentive to change regulatory structure and certainly even less so to change in a way that shrinks the size of the regulatory apparatus. Market-based approaches pose a threat to the existence of bureaucratic structures and, therefore, we should predict that bureaucracies will be especially resistant to the economics-based environmental proposals discussed here. The bureaucrats will remain resilient in preserving their own existence.

As a consequence, bureaucracies may lack adaptive capacity and will develop resistance mechanisms so that they can remain resilient to the emerging environmental reforms, especially if those reforms threaten the role (or even continued survival) of those agencies. Arnold and Gunderson

[127] Ronald Reagan, *A Time for Choosing*, speech delivered October 27, 1964, *available at* http://www.reaganfoundation.org/pdf/ATimeForChoosing.pdf (last visited Nov. 3, 2014).

[128] *See generally, e.g.*, WILLIAM NISKANEN, BUREAUCRACY AND REPRESENTATIVE GOVERNMENT (1971) (examining the tendency for bureaucracies to seek to maximize their budgets and otherwise perpetuate their existence); William A. Niskanen, *Bureaucrats and Politicians*, 18 J. L. & ECON. 617 (1975) (same); William. A. Niskanen, *The Peculiar Economics of Bureaucracy*, 58 PAPERS AND PROCEEDINGS OF THE EIGHTIETH ANNUAL MEETING OF THE AMERICAN ECONOMIC ASSOCIATION 293 (1968) (same). *See also* LUDWIG VON MISES, BUREAUCRACY (1944), *available at* http://mises.org/books/bureaucracy.pdf (comparing the relative efficiency of institutions driven by profit motives versus ineffective institutions driven by bureaucratic motives).

recognize this possibility in their work as well, explaining that some scholars have identified a "bias in environmental law to protect presumed static economic efficiencies and to ignore dynamic relationships between economics and the environment,"[129] concluding that "[a]t times, the legal system seems to operate as if its primary function is to promote the resilience of the legal system itself."[130]

William Niskanen and other economists and political scientists are not alone in recognizing this general human tendency and validating this observation. In addition to Ronald Reagan mentioned above, take just one other, offbeat example. Internet technology expert Clay Shirky set off a buzz of discussion throughout the tech world in 2010 after uttering the words: "Institutions will try to preserve the problem to which they are the solution."[131] He was not speaking about government bureaucracies,[132] but the point is powerful all the same. This issue is really about tendencies in human nature. The point is that, if problems are solved or actions done more efficiently through an alternative to the status quo, there will be less need for those currently tasked with solving the problem. Indeed, their usefulness may entirely disappear if the problem is completely eliminated. Thus, they need to find a way to hang on and for the problem to persist. Market innovators have no such impediment and gain no benefit from stagnation or perpetuation of inefficiencies. Their power lies in profit, innovation and progress, not in position.

Even if agencies begin to talk about adaptation, coordination, collaboration, and the like, observers should be ever vigilant in examining whether their actions support the labels given the realities of the institutional

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[129] Arnold & Gunderson, *supra* note 7, at 10429 (citing DAVID M. DRIESEN, THE ECONOMIC DYNAMICS OF ENVIRONMENTAL LAW (2003)).

[130] *Id.*

[131] This phrase was apparently first recorded, and therein dubbed "The Shirky Principle," by a columnist for the magazine *Wired*. Kevin Kelly, *The Shirky Principle*, THE TECHNIUM, Apr. 2, 2010, *available at* http://kk.org/thetechnium/2010/04/the-shirky-prin/. *See also* Mike Masnick, *Institutions will try to preserve the problem to which they are the solution*, TECHDIRT, Apr. 9, 2010, *available at* https://www.techdirt.com/articles/20100404/2112388868.shtml.

[132] Kelly, *supra* note 131 (his point appeared to relate to media, industry, and perhaps unions).

incentives to remain resilient against change. Bureaucratic tendencies also create incentives toward subterfuge and administrative masking.[133] Regulators are capable of masking their regulations with lots of nice sounding words of adaptability and polycentrism or integrationist multimodality; but behind the curtain may lie things which advance only their own interests. If, indeed, we believe that current regulators may have hard-wired resistance to these types of changes, they may mask their activities in the new generation's accepted vocabulary but in reality be working against those very same adaptive efforts. We will need to develop ways to evaluate whether there is actual substance behind agency claims when they supposedly say that they are accepting a new regulatory paradigm. The regulators may be adapting their terminology to appease those advancing a fourth generation agenda while nonetheless remaining entrenched in old thinking and continuing to implement policy in outmoded ways.

