

# BOOK REVIEW

ON THE ROLE OF COST-BENEFIT  
ANALYSIS IN ENVIRONMENTAL LAW:  
A BOOK REVIEW OF FRANK ACKERMAN AND  
LISA HEINZERLING'S *PRICELESS: ON KNOWING THE  
PRICE OF EVERYTHING AND THE VALUE OF NOTHING*

BY  
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*Legal scholarship on the role of cost-benefit analysis in environmental law is often stimulating, but does not seem to be changing anybody's mind. The entrenchment of a camp of detractors and a camp of advocates of cost-benefit analysis parallels the impasse that has stymied environmental law for over a decade. Professors Frank Ackerman and Lisa Heinzerling have coauthored a book that captures most of the arguments from the detractor side, and they have done so skillfully and powerfully. However, this Review criticizes the book's contribution to perpetuating this intellectual stalemate. The book does this by focusing on an environmental theory of moral absolutism and attempting to exclude economic considerations altogether from the environmental law and policy-making process. What is needed is some way of separating out environmental problems that are largely economic in nature, which can be informed by cost-benefit analysis, from those problems that are largely moral in nature, which cannot be informed by cost-benefit analysis. This Review proposes some ideas on how to draw this line. One set of environmental and risk problems that should be removed from the realm of economics includes problems in which the risk of harm is*

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*relatively high, such that the risk becomes outright danger. When such a risk exists, it begins to resemble an intentional harm and should be regulated without regard to a weighing of costs and benefits. Another set of environmental and risk problems that should be insulated from cost-benefit analysis concerns situations in which a discrete group is singled out for physical harm on some basis that we find objectionable, such as race. When environmental justice concerns are implicated, there is no effective way of monetizing the injustice of being chosen to bear physical harm. By attempting to draw this line, this Review attempts to advance the debate over the proper role for cost-benefit analysis in environmental and safety regulation.*

I.	INTRODUCTION .....	136
II.	ACKERMAN AND HEINZERLING'S CONTRIBUTIONS TO THE COST-BENEFIT DEBATE .....	140
III.	PROBLEMS WITH THE ACKERMAN AND HEINZERLING ARGUMENT .....	144
	A. <i>Ackerman and Heinzerling's Overbroad         Criticism of Economics</i> .....	146
	B. <i>The Problem With Moral Outrage as a Rhetorical Strategy</i> .....	151
	C. <i>The Problem with Ackerman and Heinzerling's         Moral Absolutism</i> .....	157
IV.	WHEN SHOULD COST-BENEFIT ANALYSIS BE A GUIDING PRINCIPLE? .....	163
	A. <i>High Probabilities of Harm</i> .....	165
	B. <i>Environmental Justice Concerns</i> .....	168
V.	CONCLUSION .....	172

## I. INTRODUCTION

Legal scholarship on cost-benefit analysis in environmental law has produced a considerable amount of heat *and* light. Numerous books, scores of law review articles, and countless white papers have been devoted to argumentation over the proper role of cost-benefit analysis.<sup>1</sup> While the debate has been illuminating, it often seems to be carried on by two disparate camps that, for the most part, talk past each other. The

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<sup>1</sup> Books and book chapters include CASS R. SUNSTEIN, *THE COST-BENEFIT STATE* (2002); *COST-BENEFIT ANALYSIS: LEGAL, ECONOMIC, AND PHILOSOPHICAL PERSPECTIVES* (Matthew D. Adler & Eric A. Posner eds., 2001); R. KERRY TURNER ET AL., *Cost-Benefit Thinking, in ENVIRONMENTAL ECONOMICS: AN ELEMENTARY INTRODUCTION* (1993); Steven Kelman, *Cost-Benefit Analysis: An Ethical Critique*, and Herman B. Leonard & Richard J. Zeckhauser, *Cost-Benefit Analysis Defended, in ENVIRONMENTAL ETHICS: WHAT REALLY MATTERS, WHAT REALLY WORKS* (David Schmitz, and Elizabeth Willot, eds., 2002). Symposium issues include those by the *Journal of Legal Studies*, which included contributions from Cass Sunstein, Mathew Adler, Eric Posner, and Richard Posner, as well as Nobel Laureates Amartya Sen and Gary Becker, 29 *J. LEGAL STUD.* 837 (2000), the *University of Pennsylvania Law Review*, 150 *U. PENN. L. REV.* 1412 (2002), and the *Georgetown Law Journal*, which centered upon controversy over cost-benefit analysis for implementation of a rule on the permissible levels of arsenic in drinking water, 90 *GEO. L.J.* 2255 (2002).

argumentation is such that the meaningful exchange of ideas has given way to posturing. There is considerable truth in both camps, as there often is when there are deep and bitter divisions. And yet this debate is carried on in terms of absolutes, as if it were a debate that can be won on rhetoric and storytelling alone.

