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FRAMING EFFECTS AND REGULATORY CHOICE

*Jonathan Remy Nash**

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INTRODUCTION

Recent contributions to the literature in the fields of economics and psychology establish that the way in which a problem, question, or dilemma is presented to individuals may affect their responses. So-called "framing effects" may result in deviations from what economists would call a "rational" response to a problem.[1]

The legal literature has recognized the importance of this behavioral law and economics innovation (among others). If people act irrationally because of framing effects, then legal rules designed based upon the expectation that people will react in an economically rational way to them will not be effective.[2] Indeed, legal rules ought to be designed with behavioral law and economic insights—including framing effects—in mind.

But the legal literature has yet to consider the possibility that public perception of different types of regulatory instruments, as influenced by framing effects, may have an impact on instrument choice. Framing effects may render instruments subject to criticism to which other, competing instruments are not subject, even if in economic reality—i.e., framing effects to the side—the competing instruments could be subjected to the same criticism.

In this Article, I argue that framing effects can indeed play a role in rendering certain regulatory instruments more subject to criticism, and therefore less viable. As a case study, I use the question of environmental regulatory instrument choice. This focus is appropriate in light of the gulf between favorable theoretical evaluations of market-based regulation on the one hand, and generally negative public perceptions of market-based regulation and the suboptimal usage of market-based regulatory instruments on the other. The academic popularity of market-based regulation has not translated into widespread implementation of market-based instruments. This is the result in large part of successfully organized opposition to market-based regimes. Opponents of market-based regimes tend to raise two related, but distinct, arguments against them. First, it is often asserted that market-based regulatory instruments should be rejected because they give rise to a "right to pollute."[3] Second, opponents argue

1 *See infra* notes 8–17 and accompanying text.

2 *See infra* notes 18–20 and accompanying text.

3 *See infra* Part III.A.

against market-based regimes on the ground that they wrongly "commodify" the environment.[4]

In reality, virtually all environmental regulatory regimes can properly be subjected to versions of both these critiques. Nonetheless, the "right to pollute" and "commodification" critiques persist as effective challenges, particularly to market-based regulatory schemes. I suggest three frame-related reasons for the critiques' ongoing vitality with respect to market-based regulation. First, market-based regulations tend to emphasize the role of private actors and to minimize the role of the government. Second, market-based regulations are seen to separate pollution from the underlying benefit of the activity that results in pollution generation. Third, market-based regulations are seen to confer rights upon, rather than to take rights away from, polluters.

These three factors result in market-based regulatory forms' heightened susceptibility to the "right to pollute" and "commodification" critiques. In effect, the critiques' applicability is at least in part a framing effect.

This conclusion is important on two levels. First, with respect to environmental regulatory instrument choice, understanding the critiques as the results of framing helps to explain continued reliance upon command-and-control regulation despite widespread endorsement of market-based instruments. It also suggests that changes to the market-based instruments' frame might reduce framing effects, thereby making those instruments more palatable.

Second, on a broader level, the analysis with respect to environmental regulation suggests that framing effects may affect instrument choice in general. Along similar lines, understanding commodification of the environment as at least in part a framing effect may shed light on the proper scope of the "commodification" critique: when, exactly, is it wrong for a legal regime to "commodify" what had not previously been a commodity?

This Article proceeds as follows. First, in Part I, I describe the contributions of behavioral law and economics literature, and then focus on the notion of framing effects. In Part II, I provide an overview of the regulatory tools generally available to environmental regulators. In Part III, I elucidate the "right to pollute" and "commodification" critiques as applied to environmental regulation. In Part IV, I analyze the economically proper scope of the "right to pollute" and "commodification" critiques with respect to environmental regulatory instruments.

4 *See infra* Part III.B.

In Part V, I first describe the differing frames of various environmental regulatory tools. I then describe how those differing frames give rise to framing effects that are likely to affect public perception of and reaction to different regulatory tools. In Part VI, I assess the prospect for reframing as a means to defuse objections to the introduction of market-based regulation. I conclude by outlining broad lessons that might be taken, as well as possible avenues for future research.

I. BEHAVIORAL LAW AND ECONOMICS AND FRAMING EFFECTS

In this Part, I present an overview of behavioral law and economics. I then focus on one insight of behavioral law and economics: framing effects.

Basic economic analysis of law rests upon the traditional economic assumption that actors act in their economic self-interest. Empirical evidence indicates, however, that this assumption is in many cases not justified: human behavior, in other words, diverges from what pure economic self-interest as a motivation might suggest.[5] Behavioral law and economics seeks to improve the predictive power of traditional law and economics by incorporating behavioral considerations into the model.[6]

Framing effects are one example of an observable behavioral trait for which the traditional "rational actor" model does not allow. As expounded by Amos Tversky and Daniel Kahneman, the precise way in which a problem or choice is presented—i.e., its frame—may affect the decisionmaker's perception of the problem or choice, and ultimately the decisionmaker's preference.[7]

The relevance of framing turns upon another concept critical to behavioral law and economics: Tversky and Kahneman's groundbreaking work on prospect theory.[8] Prospect theory asserts two funda-

5 *See, e.g.*, Cass R. Sunstein, *Human Behavior and the Law of Work*, 87 VA. L. REV. 205, 207 (2001) (noting that most people "behave like *homo sapiens*, not like *homo economicus*" (citing Richard H. Thaler, *From Homo Economicus to Homo Sapiens*, 14 J. ECON. PERSP., Winter 2000, at 133)); *see* Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1476–81 (1998) (identifying and discussing differences between "homo economicus" and "real people").

6 *See, e.g.*, BEHAVIORAL LAW AND ECONOMICS (Cass R. Sunstein ed., 2000); Jolls et al., *supra* note 5, at 1476–81; Russell B. Korobkin & Thomas S. Ulen, *Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics*, 88 CAL. L. REV. 1051, 1074–75 (2000).

7 *See generally* Amos Tversky & Daniel Kahneman, *The Framing of Decisions and the Psychology of Choice*, 211 SCI. 453 (1981) (explaining framing effects and their significance to rational-choice theory).

8 *See, e.g.*, Daniel Kahneman & Amos Tversky, *Choices, Values, and Frames* [hereinafter Kahneman & Tversky, *Choices, Values, and Frames*], *in* CHOICES, VALUES, AND

mental ways in which people perceive options differently than the rational actor model would predict. First, people value a loss of a certain amount more negatively than the positive value they associate with a gain of the same amount. Second, people tend to overweight low probabilities and to underweight moderate and high probabilities, with the latter effect being more pronounced than the former.

The validity of prospect theory suggests the importance of framing. As Tversky and Kahneman explain, if people valued gains and losses equally and perceived probabilities exactly as they actually are, then framing would not matter. But, insofar as they do not, "different frames can lead to different choices."[9] A simple example is that "the possible outcomes of a gamble can be framed either as gains and losses relative to the status quo or as asset positions that incorporate initial wealth."[10]

There are, in effect, two aspects to framing effects: people's natural tendencies in formulating frames—so-called "mental accounting"[11]—and the ability of someone who is propounding an option to present the option—i.e., to frame it—in such a way as to take advantage of framing effects and make the option seem more or less desirable.[12] The fact that the frame in which an option is presented may be

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FRAMES 1 (Daniel Kahneman & Amos Tversky eds., 2000); Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, *in* CHOICES, VALUES, AND FRAMES, *supra*, at 17; Amos Tversky & Daniel Kahneman, *Advances in Prospect Theory: Cumulative Representation of Uncertainty*, *in* CHOICES, VALUES, AND FRAMES, *supra*, at 44 (developing an updated version of prospect theory that looks not just at risky prospects, but also at uncertain prospects to predict preferences for those prospects).

9 Tversky & Kahneman, *supra* note 7, at 454. Technically, the importance of framing rests upon the nonlinearity of the perceived value and perceived probability functions that prospect theory predicts. *See id.*; *see also* Richard H. Thaler, *Mental Accounting Matters*, *in* CHOICES, VALUES, AND FRAMES, *supra* note 8, at 241, 244 (noting as "important features" of Kahneman and Tversky's prospect theory with respect to mental accounting that (i) "[t]he value function is defined over gains and losses relative to some reference point," (ii) "[b]oth the gain and loss functions display diminishing sensitivity," and (iii) the theory respects the concept of loss aversion (emphasis omitted)).

For discussions of the effects of framing on behavior, see, for example, Eric J. Johnson et al., *Framing, Probability Distortions, and Insurance Decisions*, *in* CHOICES, VALUES, AND FRAMES, *supra* note 8, at 224, 225 (analyzing the effects of possibility assessments and perceptions of loss on consumers' decisions about insurance); Tversky & Kahneman, *supra* note 7, at 454–55; Amos Tversky & Daniel Kahneman, *Rational Choice and the Framing of Decisions*, *in* CHOICES, VALUES, AND FRAMES, *supra* note 8, at 209, 215–18.

10 Kahneman & Tversky, *Choices, Values, and Frames*, *supra* note 8, at 4.

11 *See* Thaler, *supra* note 9, at 248–68.

12 *See id.* at 245–46 (describing "principles of hedonic framing, that is, the way of evaluating joint outcomes to maximize utility," and suggesting ways in which market-

chosen deliberately with an eye toward affecting its perception is a point to which I return below, in the context of the possible use of education to correct economically inaccurate perceptions.[13]

Tversky and Kahneman identify three particular types of framing that can result in actions that are anomalous if evaluated under the rational actor model standard: framing of acts, framing of contingencies, and framing of outcomes.[14] Framing of acts refers to the question of whether two decisions are presented independently or in tandem.[15] Framing of contingencies refers to whether a possibility is presented as more or less contingent or certain.[16] Framing of outcomes refers to whether outcomes are presented as gains or losses in respect of the status quo.[17]

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ers might take advantage of it); *id.* at 246–48 (discussing the divergence between "hedonic framing" and actual framing tendencies).

13 *See infra* notes 203–04 and accompanying text.

14 *See* Tversky & Kahneman, *supra* note 7, at 453–54.

15 *See id.* at 454–55.

16 *See id.* at 456–57.

17 *See id.* Kahneman and Tversky define a "psychological account"—later referred to in the literature as a "mental account," Thaler, *supra* note 9, at 244,—as "an outcome frame which specifies (i) the set of elementary outcomes that are evaluated jointly and the manner in which they are combined and (ii) a reference outcome that is considered neutral or normal." *Id.* (citing Tversky & Kahneman, *supra* note 7, at 456). As Thaler explains, the reference point is typically the status quo. *Id.*

In a subsequent article, Kahneman and Tversky identified three different ways in which outcomes might be framed: as a minimal account, as a topical account, and as a comprehensive account. *See* Kahneman & Tversky, *Choices, Values, and Frames*, *supra* note 8, at 11. Thaler elucidates:

> Comparing two options using the minimal account entails examining only the differences between the two options, disregarding all their common features. A topical account relates the consequences of possible choices to a reference level that is determined by the context within which the decision arises. A comprehensive account incorporates all other factors including current wealth, future earnings, possible outcomes of other probabilistic holdings, and so on.

Thaler, *supra* note 9, at 244–45. While "[e]conomic theory generally assumes that people make decisions using the comprehensive account," *id.*, Kahneman and Tversky suggest that in fact people tend to evaluate acts in terms of a "minimal account," which includes only the direct consequences of the act, Kahneman & Tversky, *Choices, Values, and Frames*, *supra* note 8, at 11.

Other commentators have devised another typology of so-called "valence framing" (that is, framing that describes options in positive or negative terms). *See* Irwin P. Levin et al., *All Frames Are Not Created Equal: A Typology and Critical Analysis of Framing Effects*, 76 ORG. BEHAV. & HUM. DECISION PROCESSES 149, 150 (1998) (dividing valence framing into "risky choice framing," "attribute framing," and "goal framing" (emphasis omitted)).

The legal literature has recognized the importance of this behavioral law and economics innovation (among others). Commentators have recognized that if people act irrationally because of framing effects, then legal rules that are designed to anticipate economically rational responses from societal actors may not function as expected.[18] Other commentators have relied upon framing effects to argue that societal actors' responses to different types of legal rules may differ even if the rules are economically indistinguishable.[19] And commentators have also recognized that framing effects may influence bargaining undertaken with the potential application of a legal rule lurking in the background.[20]

Absent from the legal literature, however, is analysis of the extent to which public perception of competing regulatory options—as influenced by how the public is likely to see the options as being framed—might affect the viability of those options.[21] Such an analysis differs from extant studies involving framing effects insofar as the hypothesis I advance here suggests that a regulatory regime's framing effects

18 *See, e.g.*, Edward McCaffery et al., *Framing the Jury: Cognitive Perspective on Pain and Suffering Awards*, *in* BEHAVIORAL LAW AND ECONOMICS, *supra* note 6, at 259, 276.

19 *See, e.g.*, Christine Jolls, *Behavioral Economic Analysis of Redistributive Legal Rules*, *in* BEHAVIORAL LAW AND ECONOMICS, *supra* note 6, at 288, 294–98 (arguing that framing effects may result in a redistributive legal rule having less of a distortional effect on the work incentives of those benefited and burdened by the rule than a tax rule, even if the two rules are economically identical).

20 *See, e.g.*, Stephanos Bibas, *Plea Bargaining Outside the Shadow of Trial*, 117 HARV. L. REV. 2463, 2514–15 (2004) (discussing framing effects on plea bargaining).

21 *Cf.* David A. Dana, *A Behavioral Economic Defense of the Precautionary Principle*, 97 NW. U. L. REV. 1315, 1330 (2003) ("There is little discussion in the behavioral economics literature of what relevance, if any, biases affecting individual choice have in the context of political decisionmaking and outcomes."); Daryl J. Levinson, *Framing Transactions in Constitutional Law*, 111 YALE L.J. 1311, 1314 n.2 (2002) ("This Article does not explore the connection between the psychology of individual decisionmaking and the law's approach to framing transactions, although the intriguing connection is well worth noticing."). Dana explains the connection between individuals' cognitive biases and political results. First, politicians will tend to respond to public opinion, which in turn may be influenced by cognitive biases. Dana, *supra*, at 1330. Second, from an interest group perspective, Dana argues that "cognitive biases matter because they may affect the vigor with which a given interest group mobilizes and how much it therefore will invest in the political process in order to secure a favorable outcome." *Id.* at 1331. In addition, it seems that environmental political entrepreneurs will have an easier, and cheaper, time mobilizing public opinion where it is possible to feed into cognitive biases. *Cf.* Dale B. Thompson, *Political Obstacles to the Implementation of Emissions Markets: Lessons from RECLAIM*, 40 NAT. RESOURCES J. 645, 664–67 (2000) (describing how "political entrepreneurs" harnessed public opposition to defeat inclusion of consumer products that caused pollution in a regional pollution permit trading program).

might have influence even beyond those actors specifically subject to the particular regime. In this Article, I advance this hypothesis in the context of environmental regulation.[22]

II. OVERVIEW OF ENVIRONMENTAL REGULATORY TOOLS

In this Part, I present a brief overview of prevalent environmental regulatory tools—command-and-control regimes, information-based regimes, tax-based regimes, and tradable pollution permit regimes.

A command-and-control regime entails the government setting a particular standard with which polluters are obligated to comply.[23] Most extant command-and-control regulatory regimes establish performance standards, but may require installation of particular technologies where monitoring to determine whether a performance standard is being met may prove impractical or infeasible.[24] The most common species of command-and-control regime is technology-based—that is, a command-and-control system under which the government mandates installation of a particular pollution reduction technology. It is also possible for command-and-control regimes instead to rely upon government-established effluent limitations; the latter form of regime leaves polluters free to decide how to comply with the mandated maximum effluent standards (whether by installation of one type of technology or another, or otherwise).

An information-based regime requires polluters to divulge certain information about pollution releases.[25] In return, polluters remain free to pollute; there is no mandated pollution reduction or elimination requirement. In effect, the release of information "buys" the polluter the right to continue to pollute. The rationale underlying information-based regimes is that the release of pollution informa-

22 *See infra* Parts IV, V.

23 *See* Jonathan Remy Nash, *Too Much Market? Conflict Between Tradable Pollution Allowances and the "Polluter Pays" Principle*, 24 HARV. ENVTL. L. REV. 465, 481 (2000).

24 *See* David M. Driesen, *Is Emissions Trading an Economic Incentive Program?: Replacing the Command and Control/Economic Incentive Dichotomy*, 55 WASH. & LEE L. REV. 289, 311 (1998).

25 For example, the Toxic Substances Control Act, 15 U.S.C. §§ 2601–2692 (2000 & Supp. III 2003), requires manufacturers and processors of chemical substances to maintain and file records of the chemicals they produce. *Id.* § 2607(a). The EPA then compiles all the filings it receives and periodically releases a list of every chemical substance manufactured or processed in the United States. *See id.* § 2607(b); *see also* Emergency Planning and Community Right-to-Know Act, 42 U.S.C. §§ 11001–11050 (2000 & Supp. III 2003) (requiring disclosure of releases of toxic substances and maintenance of the Toxics Release Inventory).

tion will give rise to public pressure that will compel firms to reduce or eliminate pollution.

The remaining environmental regulatory tools—tax-based regimes and tradable pollution permit regimes—fall under the rubric of "market-based" regulatory devices. The two tools are called "market-based" because they each envision polluters making economic decisions as to whether and how much to pollute, based upon the effective market price of pollution. As I explain below, market-based systems offer the possibility of achieving a desired level of pollution reduction cost-effectively—i.e., at the lowest possible cost.

Under a tax-based regime, the government sets a tax rate for pollution emissions. Each polluter must pay a tax at that rate for each unit of pollution that the polluter emits. A tax-based regime imposes no explicit overall limit on pollution. The system relies upon the costs of pollution, as imposed through the pollution tax, to create an incentive for pollution reduction. If societal actors act with economic rationality, then actors whose marginal cost of pollution reduction is greater than the tax will continue to pollute and simply pay the tax; those whose marginal cost of pollution reduction is lower than the tax will instead opt to reduce their pollution emissions. In this way, a tax-based system will induce the most cost-effective pollution reduction steps, and thus tend to achieve overall pollution reduction at the lowest possible cost.