There is no reason to believe just because we decide adaptive and polycentric approaches are superior that bureaucracies will buy in and adapt with us. The challenge remains to find a way to overcome these barriers. The best approach is to remove bureaucracies from holding regulatory power, thereby cutting off their capacity to interfere, through their resistance, with change or adaptation. Markets and private ordering do not operate with bureaucratic agents.

Public Choice and Interest Group Theory

Public choice theory (also referred to as interest group theory) posits that private advantage – accomplished through rent-seeking behavior – is regularly at play in the creation of law generally, including in the enactment of legislation and promulgation of regulation.[134] Environmental protection laws may appear to be in the "public interest,"[135] and for a long time scholars

[133] *See* Donald J. Kochan, *The Mask of Virtue: Theories of Aretaic Legislation in a Public Choice Perspective,* 58 ST. LOUIS U. L.J. 295, 300, 336-348 (2014) (analyzing the masking phenomena).

[134] MAXWELL L. STEARNS & TODD J. ZYWICKI, PUBLIC CHOICE CONCEPTS AND APPLICATIONS IN LAW 46 (2009) (explaining rents and rent seeking).

[135] Andrew P. Morriss, Bruce Yandle & Andrew Dorchak, *Choosing How to Regulate*,

did not seriously question the motivations behind seemingly public-interested legislation.[136] Public choice theory, however, exposed the fallacy of this romantic notion of lawmaking,[137] explaining the incentives and economics behind the bargains that could be struck between legislators and interest groups.

So, through public choice theory, we see the production of legislation as the creation of a commodity offered for sale to the interest group willing to pay the most for its production. [138] It is a marketplace for legislation.[139] Society is not the target beneficiary. Instead, the interest groups are able to concentrate particularized benefits upon themselves while often dispersing the costs in a largely unnoticeable way to the taxpaying society as a whole.

I have discussed in some detail the public choice analysis of environmental group behavior in past work.[140] I will only briefly outline a few of those conclusions here.

The interest group theory demonstrates obstacles to any fourth generation reform. These were indeed already obstacles in every generation before as well and are not anything unique to this generation's reforms, but because these barriers remain as components of our regulatory and legislative structure, we need to continue to remain cognizant of them as we evaluate the prospects for any emerging reforms.

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29 HARV. ENVTL. L. REV. 179, 214 (2005) (discussing the history of public interest theory).

[136] *Id.* at 215.

[137] James Buchanan, *Politics Without Romance: A Sketch of Positive Public Choice Theory and Its Normative Implications*, *in* THE THEORY OF PUBLIC CHOICE –II, at 11 (James Buchanan & Gordon Tullock eds. 1984) (explaining that the truths exposed by public choice destroyed the romance of public interest theory).

[138] Jonathan R. Macey, *Promoting Public Regarding Legislation Through Statutory Interpretation: An Interest Group Model,* 86 COLUM. L. REV. 223, 227 (1986) ("interest group theory treats statutes as commodities that are purchased by particular interest groups or coalitions of interest groups that outbid and outmaneuver competing interest groups.").

[139] Robert D. Tollison, *The Economic Theory of Rent Seeking*, 152 PUBLIC CHOICE 73, 80 (2012) (discussing the supply and demand of legislation).

[140] Kochan, *Mask of Virtue*, *supra* note 122, at 339-46 (discussing public choice and rent-seeking interest group behavior by environmental groups).

Environmental groups act in the same economically rational ways as businesses and others – they wish to maximize their own self-interests as organizations and the self-interests of their members. The environmental cause is often seen as a worthy one, and environmental interests groups have used that optic to obtain self-interested legislation that advances the groups' purposes.[141] Despite the perception on the part of many in the public that such sympathetic legislation is in the public interest, recent scholarship has focused on the interest group politics involved and found the environmental lobby indistinguishable from typical big business special interests when it comes to playing the interest group bargaining game in front of a legislature.[142] Environmental interest groups manage the system for self-interested gain just like any other interest group, obtaining benefits at a lower cost than would be paid if they were required to purchase the outcome in an open market – the very definition of rent-seeking.[143]

Environmental groups seek to maximize their own budgets, increase dues-paying members, and obtain greater charitable contributions within a competitive philanthropic giving and non-profit-receiving financial environment. To do so, environmental groups try to show "wins" and "success stories" that they can sell to the outside world in return for more

[141] Todd J. Zywicki, *Baptists? The Political Economy of Environmental Interest Groups*, 53 CASE W. RES. L. REV. 315, 335 (2002) [hereinafter "Zywicki, *Baptists*"]. *See also* Todd J. Zywicki, *Environmental Externalities and Political Externalities: The Political Economy of Environmental Regulation and Reform*, 73 TUL. L. REV. 845, 856-888 (1999) (explaining the political economy of environmental interests groups from an empirical perspective); POLITICAL ENVIRONMENTALISM: GOING BEHIND THE GREEN CURTAIN (Terry L. Anderson ed. 2000) (discussing the self-interested political nature of the environmental movement); Jonathan H. Adler, *Rent Seeking Behind the Green Curtain*, 1996 REGULATION 27 (1996) (discussing the effectiveness of green-based rent-seeking); Macey, *supra* note 127, at 232 n. 46 ("Even regulations that have long been thought to accomplish such worthy goals as improving the environment recently have been shown to benefit special interests.").