The detractors of cost-benefit analysis generally believe that it should play little or no role in environmental law. Objections are grounded largely, but not completely, on deontological grounds.<sup>2</sup> While there are some detractors who believe that at least as presently practiced, cost-benefit analysis has too many methodological problems to be useful,<sup>3</sup> the most vocal faction of detractors object to the practice on ethical grounds. The view of this latter faction is that environmental issues are fundamentally moral issues, and should not be resolved by an amoral practice such as cost-benefit analysis.<sup>4</sup>

By contrast, advocates of cost-benefit analysis, who believe that cost-benefit analysis should play *some* role (typically some role short of being a decision rule<sup>5</sup>), have tended to base their arguments largely, but not completely, on consequentialist grounds.<sup>6</sup> While there is some divergence of opinion in the advocates' camp with respect to the robustness of cost-benefit analysis, all would agree that it is a way of introducing some rationality into

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<sup>2</sup> See, e.g., Mark Sagoff, *Can Environmentalists Be Liberals? Jurisprudential Foundations of Environmentalism*, 16 ENVTL. L. 775, 778–79 (1986) (describing the split between deontological liberals and utilitarian liberals); Laurence H. Tribe, *Ways Not to Think About Plastic Trees: New Foundations for Environmental Law*, 83 YALE L.J. 1315, 1317–1325 (1974) (addressing deontological concerns).

<sup>3</sup> See, e.g., FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING 9 (2004) (“[F]ormal cost-benefit analysis often hurts more than it helps; it muddies rather than clarifies fundamental clashes in values.”); Richard W. Parker, *Grading the Government*, 70 U. CHI. L. REV. 1345 (2003) (pointing out defects in the practice of “scorecards,” or summary cost-benefit analyses); Alyson C. Fluornoy, *In Search of an Environmental Ethic*, 28 COLUM. J. ENVTL. L. 63, 85 (2003) (“Many statutory standards that embody a traditional utilitarian ethic lack any explicit mandate for consideration of attributes like interdependence, irreversibility, and uncertainty. Decisions under such standards generally reveal similar inattention to ecological science.”).

<sup>4</sup> See, e.g., Sagoff, *supra* note 2, at 780–84; Lisa Heinzerling, *Markets for Arsenic*, 90 GEO. L. J. 2311, 2313, 2329–38 (2002); Steven Kelman, *An Ethical Critique*, 5 REG. 33 (1981); Martha C. Nussbaum, *The Costs of Tragedy: Some Moral Limits of Cost-Benefit Analysis*, 29 J. LEGAL STUD. 1005, 1028–36 (2000); Henry S. Richardson, *The Stupidity of the Cost-Benefit Standard*, 29 J. LEGAL STUD. 971, 971–90 (2000).

<sup>5</sup> See, e.g., Richard D. Morgenstern, *Conducting an Economic Analysis*, in ECONOMIC ANALYSES AT EPA 27 (Richard D. Morgenstern ed., 1997) (“The mainstream view generally does not agree that cost-benefit analysis is capable of identifying the truly ‘best’ option.”); Matthew D. Adler & Eric A. Posner, *Introduction*, 29 J. LEGAL STUD. 837, 838 (2000) (“Even the proponents of cost-benefit analysis do not generally argue that it should be the sole decision procedure for administrative agencies and other governmental bodies.”).

<sup>6</sup> See Amartya Sen, *The Discipline of Cost-Benefit Analysis*, 29 J. LEGAL STUD. 931, 936 (2000) (defining consequential evaluation by not only looking at happiness or the fulfillment of desire, but also whether certain actions have been performed or particular rights violated); Robert H. Frank, *Why is Cost-Benefit Analysis So Controversial?*, 29 J. LEGAL STUD. 913, 915 (2000) (arguing that although cost-benefit analysis is closely identified with consequentialist ethical theories its prescriptions are not systematically misleading).

a legislative and regulatory process beset by cognition problems, arbitrary priority setting, and institutional biases.<sup>7</sup>

Professor Lisa Heinzerling has emerged as perhaps the leading voice of the detractors' camp.<sup>8</sup> She has dedicated most of her distinguished career to attacking the use of economics in environmental law and policy, including the use of cost-benefit analysis. Although not formally trained in economics, she has developed an expertise in the field that humbles many formally trained economists, including this author. Her criticisms of specific uses of cost-benefit analysis and of specific techniques in estimating costs and benefits are well-researched and compelling. But Heinzerling's combative style, while it has captured the moral outrage of the environmental side and elevated her in the environmental field, has not garnered the attention she deserves from outside this constituency. Sometimes her bright light is lost in