The implementation of a standard tradable pollution permit consists of three basic steps.[26] First, the government determines an acceptable overall level of pollution for the region[27] to be regulated. The government translates that overall level into an acceptable amount of pollution emissions over a period of time (usually annually). It then breaks that total amount down into numerous pieces, and assigns each piece to numerous "pollution permits" or "emissions allowances." Second, the government allocates the permits among societal actors. Under extant programs, that is generally accomplished by "grandfathering" the permits, that is, by allocating them at no charge to preexisting polluters in proportion to each polluter's preexisting pollution record.[28] It is also possible to use an auction as a dis-

26 *See* Nash, *supra* note 23, at 483–85.

27 The use of the word "region" should not be taken to imply that tradable pollution permit regimes cannot apply to regulate pollution of media other than air. To the contrary, tradable pollution permit regimes have been used to regulate water pollution, for example. *See infra* notes 42–43 and accompanying text.

28 Thomas W. Merrill, *Explaining Market Mechanisms*, 2000 U. ILL. L. REV. 275, 284–89.

tribution mechanism.[29] Third, the government allows societal actors to trade the permits among themselves. Although it is possible to conceive of regimes under which trading might be limited in some way,[30] most extant regimes allow for unfettered trading within the regulated region.[31]

Tradable pollution permit regimes seek to achieve pollution reduction at the lowest possible cost,[32] to increase incentives to develop new pollution-reduction technologies, and to allocate pollution allowances to those who value them most highly. These goals turn on the emergence of a robust market for permits, which in turn requires that transaction costs remain relatively low.[33]

First, as to cost-effectiveness, trading allows a firm that can reduce its pollution emissions relatively cheaply to do so and be rewarded with excess pollution permits that it can sell.[34] On the other hand, a firm with a relatively high marginal cost of pollution reduction instead can choose to purchase permits at less cost.[35] Thus, the government's overall level of pollution reduction is achieved, but at a lower cost than if the government mandated that each polluter reduced its pollution proportionately.[36]

Second, a trading regime rewards participants for every marginal reduction in pollution emissions they can achieve that costs less than the market price of a permit.[37] Because participants will be willing to pay for technologies that reduce pollution emissions, there is an in-

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29 The Clean Air Act requires that a few permits be distributed by auction each year. Clean Air Act § 416(b), (d), 42 U.S.C. § 7651o(b), (d) (2000); *see* Jonathan Remy Nash & Richard L. Revesz, *Markets and Geography: Designing Marketable Permit Schemes to Control Local and Regional Pollutants*, 28 ECOLOGY L.Q. 569, 584–86 (2001).

30 Indeed, Richard Revesz and I have recommended a system under which trading would be constrained in order to control against unacceptably large concentrations of pollutants at particular locations. *See infra* note 145.

31 *See* Nash & Revesz, *supra* note 29, at 582–614. The Regional Clean Air Incentives Market (or "RECLAIM") sulfur and nitrogen oxides emissions trading program in the greater Los Angeles metropolitan area does divide the regulated region into two zones—a coastal zone and an inland zone—with sales of permits allowed within either zone, but only from the coastal zone to the inland zone and not the other way. *Id.* at 611–12.

32 Tradable pollution permit regimes generally do not, although they perhaps should, include distributional goals. *See infra* notes 140–47 and accompanying text.

33 *See* Nash & Revesz, *supra* note 29, at 631.

34 *See* Nash, *supra* note 23, at 485.

35 *Id.*

36 *Id.* at 486.

37 *See* Driesen, *supra* note 24, at 325.

centive for companies to develop such technologies.[38] By contrast, most extant environmental regulatory regimes employ a command-and-control approach that offers no reward, and therefore little incentive to develop technologies, to reduce emissions below the regulatory standard.

Third, a trading regime in theory will allocate pollution permits to those societal actors who value them most highly. Actors who value pollution permits highly—presumably because those actors can use the permits to make more of a profit from productive use of the permits than can other actors—will be willing to pay a premium to obtain permits; in contrast, actors who value the permits less will be pleased to accept payment—presumably because they can profit more by selling the permits than by making use of them. In the end, then, the permits should wind up in the hands of those who value them most highly.[39]

Tradable pollution permits have become more common in recent years.[40] The most well known regime is the flagship national sulfur dioxide emissions program that Congress enacted under the Clean Air Act Amendments of 1990.[41] Tradable pollution permit re-

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38 *See, e.g.*, Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 STAN. L. REV. 1333, 1346 (1985). For a skeptical analysis of this point, see David M. Driesen, *Does Emissions Trading Encourage Innovation?*, 33 Envtl. L. Rep. (Envtl. Law Inst.) 10,094 (2003).

39 *But see* Saul Levmore, *Voting with Intensity*, 53 STAN. L. REV. 111, 117–18 (2000) (arguing that, where wealth is distributed inequitably, markets will "not guarantee that goods will end up where they are most wanted"). At the same time, Levmore by no means discounts the benefits of markets. He elucidates:

> While markets are often advertised as allocating goods to the highest valuing users, unequal wealth makes this claim contestable. The much more easily defended claim, and one that is normally advertised, is that markets encourage a larger economic pie, which is likely to find its way to the hands of many participants, wealthy and impoverished alike. In between is the plausible claim that even with wealth inequality, markets do a good job of encouraging a reasonable level of production of goods; utility is unlikely to be increased in switching to a scheme in which some non-market force ordered or contracted for production levels. Finally, even where markets enable wealthy but relatively low-valuing users to acquire goods, these purchases do improve the positions of both buyers and sellers.

Id. at 118–19 (footnote omitted).

40 For a general discussion of the rising role over the past thirty years of environmental economics in environmental legal policy, see Wallace E. Oates, *From Research to Policy: The Case of Environmental Economics*, 2000 U. ILL. L. REV. 135.

41 *See* Clean Air Act, Amendments of 1990, Pub. L. No. 101–549, 104 Stat. 2399 (codified as amended in scattered sections of 42 U.S.C.).

gimes have also been used to regulate water pollution[42]—indeed, the Environmental Protection Agency has recently set out guidelines for states to implement trading programs under the Clean Water Act[43]—and proposals abound to extend the use of the regimes to help regulate other environmental problems.[44] Tradable pollution permit regimes have also emerged on the international stage: the seeds for a global trading program to curb greenhouse gas emissions appear in the Kyoto Protocol.[45] Still, command-and-control regulation remains a common—if not the dominant—form of domestic environmental regulation; actual implementation of tradable pollution permit regimes lags behind their academic endorsement.[46]

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42 *See, e.g.*, Robert C. Anderson et al., *Cost Savings from the Use of Market Incentives for Pollution Control*, *in* MARKET-BASED APPROACHES TO ENVIRONMENTAL POLICY 15, 30–31 (Richard F. Kosobud & Jennifer M. Zimmerman eds., 1997) (discussing water pollution trading programs).

43 *See* Water Quality Trading Policy, 68 Fed. Reg. 1608 (Jan. 13, 2003).

44 *See, e.g.*, David Sohn & Madeline Cohen, Note, *From Smokestacks to Species: Extending the Tradable Permit Approach from Air Pollution to Habitat Conservation*, 15 STAN. ENVTL. L.J. 405 (1996) (suggesting the use of a tradable pollution permit regime for habitat conservation to preserve endangered species). *But see* Lorraine McCarthy, *State Environmental Commissioner Urges Termination of Emissions Trading Program*, 33 Env't Rep. (BNA) 2062 (Sept. 20, 2002) (indicating that New Jersey will discontinue its intrastate air pollution trading program).

45 *See* Nash, *supra* note 23, at 493–96 (citing Kyoto Protocol to the United Nations Framework Convention on Climate Change, 3d. Sess. U.N. Doc FCCC/CP/19971/Add. 1 (1998)); Richard B. Stewart, *A New Generation of Environmental Regulation?*, 29 CAP. U. L. REV. 21, 111 (2001)..

46 *See* Robert W. Hahn et al., *Environmental Regulation in the 1990s: A Retrospective Analysis*, 27 HARV. ENVTL. L. REV. 377, 404 (2003) ("In reality, market-based policy instruments are used to implement only a very small fraction of environmental regulation in the United States."); Merrill, *supra* note 28, at 277; Carol M. Rose, *Romans, Roads, and Romantic Creators: Traditions of Public Property in the Information Age*, 66 LAW. & CONTEMP. PROBS. 89, 94 (2003) ("Currently, [tradable environmental allowances] are in force only in very limited spheres, despite the enormous theoretical interest in them."); Stewart, *supra* note 45, at 24–25 ("[T]he basic system of command regulation established in the 1970s, in which environmental problems in different media are addressed in different, uncoordinated statutes, persists to this day."). *But cf.* David M. Driesen, *Trading and Its Limits*, 14 PENN ST. ENVTL. L. REV. 169, 169 (2006) (noting that, today, EPA "rarely develops any pollution control program without including some form of environmental trading within it"); Robert N. Stavins, *What Do We Really Know About Market-Based Approaches to Environmental Policy?: Lessons from Twenty-Five Years of Experience*, *in* EMISSIONS TRADING 49, 53 (Richard F. Kosobud ed., 2003) ("[T]here has been an unmistakable shift of the political center toward [market-based regulation].").

III. THE "RIGHT TO POLLUTE" AND "COMMODIFICATION" CRITIQUES

My argument that framing effects can influence environmental regulatory choice rests upon the assertion of two critiques—the "right to pollute" and "commodification" critiques—to certain forms of environmental regulatory instruments but not others. In this Part, I explicate the two critiques in the context of environmental regulation. The critiques are generally applied to the market-based regulatory tools—taxes and tradable pollution permits—with a particular emphasis on the latter. In subsequent parts, I demonstrate that both critiques in fact have applicability in respect of all the environmental regulatory options I discuss here, and argue that the particular applicability of the critiques to market-based instruments is the result, at least in part, of framing effects.

A. *The "Right to Pollute" Critique*

Many opponents assail tradable pollution permit regimes for creating a "right to pollute."[47] The problem with the government crea-

47 *See* James L. Huffman, *Markets, Regulation, and Environmental Protection*, 55 MONT. L. REV. 425, 432 (1994) ("Most environmental groups have opposed the tradeable emissions approach, generally on the ground that no one should have a right to pollute."); Barton H. Thompson, Jr., *What Good Is Economics?*, 37 U.C. DAVIS L. REV. 175, 197 (2003) ("[M]any environmentalists complain that market mechanisms are mere 'license[s] to pollute' . . . ." (quoting STEVEN P. KELMAN, WHAT PRICE INCENTIVES? ECONOMISTS AND THE ENVIRONMENT 44 (1981))); *see also* Matthew L. Wald, *Utility Is Selling Right to Pollute*, N.Y. TIMES, May 12, 1992, at 1A. Barry Commoner applied the critique, in respect of the proposal for a national sulfur dioxide emission trading program (which later came to fruition), thus:

> This is . . . a perverse parody of the "free market." . . . [I]nstead of goods—useful things that people want—being exchanged, "bads" that nobody wants are traded. It is a market that cannot operate unless it is provided with what it is supposed to exchange—pollutants. This is a proposal that not only fails to prevent pollution but actually *requires* it.

BARRY COMMONER, MAKING PEACE WITH THE PLANET 188 (1992).

Steven Kelman provides empirical evidence of the prevalence of the "right to pollute" view among Democratic Senate staffers and environmentalists in the early 1980s. *See* Steven Kelman, *Economic Incentives and Environmental Policy: Politics, Ideology, and Philosophy*, *in* INCENTIVES FOR ENVIRONMENTAL PROTECTION 291, 303–04, 304 tbl.14.3 (Thomas C. Schelling ed., 1983) (describing Democratic Senate staffers' general adherence to the "right to pollute" critique); *id.* at 310–11 tbls.14.5 & 14.6; *id.* at 311 ("Thirty-seven percent of environmentalist respondents mentioned the 'license to pollute' argument, and those mentioning that argument were also more likely to oppose charges . . . ."); *id.* at 311–19 (describing the staying power of the critique).

Some commentators suggest that even environmentalists have essentially abandoned the "right to pollute" critique. *See, e.g.*, Jonathan Baert Wiener, *Global Environmental Regulation: Instrument Choice in Legal Context*, 108 YALE L.J. 677, 726 (1999)

tion of "rights to pollute," the argument proceeds, is that it functions to remove the stigma that otherwise is, and generally should be, associated with pollution.

Steven Kelman delineates three constituent reasons why environmentalists might be concerned about government action that gives rise to a "right to pollute."[48] First, the condemnation of pollution is "good intrinsically (or right in itself), because it can be seen as just that good behavior be praised and bad behavior condemned."[49] The generation of pollution, on this account, is an evil, to be condemned along with (for example) racial discrimination and murder. By creating "rights to pollute," the government in effect endorses that evil.[50]

Second, governmental stigmatization of pollution sends a signal to society encouraging citizens to develop pro-environmental preferences.[51] So too, then, may the absence of stigma send the opposite signal: "The 'license to pollute' that an economic incentives policy implies may influence citizen preferences in a direction that gives achievement of a clean environment less weight—and hence lower the level of cleanup that society finally requires."[52] Moreover, this effect may carry over to actors who are not subject to direct regulation

("Most environmental advocates have indeed given up the 'license to pollute' rhetoric over the past fifteen years, recognizing the effectiveness of incentives at controlling pollution and seeking instead the careful design of incentive instruments to ensure real environmental quality improvement."). However, recent contributions to the literature continue to describe environmental groups as advancing the critique. *See, e.g.*, Thompson, *supra*, at 197–98.

48 *See* KELMAN, *supra* note 47, at 44–53.

49 *Id.* at 48; *see generally id.* at 47–48 (describing "a judgment that is very common" and government's ability to "apply[ ] it . . . to polluting behavior" through stigmatizing regulations).

50 *See* COMMONER, *supra* note 47, at 213; Robert E. Goodin, *Selling Environmental Indulgences*, 47 KYKLOS 573, 575 (1994) (drawing an analogy between market-based environmental regulation's "sales" of pollution rights and sales by the Catholic Church of indulgences in the Middle Ages); *see also* Richard B. Stewart, *Economic Incentives for Environmental Protection: Opportunities and Obstacles*, *in* ENVIRONMENTAL LAW, THE ECONOMY, AND SUSTAINABLE DEVELOPMENT 171, 198–99 (Richard L. Revesz et al. eds., 2000) (describing and dissecting the argument); Lior Jacob Strahilevitz, *How Changes in Property Regimes Influence Social Norms: Commodifying California's Carpool Lanes*, 75 IND. L.J. 1231, 1285 (2000) (summarizing the argument, which Strahilevitz opines is "too simplistic to be satisfying"); *id.* ("Pollution is a bad thing, and the government should not approve of anyone's efforts to produce it." (footnote omitted)).

51 *See* KELMAN, *supra* note 47, at 49–52. This stigma may not translate, however, into strong pro-environmental norms that significantly affect behavior. *See* Ann E. Carlson, *Recycling Norms*, 89 CAL. L. REV. 1231, 1295–96 (2001) (drawing on empirical evidence to conclude that the degree to which recycling behavior is convenient may encourage the behavior more than a social norm in favor of the behavior).

52 KELMAN, *supra* note 47, at 49.

by the government; thus, it is possible that actors who are directly subject to government regulation that gives rise to a "right to pollute" may reduce their pollution (as they are obligated to under the regulation), but that society's overall attitude toward reduction of pollution is less demanding, with the result that overall pollution in fact increases.[53]

Third, Kelman argues that governmental recognition of a "right to pollute" would remove an incentive for polluters to reduce their own pollution: "Stigmatization of polluting behavior will tend to increase compliance with social measures to reduce pollution. Stigmatization may also act to make polluters realize that their behavior shows insufficient concern for others, thus changing their attitudes and, perhaps, their resistance to environmental laws."[54]

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53 Bruno Frey argues:

> The sale of licenses allowing a specific amount of pollution suggests to people that pollution is not morally condemned and that once a license has been granted, a 'license to pollute' has been acquired. The environmental decision-makers . . . fear the destruction of environmentally relevant intrinsic motivation spilling over into those areas where pricing instruments are not applicable . . . . People perceive the environment as a whole. Decision-makers fear that the use of pricing instruments would lead to a counterproductive effect: the quality of the environment is improved in those areas where tradeable licenses (or environmental charges or taxes) are applied, but environmental quality is lowered in all other areas because the guiding environmental ethic has weakened or has been completely destroyed. This reduced ethic moreover hampers individuals' willingness to accept any kind of action to fight pollution, i.e., political support for environmental policies would also be decreased.

Bruno S. Frey, *Motivation as a Limit to Pricing*, 14 J. ECON. PSYCHOL. 635, 652 (1993).

The potential for both command-and-control restrictions and ethical motivations to influence behavior is demonstrated by a sign in the Tulane University main parking complex elevator, which reads: "COURTESY IS CONTAGIOUS! PLEASE PARK WITHIN THE LINES. VIOLATORS WILL BE ISSUED CITATIONS!" *See also* Charisse Jones, *NYC Tackles Cellphone Etiquette: Legislating What's Rude Goes Too Far, Some Claim*, USA TODAY, Oct. 31, 2002, at 3A (discussing proposed New York City legislation that would have imposed fines on individuals whose cellular telephones ring during indoor performances).

54 KELMAN, *supra* note 47, at 52; *see generally id.* at 52–53 (connecting "the success of stigmatization with the existence of a sense of social interdependence").

Compare Kelman's argument with the argument advanced in David B. Spence, *The Shadow of the Rational Polluter: Rethinking the Role of Rational Actor Models in Environmental Law*, 89 CAL. L. REV. 917 (2001). Spence argues that the existing environmental regulatory framework relies too heavily on a "rational polluter" presumption—that is, the presumption that societal actors will pollute to the extent that regulation directs them not to. *See id.* at 919–31. Spence suggests that many societal actors choose to reduce their pollution on their own, and that in fact many polluters exceed pollution limits unintentionally—despite extensive and expensive efforts to comply—sim-

B. The "Commodification" Critique

Opponents also frequently raise a "commodification" critique of tradable pollution permit regimes and certain other forms of environmental regulation.[55] This complaint argues that tradable pollution permits render the environment, or environmental quality, a mere "commodity," and that that "commodification" is wrong. Despite this general statement of the commodification critique, the critique in fact arises in different guises and with varying scope.