[142] Zywicki, *Baptists*, *supra* note 141, at 336 ("the stranglehold that environmental lobbyists exercise over environmental policy-making is the result of the public perception that these groups are, in fact, acting according to the public interest.").

[143] *Id.* at 349 (finding "little obvious difference between environmental activists who want more for their projects, and farmers, defense contractors, or thousands of others who use the political process to redistribute money from the public to the goals preferred by their well-organized and influential interest groups").

funding, prestige, and relative power and influence. Quite often, these successes manifest themselves in tangible, saleable forms when they obtain regulations, win in litigation, shut down a business or in some other way strike a blow to the perceived enemy, or otherwise work to increase state-based environmental controls. These types of successes are actually easier to prove and causal influence is more easily demonstrated than with whatever likely attenuated contribution such groups can claim when the environment gets better.

The point is that, as interest groups, traditional environmental groups might support regulations that may not be the optimal choice for the environment but instead will represent a competing self-interest of the group. Similarly, businesses too will lobby for measures that accrue to their benefit regardless of whether those measures are objectively efficient or otherwise beneficial for the environment. We may get regulation that the businesses want or what the environmental groups want but neither is likely to be what an objective and selfless environmental advocate might believe is the best approach, no matter what that might be.

This point did not escape Arnold in his work when identifying the best approaches in the fourth generation of environmental law.[144] The next generation will not be immune from these political realities that have loomed over all that have come before.

Capture Theory

As a final example of a potential barrier, we must worry about whether regulators are captured by any of these interest groups and unable to

[144] As Arnold wisely warns, "[p]rescriptive scholarship excels at analyzing what should be done but too often gives little to no attention to how proposed solutions will actually be adopted and implemented in complex socio-legal systems." Arnold, *supra* note 7, at 881. Every environmental law decision has a "multitude of forces that may shape the adoption, mutation, or non-adoption of the proposal," *id.*, and "[m]ost, perhaps even all, decisions are political in nature and shaped by political interests and forces." *Id.* Arnold concludes that, "[t]he empirical fact of multiple competing goals and interests has to be taken seriously, even if authors contend that one set of principles is normatively superior to others." *Id. See also id.* at 880 ("integrationist and multimodal methods may . . . use environmental law and policy to serve special interests").

make objective decisions as a consequence. An agency may be beholden to groups that have not bought into the changed approaches being advanced by fourth generation environmental law advocates. Agencies may be incapable of adapting because they have been captured by certain interest groups.[145] Absent some major structural reform, this is a debilitating tendency that limits realistic chances of sound adaptation (even if possible).

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These institutional realities were informed by the economic analysis of decision-making bodies and processes. That is the other role for economics in the fourth generation of environmental law (as it is for all of law). Economics will continue to help us understand the ways things actually work once human action is required, whether it be in the formulation or the implementation of legal rules.

VI. CONCLUSION

There is hope that economic principles will have a greater role to play in the fourth generation of environmental law. Economics-based alternatives to state interventionist environmental laws and policies should be given a weighted place in any combined approach utilizing polycentrism or integrationist multimodality. But, even if an economic approach does not rise to that level, there should at least be some room for inclusion of these principles into the formation of the next generation's environmental strategy.

The second, more pessimistic lesson of this Essay is that, no matter what approaches are adopted, we must keep economic principles in mind to the extent that they explain some of the institutional barriers to achieving any substantive reform for objectively good environmental ends. The political and institutional realities might make any reform – no matter what direction it comes from – difficult because of the incentive structures built into the administrative agencies and in the production of legislation.

[145] *See generally, e.g.*, Joseph P. Kalt & Mark A. Zupan, *Capture and Ideology in the Economic Theory of Politics*, 74 AM. ECON. REV. 279 (1984) (explaining the mechanics of agency capture).

So what role should economics play in the fourth generation of environmental law? Economic principles should, to the greatest degree possible, inform the content of legal rules. Economics also has a role to play in providing a realistic assessment of the institutional realities and roadblocks to any reform. Using economic analysis in each of these areas of analysis will help move the next generation of environmental law in a more informed and positive direction.