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<sup>7</sup> See, e.g., Robert W. Hahn & Cass R. Sunstein, *A New Executive Order For Improving Federal Regulation? Deeper and Wider Cost-Benefit Analysis*, 150 U. PENN. L. REV. 1489 (2002) (explaining how to ensure a broader commitment to cost-benefit analysis); Eric A. Posner, *Using Net Benefit Accounts to Discipline Agencies: A Thought Experiment*, 150 U. PENN. L. REV. 1473 (2002) (arguing for the implementation of a system of "Net Benefit Accounts" that would force agencies to internalize the political benefits and costs imposed by their regulations on industry and other groups); SCOTT FARROW & MICHAEL TOMAN, USING ENVIRONMENTAL COST-BENEFIT ANALYSIS TO IMPROVE GOVERNMENT PERFORMANCE 11-12 (Resources for the Future, Discussion Paper No. 99-11, 1998) (concluding that not doing cost-benefit analysis merely "masks [uncertainties] by leaving the decision maker to integrate a larger amount of disparate information in a more subjective and unstructured way"), <http://www.rff.org/Documents/RFF-DP-99-11.pdf>; ROBERT W. HAHN & PATRICK DUDLEY, HOW WELL DOES THE GOVERNMENT DO COST-BENEFIT ANALYSIS? 1-2 (AEI-Brookings Joint Center for Regulatory Studies, Working Paper No. 04-01, 2004) (noting some of the benefits of cost-benefit analysis), <http://www.aei.brookings.org/admin/authorpdfs/page.php?id=317>; ROBERT STAVINS, ENVIRONMENTAL PROTECTION AND ECONOMIC WELL-BEING: HOW DOES (AND HOW SHOULD) GOVERNMENT BALANCE THESE TWO IMPORTANT VALUES? 3 (John F. Kennedy School of Government, Harvard University, Faculty Working Paper No. RWP03-035, 2003) ("Although formal benefit-cost analysis should *not* be viewed as either necessary or sufficient for designing sensible public policy, it can provide an exceptionally useful framework for consistently organizing disparate information, and in this way, it can greatly improve the process and hence the outcome of policy analysis."), [http://ksgnotes1.harvard.edu/Research/wpaper.nsf/rwp/RWP03-035/\\$File/rwp03\\_035\\_Stavins.pdf](http://ksgnotes1.harvard.edu/Research/wpaper.nsf/rwp/RWP03-035/$File/rwp03_035_Stavins.pdf); Stephen F. Williams, *Squaring the Vicious Circle*, 53 ADMIN. L. REV. 257, 270 (2001) ("If you accept the Ben Franklin preference for net benefit, then you must in some way consider costs and compare them with benefits; that's the *only* way you can get to *net* benefit."); Michael Abramowicz, *Toward a Jurisprudence of Cost-Benefit Analysis*, 100 MICH. L. REV. 1708, 1117-20 (2002) (highlighting the benefits of cost-benefit analysis).

<sup>8</sup> Others include Thomas McGarity, Sidney Shapiro, Robert Glicksman, and David Driesen. See, e.g., Thomas O. McGarity, *Professor Sunstein's Fuzzy Math*, 90 GEO. L.J. 2341, 2366 (2002) (arguing that cost-benefit analysis is "occasionally comprehensible, but frequently preposterous and always manipulable number spinning"); Sidney A. Shapiro & Thomas O. McGarity, *Not So Paradoxical: The Rationale for Technology-Based Regulation*, 1991 DUKE L.J. 729, 744 (1991) (arguing that Sunstein's approach "lacks any moral compass for determining what level of risk is appropriate in hard cases"); Thomas O. McGarity & Sidney A. Shapiro, *OSHA's Critics and Regulatory Reform*, 31 WAKE FOREST L. REV. 587, 631 (1996) (discussing cost-benefit analysis and its inconsistency with technology-based standard setting); SIDNEY A. SHAPIRO & ROBERT L. GLICKSMAN, RISK REGULATION AT RISK: RESTORING A PRAGMATIC APPROACH (2003) (arguing that pragmatism is an appropriate baseline for the design and implementation of risk regulation); DAVID DRIESEN, THE ECONOMIC DYNAMICS OF ENVIRONMENTAL LAW (2003) (proposing a concept of economic dynamics to reshape thinking about environmental law and policy).

her intense heat; lost also is her discerning recognition of problems with cost-benefit analysis that truly need to be addressed.