It is appropriate to begin an elucidation of commodification with a discussion of commensurability, of which commodification is a special case.[56] Essentially, two items are commensurable if there is a com-

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ply because the pollution restrictions established by government are too arcane and complex for strict compliance reasonably to be expected. *See id.* at 931–77. Based upon this, Spence argues that environmental regulation should be modified to take into account the average polluter's good faith efforts to reduce pollution and to comply with government regulation. *See id.* at 993–96.

Interestingly, if those who attach import to the stigmatization of pollution emissions for the development of proper social norms are correct, then Spence's argument may suffer from a circularity: Spence argues in effect that the fact that societal actors will not generally pollute up to the limits of government regulation justifies moving away from a strict command-and-control regulatory approach. Yet if the critics of market-based regulation are correct, then the persistence of command-and-control regulation is *the very reason* that societal actors conform to norms of pollution reduction. If that is so, then while the removal of command-and-control regulation might in the short run create greater governmental-private sector cooperation toward pollution reduction, it would likely in the long run lead to far greater pollution as a result of the removal of both (i) strict limits on pollution emissions and (ii) the resulting anti-pollution norms.

Kelman's argument may also be contrasted by an argument advanced by Timothy Malloy. *See* Timothy F. Malloy, *Regulating by Incentives: Myths, Models, and Micromarkets*, 80 TEX. L. REV. 531 (2002). Malloy advances the claim that traditional analyses of corporate compliance with environmental regulation have assumed, wrongly, that corporate decisionmaking is monolithic. *Id.* at 544–49. Malloy argues to the contrary that environmental decisionmaking within the corporate form is generally far more complex and will depend upon exactly how the decisionmaking authority is vested within the corporate structure. *Id.* at 592–600. As such, the effect of external factors, including social norms, on corporate environmental compliance decisions may depend upon which individuals and/or divisions within a corporation are actually called upon to make those decisions. *Id.* at 556–65.

55 KELMAN, *supra* note 47, at 44 (noting that environmental incentives are seen by opponents as granting "an unacceptable 'license to pollute'").

56 *See* Frederick Schauer, *Instrumental Commensurability*, 146 U. PA. L. REV. 1215, 1215 n.3 (1998) ("The debates about commodification plainly are related to the debates about commensurability. . . . For instance, a belief in universal commodification would presuppose the validity of commensurability. More reasonably, one could believe that all values or reasons are reducible to a common metric of utility, pleasure,

mon metric according to which they can be ranked relative to one another; the two items are incommensurable if that is not the case.[57]

Commodification is a type of commensurability. The fact that something has been "commodified" means that it has been rendered property-like, and subject to market-like transactions.[58] The commodified thing necessarily then is commensurable with other things like it, insofar as the things can be (effectively or literally) bought and sold for money; thus, dollar value provides the common metric that commensurability requires. In effect, the commodified thing is rendered, like the money for which it can be traded, fungible.[59]

But commodification goes beyond commensurability: Property-like features and market-like transactions are not required for commensurability, but are critical to commodification. Margaret Radin elucidates the concept of commodification, suggesting two constructions of the term "commodification," one narrow and the other broad. The narrow conception of commodification "describes actual buying and selling (or legally permitted buying and selling) of something."[60] The broad conception includes "not only actual buying and selling, but also market rhetoric, the practice of thinking about interactions as if they were sale transactions, and market methodology, the use of monetary cost-benefit analysis to judge these interactions."[61]

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self-expression, virtue, or something else, but are not reducible to a common metric of a medium of exchange." (citations omitted)).

57 *See* MARGARET JANE RADIN, CONTESTED COMMODITIES 118 (1996) ("By commensurability, I mean that values of things can be arrayed as a function of one continuous variable, or can be linearly ranked."); Matthew Adler, *Law and Incommensurability: Introduction*, 146 U. PA. L. REV. 1169, 1170 (1998) ("Roughly speaking, 'incommensurability' means the absence of a scale or metric."); Cass R. Sunstein, *Incommensurability and Valuation in Law*, 92 MICH. L. REV. 779, 796 (1994) ("Incommensurability occurs when the relevant goods cannot be aligned along a single metric without doing violence to our considered judgments about how these goods are best characterized." (emphasis omitted)). The term's precise definition is open to some debate. *See, e.g.*, Adler, *supra*, at 1170 (discussing three related, but distinct, definitions of incommensurability of options); Sunstein, *supra*, at 795–99 (describing the contours of the term); *cf. id.* at 798 (distinguishing commensurability from compatibility). The concept of "incommensurability" has been the subject of considerable academic attention. *See, e.g.*, Sunstein, *supra*; Symposium, *Law and Incommensurability*, 146 U. PA. L. REV. 1169 (1998).

58 *See* Margaret Jane Radin, *Market-Inalienability*, 100 HARV. L. REV. 1849, 1855 (1987) (defining "commodified" as something "deemed suitable for trade in a laissez-faire market").

59 *See infra* note 63 (discussing the link between commodification and fungibility).

60 *Radin, supra* note 58, at 1859.

61 *Id.*

Radin then defines "universal commodification" as the broad conception of commodification "in its most expansive form."[62] Universal commodification "limit[s] actual buying and selling only by the dictates of market methodology, and solving problems of contested commodification by making everything in principle a commodity."[63]

With the general contours of commodification in place, I turn to two questions that arise in the particular context of commodification of the environment. First, why is commodification of the environment thought to be a bad thing?[64] Second, what exactly constitutes commodification of the environment?

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62 *Id.*

63 *Id.* Under universal commodification, "anything some people are willing to sell and others are willing to buy in principle can and should be the subject of free market exchange," and "everything people need or desire, either individually or in groups, is conceived of as a commodity." *Id.* at 1860.

In her book, *Contested Commodities*, Radin offers a more formal description of commodification, one that links commodification with the concepts of fungibility and commensurability:

> [L]iteral complete commodification is characterized by (1) exchanges of things in the world (2) for money, (3) in the social context of markets, and (4) in conjunction with four indicia of commodification in conceptualization. Those four conceptual indicia characterize complete commodification in rhetoric. They are (i) objectification, (ii) fungibility, (iii) commensurability, and (iv) money equivalence. Literal commodification and commodification in conceptualization need not be coextensive in practice, but they are loosely interdependent. Unless the market conceptual scheme (market rhetoric) were prevalent in the world, literal market exchanges could not have the meaning they do. And unless literal market exchanges were prevalent in [the] world, we would not be able to operate inside the conceptual scheme the way we do.

RADIN, *supra* note 57, at 118. Radin further expounds:

> The indicia of commodification in conceptualization are related to one another, but each of them plays a slightly different role in our understanding of commodification. Objectification relates to ontological commitment. By objectification, I mean ascription of status as a thing in the Kantian sense of something that is manipulable at the will of persons. Fungibility relates to exchange. By fungibility, I mean at least that the things are fully interchangeable with no effect on value to the holder. Fungibility may also mean that the things can be equated with a sum of money. If fungibility has this meaning, it collapses into commensurability. Commensurability relates to the nature of value. By commensurability, I mean that values of things can be arrayed as a function of one continuous variable, or can be linearly ranked. By money equivalence, I mean that the continuous variable in terms of which things can be ranked is dollar value.

Id.

64 That is not to say that it is the commodification only of the environment that is the subject of criticism. For a recent extension of commodification (through cost-

Kelman offers the most thorough treatment of the problems that supposedly arise from commodification of the environment. Kelman identifies two "psychological costs of using the market" to regulate environmental protection: the "feeling-falloff effect"[65] and the "downvaluation effect."[66] With respect to the feeling-falloff effect, Kelman first argues that the necessarily impersonal nature of market transactions will tend to decrease the value of human interactions. This will have the effect, he continues, of decreasing feeling-inducing behaviors—such as altruism and spontaneity[67]—and increasing feelings of loneliness and distrust.[68]

Kelman identifies three essential reasons for the downvaluation effect of markets. First, the feeling-falloff effect itself results in a loss of value.[69] Second, goods that are not subjected to market transactions because of a perception that they should be shared equally lose that status when markets are introduced.[70] Third, Kelman notes that

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benefit analysis) that some—but not all, *see infra* note 66—criticize, see Edmund L. Andrews, *New Scale for Toting Up Lost Freedom vs. Security Would Measure in Dollars*, N.Y. TIMES, Mar. 11, 2003, at A13 ("In an unusual twist on cost-benefit analysis, an economic tool that conservatives have often used to attack environmental regulation, top advisers to President Bush want to weigh the benefits of tighter domestic security against the 'costs' of lost privacy and freedom.").

65 *See* KELMAN, *supra* note 47, at 57–69.

66 *See id.* at 69–77. Sometimes, however, commodification actually might make people realize how valuable something really is—either because the market value is higher than what people might have anticipated, or because of the realization that the market value does not in fact capture the item's true worth. Thus, for example, consumer advocate and former Green Party presidential candidate Ralph Nader supports a proposal to monetize the benefit of certain freedoms in order to determine whether the new antiterrorism security measures that would necessitate the loss of those freedoms are justified:

> "As long as they're going to deal with monetary evaluations, I told them they should start asking about the cost of destroying democracy," said Mr. Nader, who lobbied Mitchell E. Daniels Jr., the [White House] budget office director, on the issue. "If the value assigned to civil rights and privacy is zero, the natural thing to do is just wipe them out."

Andrews, *supra* note 64.

67 *See* KELMAN, *supra* note 47, at 62–69; *cf.* William E. Nelson, *Two Models of Welfare: Private Charity Versus Public Duty*, 7 S. CAL. INTERDISC. L.J. 295, 315 (1998) (suggesting that the shift over the last century to a centralized, government-dominated approach for dealing with the poor in the United States has resulted in a decrease in charitable giving but allowing more time to pursue careers and expanding businesses by propounding the understanding that it is now the government's responsibility to care for the poor).

68 *See* KELMAN, *supra* note 47, at 60–62.

69 *See id.* at 70–71.

70 *See id.* at 71.

"one is able to proclaim the special value of something simply by keeping it outside the system of markets and prices of which most valued things form a part;"[71] to subject such goods to market transactions would cause an inherent downvaluation.[72]

With an understanding of why critics see commodification of the environment as problematic, I turn to the question of what exactly constitutes commodification of the environment. To some, commodification of the environment entails simply engaging in activities that require one to assign values to the environment. As her elucidation of the broad conception of commodification reflects, Radin understands cost-benefit analysis to fall within the purview of commodification, broadly construed.[73] Indeed, since "[m]arket methodology includes a cost-benefit analysis,"[74] "a healthful environment" can constitute a commodity under Radin's conception of "universal commodification."[75] Elizabeth Anderson similarly sees cost-benefit analyses undertaken in respect of environmental protection as an example of commodification of the environment.[76] Steven Kelman sees the introduction of a tax-based environmental regulatory regime as commodification of the environment.[77] And Radin notes Kelman's criticism of tax-based environmental regulation[78] in the context of equating "commodification" with the "[m]onetization . . . of clean air and water."[79] Frank Ackerman and Lisa Heinzerling also endorse this view, characterizing cost-benefit analysis as "involv[ing] the creation of artificial markets for things—like good health, long life, and clean air—that are not bought and sold."[80] Thus, the broadest

71 *Id.*

72 *See id.* at 71–77; *cf.* RADIN, *supra* note 57, at 120 ("The idea of fungibility, even without commensurability, still undermines the notion of individual uniqueness."); Holly Doremus, *The Special Importance of Ordinary Places*, 23 ENVIRONS ENVTL. L. & POL'Y J. 3 (2000) (arguing that the only way to safeguard nature is to protect and preserve ordinary places and things).

73 *See supra* text accompanying note 61.

74 Radin, *supra* note 58, at 1861.

75 *Id.* at 1860.

76 *See* ELIZABETH ANDERSON, VALUE IN ETHICS AND ECONOMICS 203–10 (1993); *see also* Katharine K. Baker, *Consorting with Forests: Rethinking Our Relationship to Natural Resources and How We Should Value Their Loss*, 22 ECOLOGY L.Q. 677, 679 n.10 (1995) (using the term "commodification" to refer to the "process of characterizing and placing a dollar figure upon a good or value that is not generally marketable").

77 *See* KELMAN, *supra* note 47, at 54–83.

78 Radin, *supra* note 58, at 1857 n.36.

79 *Id.* at 1857.

80 Frank Ackerman & Lisa Heinzerling, *Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection*, 150 U. PA. L. REV. 1553, 1562 (2002). *But see* Lewis A. Kornhauser, *On Justifying Cost-Benefit Analysis*, 29 J. LEGAL STUD. 1037, 1048 (2000) ("[T]he

commodification critique alleges that it is simply wrong to engage in a system that effectively places a monetary value on the environment.

But the commodification critique also can be focused more narrowly, and more directly, where an actual market exists. Radin's approach acknowledges that the commodification argument reaches its zenith where "actual buying and selling" occurs.[81] Kelman takes the same position.[82] Thus, while taxes and tradable permits both may be considered "market-based" forms of environmental regulation, tradable permits accentuate the problems of commodification since only they require the existence and use of a true "market." Only under a tradable pollution permit regime is the "'[right]' to emit a unit of pollution . . . subject to resale."[83] Only a tradable pollution permit regime creates an actual commodity, an alienable property interest, in environmental quality.[84]

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commodification critique rests on a mistaken interpretation of the formal theory: cost-benefit analysis does not price life, the environment, or any other irreplaceable commodity. Rather, cost-benefit analysis places a value on specific policies offered in specific contexts.").

81 *See* Radin, *supra* note 58, at 1859.

82 Kelman explains:

> Setting a charge means using prices to steer production and allocation, but when charges are used there is (in contrast to a marketable rights system where "rights" to emit a unit of pollution would actually be auctioned off and subject to resale) no direct market *exchange* of a thing called environmental quality. Instead, the charge ideally would be set by determining the price that would have resulted had there been market exchange.
>
> The full-blown psychological costs of using the market occur in instances where prices are established *and* where market exchange (with the attendant decrease in production of positively valued feelings) occurs as well. These would be relevant in discussions of proposals by economists for greater reliance on the market in areas such as health care or education. They are not, at least conceptually, fully relevant to proposals for using charges in environmental policy (although they would be for marketable rights proposals).

KELMAN, *supra* note 47, at 83; *see also* GREGORY S. ALEXANDER, COMMODITY AND PROPRIETY 183 (1997) ("Commodities are associated with freedom, but they are also associated . . . with alienation [of feelings and interpersonal relations]."). *But see* Norman W. Spaulding III, Note, *Commodification and Its Discontents: Environmentalism and the Promise of Market Incentives*, 16 STAN. ENVTL. L.J. 293, 297–98 (1997) (noting that there is "complete commodification" only where the market sets both the ends and the means, and that current market-based approaches fall short of this in that they enlist the market only to set the means, not the ends (which are set politically)).

83 KELMAN, *supra* note 47, at 83.

84 *See* Neil Duxbury, *Law, Markets and Valuation*, 61 BROOK. L. REV. 657, 691 n.94 (1995) ("There are some things which do not have the capacity to consent to the process of commodification and yet which may be degraded by that very process. There may exist strong feelings, for example, that the creation of markets in pollution

Thus, the commodification critique applies generally to market-based forms of regulation—that is, taxes and tradable pollution permits—because those types of regulation rest inherently on some notion of a market for environmental quality. The implicit presumption is that other environmental regulatory instruments do *not* rest on any notion of market, and so are not subject to the commodification critique. Moreover, proponents of the commodification critique acknowledge that tradable pollution permit regimes are more subject to the critique than tax-based (and, a fortiori, other) regimes. The assumption here is that tradable pollution permit regimes, alone among environmental regulatory regimes, give rise to alienable property-based rights in the environment.

IV. ECONOMIC REALITY AND THE CRITIQUES

In this Part, I subject both the "right to pollute" and "commodification" critiques to the light of economic reality.

A. The Economic Reality of the "Right to Pollute" Critique

In this subpart, I explain that, notwithstanding certain common understandings to the contrary, all environmental regulatory approaches short of complete pollution bans give rise to some form of "right to pollute." Moreover, all these rights to pollute are, in one way or another, alienable. Thus, the tendency to focus the "right to pollute" critique against market-based regulatory instruments, and tradable pollution permit regimes in particular, is not grounded in economic reality.

I begin my analysis by considering tradable pollution permits, since these are most widely, and most clearly, seen to give rise to "rights to pollute." Indeed, the tradable pollution permits themselves seem to embody "rights to pollute" as a property-based entitlement.

It is widely accepted that tradable pollution permits are a form of property.[85] The common wisdom is that they are property specifically

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rights encourages environmental degradation by making polluting activities permissible at a price. One can hardly defend such activities by developing an argument based on consent, for the environment does not have the capacity to consent." (citation omitted)); *see also* Oates, *supra* note 40, at 142 (describing Oates' initial response to J.H. Dales' proposal to implement a tradable pollution permit regime as "skeptic[al]" because of the perception that Dales was "advocating that we effectively put the environment up for sale"; Oates notes that his perception "was proved wrong").

85 Here, I mean "property" in the traditional sense, not "constitutional property" subject to the Fifth Amendment's Takings Clause. *Cf.* Thomas W. Merrill, *The Landscape of Constitutional Property*, 86 VA. L. REV. 885, 942–94 (2000) (discussing the relationship between traditional notions of property and "constitutional property").

because they are tradable.[86] While it is true that alienability is a cornerstone element of property, it turns out that, from a property law perspective, tradability does not distinguish tradable permits from other regulatory tools. In fact, many other regulatory tools—including command-and-control regulation, information disclosure regulation, and tax-based regulation—also give rise to property rights. Tradability separates tradable permits from other regulatory forms only in that tradability renders tradable permits *stand-alone* property rights.

Most observers think of a tradable pollution permit as giving rise to some form of property right.[87] One who owns a permit enjoys

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86 *See, e.g.*, Terry L. Anderson & J. Bishop Grewell, *Property Rights Solutions for the Global Commons: Bottom-Up or Top-Down?*, 10 DUKE ENVTL. L. & POL'Y F. 73, 90–91 (1999) (noting that the Los Angeles metropolitan area trading program for smog precursor emission permits "created . . . property rights"); Robert W. Hahn & Gordon L. Hester, *Where Did All the Markets Go? An Analysis of EPA's Emissions Trading Program*, 6 YALE J. ON REG. 109, 143 (1989) ("[R]egulators have defined a set of property rights and placed minimum restrictions on their use" in structuring tradable emission permit regimes.); Lisa Heinzerling, *Selling Pollution, Forcing Democracy*, 14 STAN. ENVTL. L.J. 300, 308 (1995) ("[J.H.] Dales suggested the government create pollution permits that reflect, in total, a pollution limit set by the government, and then allow firms to trade the permits as if they were property." (footnote omitted)); James E. Krier, *Marketable Pollution Allowances*, 25 U. TOL. L. REV. 449, 449–50 (1994) ("[Sulfur dioxide emission permits] have some essential property-rights characteristics. Chiefly, they confer entitlements to pollute, and these entitlements are transferable—they may be bought and sold on the market."); Clare Langley-Hawthorne, *An International Market for Transferable Gas Emission Permits to Promote Climate Change*, 9 FORDHAM ENVTL. L. REV. 261, 298 (1998) ("The theory of tradable emission permits creates a market for emission as externalities, and grants a quasi property right to the commons by granting what is, in effect, a license to pollute." (footnote omitted)); Franz Xaver Perrez, *The Efficiency of Cooperation: A Functional Analysis of Sovereignty*, 15 ARIZ. J. INT'L & COMP. L. 515, 555 (1998) ("[T]he creation of tradable pollution rights as proposed in the academic literature or adopted under the Clean Air Act Amendments of 1990 for sulfur dioxide emission, is an attempt to create individual property rights." (footnotes omitted)).

87 Borrowing from Richard Stewart and James Krier, Carol Rose describes tradable pollution permit regimes as creating "hybrid property." *See* Carol M. Rose, *The Several Futures of Property: Of Cyberspace and Folk Tales, Emission Trades and Ecosystems*, 83 MINN. L. REV. 129, 163–64 (1998) (citing Richard B. Stewart, *Privprop, Regprop, and Beyond*, 13 HARV. J.L. & PUB. POL'Y 91, 93 (1990), and Krier, *supra* note 86, at 449 (footnote omitted)). To similar effect, see also DANIEL H. COLE, POLLUTION AND PROPERTY 45 (2002); David M. Driesen, *What's Property Got to Do with It?*, 30 ECOLOGY L.Q. 1003, 1007–10 (2003); Stewart, *supra*, at 93–94.

The rights to which tradable pollution permit regimes give rise may, or may not, be subject to the Fifth Amendment's Takings Clause. *See supra* note 85. But that is true as well of "rights" under other environmental regulatory regimes.

many of the standard incidents of property ownership[88]: The owner has the right to possess exclusively the permit, to use the permit, to sell or otherwise dispose of the permit, and to pledge the permit to creditors.[89] Even the Congress that created sulfur dioxide emission allowances and statutorily purported to disclaim their property status[90] nonetheless characterized the permits as "quasi-property."[91]

Although the general view is that, in contrast to tradable pollution permit regimes, command-and-control regimes do not create property, the reality is that they also give rise to a property-based entitlement to pollute. The general misconception that they do not seems to arise from the view that tradable pollution permit regimes do, while command-and-control regimes do not, allow for alienability of pollution rights. While only permit systems feature independent alienability, both permit systems and command-and-control systems give rise to property-based rights. Although it is true that alienability is a basic touchstone of whether a distinct property right exists,[92] the

88 *See* A. M. Honoré, *Ownership*, *in* OXFORD ESSAYS IN JURISPRUDENCE 107, 112–28 (A.G. Guest ed., Clarendon Press 1968) (1961).

89 *See* Daniel H. Cole, *Clearing the Air: Four Propositions About Property Rights and Environmental Protection*, 10 DUKE ENVTL. L. & POL'Y F. 103, 113–14 (1999) (noting that, even though the statute that creates sulfur dioxide emission allowances under the national sulfur dioxide emission trading program includes a statement that the allowances are not property, the statute nonetheless "expressly recognizes property rights in emission allowances" (footnote omitted)); Krier, *supra* note 86, at 449–50.

90 *See* 42 U.S.C. § 7651b(f) (2000) (providing that a sulfur dioxide emission allowance constitutes only a "limited authorization to emit sulfur dioxide" and does "not constitute a property right").

91 Henry E. Mazurek, Jr., *The Future of Clean Air: The Application of Futures Markets to Title IV of the 1990 Amendments to the Clean Air Act*, 13 TEMP. ENVTL. L. & TECH. J. 1, 11 (1994) ("[A] House Energy and Commerce Committee report issued during final debate over the [Clean Air] Amendments stated that allowances are like 'quasi-property,' and therefore can be reported as 'utility assets.'" (quoting H.R. REP. NO. 101–490, pt. 1, at 366 (1990))). "Congress further emphasized the durable nature of an 'allowance' when Congressman Mike Oxley of Ohio interpreted the statute as granting 'only Congress and the President, acting together through legislation . . . the authority to limit or [to] revoke allowances.'" *Id.* at 11 (quoting 136 CONG. REC. E360, E3672 (daily ed. Nov. 2, 1990) (statement of Rep. Oxley)); *see also id.* at 19–29 (discussing the development of the sulfur dioxide emission allowance futures market); Adam J. Rosenberg, Note, *Emissions Credit Futures Contracts on the Chicago Board of Trade: Regional and Rational Challenges to the Right to Pollute*, 13 VA. ENVTL. L.J. 501, 518–19 (1994) (same).

92 *See, e.g.*, Lynda L. Butler, *The Pathology of Property Norms: Living Within Nature's Boundaries*, 73 S. CAL. L. REV. 927, 929–30 (2000) (noting that the "[b]asic characteristics of property include . . . free transferability, or the right to alienate property" (citing 6 AMERICAN LAW OF PROPERTY §§ 26.1–.4 (A. James Casner ed., 1952))). *But see* Andrus v. Allard, 444 U.S. 51, 65–66 (1979) (establishing that Fifth Amendment prop-

fact that command-and-control regimes do not allow for the alienability of any new property interest simply means that such regimes do not create new property interests that are separable from preexisting property interests; it does not mean that these regimes do not convey a valuable property right.

To see this, consider a traditional command-and-control regime, under which firms receive permits to emit a pollutant over a given period of time provided that certain conditions (such as a cap on the total amount emitted, or the installation of a particular pollution reduction technology) are met. The permits are not tradable. Each permit inheres in the factory in respect of which it was issued; that is, if the stock of the company that owns a factory to which a permit has been issued is sold, the purchaser acquires the right to exploit the permit. In this case, the permit clearly is a valuable asset to the factory owner. Indeed, the permit has a value that presumably is amortized in the overall value of the factory. In other words, a prospective purchaser of the stock of the factory's owner would pay some additional amount if the factory has an existing permit above what it would pay if the purchaser would have to expend funds to obtain a new permit.[93] Thus, the permit constitutes a right that broadens the bundle of property rights that ownership of the factory represents, and it is a right that enhances the value of that property bundle.[94] Viewed from the perspective of property rights, command-and-control regimes appear as pollution permit regimes under which the permits are not tradable

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erty rights not removed by a prohibition of commercial transactions in parts of bird legally killed before laws prohibited killing); Margaret Jane Radin, *The Liberal Conception of Property: Cross Currents in the Jurisprudence of Takings*, 88 COLUM. L. REV. 1667, 1673–74 (1988) (noting that the Supreme Court's Takings jurisprudence has afforded low constitutional protection to the right of alienability).

93 *See* Robert W. Hahn & Roger G. Noll, *Barriers to Implementing Tradable Air Pollution Permits: Problems of Regulatory Interactions*, 1 YALE J. ON REG. 63, 70 (1983) ("[G]iving a firm a permit to operate a polluting facility if it is in compliance with regulatory standards conveys a limited property right."). Allowing the permits to be tradable enhances the value of the permits. *See id.*; *see also id.* at 72 ("[R]egulation of SOx emissions in Los Angeles [through, at the time, non-tradable pollution permits] has created a new property right—a permit to emit—that is half as valuable as the compliance costs that have been undertaken to meet existing standards and roughly ten times as valuable as the short-run efficiency gains to be derived from making permits freely tradable.").

94 Along similar lines, to the extent that the tax code authorizes a corporation that purchases another corporation to benefit from the purchased corporation's unused net operating losses, *see generally* I.R.C. § 382 (West 2002 & Supp. 2006) (establishing limits on certain losses following ownership change), one would expect the sellers of the purchased corporation to have fetched a better price than they would have if the corporation had no usable net operating losses.

separate from the underlying property.[95] In the end, moreover, whether the government in fact issues actual "permits" or not is of no moment; the property nature of the right conferred remains.

Thus, command-and-control regimes give rise to property-based "rights to pollute." An effluent-based standard authorizes pollution up to the applicable effluent limitation. A technology-based standard authorizes pollution once the polluter has installed the requisite pollution reduction technology. A cap on total pollution allows pollution up to that cap.

Along similar lines, an information disclosure regulatory regime also gives rise to a property-based interest. Once the information is disclosed, the firm has the right to pollute. Moreover, to the extent that that right is a valuable one (and exceeds any costs associated with the disclosure), the value of the firm will have increased, reflecting the addition of that valuable right. As above, one can conceive of the firm as having obtained permits to pollute from the government (with the question of whether or not the firm in fact receives actual permits remaining irrelevant).

Although they may not always be seen to do so, tax regimes also create property-based rights to pollute. Specifically, they confer upon polluters the right to emit pollution for each quantum of tax paid.[96] In effect, then, these regimes set up markets[97] in (nontransferable)

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95 This is in conformance with the notion I have advanced elsewhere, that to every tradable pollution permit regime there corresponds an "underlying command-and-control regime." *See* Nash, *supra* note 23, at 519. In structuring a typical tradable pollution permit regime, the government establishes an acceptable ambient level of pollution, translates that level into an acceptable annual amount of emissions, divides that annual amount into a number of emission permits, and distributes those permits among polluters and other societal actors. *Id.* at 483–84. The government then allows free trading of those permits. *Id.* at 484–85. The underlying command-and-control regime corresponding to that tradable pollution permit regime comes about when the government undertakes all the aforementioned steps *except that* it does not allow trading of permits apart from the underlying property. *See id.* at 486.

96 *Cf.* PAUL B. DOWNING, ENVIRONMENTAL ECONOMICS AND POLICY 194 (1984) ("The effluent fee system implies that property rights are owned by recipients [of pollution damage]. . . ."). This statement simply recognizes the fact that, before any taxes are paid, property rights to pollute reside with the government, acting as proxy for those who would be harmed by pollution emissions. Once taxes are paid, of course, the property rights are transferred to the payors.

97 Traditional tax regimes generally apply a uniform tax rate, and thus set up "markets" that offer the commodity at a fixed price. But this need not be the case—it is possible, in theory, to take into account changes in marginal pollution reduction cost by varying the tax rate over time, although this may prove difficult in practice. *See* Louis Kaplow & Steven Shavell, *On the Superiority of Corrective Taxes to Quantity Regulation*, 4 AM. L. & ECON. REV. 1, 6 (2002); Oates, *supra* note 40, at 139–40; *cf.*

pollution emission rights; this is no different in effect from purchasing additional units of a product on a spot market. It is true that these pollution rights are not alienable separate from the underlying property, but they need not be, since any polluter always can opt to pay more in tax and thus to purchase additional pollution rights.[98]

In summary, then, while only tradable pollution permit regimes give rise to individuated property-based rights, it remains the case that tradable pollution permits, command-and-control regulation, information-based regulation, and tax-based regimes all give rise to property-based rights to pollute. Indeed, it seems that, insofar as all these regulatory approaches allow polluters to engage in some amount of pollution, all these systems give rise to property-based rights to pollute.[99] More generally, all environmental regulatory regimes, short of absolute bans on pollution, give rise to property-based "rights to pollute."[100]

Indeed, the realization that only a total ban on pollution confers no "right to pollute" truly undermines the critique insofar as, in reality, a total ban on pollution is both impractical and undesirable.[101] While pollution standing alone may be undesirable and might even be considered an "evil," the fact remains that many socially beneficial ac-

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Strahilevitz, *supra* note 50, at 1251 (describing a system under which drivers may pay a toll to gain access to San Diego freeway express lanes, with the toll varying according to how much traffic is currently making use of the express lanes, explaining "[t]he more traffic is in the Express Lanes, the higher the toll will be").

98 *Cf.* Frank Snare, *The Concept of Property*, 9 AM. PHIL. Q. 200, 201 (1972) ("Some rules, although they regulate property, presuppose its existence. Laws which tax property would be such as these." (footnote omitted)).

99 *See, e.g.*, Cole, *supra* note 89, at 105–09 (arguing that "all solutions to environmental problems are 'property-based'"); Carol M. Rose, *Rethinking Environmental Controls: Management Strategies for Common Resources*, 1991 DUKE L.J. 1, 23 ("Many of us who teach property law think that all these control strategies [for regulating the environment] represent different kinds of property regimes, but conventional usage only calls the individualized right a property right.").

That is not to say that the value of the property rights conferred by the various systems is identical. Indeed, it is likely that the values would be different. For example, an independently alienable right is likely more valuable than a right that can only be transferred in conjunction with the underlying asset.

100 Nash, *supra* note 23, at 529; Wiener, *supra* note 47, at 724 ("[A]ll policies, except an absolute ban, amount to licensing some 'right to pollute.'").

101 That is not to say that a ban on a *particular pollutant* is necessarily either impractical or undesirable. For example, the Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, S. TREATY DOC. NO. 100–10, 1522 U.N.T.S. 3, was designed to effect the elimination of emissions of certain ozone-depleting chemicals by parties to the treaty. Still, a total ban on all forms of pollution remains impractical and undesirable.

tivities generate pollution as a necessary byproduct.[102] Society has decided—if implicitly—to balance the benefits of the socially productive activities that result in pollution generation with the costs of the pollution itself. There is, then, some optimal level of pollution—that is, a level of pollution that maximizes the excess of those benefits above the costs—and that optimal level of pollution is greater than zero.[103] On this basis, Eric Posner identifies not a strict anti-pollution norm, but rather a norm "not to pollute 'too much.'"[104] The absolute ban on pollution that a strict anti-pollution norm would mandate is neither realistic nor desirable.[105]

Once one accepts the undesirability of an absolute pollution ban, one's focus shifts to the regulatory system's method and extent of allocating pollution rights. From that perspective, tax-based regimes and tradable pollution permit regimes that rely upon auctions for the initial allocation of permits fare better than other regimes: Those regimes at least charge something for every property right obtained. In contrast, grandfathering-based tradable permit regimes, command-and-control regimes, and information-based regimes distribute at least some property rights free of charge.[106]

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102 *See* Stewart, *supra* note 50, at 199 ("The laws of physics make [pollution] residuals an inevitable consequence of human activity. Zero residuals discharge is an unattainable and undesirable objective.").

103 *See* Nash, *supra* note 23, at 523 n.222. Still, there is likely to be great disagreement as to where that optimal level lies, and the question remains as to whether the government accurately might identify the optimal level. *See id.* at 525 n.224.

104 Eric A. Posner, *Law, Economics, and Inefficient Norms*, 144 U. PA. L. REV. 1697, 1735 (1996). Posner elucidates: "Firms are entitled to pollute a bit, especially when they employ a lot of people and produce valuable goods. But if firms exceed a certain threshold of pollution, neighbors complain, consumers boycott, and so on." *Id.*

105 *See* Strahilevitz, *supra* note 50, at 1285 ("Nor is it accurate to suggest that in the absence of a trading system, social norms will necessarily dictate that every pollutant be banned. Obviously, the public is willing to tolerate some level of pollution and is unwilling to tolerate a higher level."). It is thus not surprising that pollution control legislation is not designed to achieve the actual elimination of pollution. *See, e.g.*, J.B. Ruhl, *How to Kill Endangered Species, Legally: The Nuts and Bolts of Endangered Species Act "HCP" Permits for Real Estate Development*, 5 ENVTL. LAW. 345, 349 (1999) ("[T]he [Clean Water Act] does not leave it that 'the discharge of any pollutant by any person shall be unlawful,' but rather that such activities are unlawful '[e]xcept as in compliance with' the terms of the statute." (quoting Clean Water Act, § 301(a), 33 U.S.C. § 1311(a) (1994))). At the same time, even if the eradication of pollution is not itself viable, it can be identified—and indeed is identified in various pollution control statutes—as a societal *aspiration*. *See, e.g.*, Clean Water Act § 101(a)(1), 33 U.S.C. § 1251(a)(1) (2000) ("[I]t is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985 . . . .").

106 *See* Nash, *supra* note 23, at 509 ("[S]ome form of free distribution of pollution allowances is imbedded (even if not explicitly) in command-and-control regimes.");

Kelman acknowledges this response, but maintains that standard-based regulation imposes a stigma on pollution that market-based regulation does not.[107] The tradable permit removes any normative element; the legal rule is, in Saul Levmore's terms, "a mere price" with no sanction.[108] Kelman argues that standard-based regulation calls on polluters to do "'the best they can' to reduce pollution."[109] Kelman's argument on this point is not sustained, and its basis is murky. After all, if both command-and-control and market-based regulation allow certain levels of pollution, why is it objectively correct to say that command-and-control regulation, but not market-based regulation, calls upon polluters to do the best they can to reduce pollution? Indeed, insofar as tax systems and auction-based trading schemes charge for each unit of pollution, is it not more accurate to say that those systems call upon polluters to do the best they can to reduce pollution? While Kelman may be correct that command-and-control regulations *are understood* to impose a greater stigma on pollution and therefore to call upon polluters to do the best they can to reduce pollution, that normative perception is incorrect. I argue below that this inaccurate per-

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Wiener, *supra* note 47, at 724 ("[C]onduct-based technology requirements and fixed performance standards amount to a license to pollute *for free* once the requisite technology is installed or the quantity target is achieved. Taxes and tradeable allowances, by contrast, force the polluter to *pay* for *every* unit of emissions, either by paying the tax or by forfeiting the revenue from the sale of the allowance. Thus, it is conduct rules and fixed quantity rules, ironically, that truly license a right to pollute for free."); *cf.* Stewart, *supra* note 50, at 198 ("[C]ommand-and-control regulation does not stigmatize or send any negative signal with respect to the residuals that are permitted by command standards. By contrast, [market-based regimes] impose an economic cost on all residuals, reminding sources that any level of residuals may impose social costs. This message is most evident in the case of environmental taxes."). Note that a command-and-control system may impose only fixed costs on polluters, so that the per emission cost varies according to how much pollution each polluter in fact emits.