With environmental economist Frank Ackerman, Heinzerling has produced the book *Priceless: On Knowing the Price of Everything and the Value of Nothing (Priceless)*, a comprehensive criticism of the use of economics—in particular, the use of cost-benefit analysis—in environmental and safety regulation. Praised by Ralph Nader for “tak[ing] apart the barren but intricate hokum of deregulatory formulaics,”<sup>9</sup> *Priceless* pulls together the different strands of critiques that the two authors have produced over the years, and restates both their moral and methodological objections to everything economic. Ackerman and Heinzerling clearly object to economic analysis on deontological grounds. They argue that environmental protection and health and safety regulation are moral issues, not economic ones. More than once in the book (and also in Heinzerling’s past scholarship), they announce that economics gives us reason to do the “obviously wrong thing.”<sup>10</sup> Ackerman and Heinzerling claim that this book offers “an attitude rather than an algorithm.”<sup>11</sup> In addition, they spend a considerable amount of time attacking consequentialist justifications for cost-benefit analysis. They express deep skepticism that cost-benefit analysis is any better than the traditional paradigm of environmental regulation, which reformers have criticized as being unnecessarily burdensome and ineffective. Ackerman and Heinzerling criticize, even mock, a variety of techniques used in economic analysis and cost-benefit analysis, including discounting (they devote a chapter, “Honey, I Shrunk the Future,” to this topic) and contingent valuation methodology, the survey-based method of estimating non-market values (in the chapter “Unnatural Markets”).<sup>12</sup> Ackerman and Heinzerling argue that even if environmental protection and health and safety regulation were economic issues, cost-benefit analysis is deeply flawed. Along the way, they condemn a number of political movements that they associate with economics, such as trends towards market deregulation and privatization of government services.

While Ackerman and Heinzerling raise some important methodological issues with cost-benefit analysis, this book falls short of being the definitive critique of the practice that I had hoped for from these distinguished scholars. Rather, *Priceless* is a rallying cry, a call for our collective outrage to rise up and smite those regulated interests that pollute our air, water, and land, and that subject us to a vast array of involuntary risks. But while their passion and outrage seems aimed at energizing their core constituency—those who have always believed in more stringent environmental and safety regulation—their derisive and disdainful tone<sup>13</sup> detracts from the

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<sup>9</sup> Center for Progressive Regulation, *Media Room: Priceless*, at <http://www.progressiveregulation.org/priceless.CFM> (last visited Feb. 20, 2005).

<sup>10</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 9, 87.

<sup>11</sup> *Id.* at 11.

<sup>12</sup> “[I]f whales were consumers, swimming up to the market with cash in their fins, economists could interview them.” *Id.* at 176.

<sup>13</sup> Consider the following: “[I]f everyone looks under the sofa cushions and finds a lost penny every week, will a life be saved as a result?” *Id.* at 57–58 (ridiculing the notion that the

contributions they make, and turns off those whose minds might truly be changed.

In Part I of this Review, I examine three of the contributions that the book makes to the cost-benefit debate: problems with estimates of the value of a statistical life 1) due to the nature of wage-risk data and 2) due to income effects, and 3) problems with systemic overestimates of compliance cost. In Part II, I discuss in detail three of the problems with the Ackerman and Heinzerling argument: their overbroad attack on economics, their flawed rhetorical strategy of rallying by moral outrage, and their failure, in advancing their brand of moral absolutism, to engage with any of the subtleties that must be wrestled with in critiquing cost-benefit analysis and economics. In Part III, I offer some thoughts as to how we might instead think about the role of cost-benefit analysis in environmental law. Advocates have denied that they are proposing cost-benefit analysis as a decision rule. But they have not offered up any principle to determine which problems should be resolved by resort to cost-benefit analysis. I offer some thoughts in this Part in hope of triggering a discussion on how to develop such a principle. I conclude by making some general observations about objections to cost-benefit analysis.

## II. ACKERMAN AND HEINZERLING'S CONTRIBUTIONS TO THE COST-BENEFIT DEBATE

*Priceless* makes, in my view, at least three important contributions to the cost-benefit debate. They should not be ignored, even by those economists that are the targets of Ackerman and Heinzerling's barbs.

First, Ackerman and Heinzerling point out the problem of selection bias in using wage-risk data to estimate the value of a statistical life. Most estimates are based upon wage-risk data—broad statistical information on how much wage premium workers typically demand for risky jobs. Economists assume that workers understand the added riskiness of particular occupations, and will demand slightly higher wages to compensate for the higher risk. By essentially dividing the wage premium by the added risk, an inference can be made about how much this risk is worth to the individual worker.<sup>14</sup> The problem is, as Ackerman and Heinzerling

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creation of wealth results in saved lives). "Rules that cost billions for every life saved, missed opportunities to save tens of thousands of lives, regulations that kill more people than they save: these are the stories that have captured the imagination of regulatory critics and their gullible publicists. The stories are the supermarket tabloid sensations of Washington policy debate, the regulatory equivalent of reports that alligators can be found in New York City's sewer system, or that Elvis is alive somewhere in America." *Id.* at 59. "Likewise, when a controversial new rule is proposed, the right-wing think-tank crowd in Washington goes to work on rewriting the science as well as the economics." *Id.* at 111. "[D]on't laugh yet: this is exactly what is done in contemporary cost-benefit analysis." *Id.* at 188.

<sup>14</sup> The actual extrapolations are more complicated, but suffice it to say the wage differential is used to impute the value of the risk of loss of life. For a discussion of wage-risk studies, see MICHAEL J. MOORE & W. KIP VISCUSI, *COMPENSATION MECHANISMS FOR JOB RISKS* (1990) (illustrating the diverse nature of the response to job risks and the important role that is played by compensation mechanisms for these risks); Michael J. Moore & W. Kip Viscusi, *Models for Estimating Discount Rates for Long-Term Health Risks Using Labor Market Data*, 3 J. RISK &

point out, that those who take risky jobs and demand a wage premium for it tend to be less risk averse than the general population; hence their implicit valuation of risk should not be taken as representative of the general population.<sup>15</sup> Their argument is persuasive. Although wage-risk studies do a credible job of controlling for a variety of variables—e.g., gender, race, education, and industry<sup>16</sup>—there is no empirical way to measure the difference in risk aversion between those who take these risky jobs and those who choose other jobs. Thus, there is no way to estimate the degree to which workers in risky jobs have a lower risk premium than the rest of us. Estimates of a statistical life that are based solely on wage-risk data are thus doomed to understate the value of risk for the rest of us who are involuntarily exposed to environmental risk.

Second, Ackerman and Heinzerling point out that most estimates of the value of a statistical life are based upon data dating back to the 1980s. While they have been carefully adjusted to account for inflation, they have often not been updated to account for the increase in incomes over the last 20 years.<sup>17</sup> This is a particularly strange omission on the part of those performing cost-benefit analyses. Kip Viscusi himself, the author or coauthor of much of the work done on the value of a statistical life, has concluded that risk avoidance increases with income.<sup>18</sup> So why aren't adjustments made for the value of a statistical life? Ackerman and Heinzerling suggest that the estimated value of a statistical life should simply be scaled up to adjust for higher incomes in the United States.<sup>19</sup> That would require us to assume that people would increase their expenditures for risk avoidance in proportion with their income. That is a strong assumption, but as a first cut, we could do worse—we could refuse to adjust the estimate at all, which is what we have often done.

It should be mentioned that not all cost-benefit analyses make this mistake. The United States Environmental Protection Agency (EPA), in a cost-benefit analysis for its issuance of a standard for arsenic under the Safe

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UNCERTAINTY 381 (1990) (utilizing job choices involving fatality risks to estimate individual discount rates for adverse health outcomes); W. Kip Viscusi, *Mortality Effects of Regulatory Costs and Policy Evaluation Criteria*, 25 RAND J. ECON. 94 (1994) (arguing that regulation of risk may produce offsetting risk increases, altering cost-benefit criteria pertinent to policy analysis); W. Kip Viscusi, *Labor Market Valuations of Life and Limb: Empirical Evidence and Policy Implications*, 26 PUB. POL'Y 359 (1978) (utilizing empirical analysis to determine compensation for nonpecuniary characteristics).

<sup>15</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 77–80.

<sup>16</sup> See MOORE & VISCUSI, *supra* note 14, at 78 tbl.5.4 (listing wage equation estimates by variables); W. KIP VISCUSI, THE VALUE OF LIFE: ESTIMATES WITH RISKS BY OCCUPATION AND INDUSTRY (Harvard Law School, Discussion Paper No. 422, 2003) (discussing a worker fatality risk variable), available at [http://www.law.harvard.edu/programs/olin\\_center/papers/pdf/422.pdf](http://www.law.harvard.edu/programs/olin_center/papers/pdf/422.pdf).

<sup>17</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 83–84.

<sup>18</sup> William N. Evans & W. Kip Viscusi, *Income Effects and the Value of Health*, 28 J. HUM. RESOURCES 497 (1993); W. KIP VISCUSI & JOSEPH E. ALDY, THE VALUE OF STATISTICAL LIFE: A CRITICAL REVIEW OF MARKET ESTIMATES THROUGHOUT THE WORLD 70–71 (AEI-Brookings Joint Center for Regulatory Studies, Related Publication No. 03-2, 2003), <http://www.aei.brookings.org/admin/authorpdfs/page.php?id=239>.

<sup>19</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 83–84.