107 *See* KELMAN, *supra* note 47, at 53.

108 Saul Levmore, *Norms as Supplements*, 86 VA. L. REV. 1989, 1998 (2000). Referring explicitly to "courts," though acknowledging that the point extends to administrative agencies and legislatures as well, *id.* at 1999 n.12, Levmore explains:

> Laws are more than prices when courts had expected behavioral changes and are annoyed to find no such changes. Laws are less than prices when courts observe through repeat litigation that there have been no behavioral adjustments, and then reassess their original findings in a way that now yields to [the lawbreaker].

Id. at 1999. *See generally id.* at 1998–99 (explaining that tort liability for pollution is frequently nothing more than a price for pollution because tort suits for pollution usually result in monetary judgments against defendants and nothing more).

109 KELMAN, *supra* note 47, at 53.

ception results from framing.[110] Further, an inaccurate normative perception is something that perhaps can, and, if so should, be changed, perhaps by public education, a point to which I return below.[111]

A final ground on which one might hold out for the propriety of singling out tradable pollution permit regimes under the "right to pollute" critique is the argument that the "rights to pollute" to which a tradable permit regime gives rise are especially property-like, and therefore objectionable, because they are alienable. This argument, too, proves ultimately unconvincing.

While the common wisdom is that only tradable pollution permit regimes give rise to rights that are alienable, it is in fact not the case that tradable pollution permit regimes are the only regimes that give rise to alienable property rights. To the contrary, the property-based rights to which other environmental regulatory regimes give rise generally also are alienable: They may be transferred along with the underlying property with which they are associated. Thus, for example, where a command-and-control regime vests a valuable property right with a factory, the owner of the factory may sell that right, along with the factory, to a willing buyer.[112] Note, moreover, that, because the property right conferred by the command-and-control regime is valuable, the seller will receive more for its factory than it would without that right. Thus, the factory owner is free to transfer the property

110 *See infra* Part V.

111 *See infra* Part VI.

112 Some systems make alienation upon transfer of assets easier than others. *See, e.g.*, 40 C.F.R. § 122.61(b) (2005) (providing for "[a]utomatic transfers" of National Pollution Discharge Elimination System permits under the Clean Water Act to new owners or operators). At the same time, even the Clean Water Act regulation does empower the Administrator of the EPA to "notify the existing permittee and the proposed new permittee of his or her intent to modify or revoke and reissue the permit." *Id.* § 122.61(b)(3); *see id.* § 122.41(*l*)(3) ("This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act."); *id.* § 122.41(g) ("This permit does not convey any property rights of any sort, or any exclusive privilege."); Esther Bartfeld, *Point-Nonpoint Source Trading: Looking Beyond Potential Cost Savings*, 23 ENVTL. L. 43, 98 n.149 (1993) ("In general, NPDES permits are not readily transferable.").

For a general discussion of transferability of environmental permits, see Maureen A. Brennan & Christopher W. Armstrong, *Transfer of Environmental Permits in Real Estate Transactions*, 716 PLI/CORP. 87 (1990). The authors note that some permits may be more difficult to transfer than others, highlighting that state-issued permits may be subject to greater restraints on transferability.

right, for value; the only restriction is that the property right cannot be alienated separately from the underlying property.[113]

Thus, all environmental regulatory regimes (short of absolute pollution bans) give rise to rights to pollute. These rights to pollute, moreover, are generally alienable, in one way or another.

B. The Economic Reality of the "Commodification" Critique

In this subpart, I explore the susceptibility of the various environmental regulatory tools to the "commodification" critique, in an effort to determine the proper extent to which market-based instruments—including, particularly, tradable pollution permit systems—should be the focus of the critique. First, I address the argument that tradable pollution permit regimes are properly subject to the critique specifically because they give rise to alienable property-based rights. I argue that, as I have established above, tradable pollution permit regimes are not unique in that regard.

Second, I address the argument that tradable pollution permit systems fall inherently subject to the "commodification" argument because they necessarily give rise to stand-alone fungible rights to degrade the environment. There are two problems with this argument: First, a tradable pollution permit system need not be structured so as to give rise to purely fungible rights, and second, other environmental regulatory regimes can, and in practice generally do, give rise to rights to pollute that are fungible in certain ways.

Third, I consider the argument that market-based environmental regulatory instruments are particularly susceptible to the "commodification" critique because of the explicit transactional mindset that such instruments develop. I argue that other environmental regulatory approaches also can, and in practice generally do, incorporate a market-

113 Instructive in this regard is the opinion of the United States Tax Court in *Beatty v. Commissioner*, 46 T.C. 835 (1966). At issue in *Beatty* was a liquor license issued by the state of Arizona. When the petitioners purchased their license in 1959, it was freely transferable. Subsequently, in 1961, the state amended the law such that liquor licenses were no longer freely tradable, but could only be transferred "as part of a bona fide bulk sale of the entire business and stock in trade." *Id.* at 836–37.

The petitioners argued that they were entitled to a loss for the purchase price as a result, *inter alia*, of the loss of the right to alienate their license. The court rejected this argument. It concluded that the change in state law had "not destroy[ed]" the right to transfer, reasoning that "the right of transfer could still be exercised, albeit only in connection with a bulk sale of the entire business and stock in trade." *Id.* at 841. And, the court specifically noted that, "[s]ince the 1961 amendment, there ha[d] been transfers of [state liquor] licenses through bulk sales of entire businesses." *Id.* at 838.

based element—in the form of cost-benefit analysis as performed by the regulator. I further recognize that the perceived attenuation between cost-benefit analysis and non-market-based environmental tools serves to confirm the greater applicability of the "commodification" critique to market-based approaches. At the same time, however, I suggest (and argue more fully below[114]) that that attenuation may be to some degree at least a product of framing.

1. Alienability

I begin by addressing the argument that tradable pollution permit regimes are especially and inherently subject to the "commodification" critique because they, alone among regulatory approaches, give rise to alienable property-based rights. But, as I have discussed above, other environmental regulatory regimes also give rise to property rights that are alienable—they are alienable along with the underlying property of which they are a part.[115] On this basis, moreover, a distinction can be drawn between the pollution rights and other items against which a commodification critique has historically been lodged. Consider, for example, blood. Blood today is to some degree tradable as a stand-alone commodity, free and clear of the body from which it originates.[116] Still, blood is not alienable as part of the body, since the body itself is not alienable.[117] In this sense, property rights in blood—

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114 *See infra* Part V.B.2.

115 *See supra* text accompanying notes 112–13.

116 The development of markets for blood was critiqued in RICHARD M. TITMUSS, THE GIFT RELATIONSHIP (1971).

Note that, while blood is alienable as a stand-alone commodity, that is not in general true about other body parts. *See* Margaret Jane Radin, *Property and Personhood*, 34 STAN. L. REV. 957, 966 (1982) (noting that blood and certain other body parts are alienable, but also that most other body parts are not generally considered to be alienable). On the general topic of alienability of and markets in body parts, see STEPHEN WILKINSON, BODIES FOR SALE (2003); Julia D. Mahoney, *The Market for Human Tissue*, 86 VA. L. REV. 163 (2000); *see also* Heather R. Kolnsberg, *An Economic Study: Should We Sell Human Organs?*, 30 INT'L J. SOC. ECON. 1049 (2003) (questioning the long-run economic benefit of organ selling).

117 To the extent that a system recognizes slavery and transactions involving slaves, it is possible for a body to be alienable. Even there, however, there is a difference—the body would not be purchased or sold for the blood it contains, and the blood would not enhance the value of the body being traded. *Cf.* YORAM BARZEL, ECONOMIC ANALYSIS OF PROPERTY RIGHTS 105–13 (2d ed. 1997) (analyzing the question of slaves as property). Markets for babies—another commodification the advisability of which commentators have debated, *compare, e.g.*, Elisabeth M. Landes & Richard A. Posner, *The Economics of the Baby Shortage*, 7 J. LEGAL STUD. 323 (1978) (advancing the notion of such markets), *with* Margaret Jane Radin, *What, if Anything, Is Wrong with Baby Sell-*

which arise only once the blood is separated from the body[118]—are distinct from property rights to which environmental regulation gives rise—which are alienable along with the underlying property even if they are not separated from the underlying property.

2. Fungibility

I now address the view that tradable pollution permit regimes necessarily generate completely fungible pollution rights and, as such, are inherently subject to the "commodification" argument. To be sure, under extant regimes tradable pollution permits are entirely fungible. To appreciate this extreme fungibility, consider the notion that tradable pollution permits result from the partition of preexisting property into a base asset and a permit or series of permits.[119] If partitioning provided the entire explanation for the genesis of tradable pollution permits, then holders of property who received "grandfathered" permits would hold, if now in distinct pieces of property, the same "bundle of rights" that they held before—or, perhaps

ing?, 26 PAC. L.J. 135 (1995) (questioning the advisability of such markets)—similarly present a situation inapposite to markets for environmental degradation.

118 *See* J. E. Penner, *The "Bundle of Rights" Picture of Property*, 43 UCLA L. REV. 711, 803 (1996) ("[T]he connection of our bodily parts with our bodies shows why they are not, in general, regarded as our property, even though they are clearly protected by duties of non-interference, and even though our rights to them are 'alienable,' given that we can waive a right to assault, releasing others from these duties, say, to let a surgeon do a biopsy. Until quite recently, technology did not prompt us to consider doing without them, much less passing them around. We did not therefore regard our connection to them as contingent: They could not just as well be someone else's body parts."); Radin, *supra* note 116, at 966 (noting that it "seem[s] appropriate to call parts of the body property only after they have been removed from the system" (footnote omitted)).

119 Note that partitioning is not a necessary part of the genesis of tradable pollution permits. Partitioning will be a necessary part of the process only if, before the advent of the permits, preexisting property rights were understood to convey to their holders the right to engage in activities that resulted in pollution. If that is not the case—for example, if the government decides to authorize activities that previously were prohibited or if the activities were not previously undertaken (not because they were prohibited, but perhaps because of insufficient technological support)—then the tradable pollution permits are completely new property. For example, the government's recent auctions of new broadcast spectra, *see* Nash, *supra note* 23, at 507, can be seen as the generation of new property interests, *see, e.g.*, Carol M. Rose, *Possession as the Origin of Property*, 52 U. CHI. L. REV. 73, 75 (1985) (identifying "space on the spectrum of radio frequencies" as a "'fugitive' resource" that has been "reduced to property for the first time" (footnote omitted)).

Historically, however, that has not been the case; usually preexisting property rights accounted for the rights later authorized by pollution permits. In the text, I focus on that more common setting.

more accurately in light of the fact that most tradable pollution permit schemes seek to reduce the level of pollution emissions, some proper subset of the bundle of rights they held previously. But in fact, the holder has something more: The holder now has an individuated right that he or she can sell independent of the underlying base asset.[120] That is, not only does the holder have a new piece of property that he or she can sell independent of the underlying asset (from which the permit originated), but the new asset is an asset that, if conveyed, will confer upon the buyer a new right to do something to *the buyer's* preexisting property—that is to say that the holder's new asset is *fungible*.[121]

But that extent of fungibility is not inherent in tradable pollution permit regimes; it is, rather, a design choice. To demonstrate this, I remain with the example of a property holder who, before a partition of her property, enjoys the right generally to use her property as she sees fit; I compare the situation in which the holder voluntarily partitions her property[122] with the involuntary partition effected by the creation of tradable pollution permits with grandfathering. Specifically, let us say that Wally, the owner of Whiteacre, sells Betty the right to remove lumber from Whiteacre. As a result, Betty as the holder of that right has the right to remove lumber from Whiteacre. Betty does not enjoy the right to remove lumber from any other plot of land—not even from Blackacre, land she herself owns, if she previously has granted the right to remove lumber from Blackacre to someone else. In short, the right to remove lumber from Whiteacre is transferable, but it is not fungible.

Pollution permit trading systems in theory could be structured in much the same way. Say, for example, that the government seeks to regulate disposal of hazardous wastes by issuing permits to actors;

120 This would seem to be a valuable addition to the holder's estate. *But cf.* Andrus v. Allard, 444 U.S. 51, 65–66 (1979) (establishing that federal regulation that prohibited commercial transactions in parts of birds legally killed before laws prohibited killing did not trigger the protection of the Takings Clause).

121 In fact, there are different ways in which property can be fungible. Below, I draw a distinction between the fungibility that is the discussion of the present discussion in the text (to which I refer as "market-fungibility") and fungibility based upon differences in damage caused by emissions in different places (to which I refer as "degradation-fungibility"). *See infra* notes 124–35 and accompanying text.

122 Law may limit the ways in which property holders may partition their property, at least in terms of the property interests to which the partition may give rise. *See generally* Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The* Numerus Clausus *Principle*, 110 YALE L.J. 1 (2000) (noting that a central purpose of property law is to limit the freedom to define legally enforceable property interests).

each permit authorizes its holder to dispose of one ton of hazardous wastes on its land. The permits are tradable. The government might structure the permits to adhere to the real property nature of the bundle from which they were partitioned. In this case, each permit would authorize its holder to dispose of one ton of hazardous wastes *on the land in respect of which the permit originally was issued.* Thus, if Wally obtains a permit from the government and then sells that permit (unused) to Betty, then Betty (as the new holder of the permit) obtains the right to dispose of one ton of hazardous waste on Whiteacre. As in the lumber example above, the permits, though freely tradable, are not fungible—the right that each permit conveys to its holder depends upon the land in respect of which it was originally issued.

But that is not the way tradable pollution permit regimes generally are structured: Tradable pollution permits *are* fungible. Remaining with the hazardous waste disposal example, each permit would authorize its holder to dispose of one ton of hazardous wastes *on any land that the holder owns.* Thus, if Wally sells a permit to Betty and Betty owns Blackacre, then the permit authorizes Betty to dispose of one (additional) ton of hazardous waste on Blackacre. Under such an approach, all permits are entirely fungible: It matters not the source of the permit that Betty purchases—the rights she obtains by virtue of her purchase will be identical regardless of source.

If a tradable pollution permit regime is implemented that returns back to their original holders—i.e., grandfathers—all pollution rights, then a factory owner *A* can convey to another factory owner *B* a right that *A* could not have conveyed to *B* before the partition: the right to use *B*'s factory more than *B* could have without the right. Moreover, note that *A* could not have conveyed that right to *B* before the partition even if *A* sold *B* her entire interest in her factory. That would only allow *B* to use what had been *A*'s factory; that transaction would have no impact on *B*'s ability to use the factory that he had owned even before the transaction. Even though they originated as part of an interest in *real property*, the permits under this typical structure thus convey rights along the lines of *personal property.*[123] No longer are the rights tied to particular plots of land; the purchaser obtains the same rights, since the permits are fungible.

123 In this regard, compare, for example, how the use of a 'profit a prendre' can convert what had been portions of real property into personal property. *See, e.g.*, 63C AM. JUR. 2D *Property* § 21 (1997) ("[R]eal property in the form of mineral rights or a profit a prendre is transformed into personal property when the physical substance is severed from the land." (footnote omitted)).

To this point, I have demonstrated that tradable pollution permits need not be as fungible as the common wisdom suggests that they must be. In this sense, the notion that tradable pollution permit regimes are inherently subject to the "commodification" critique by virtue of the fungibility of the permits is at least somewhat suspect. But there is a further point on the fungibility score: While regimes other than tradable pollution permit regimes may not give rise to fungible property that is exchangeable on a market—that is, they do not exhibit what I will refer to as "market-fungibility"—still, these other environmental regulatory regimes can also, and generally do, feature a certain aspect of fungibility. They tend to exhibit what I will refer to as "degradation-fungibility."

Before proceeding, let me explicate the distinction between "market-fungibility" and "degradation-fungibility."[124] Market-fungibility is the species of fungibility I have to this point been discussing. It exists where pollution rights are separated from any underlying property interest, such that it does not matter which permit someone purchases; any permit would convey upon the purchaser the same rights. Market-fungibility, as I have described above, rests on the validity of dissociating a right from the particular underlying property with which it previously was associated. In other words, partitioning is a necessary prerequisite to market-fungibility, meaning that all market-fungible regimes are tradable pollution permit regimes.[125]

Market-fungibility is to be distinguished from degradation-fungibility. I use "degradation-fungibility" to refer to a regulatory regime's general failure to treat emissions that cause varying amounts of damages at different times and locations differently. That is, a regulatory regime is degradation-fungible if it regulates two emissions of the same amount of a pollutant equally without regard to whether the location and extent of the harm caused by the emissions are the same.

By way of illustration, the first hypothetical system that I described above[126] (involving tradable permits to dispose of hazardous

124 Both types of fungibility square with Margaret Radin's inclusive understanding of fungibility. *See* RADIN, *supra* note 57, at 118 ("By fungibility, I mean at least that the things are fully interchangeable with no effect on value to the holder."); *id.* at 118–20; *see also* U.C.C. § 1-201(b)(18)(A) (2006) (defining "fungible goods" as goods of which "any unit, by nature or usage of trade, is the equivalent of any other like unit"); *cf.* Schauer, *supra* note 56, at 1217–19 (noting instances in which things that are claimed to be "the same" nonetheless are substantially different from one another).

125 Note that the converse is not true, insofar as the first hypothetical system that I described above (involving tradable permits to dispose of hazardous wastes) is not market-fungible. *See supra* text accompanying notes 119–23.