Drinking Water Act<sup>20</sup> (on which Heinzerling has written a blistering critique<sup>21</sup>), did account for income increases in arriving at its estimate of the value of a statistical life. EPA examined different assumptions about the effect of increases in income on the willingness to avoid risk, and conducted sensitivity analyses using different assumptions.<sup>22</sup> Nevertheless, this EPA study aside, agencies have proven to be surprisingly reluctant to update their estimates of the value of a statistical life.<sup>23</sup>

Third, Ackerman and Heinzerling point out that in cost-benefit analyses, compliance costs tend to be overstated.<sup>24</sup> Their argument is that current estimates of compliance costs fail to account for the technological and process innovation that invariably occurs and reduces compliance costs.<sup>25</sup> As evidence for this assertion, the authors cite the sulfur dioxide emissions trading program under Title IV of the Clean Air Act,<sup>26</sup> under which actual compliance costs were one tenth of initial industry estimates.<sup>27</sup> Indeed, coal-fired power plant operators found a myriad of ways to reduce sulfur emissions that were scarcely imagined just a few years ago.<sup>28</sup> A more systematic analysis of this claim was undertaken by Winston Harrington and researchers at Resources for the Future, who examined 25 rulemaking case studies for which there were both *ex ante* and *ex post* estimates of compliance costs. Harrington and his colleagues grouped the estimates into three categories: overestimates, underestimates, and accurate estimates (defined as being within a certain percentage of the original estimate). Their

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<sup>20</sup> 42 U.S.C. §§ 300f to 300j-26 (2000).

<sup>21</sup> Heinzerling, *supra* note 4.

<sup>22</sup> National Primary Drinking Water Regulations; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring, 66 Fed. Reg. 6976, 7012 (Jan. 22, 2001) (codified at 40 C.F.R. pts. 9, 141, 142).

<sup>23</sup> The figure traditionally used for the value of a statistical life, \$6.1 million, is based on data from the 1980s. This appears to remain a popular figure at EPA. A proposed rule proposed for primary drinking water regulations under the Safe Water Drinking Act, 42 U.S.C. §§ 300f to 300j-25 (2000), estimated the benefit of avoided deaths at \$66 million, based on the calculation that the rule would save 11 lives per year. *See* Statement of Priorities, 69 Fed. Reg. 72,819, 72,844 (Dec. 13, 2004) (describing proposed rule). A 2004 proposed National Emissions Standard for Hazardous Air Pollutants under § 112 of the Clean Air Act, 42 U.S.C. § 7412 (2000), bases benefits estimates on a value of a statistical life of \$5.5 million. National Emissions Standards for Hazardous Air Pollutants: Proposed Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Phase I Final Replacement Standards and Phase II), 69 Fed. Reg. 21,198, 21,355 (proposed Apr. 20, 2004) (to be codified at 40 C.F.R. pts. 63, 264, 265, 266, 270, 271). In an illustration of laziness, the Consumer Product Safety Commission, in issuing a 2005 notice of proposed rulemaking on the standard of flammability of mattresses, used a value of a statistical life of \$5 million, specifically citing a study by Kip Viscusi *from 1993*. Standard for the Flammability (Open Flame) of Mattresses and Mattress/Foundation Sets, 70 Fed. Reg. 2470, 2482 (Jan. 13, 2005).

<sup>24</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 37–38.

<sup>25</sup> David Driesen also makes this point. DRIESEN, *supra* note 8, at 22–23.

<sup>26</sup> 42 U.S.C. §§ 7401–7671q (2000). Title IV of the Act appears at *id.* § 7651.

<sup>27</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 38.

<sup>28</sup> Byron Swift, *How Environmental Laws Work: An Analysis of the Utility Sector's Response to Regulation of Nitrogen Oxides and Sulfur Dioxide Under the Clean Air Act*, 14 TULANE ENVTL. L.J. 309, 327–28 (2001).



conclusion was unambiguous: Overestimates of compliance costs are far more frequent than underestimates and accurate estimates combined.<sup>29</sup>

But the situation is not as inherently hopeless as Ackerman and Heinzerling contend. A compliance cost estimate need not be, as the authors seem to believe, a simple crude estimate of the costs of buying some piece of compliance equipment. The cost-benefit analysis of a phase-down on lead in gasoline conducted in the 1980s utilized a linear programming model that took into account the considerable flexibility that refiners have in their operations. The analysis, carried out under a Reagan Administration that was decidedly hostile to environmental protection, was criticized by the oil industry for not simply extrapolating the cost by multiplying the price differential between leaded and unleaded gasoline (seven cents at that time) by the volume of gasoline consumed.<sup>30</sup> Such a simplistic method would have produced an unrealistically high estimate of compliance costs, something EPA properly rejected. Another reason for optimism about our ability to estimate costs more accurately comes from our experience with the acid rain program for the trading of sulfur dioxide emissions. Ackerman and Heinzerling are critical of cost-benefit analysis because the actual compliance costs were one tenth of the initial industry estimates, and one sixth of EPA estimates.<sup>31</sup> But this entire experiment with emissions trading has spawned a number of economic models that have explained, *ex post*, the compliance strategies utilized by power plants that resulted in compliance cost savings. A number of papers and books have been written that have advanced the economic understanding of compliance strategies.<sup>32</sup> These studies will no doubt make future estimates of compliance costs more accurate. Nevertheless, Ackerman and Heinzerling rightly highlight an important systemic problem with cost-benefit analysis, one that is in need of future research.

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<sup>29</sup> WINSTON HARRINGTON, ET AL., ON THE ACCURACY OF REGULATORY COST ESTIMATES, (Resources for the Future, Discussion Paper No. 99-18, 1999), <http://www.rff.org/Documents/RFF-DP-99-18.pdf>.

<sup>30</sup> Albert L. Nichols. *Lead in Gasoline*, in ECONOMIC ANALYSES AT EPA 49, 63-64 (Richard D. Morgenstern ed., 1997).

<sup>31</sup> U.S. ENVTL. PROT. AGENCY, PROGRESS REPORT ON THE EPA ACID RAIN PROGRAM 4 (1999) (showing annual compliance cost estimates of \$7.4 billion by the Edison Electric Institute, the industry trade group, and \$4.6 billion by EPA), *available at* <http://www.epa.gov/airmarkets/progress/arpreport/acidrainprogress.pdf>. The actual compliance cost, calculated *ex post*, totaled a mere \$726 million for 1995. A. DENNY ELLERMAN ET AL., MARKETS FOR CLEAN AIR 228-31 (2000); *see also* Curtis Carlson et al., *Sulfur Dioxide Control by Electric Utilities: What are the Gains From Trade?*, 108 J. POL. ECON. 1292, 1318 (2000) (estimating \$832 million for 1995).

<sup>32</sup> *See, e.g.*, ELLERMAN ET AL., *supra* note 31; Carlson et al., *supra* note 31, at 1318; DALLAS BURTRAW, COST SAVINGS, MARKET PERFORMANCE, AND ECONOMIC BENEFITS OF THE U.S. ACID RAIN PROGRAM, (Resources for the Future, Discussion Paper No. 98-28-REV, 1998), <http://www.rff.org/Documents/RFF-DP-98-28-REV.pdf>.

### III. PROBLEMS WITH THE ACKERMAN AND HEINZERLING ARGUMENT

Environmentalists have always had at best an uneasy relationship with economists, and at worst a downright stormy one.<sup>33</sup> What seems to bother environmentalists most is the idea—a misconceived one—that economics is all about reducing things to money.<sup>34</sup> Economics is a theory of choice. Monetization is merely a metric, a way of ranking and making choices about different states of the world. It may be that the choices posed by policy makers turn out to be false choices—as is often the case when regulated industries claim that environmental regulation will cost them millions of dollars and will cost jobs—but the remedy then would be to redefine the

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<sup>33</sup> The late David Brower, founder of the Sierra Club and the Earth Island Institute, was legend in not only his effective environmental advocacy, but his disdain for economists: “I quote Hazel Henderson: ‘Economics is a form of brain damage.’ . . . Economists are in trouble because they leave out of their calculations two terribly important factors, which they name and do nothing about: the cost to the Earth and the cost to the future.” DAVID BROWER, *The Sermon, in IT’S HEALING TIME ON EARTH* (2000), <http://www.wildnesswithin.com/heal.html>. Hazel Henderson herself has made the following statements about economists:

However much human energy and ingenuity we expend, if we don’t have some natural resources to manipulate and fashion for our needs, then we are not only poor, but dead. Economists seem sometimes to doubt this, particularly the technological optimists who sometimes give the impression that the human mind can engineer infinite substitution as resources become scarce.

HAZEL HENDERSON, *CREATING ALTERNATIVE FUTURES: THE END OF ECONOMICS* 93 (1996), and,

The debate now shaping up between economics versus long-term environmental ethics has been brewing for over a decade. Economists whose intellectual investments and clients are tied to the declining sector have been lobbying environmentalists and insisting that it is *we* who need to learn economics, rather than *they* that need to learn ecology and systems sciences.

HAZEL HENDERSON, *PARADIGMS IN PROGRESS: LIFE BEYOND ECONOMICS* 97 (1995). The Canadian environmental activist and benefactor David Suzuki has also lamented the dismal nature of economics:

Well, I certainly think economics is at the heart of the current crisis affecting the planet. And I think the fact that every government on earth seems to have bought into the current idea of economics virtually assures that we will continue at the same destructive rate. The whole drive for GATT agreements, for greater free trade and globalization of the marketplace absolutely assures that we’re going to destroy the planet. And the reason is because economics—the way it’s been constructed—is not connected to the real world.

Interview with David Suzuki, at <http://www.nancho.net/advisors/suzuki.html#toc> (last visited Feb. 20, 2005).

<sup>34</sup> Consider, for example, this statement:

Let’s assume, for the duration of this article, that to you trees are vertical stalks of fiber, that a forest carries no more spiritual or aesthetic value than a parking lot, that woodland creatures are uninteresting sacks of calories, and that the smell of sunbaked pine needles on a breezy June afternoon merely matches the scent that comes from those conifer-shaped air fresheners that dangle from your rearview mirror. Let’s assume, in other words, that you’ve done something rotten and God has turned you into an economist.