126 *See id.*

wastes) is degradation-fungible if it treats disposals of wastes that cause different types of damage (insofar as damage caused will depend upon the particular wastes disposed of, as well as the features of the specific disposal locations) the same way by, for example, conferring on each landowner precisely the same number of disposal permits in the first instance. More generally, any environmental regulatory regime may, and in fact many do, improperly equate actions that cause different environmental harms. Command-and-control systems generally treat pollution sources in the same way—or, to the extent they do not, they do not discriminate based upon factors likely to correspond to differences in environmental harm.[127] Environmental tax regimes generally impose a uniform tax rate and thus do not take into account differences in environmental damage that different emissions might cause.[128] Information-based regimes generally impose the same disclosure requirements on all polluters and emissions for each pollutant.[129]

Note that the set of environmental regulatory regimes that is market-fungible overlaps with the set of regimes that is degradation-fungible, but also that the two sets are distinct. As Table 1 reflects, there are regimes that are market-fungible but not degradation-fungible, and there are regimes that are degradation-fungible but not market-fungible. Indeed, not all tradable permit systems are degradation-fungible. For example, an ambient permit system is market-fungible but not degradation-fungible. Further, systems other than tradable permit systems can be degradation-fungible. For example, a typical tax-based regime, which imposes the same tax rate on all emissions of a non-global pollutant, is degradation-fungible (since it fails to treat differently pollution emissions that cause different amounts of damage at different locations) but not market-fungible; the same is true of a

127 For example, the Clean Air Act imposes stricter standards on new emission sources. *See* Clean Air Act, §§ 165, 169, 42 U.S.C. §§ 7475, 7479(i) (2000); *see also* Nash, *supra* note 23, at 518 (stating that existing environmental laws place higher standards on new plants than on existing ones). But it is older sources that are more likely to be out-of-date and "dirtier," and thus to cause larger environmental damage. *See id.* at 515 & n.199.

128 *But see supra* note 97 (discussing the possible use of a variable tax rate to address this problem).

129 At the same time, one might expect public reaction to the disclosure to be greater where the possible environmental damage is likely to be greater. In that sense, the programs, combined with the public involvement that the programs anticipate, to some degree take into account differences in environmental harm.

typical command-and-control regime that ignores differences in pollution damage caused by different emissions.[130]

TABLE 1. MARKET-FUNGIBILITY AND DEGRADATION-FUNGIBILITY OF ENVIRONMENTAL REGULATORY REGIMES

Type of Regime	Market-Fungible?	Degradation-Fungible?
Typical Emission Permit Trading Regime	Yes	Yes
Ambient Permit Trading Regime	Yes	No
Hypothetical Hazardous Waste Disposal Permit Trading Regime	Depends*	Yes
Typical Tax Regime	No	Yes
Source-Specific Tax Regime	No	No
Typical Command-and-Control Regime	No	Yes

* *See supra* Part IV.B.2.

While market- and degradation-fungibility are distinct concepts, in practice the demands of market-fungibility generally encourage the acceptance of degradation-fungibility. Society enjoys the full benefits of pollution trading—that is, cost-effective reduction of pollution—only where the regime is fully market-fungible.[131] But, unless the system involves permits for environmental degradation (a possible, but complicated, option),[132] the permits will simply represent pollution emissions, and it is unlikely that two emissions of the same amount of the same pollutant from two different locations (and otherwise under different conditions) will have the same impact on environmental quality.[133] It still may be possible to allow trading among polluters located within close proximity to one another, on the theory that the degradation impact of emissions from polluters located close to one another will be substantially the same. But, even putting aside the problems with this approach,[134] the fact remains that the imposition

130 *See* James Salzman & J.B. Ruhl, *Currencies and the Commodification of Environmental Law*, 53 STAN. L. REV. 607, 624 n.36 (2000) ("Proxy choice is not solely a challenge for [environmental trading markets]. We do the same for traditional command-and-control regulation. The emissions from coal-fired utilities, for example, are limited in terms of tons of sulfur, not by the net impact from their release.").

131 *See, e.g.*, Stewart, *supra* note 45, at 111 (emphasizing the importance of a "uniform homogenous commodity" to a successful marketable permit program).

132 *See infra* note 145.

133 *See* Nash & Revesz, *supra* note 29, at 576–80. Note that this is not the case for so-called "global pollutants." *See id.* at 576.

134 *See id.* at 616 ("No matter how much attention the policymaker devotes to constructing zonal boundaries in light of topography and wind patterns, emissions of

of restrictions on the number of viable traders at some point may become so strict that they impede the viable operation of the permit market. A solution to this problem is to expand the number of viable traders, but this can only be done by increasing degradation-fungibility.[135] Thus do the demands of market-fungibility create an incentive for increased degradation-fungibility.

The distinction between market- and degradation-fungibility is important because, while both forms of fungibility can serve as the basis for the "commodification" critique, only market-based fungibility seems in practice to be so used. I return to the latter point below;[136] for now, I demonstrate that both forms of fungibility can serve to ground the "commodification" critique.

As an initial matter, it seems clear that the applicability of the "commodification" critique is at its zenith where both market- and degradation-fungibility inhere. Thus, a full-fledged traditional tradable pollution permit regime is the quintessential regulatory instrument to which the critique applies.[137]

Market-fungibility, standing alone, also can serve as a basis for assertion of the "commodification" critique against a regulatory regime. Consider, for example, the commodification critique in the context of the hypothetical regulatory regime described above, under which the government issues permits that allow holders to dispose of hazardous waste but where the permits, though tradable, remain tied to particular pieces of land.[138] It seems that the critique is less applicable to such a regime, which is degradation-fungible but not market-fungible: After all, the regime has not given rise to a unified market for fungible pollution permits, but only to multiple smaller markets for particular pollution permits. Still, the fact remains that actual markets in the permits exist, confirming the applicability of the critique.

Degradation-fungibility, standing alone, can serve as a basis for assertion of the "commodification" critique as well. An environmental regulatory regime that is degradation-fungible gives rise to rights to

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local and regional pollutants from different locations, even within the zone, are not equivalent. Rather, they remain spatially differentiated and will have somewhat different impacts—in terms of location and magnitude.").

135 *See id.* at 617. James Salzman and J.B. Ruhl describe this as the "inevitable tradeoff between fat and sloppy or thin and bland." Salzman & Ruhl, *supra* note 130, at 645; *see id.* at 645–47.

136 *See infra* text accompanying notes 183–85.

137 *See supra* text accompanying notes 82–84.

138 *See supra* Part IV.B.2.

pollute[139] that are commensurable along a common metric in that the regulatory regime treats these rights to pollute as equivalent (even though, from the perspective of environmental degradation, they are not).

For example, a degradation-fungible tradable pollution permit regime "commodifies," in the form of permits, something that should not be a commodity.[140] While equating emissions of global pollutants is not problematic,[141] emissions of local and regional pollutants are "spatially differentiated," meaning that the location and extent of damage an emission causes will vary with the location of, and conditions surrounding, the emission.[142] Tradable pollution permit regimes for local and regional pollutants thus create an environmentally-unsound commodity to the extent that they allow for unfettered trading of permits between different locations.[143] So, too, can regimes that improperly equate emissions across time or of different pollutants give rise to improper commodification.[144] Moreover,

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139 *See supra* text accompanying notes 99–100 (indicating that all regimes short of absolute bans give rise to rights to pollute).

140 On the importance of degradation-fungibility to tradable pollution permit regimes, see Salzman & Ruhl, *supra* note 130. As Salzman and Ruhl explain:

> [Environmental trading markets] must assume fungibility—that the things exchanged are sufficiently similar in ways important to the goals of environmental protection—otherwise there would be no assurance that trading ensured environmental protection. While the precondition of fungibility may seem self-evident, this core assumption turns out to be more problematic than it first appears.

Id. at 611 (emphasis omitted).

In fact, the degradation-fungibility mandated by the trading system may be wholly inaccurate in terms of the actual environmental impacts—that is to say that, in many situations, the environmental degradation authorized by a permit may vary depending upon the identity, location, and other characteristics of the holder. *See generally id.* at 629–31 (discussing the nonfungible nature of the importance of time as currency units and establishing defined environmental protection goals in order to determine the appropriate currency); Nash & Revesz, *supra* note 29, at 576–614 (discussing three regulatory programs involving tradable emission permits and the effect that these programs have on the environment); *infra* text accompanying notes 142–43 (stating that local and regional pollutants are environmentally unsound commodities because they differ in location and extent of damage).

141 *See* Nash & Revesz, *supra* note 29, at 576. *But see* Salzman & Ruhl, *supra* note 130, at 623 ("In the context of trades among greenhouse gases [(a global pollutant)], the ideal unit would be marginal cost to society from the emission's contribution to climate change. However, such measures of utility cannot be calculated with any certainty so we rely on a proxy—in this case the emission's global warming potential.").

142 *See* Nash & Revesz, *supra* note 29, at 576–80.

143 *See* Salzman & Ruhl, *supra* note 130, at 627–29.

144 *See id.* at 629–30.

such "miscommodifications" are not uncommon among tradable pollution permit regimes; rather, they are the norm.[145]

145 *E.g.*, Nash & Revesz, *supra* note 29, at 582–614 (describing how existing tradable pollution permit programs allow for generally unfettered trades of emissions of spatially differentiated pollutants).

Environmental economists have proffered proposals to structure tradable pollution permit regimes so as to address this concern, but each has its drawbacks. Standard proposals include emissions trading with multiple zones, markets in units of environmental degradation or (equivalently) ambient permit systems (the latter of which I discuss in the text just below), and pollution offset markets. *See id.* at 614–24. Emissions trading with multiple zones entails division of the regulated region into multiple trading zones, with the possibility of allowing no interzonal trading, or of translation factors for interzonal trading; the problem is that, to the extent that the markets are small enough seriously to address the problem, they may be too small to sustain trading. *See id.* at 614–18; Salzman & Ruhl, *supra* note 130, at 645 (noting the "inevitable tradeoff between fat and sloppy or thin and bland"); *id.* at 645–47. Ambient permit systems feature the trading of units of environmental degradation, not emissions amounts; they require maintenance of multiple markets (in respect of the multiple points at which environmental degradation is measured) and, as such, entail substantial transactions and administrative costs. *See* Nash & Revesz, *supra* note 29, at 618–21. Pollution offset markets entail a "single market in emission permits but [one] in which trades are not effected on a one-to-one basis," *id.* at 622; they, too, give rise to substantial transactions and administrative costs, *see id.* at 621–24.

In short, all these proposals would tend to impose substantial transactions and administrative costs that may undermine the very market upon which the trading regime relies to achieve its goal of pollution reduction at the lowest possible cost. Indeed, this is true for the one trading system that (by definition) does create the proper commodity—an ambient permit system, under which permits entitle their holders, not to emit a certain amount of pollutant, but rather to engage in an activity that results in the degradation of the environment at a particular location. *See supra* note 140.

Richard Revesz and I recently proposed a modified emission permit trading system that would retain the trading of emissions but at the same time would constrain the environmental degradation that results from improperly equating emissions of spatially differentiated pollutants from different locations and over time. *See* Nash & Revesz, *supra* note 29, at 624–28. Our proposal relies upon a single market for emissions permits. Receptor points, and acceptable pollution levels at all receptor points (based, presumably, on concerns of health, welfare, justice, and practicality), would be chosen. Approval of a trade of permits would be required before the trade could be consummated. Responsibility for grants and denials of approval would rest with a website, which would harness a pollution dispersion model. All pertinent data regarding polluters (and prospective polluters) that the model required to predict pollutant concentrations—including emission locations, stack heights, temperature and velocity of emissions, and weather and topographical data—would be loaded onto the website. After verification that the initial allocation of permits would not result in unacceptably high pollutant concentrations, the website would await requests for approval of trades. In determining whether to grant approval for a trade, the website would modify temporarily its emissions data to reflect provisionally the shift in permit use. The website then would use the dispersion model to predict pollutant concentra-

Moreover, degradation-fungibility is not a problem particular to market-fungible tradable pollution permit regimes. As I have explained above, even a tradable pollution permit regime that is not market-fungible can be degradation-fungible.[146] And other environmental regulatory regimes can be—and generally are—degradation-fungible but not market-fungible.[147] For example, a command-and-control regime that imposes a uniform technology requirement on mercury-emitting factories in a certain industry treats as equivalent the emissions of mercury that are allowed to continue once the standard has been met.

To the extent that commensurability is a cornerstone of commodification,[148] it would seem, then, that degradation-fungibility might serve as a basis for assertion of the "commodification" critique. The fact that it does not suggests that perhaps framing effects shield this form of fungibility from the common perception of regulatory regimes; I return to this point below.[149]

3. Cost-Benefit Analysis

A final point in relation to commodification and environmental regulatory regimes is that, while market-based regimes are singled out for giving rise to markets in environmental quality, other regulatory approaches can, and in fact in practice generally do, make use of cost-

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tions in the wake of the trade. If the model predicted that pollutant concentrations would be at or less than acceptable levels at all receptor points, then the website would grant approval for the trade and retain the modified emissions data. If, however, the model predicted that the pollutant concentration at any receptor point (or points) would exceed acceptable levels, then the website would reject the trade and revert to the pretrade emissions data. Either way, the website then would be ready to consider requests for approval for other trades. *Id.* at 626.

The system we propose would not eliminate the commodification issue, but would substantially limit it, and do so in a way that would not give rise to potentially fatally large transactions and administrative costs. *See id.* at 628–33 (arguing that the proposed "constrained single-zone emission regime" compares favorably with other tradable pollution permit regime structures). Thus, this aspect of the commodification issue can be addressed substantially by modifying the structure of the trading system.

146 *See supra* Table 1.

147 *See id.*

148 *See supra* text accompanying notes 56–59.

149 *See infra* Part V.B.2.

benefit analysis.[150] In short, both market-based and non-market-based regulatory instruments place a value on the environment.[151]

At the same time, it is true that markets and market rhetoric are seen to inhere in market-based regulatory approaches, while reliance on cost-benefit analysis under other approaches seems far more attenuated: After all, it is conducted a priori rather than on a case-by-case basis, and it is conducted by the regulator and not by the societal actors who will make the decision as to whether and how much to pollute.

At the same time, however, the issue of framing raises the question of the extent to which the attenuation is the result of perception, and in particular whether it is prompted by the frames through which the various environmental regulatory approaches are seen. I elaborate on this point in the next Part.[152]

V. FRAMING AND THE PERSISTENCE OF THE CRITIQUES

The previous Part analyzed the "right to pollute" and "commodification" critiques in the light of economic reality, and demonstrated that the "right to pollute" critique applies to all environmental regulatory instruments short of absolute pollution bans, while the "commodification" critique can be seen to apply not only to market-based instruments, but to other regulatory instruments as well. Indeed, Lior Strahilevitz dismisses the "right to pollute" critique of permits as "too simplistic to be satisfying,"[153] while Eric Posner implies that marketable permits should be unobjectionable since they create a property right that is based upon "a firm's *norm-grounded entitlement* to pollute 'a little.'"[154]

150 *See, e.g.*, Clean Water Act, § 304(b)(1)(B), 33 U.S.C. § 1314(b)(1)(B) (2000) (directing the Environmental Protection Agency to consider as a factor in determining the "best practicable control technology currently available" the "total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application"). For a taxonomical overview of various statutory cost-benefit requirements, see Cass R. Sunstein, *Cost-Benefit Default Principles*, 99 MICH. L. REV. 1651, 1663–67 (2001).

151 *See* Stewart, *supra* note 50, at 198 (Market-based regimes "deal with limited rights to use common resources for disposing of residuals generated by socially productive activities. The difference between [market-based regimes] and command regulation is the mechanism for allocating these usufructory rights. The value that we place on distant vistas and clean water is the same whether the residuals limitations needed to preserve these environmental values are achieved through command regulation or through [market-based regimes]."); *supra* Part III.B.

152 *See infra* Part V.B.2.

153 Strahilevitz, *supra* note 50, at 1285.

154 Posner, *supra* note 104, at 1735 (emphasis added).

Nonetheless, as I have suggested above and describe in greater detail here, economic reality seems to diverge from perception in respect of the critiques. The prevailing perception is that both critiques apply particularly to market-based regulation, with tradable pollution permit regimes especially susceptible to the commodification critique. In this Part, I identify framing effects as one source of that divergence. The differing frames through which competing environmental regulatory instruments are presented, and therefore perceived, render some of those instruments more susceptible to the critiques than others, the reality of the situation notwithstanding. First, I describe the natural frames of the various environmental regulatory approaches. I then turn to the effects of those frames on perception of the devices.

A. *The Frames of Environmental Regulatory Devices*

I focus upon two aspects of framing: the framing of acts and actors, and the framing of outcomes. By the framing of acts and actors, I mean to refer to the set of societal actors, whether public or private, whose acts fall naturally within the frame of the regulation.[155] By framing of outcomes, I mean to refer to whether the regulation tends to frame particular societal actors as experiencing a loss or gain by virtue of the regulation.[156]

Two aspects of framing of acts and actors are salient. First, market-based regulations tend to frame their effects in a way that marginalizes the role of government: It relegates government to issuing pollution rights to societal actors, divorced from any substantial decisionmaking. Second, market-based regulations tend to partition the pollution emissions of a societal actor from the socially beneficial activity that the actor is presumably undertaking. I elaborate on each of these points in turn.

Market-based regulations frame their function in terms of individual cost-benefit-based decisions undertaken by private actors; the role of government is deemphasized.[157] In reality, the government plays a substantial, important, and active role in establishing and administering market-based regulation. Under a tax regime, the government must establish, collect, and enforce the tax. Under a tradable pollution permit regime, the government must establish the ceiling for

155 *Cf. supra* text accompanying note 15 (describing Tversky and Kahneman's concept of "framing of acts," Tversky & Kahneman, *supra* note 7, at 454–55).

156 *Cf. supra* text accompanying note 17 (describing Tversky and Kahneman's concept of "framing of outcomes," Tversky & Kahneman, *supra* note 7, at 456–57).

157 Anderson et al., *supra* note 42, at 16 (distinguishing between market incentives and the governmental command-and-control structure).

overall pollution emissions, allocate the permits, monitor the trading, and ensure that no source emits more pollutant than its holding of permits authorizes. Nonetheless, the regimes are framed in a way so as to emphasize the role of individual actors—in terms of deciding whether to pay the tax and pollute more, or whether to buy or sell permits—rather than the role of government.

In contrast, non-market-based regimes frame themselves in terms of the establishment by the government of a standard (whether technological or effluent) with which pollution sources must comply. The focus is on the government's relationship—as rule-setter and enforcer—with polluters.

Market-based regulations tend also to frame their function so as to partition the act of pollution from the underlying activity out of which the pollution emission originates.[158] For instance, a tax regime focuses attention on the payment of the tax by a pollution source in return for the "right" to continue to pollute; little if any emphasis falls on the activity (presumably beneficial to society) of which the pollution emissions are byproducts. This is even more the case for tradable pollution permit regimes, where the focus is on the purchase of permits in order to vindicate a source's "right" to pollute more—or on the sale of permits that will allow the buyer to pollute more, in exchange for which the seller obtains money. In short, the focus is on the exchange of the permits for money, and not upon the effect of the permit transfer on either actor's ability to engage in their underlying societally beneficial activities.

Although, as I have discussed above, all environmental regulatory devices create "rights to pollute,"[159] non-market-based regimes do not put the focus on those rights. Rather, the focus is on the factory (i) complying with applicable standards and then, (ii) continuing its business with the associated pollution byproduct still linked to the underlying beneficial activity, and therefore not subject to a separate and independent focus.

In terms of framing of outcomes, non-market-based regulations tend to present the government as imposing a limit or restriction on polluters' preexisting freedom to pollute. In this sense, to the extent that people are generally in favor of reductions in pollution emissions, these regulations are framed as achieving a gain vis-à-vis the status quo. Even an information-based regime that does not itself restrict

158 *See generally* Lee Anne Fennell, *Property and Half-Torts*, 116 YALE L.J. (forthcoming 2007) (manuscript at 40–43) (discussing the analytical import of separating harm an activity causes from its benefit).

159 *See supra* text accompanying notes 99–100.

the amount of authorized pollution or impose a technology requirement does still impose a disclosure requirement; at worst, it comes across as continuing the status quo.

By contrast, market-based regulations tend to be understood as having the government confer pollution "rights" on pollution sources. From the viewpoint that pollution reductions are good, these regimes are framed as achieving a loss. This is because the regimes' frame implicitly adopts a reference point that is not the actual status quo: The reference point is that, but for the market-based regulation, polluters would have no right to pollute. In practice, the implementation of a market-based regulatory regime almost always results in a *reduction* in total pollution as compared to the status quo ante, but the frame of these devices tends to obscure that fact.

B. Framing Effects of Environmental Regulation

With the differing frames of market-based and non-market-based environmental regulatory tools in place, I turn to the effects of those frames and the question of why, economic reality notwithstanding, the "right to pollute" and "commodification" critiques retain particular vigor with respect to market-based forms of regulation.

1. The "Right to Pollute" Critique

The perceived applicability of the "right to pollute" critique to market-based environmental regulation but not other forms of regulation results from the different instruments' frames. In particular, three factors intensify the perceived susceptibility of market-based regulation to the critique: market-based instruments' portrayal of government as conferring rights on polluters rather than restricting polluters' behavior, market-based instruments' depiction of government's role as limited to conferring those rights, and market-based instruments' perceived partitioning of pollution emissions from the underlying activity of which the emissions are a byproduct.

First, market-based regulations portray the government as conferring rights on polluters, as compared with other regulatory forms that depict the government as taking rights away from—i.e., constraining—polluters.[160] This perception lends itself naturally to the characterization of market-based instruments, in contrast to other approaches, as conferring a "right to pollute" on societal actors.

Reinforcing this characterization is the second factor, that government's role is limited under market-based approaches to confer-

160 *See supra* Part V.A.

ring rights upon societal actors. A typical command-and-control approach conforms to a standard Austinian conception of law's role as a command from the sovereign backed up by legal sanction for failure to achieve compliance.[161] In contrast, market-based approaches are seen to relegate the role of government to conferring "rights" to societal actors, with the societal actors enjoying the power to choose whether and how much to pollute. The framing effect, then, is to portray market-based approaches as imposing "a mere price" with no sanction.[162]

Third, market-based regulations partition perceptually the pollution right from the underlying property right—i.e., the underlying beneficial social activity of which the pollution emission is a by-product. This enhances the perception that the "right to pollute" that government conveys under market-based approaches is a right to engage in an activity that is divorced from any beneficial activity—i.e., is divorced of any positive value. In effect, the partitioning conceals the tradeoff that society makes by allowing some pollution in order to enjoy the benefits of the socially useful activity that generates pollution as an unwanted, but (at least at the present time) necessary, by-product. By removing the explicit tie to any underlying beneficial activity, the partitioning encourages a focus on stand-alone pollution, which seems more of a "pure evil."

This focus lends support to the comparison, advanced by Robert Goodin, between transactions in stand-alone pollution rights (whether under a tax or tradable pollution permit system) and sales of indulgences by the medieval Catholic Church.[163] There, too, there was a perceived separation between the indulgence and the "bad act" for which the indulgence supposedly was penitence. The indulgence proved problematic because of the lack of apparent link between the indulgence and the "bad act," which undermined the validity of the indulgence.[164]

The view of pollution as a pure evil supports the comparison of pollution rights with other societal ills such as murder and racial discrimination. The fact remains that pollution is simply not comparable to murder or racial discrimination. Racial discrimination, for example, rightly deserves societal condemnation. An attempt to address

161 *See, e.g.*, James Bacchus, *Groping Toward Grotius: The WTO and the International Rule of Law*, 44 HARV. INT'L L.J. 533, 537 (2003) ("[John] Austin defined a law as a rule laid down by a sovereign power that can be enforced through a penalty for failing to obey it.").

162 *See supra* note 108 and accompanying text.

163 *See* Goodin, *supra* note 50, at 578–87.

164 *See id.* at 579–80.

the problem of racial discrimination by using a market to allocate the right to discriminate[165] or the right to murder[166] would undermine the stigma that properly should be associated with discrimination and with murder, and thus is fraught with problems. Some argue that a market in pollution rights (and, to a lesser extent, a tax-based regime) similarly undercuts the government's condemnation of pollution. But in fact, as discussed above, the two settings are quite different.[167] Pollution is a necessary byproduct of many beneficial activities and services;[168] racial discrimination[169] and murder simply are not. Thus,

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165 *See* Derrick Bell, *Foreword: The Final Civil Rights Act*, 79 CAL. L. REV. 597, 600–03 (1991) (parodying the notion of legislation that would establish a market for racial discrimination rights); *cf.* Robert Cooter, *Market Affirmative Action*, 31 SAN DIEGO L. REV. 133, 134 (1994) (describing how a market for racial discrimination rights could be structured, but recognizing at the same time that such a system would "dilute the law's symbolic condemnation of discrimination," and that "economic analysis has no theory of the symbolic and education function of law").

166 *Cf.* Penner, *supra* note 118, at 804. Penner notes:

> [O]ne could . . . devise a "right not to be murdered" which was property and thus transferable. One can imagine a society in which only nobles had the legal right not to be murdered, and where everyone else had to rely on the morality of their fellows or on self-defense. Imagine that some down-at-heel nobles discovered that they could legally sell their rights not to be murdered, and did so. This is an example of an alienable right not to be murdered. But while this is a case of imaginable property, it violates the concept of property we actually have, in terms of the role it plays for us. We do not conceive of a property right not to be murdered because our legal right not to be murdered is not justified by a title, purchased or not. Our legal right not to be murdered is based upon considerations about the universal status of persons. A person is conceived as having the right simply by being a living human. Such a right cannot be conceived as alienable any more than a person's life can be. One cannot separate one's life from oneself, to abandon it, give it away, or sell it, because one is one's life, or at least, whatever one is, one is not the same thing without it.

Id. (emphasis omitted).

167 *See* Sunstein, *supra* note 5, at 263. Sunstein highlights the difference between racial discrimination, which a flat ban appropriately suggests is illicit and signals that it is "the sort of practice to be eliminated rather than be brought to some optimal point," *id.*, and pollution, for which "there is an optimal level of pollution, and it is not zero, and polluting activity—so long as it is part of a legitimate business, and not an intentional tort—is not the kind of thing that it is appropriate to delegitimate as such," *id.* at 263 n.195.

168 *See supra* note 102 and accompanying text.

169 The modifier "racial" is important. Once we move beyond the setting of racial discrimination to, for example, gender discrimination, it may be that certain aspects of particular jobs make those jobs "necessarily" more appropriate for people of one gender than another; gender discrimination might be described as "necessary" under such conditions. At the same time, however, what might seem at first to be a "necessary" job qualification at one time might turn out instead to have been the product of

while it is appropriate fully to condemn racial discrimination and murder, the same is not true of pollution.[170] It might seem appropriate to condemn the release of pollutants in the abstract with no connection to any benefit flowing therefrom, but the conception underlying this view is unrealistic. The appropriateness of a pollution emission can only be judged in light of the benefit that results from the activity that produces the pollution as a byproduct.[171]

Nonetheless, a market for pollution emissions rights makes it easier to accept the notion of pollution as a pure evil, akin to racial discrimination, by encouraging the conceptualization of pollution as detached from any underlying beneficial activity. In effect, a marketable permit system gives rise to a "disconnect" between the pollution emissions and the beneficial activity.

These three framing effects blend together to bolster strongly the perception that the "right to pollute" critique applies more strongly to market-based mechanisms. Not only does the government afford

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(undesirable) societal mores that seemed necessary but in fact were only a preference. *See, e.g.*, Diaz v. Pan Am. World Airways, Inc., 442 F.2d 385, 387–88 (5th Cir. 1971) (rejecting the defendant's argument, and the trial court's holding, that the fact that passengers expected, and psychologically required, flight attendants to be female constituted a valid justification for hiring only female flight attendants).

170 Cass Sunstein explains:

> As a first approximation, a flat ban on an activity may well be preferable to a cash payment for resulting harm, assuming that there are no transaction costs (such as enforcement expenditures), *when and only when the right level of the underlying activity is zero.* The right level of assaults and poisonings seems to be zero. It would therefore be absurd to allow people to assault and poison others as long as they are willing to compensate people for the harm. Such a strategy would be inconsistent with the underlying goal of eliminating the conduct altogether.
>
> By contrast, the appropriate emissions level for many pollutants is well above zero. For example, complete elimination of sulfur dioxide emissions would cause a severe energy shortage—one that would dramatically increase poverty, health risks, unemployment, and inflation. In this respect, a ban on sulfur dioxide emissions would be difficult to justify. For those pollutants whose continued emissions is necessary to achieve desirable social goals, a fee, designed to bring about the optimal emissions level, makes far more sense than a ban.

Cass R. Sunstein, *Administrative Substance*, 1991 DUKE L.J. 607, 635–36 (footnotes omitted); *see also* Stewart, *supra* note 50, at 199 ("The discharge within proper limits of residuals from socially productive activities . . . can by no means be equated with sin or murder or racial discrimination.").

171 This does not mean that absolute bans of particular types of pollution should be precluded. *See supra* note 101. Indeed, more generally, it may be that the pollution that results from a particular activity is so harmful that the activity itself should be banned.

rights to polluters rather than taking them away, but (the perception continues) the government by doing so cedes decisionmaking authority to polluters. And, further, to the extent that the partitioning of pollution depicts pollution emissions as purely negative, the conveyance by the government of "rights to pollute" confirms the notion that the government thus sets a "mere price" for pollution without establishing any norm;[172] it seems as though, by conferring absolute rights to pollute, the government is abandoning any anti-pollution norm. Thus, while Posner speaks of a "norm not to pollute 'too much'"[173]—and, in fact, market-based systems are consistent with such a norm—the framing effects make it seem that the government is instead not endorsing any anti-pollution norm at all.[174]

2. The "Commodification" Critique

Two framing features render market-based regulatory forms—and especially tradable pollution permit systems—especially susceptible to the "commodification" critique: First, marketable permit systems tend to emphasize the individual power enjoyed by, and decisions made by, societal actors, and to deemphasize government's role; other regimes, in contrast, tend to emphasize the government's role as rule-setter and enforcer.[175] Second, market-based regimes are seen to decouple pollution from any underlying beneficial activity.

The emphasis under market-based regulation on individual choice and action, and the deemphasis of the government's role, foster the perception that market-based instruments commodify the environment. While, as I have discussed above, non-market-based instruments also tend to rely, at bottom, on some version of cost-benefit analysis,[176] that analysis falls outside the frame through which non-market-based instruments are pictured. But that is not the case for

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172 *See supra* note 108 and accompanying text; *supra* text accompanying note 162.

173 *See supra* note 104 and accompanying text.

174 The absence of government endorsement of an anti-pollution norm may make it difficult to restore such a norm later. This helps to explain the extreme resistance on the part of some environmentalists to any market-based mechanisms. *Cf.* Merrill, *supra* note 28, at 295 (noting that some "[e]nvironmentalists came to see that . . . it was safe to endorse or at least acquiesce in the usage of market mechanisms . . . [where] they would function solely as a means to an end and would not undermine the environmentalist position regarding the proper metric for setting standards"). (I am grateful to Lee Fennell for this point.)

175 This framing effect may make tradable pollution permit regimes attractive to free market adherents who distrust government regulation. (I am grateful to David Driesen for this point.)

176 *See supra* Parts III.B., IV.B.3.

market-based regulation, where cost-benefit analysis and, therefore, commodification are center stage. Under a tax regime, the focus is on each actor's decision as to whether or not to pay the tax and pollute more. Even more so is the focus on private actors' decisions to transact pollution permits under a tradable permit regime.

The fact that market-based regimes are seen to partition pollution from the underlying activity exacerbates the commodification problem. On its face, the analysis shifts from a balancing of the benefits of the socially productive goods or activities against the costs of pollution, to a balancing of the cost of the right to pollute against the profit that the polluter enjoys by virtue of the polluting act itself, divorced from any societal benefit. The partitioning makes pollution seem like a pure evil more akin to murder, the application of an economic framework to which, while in reality at least somewhat appropriate,[177] seems highly inappropriate.

The foregoing thus paints the susceptibility of market-based regulatory forms to the "commodification" critique as a framing effect. That conclusion conflicts at least somewhat with the view, advanced by proponents of the "commodification" critique, that market-based regulation inherently commodifies—and, by omission, other forms of environmental regulation do not commodify—the environment. Three factors support the view that the applicability of the "commodification" critique is at least in part due to framing.

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177 While Elizabeth Anderson adheres to the view that cost-benefit analysis involves commodification of the environment, she does concede that the environment presents a different case from other areas where commodification has been seen to be problematic:

> Whereas we neither have a market in human lives nor regard human beings primarily as economic resources, we do have markets in land, water, animals, and natural resources. Our dominant relations to these things are economic. The choices people make as consumers of environmental goods are arguably more autonomous than the choices people make as sellers of their labor power.

ANDERSON, *supra* note 76, at 203–04; *see also* Cass R. Sunstein, *Endogenous Preferences, Environmental Law*, 22 J. LEGAL STUD. 217, 247–53 (1993) (to the same effect); Sunstein, *supra* note 57, at 786–87, 834–40 (describing two coexistent, yet somewhat inconsistent, means of valuation for environmental quality and goods); Spaulding, *supra* note 82, at 297–98 (describing both market-based approaches and command-and-control approaches as examples of "incomplete commodification" on the spectrum between "complete commodification" and "complete non-commodification," with market-based approaches "[c]loser to free market environmentalism"). *But cf.* Ackerman & Heinzerling, *supra* note 80, at 1562–81 (critiquing the underpinnings and methodology of cost-benefit analysis).

First, Saul Levmore argues that the commodification critique as a general matter is largely instrumental.[178] He explains that the critique seems to persist precisely in situations where it is the case (or at least it is believed to be the case) that the collective weal will suffer as a result of trading the "commodity" in question. As such, the critique "suffers from something of a circularity problem."[179] Levmore's view accords well with the notion that the applicability of the "commodification" critique results from framing: The way in which the effect on the public weal is presented, i.e., framed, may fuel—or defuse—criticisms of the proposed commodification.

Second, as I have discussed above, most environmental regulatory regimes involve some measure of cost-benefit analysis.[180] But the "commodification" critique is commonly leveled against market-based regulatory forms. This suggests that the cost-benefit analysis present in other regimes simply falls outside the pertinent regulatory frame.[181]

Third, the absence of criticisms of environmental regulatory instruments on *degradation*-fungibility grounds suggests that the extent and scope of commodification may be affected by framing. As I have suggested above,[182] one would expect proponents of the commodification critique to be piqued by degradation-fungibility—not specifically because of the possible development of "hot spots" themselves (though that raises its own environmental justice concerns[183]), but rather because of the fact that those who promulgate degradation-fungible systems value the existence of a broad market over the selec-

178 *See* Levmore, *supra* note 39, at 115–16 & n.8.

179 *Id.* at 115.

180 *See supra* Parts III.B., IV.B.3.

181 Bruce Ackerman and Richard Stewart, as well as Cass Sunstein, maintain that tradable pollution permit regimes are preferable to other environmental regulatory instruments because of their democratizing features. In particular, they argue that the tradable permit regimes enhance democracy by promoting a focus on the fundamental question of how much pollution should be allowed, as compared with command-and-control regimes that typically focus on questions, such as the appropriate technology to be required to achieve pollution reduction, that are far less accessible. *See, e.g.*, Ackerman & Stewart, *supra* note 38, at 1352–53; Cass R. Sunstein, *Democratizing America Through Law*, 25 SUFFOLK U. L. REV. 949, 967 (1991). But, if the frame of market-based environmental regulatory instruments in fact tends to *de*emphasize the role of government, then Ackerman and Stewart's, and Sunstein's reliance upon the question of the overall level of acceptable pollution as the focal point of market-based programs is misplaced. Perhaps tradable permit systems do not effectively democratize if their frame does not put emphasis on that question. *Cf.* Heinzerling, *supra* note 86 (questioning Ackerman and Stewart's, and Sunstein's democratization assertion on theoretical and empirical grounds).

182 *See supra* notes 138–49 and accompanying text.

183 *See* Nash & Revesz, *supra* note 29, at 580–81, 613–14.

tion of a scientifically defensible commodity.[184] Market values triumph over other values, the natural argument would seem to lie. Yet, the argument that degradation-fungible systems value establishment of a broad-based commodity over all else is essentially absent from the commodification literature.[185] It thus seems that the frame through which environmental regulations (in various forms) are presented deemphasizes the question of the particular environmental harm caused by emissions, with the emphasis instead on emission amounts. The frame, in other words, affects the degree to which the regulation is perceived to commodify the environment.

Fourth, in terms of the importance of a frame that emphasizes (or deemphasizes) cost-benefit analysis and commodification, a study conducted by Kip Viscusi in a related area—corporate risk analysis and the award of punitive damages[186]—provides a useful analog. Risk is similar to pollution. Like pollution, the absolute eradication of risk is unattainable and, moreover, undesirable. Further, while there is much public rhetoric on the ideal of reducing risk,[187] in reality the public is quite willing to accept higher risk for cost savings, i.e., for the benefit of making goods and activities affordable that would not be were risk substantially reduced (let alone completely eliminated).[188]

184 Note that degradation-fungibility meets the description of "fungibility" as an indicia of commodification in the conceptualization offered by Margaret Radin. *See* RADIN, *supra* note 57, at 118; Radin, *supra* note 58 at 1880 & nn.115–17.

185 On September 23, 2006, a Westlaw search of legal journals and treatises for documents that refer to "commodification" and "environmental justice" or "hot spots" in the same paragraph produced only nine results. Vicki Been has suggested that environmental justice advocates might use a commodification argument to assert that society ought not to allow people to sell their right to live away from locally-undesirable land uses. *See* Vicki Been, *Compensated Siting Proposals: Is It Time to Pay Attention?*, 21 FORDHAM URB. L.J. 787, 824 (1994); Vicki Been, *What's Fairness Got to Do with It? Environmental Justice and the Siting of Locally Undesirable Land Uses*, 78 CORNELL L. REV. 1001, 1040–41 (1993). Norman Spaulding discusses 'hot spots' under a general analysis of commodification and market-based environmental regulation. *See* Spaulding, *supra* note 82, at 323 & n.95.

By contrast, an article that presents a taxonomy of environmental justice concerns contains no reference to commodification. *See* Robert R. Kuehn, *A Taxonomy of Environmental Justice*, 30 ENVTL. L. REP. 10,681 (2000).

186 *See* W. Kip Viscusi, *Corporate Risk Analysis: A Reckless Act?*, 52 STAN. L. REV. 547 (2000).

187 *See, e.g.*, John D. Graham & Jonathan Baert Wiener, *Confronting Risk Tradeoffs*, *in* RISK VS. RISK 1, 1 (John D. Graham & Jonathan Baert Wiener eds., 1997).

188 *See, e.g.*, Viscusi, *supra* note 186, at 548–49. Viscusi elaborates:

> On a personal level, the approach of accepting risk tradeoffs is implicit in our daily lives. We take chances all the time. We ride in motor vehicles, fly on planes, eat potentially risky foods, and live in an environment that is not risk-free. Some tradeoffs of this kind are inevitable as we seek to strike

Viscusi studied the effect of corporate risk analyses on jury awards of punitive damages in the context of automobile safety design. In particular, he used surveys of juror-eligible citizens to try, among other things, to isolate the effect on punitive damage awards of the fact that an automobile manufacturer had—or had not—conducted a cost-benefit analysis in respect of a design feature that later led to injuries. Viscusi explains that, ideally, one would want companies to undertake a systematic risk analysis rather than make similar decisions in a reckless manner.[189] But, to the contrary, Viscusi's findings indicate that jurors tend to arrive at larger punitive damage awards when companies actually engage in explicit cost-benefit analyses.[190] As Viscusi notes, "[t]he resulting incentives are perverse."[191]

Viscusi offers "conjectures"[192] to explain the facially counterintuitive behavior of individuals in this setting. Among these conjectures is the notion that "[m]oney and lives might be considered incommensu-

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an appropriate balance between the harm inflicted by risks and the benefits such activities offer for our lives. The task for the individual is to make those personal decisions that confer sufficient benefits to outweigh the associated risks.

When faced with options that have different levels of safety, we often pay a higher price for safer products, though not without limit. Millions of consumers purchase cars with antilock brakes and protective side air bags, but few of us have such an unlimited concern for safety that we purchase a tank-like Hummer vehicle.

Id.

189 *See id.* at 550. Viscusi explains:

> [W]e want corporations to think about risks in a systematic manner and to undertake such calculations to ensure that there is appropriate risk balancing that is sufficiently protective. We all benefit when corporations select the level of safety that correctly reflects our own concern with safety and the costs of providing it.

Id. Viscusi elucidates that markets allow corporations to gauge the risk tradeoffs that consumers are willing to accept:

> The risk tradeoffs that we are willing to make in effect set the price for safety in the market and provide guidance to corporations, which must supply the products and services we purchase. If corporations generate products that create more hazards than we want to bear given the product price, or include unnecessary safety features that we do not value, then the product risk mix will not be successful in the marketplace.

Id. at 549.

190 *See id.* at 556–57. Viscusi also found that jurors arrived at larger awards when companies used more accurate, but larger, values of life in conducting their cost-benefit analyses than when they used artificially low values of life. *See id.* at 558. Thus, the more sound the cost-benefit analysis, the worse the likely result for the company.

191 *Id.* at 588.

192 *Id.* at 586.

rable."[193] If that is so, then "[p]eople may be averse to explicitly balancing money against human lives."[194] Along the same lines of the commodification critique of market-based environmental regulation, the argument proceeds, it is more acceptable to engage in risk tradeoffs implicitly than it is to do so explicitly by undertaking an explicit analysis.[195] Thus, Viscusi's findings provide perhaps some empirical

193 *Id.* at 587. Viscusi also advances the possibility that the mock jurors might have been affected by hindsight bias. In other words, the mock jurors might have seen the corporations as having balanced the costs of improved safety against people—now identified people, since an accident has by now occurred—who suffered particular injuries or died as a result of the lower safety provided, whereas in fact all the corporation did was to compare the costs of improved safety with a number representing the statistical expected value of harm that would result if the additional safety feature were not incorporated. *See id.* at 587–88.

194 *Id.* at 586–87.

195 Along these lines, compare Guido Calabresi and Philip Bobbitt's explanation for the vitality of customary or evolutionary approaches (as compared to, inter alia, market-based approaches) for the distribution of scarce assets. *See* GUIDO CALABRESI & PHILIP BOBBITT, TRAGIC CHOICES 44–49 (1978). Calabresi and Bobbitt argue that customary approaches may be valuable because they allocate assets without many of the costs associated with explicit markets. But they note that, while customary approaches "are likely to reduce and even avoid the costs of costing[,] . . . this is accomplished by sacrificing honesty and candor. Evolutionary approaches epitomize the fact that subterfuges do not extinguish the costs of costing, but rather transform them into costs in honesty." *Id.* at 146. *Cf.* David L. Shapiro, *In Defense of Judicial Candor*, 100 HARV. L. REV. 731, 748 (1987) (arguing that such approaches are prescriptively questionable, and that the "subterfuge can bring us peace only for a while").

Compare as well the Supreme Court's holding in *Whitman v. American Trucking Ass'ns*, 531 U.S. 457 (2001), that the plain language of the Clean Air Act precludes the EPA from considering costs in setting national ambient air quality standards ("NAAQS"), *see id.* at 471, with the Court's indication that "secret[ ] consider[ation]" of costs would have to be tolerated (though it would be inconsistent with the Court's holding), *id.* at 471 n.4. The Court explained: "Respondents' speculation that the EPA is secretly considering the costs of attainment without telling anyone is irrelevant to our interpretive inquiry. If such an allegation could be proved, it would be grounds for vacating the NAAQS, because the Administrator had not followed the law." *Id.* Of course, if in fact EPA indeed considered costs "without telling anyone," *id.*, it would be difficult for such an allegation to be proved. By placing the burden of proof on challengers, the Court in effect provides greater protection for EPA's covert, as opposed to explicit, considerations of cost.

A distinct, yet somewhat related, point is made by Laurence Tribe in his critique of the notion of having juries rely too heavily upon mathematical methods. One objection that Tribe raises to such an approach is that it may dehumanize justice. *See* Laurence H. Tribe, *Trial by Mathematics: Precision and Ritual in the Legal Process*, 84 HARV. L. REV. 1329, 1375–77 (1971). Tribe suggests that extensive reliance on mathematics may render the legal system "even more alien and inhuman than it already . . . [seems] to distressingly many." *Id.* at 1376. He also argues that such an approach will

support for the heightened applicability of the commodification critique in the context of actual market-like treatment.

At the same time, Lior Strahilevitz advances his study of the effects of selling the right to use a freeway's express lanes as empirical evidence that the "commodification" critique is not always present.[196] Strahilevitz analyzed a system whereunder drivers on the freeway, in return for a charge, gain access to the freeway's express lanes as opposed to its local lanes. The charge varies with how many cars already are using the express lanes; higher usage leads to a higher user charge.[197] Strahilevitz found that people's behavior under the system does not conform to what proponents of the commodification critique might predict.[198] Strahilevitz argues that the freeway express lane example is substantially analogous to the use of marketable permits to regulate environmental quality.[199]

But Strahilevitz's analogy to pollution permits is not a strong one in two important ways. First, those who choose to do so pay a one-time fee, upon admission, to use the express lanes. Once they have gained admission, they cannot sell their use right to anyone else.[200]

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serve only to "shroud[ ] the [legal] process in mathematical obscurity," thus rendering the trial process and trial outcomes less, not more, comprehensible. *Id.*

196 *See* Strahilevitz, *supra* note 50, at 1272.

197 *Id.* at 1251. But note that there is only a one-time charge upon admission. *See id.*

198 Strahilevitz explains:

> The FasTrak experience does not support the argument that a move from a legal regime prohibiting an undesirable activity to one that commodifies the activity will undermine the norm against that behavior. San Diego's increase in carpooling during the life of the program suggests that, if anything, the norm against solo commuting has become somewhat stronger. Carpoolers have not felt that by commodifying their contribution to diminished roadway congestion FasTrak has trivialized their activities. To the contrary, it appears that those drivers who carpooled before the FasTrak program began to feel that society was providing them with a greater reward than it did beforehand.

Id. at 1289.

199 *See id.* at 1288–91.

200 Strahilevitz recognizes this, but does not think the distinction is ultimately salient to the question of commodification:

> An important distinction [between tradable pollution permits and the San Diego freeway-express lane example] concerns the fact that the right for solo drivers to use the Express Lanes is not, at present, alienable. The analysis herein, however, suggests that this lack of alienability makes little difference with respect to norms. Indeed, if anything, making access to the Express Lanes alienable might make carpoolers feel that their activities are valued by the state to an even greater degree, since they could then opt for either time or monetary savings as a result of their carpooling choice.

Indeed, new users purchase their use right from the government, not from existing users who are exiting the lanes. In this sense, the San Diego freeway express lane example is more akin to a variable tax scheme than to a marketable permit scheme.[201] No private party enjoys the opportunity to profit by transacting in express lane use rights.[202] In short, the system produces no opportunity for "winners" to enjoy an economic profit.

In contrast, the case of punitive damages in the wake or absence of corporate risk analyses is a setting where there are private party winners. Automobile manufacturers may be viewed (at least after the fact) as having profited at the expense of those injured or killed in accidents. In short, the risk analysis setting seems much more hospitable to the commodification critique than does the freeway-express lane setting. The setting of tradable pollution permits also can be characterized to raise the specter of private party winners. Thus, it, too, seems more susceptible to the commodification critique.

More importantly, the "commodity" that Strahilevitz studied—roadway usage—differs from the "commodity" of tradable permit systems—environmental degradation—in that roadway usage is not, standing alone, seen to be a pure evil. By contrast, environmental degradation—at least standing alone—is seen as a pure evil. There is, in short, no partitioning of roadway usage from an underlying beneficial activity such that the commodification of roadway usage seems problematic. (There might be more of a problem if, for example, the government issued, instead of roadway usage permits, permits to emit a certain amount of carbon monoxide which it then required drivers to have before they get to operate their motor vehicles.)

In sum, framing effects do enhance the susceptibility of market-based forms of environmental regulation to the "right to pollute" and "commodification" critiques. In the next Part, I turn to the question of whether, and if so how, the force of these critiques might be blunted by altering the regulations' frames.

Id. at 1288 n.286.

201 *See supra* note 97.

202 *Cf.* Levmore, *supra* note 39, at 114 (describing the basis of the "anti-commodification" objection to vote-selling as the "the idea that voting is a kind of collective decisionmaking experience, greater than the sum of individual votes, so that something important is lost if an isolated voting right is sold for the individual seller's selfish gain").

VI. REFRAMING AS A MEANS TO DEFUSE CRITIQUES OF MARKET-BASED ENVIRONMENTAL REGULATION

In the previous Part, I described the "right to pollute" and "commodification" critiques of market-based environmental regulatory systems as effects of the frames through which market-based systems are portrayed. The fact that these critiques are, to some degree at least, framing effects suggests that perhaps those effects might be minimized by altering the frames. I address that question in this Part.

The frame through which a regulation is presented, and the effects of that frame, might be altered either through education of the public to broaden the regulation's natural frame, or by changing the very frame of the regulation itself. Thus, one possibility is directly to instruct the public as to how these schemes are supposed to function,[203] and to demonstrate that they in fact do not compromise the government's commitment to environmental protection.[204]

Another avenue would be to alter the frame itself by changing the nomenclature of market-based systems. For example, tradable permit systems generally refer to the rights they create as emissions permits or allowances. While the systems often disclaim the property nature of the allowances[205]—in part to address the concern that the system is creating "property rights to pollute"[206]—the fact remains that the allowances' moniker connotes an absolute right to emit a certain amount of pollutant.[207]

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203 *See* Nash, *supra* note 23, at 531 (suggesting that the argument might be largely defused by having the government "explain[ ] to the public how [the] tradable pollution allowance regime is supposed to function").

204 The promise of education as a tool is supported by the fact that society has acclimated over time in other contexts to new independent property rights that originally drew significant opposition. *See, e.g.*, Gregory S. Alexander, *Time and Property in the American Republican Legal Culture*, 66 N.Y.U. L. REV. 273, 333–35 (1991) (describing the successful expansion, over opposition, of new forms of intangible property in Great Britain and the United States).

205 For example, the statutory scheme in the Clean Air Act explicitly provides that a sulfur dioxide emission allowance constitutes only a "limited authorization to emit sulfur dioxide," and does "not constitute a property right." Clean Air Act § 403(f), 42 U.S.C. § 7651b(f) (2000).

206 Congress evidently adopted this approach both to provide leeway were it to decide in the future to modify or eliminate the rights conveyed by the allowances, and to minimize the appearance of conveying property interests in a "right to pollute." Nash & Revesz, *supra* note 29, at 584 n.73.

207 Indeed, one might argue that the current nomenclature—if not the current state of the law itself—suggests that a polluter who possesses an emissions allowance could emit the amount of the pollutant *even if the polluter was engaged in no beneficial activity*, i.e., the polluter could simply open a canister of air pollutant for no reason other than that she was legally authorized to do so. A change in the nomenclature

To address this problem, Carol Rose has suggested that permits instead be dubbed "emissions debits" or "emissions penalties."[208] Perhaps a more satisfying—and more effective—approach would be to focus the permit's moniker on the right to use the underlying property in a way that results in the generation of pollution as a by-product.[209] Such an approach would retain the notion that the pollution emission ties back to some beneficial activity, despite the partitioning of the pollution "right" from the underlying property right. It also would serve to emphasize the fact that other forms of environmental regulation also balance pollution emissions against beneficial activities, and thus themselves engage in commodification.

It is possible that, as a result of cumulative framing effects to this point, an anti-market-based norm has developed and ensconced itself. If that is true, then simple education or relabeling of programs will likely not be successful in overcoming objections to market-based regulation. More intense educational efforts might be required to effect norm transformation.[210]

CONCLUSION

In this Article, I have argued that the different frames through which different regulatory instruments are presented may affect the perception of those instruments, and in turn may influence the choice among those instruments. I have used the "right to pollute" and "commodification" critiques that are typically lodged against market-based environmental regulatory systems as an example. The critiques in reality apply to most environmental regulatory tools, yet the perception is that they do not. I have argued that three aspects of regulatory framing—market-based regulations' emphasis on individual actors as opposed to government, their partitioning of pollution emissions from the underlying beneficial activity, and their portrayal of polluters as gaining, rather than surrendering, rights—contribute to this per-

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would dispel, properly, any suggestion that such behavior would be tolerated (let alone authorized).

208 Rose, *supra* note 99, at 36.

209 Thus, a more accurate, though perhaps too cumbersome, moniker might be "permit to use property in a way that results in an incidental pollution emission."

210 *Cf.* Posner, *supra* note 104, at 1730–31 (discussing the possible use of education to alter people's norms). *But cf. id.* at 1734–35 (noting that, because "[n]o amount of education and government-sponsored television commercials are going to prevent paper mills from spewing forth pollution," the answer instead was to "circumvent" the "weak norm" against polluting the air by "transform[ing] a firm's norm-grounded entitlement to pollute 'a little' into a property right that can be traded on the market").

ception such that the perceived susceptibility of market-based instruments to these critiques is at least in part a framing effect. I have also suggested some ways that the framing effects might be mitigated.

This Article provides three important lessons. First, at least some of the objections to market-based environmental regulation result from framing. Mitigation of these framing effects might make enactment of market-based regulation more politically viable.

Second, on a broader level, an understanding of the "commodification" critique of market-based environmental regulation as a framing effect suggests that perhaps other applications of that critique also might result from framing. In this sense, framing effects may shed light on the proper scope of "commodification," a scope that has proven difficult to understand.[211]

Third, speaking even more broadly, the importance of framing on environmental regulatory-instrument choice indicates that framing effects may play an important role in instrument choice generally. Research into the breadth of such effects, as well as the degree to which framing effects in fact may sway public opinion, would be worthwhile.

211 *See, e.g.*, Levmore, *supra* note 39, at 115–16 & n.8; Note, *The Price of Everything, the Value of Nothing: Reframing the Commodification Debate*, 117 HARV. L. REV. 689 (2003).