Bill McKibben, *What Good Is a Forest?*, AUDUBON, May–June 1996, at 54.

choices, not to deny that any choices need to be made. Denying that some sacrifices may need to be made to curb pollution and greenhouse gas emissions makes it *harder*, not easier, to undertake those sacrifices. Ackerman and Heinzerling not only buy into this fallacious view of economics, but base their arguments upon it.

First, Ackerman and Heinzerling overreach when they blame economics for everything from fascism<sup>35</sup> to deregulation,<sup>36</sup> and from regulatory takings jurisprudence<sup>37</sup> to the Enron scandal.<sup>38</sup> Ackerman and Heinzerling seem to be focusing all of their frustration with the state of environmental law on the economic profession. Not only is this attack overbroad, but by demonizing economics, Ackerman and Heinzerling obscure the true structural problem with environmental and safety regulation: the over-representation of regulated interests in judicial, legislative, and administrative forums. It is not as if these regulated interests truly need economics to justify their subversion of the public interest. Those forces that have manipulated environmental law and policy for selfish private ends have needed little help in the way of economic rationalization, and in reality have considerably more support from the legal profession than they do the economic profession.

Second, while Ackerman and Heinzerling powerfully capture the moral outrage that many of us have over the subversion of the public environmental interest, their indignant articulation of that outrage is not actually helpful to the overall cause of advancing environmental protection. Instead, this manifesto only further reinforces a stalemated environmental debate. The authors overestimate their ability to gain converts by the sheer power of their formidable rhetoric. I wish that were so, since I share their disappointment with the weakness of environmental regulation. But recent history seems to indicate that in a campaign for the hearts and minds of citizens trying to make up their minds about environmental law, the strategy of rallying by moral outrage will not be a successful one. Ackerman and Heinzerling do not acknowledge the power of imagery produced by the opposing side: the small businessman being harassed by government bureaucrats, and pictures of unemployed coal miners, loggers, and factory workers. Their failure to take seriously the opposing point of view is not only self-defeating, but it contributes to the polarization of environmental policy.

Finally, and perhaps most importantly, in arguing for a form of moral absolutism, Ackerman and Heinzerling entirely miss out on the debate that we must have: where we should draw the dividing line between economic problems that are susceptible of cost-benefit analysis and moral problems that are not. That this line exists is unquestionable. As Ackerman and Heinzerling must well understand, the policy world of environmental, health, and safety regulation is rarely one of black and white absolutes. For at least

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<sup>35</sup> See *infra* note 44 and accompanying text.

<sup>36</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 27–31.

<sup>37</sup> *Id.* at 17, 20–24.

<sup>38</sup> *Id.* at 30.

*some* cases, pollution is an economic problem. It is true that some pollution is caused by the kind of environmental miscreancy that warrants our collective scorn. But by refusing to acknowledge *any* limits to the usefulness of a moral lens for viewing environmental and safety problems, Ackerman and Heinzerling disqualify themselves from weighing in on the truly important and difficult task at hand: figuring out when we should and should not use cost-benefit analysis. We must indeed switch away from coal-based electricity generation, unsustainable and wasteful logging practices, and shut down some of the most heavily-polluting industries even if it means eliminating some jobs. But why? Not because these practices are immoral, but because given the alternatives now available to us, it is no longer worthwhile for us as a society to put up with the environmental harm that these practices produce. How do we know this? It is not because we have only recently decided that polluting is immoral. It is because we now have a very rough sense, if not quantified, that the benefits of these activities are outweighed by the costs they impose. That economic dislocation would occur from a phase-out of these practices is a truth that must be confronted honestly, while avoiding callousness. Economic relief in the form of retraining programs is hardly an ideal salve, but the authors' argument that these industries are immoral and must be shut down is incendiary. And yet, if we follow the economics-free approach advanced by Ackerman and Heinzerling, the environmental side must argue precisely for this.

#### *A. Ackerman and Heinzerling's Overbroad Criticism of Economics*

Ackerman and Heinzerling borrow from Oscar Wilde for the subtitle of their book, "On Knowing the Price of Everything and the Value of Nothing." This was Wilde's definition of a cynic,<sup>39</sup> which is evidently what the authors believe most economists are. They seem to have found a poster child in former Congressman Dick Arney, an economist by training, and one of the architects of the Republican "Contract With America" movement that sought to reduce the size of the federal government dramatically.<sup>40</sup>

But Ackerman and Heinzerling also use the late Italian dictator Benito Mussolini as a symbol of what is morally repugnant with economics. They connect Mussolini to Vilfredo Pareto, "an aristocratic Italian sociologist . . . [with] an abiding disdain for the masses and for democracy,"<sup>41</sup> and the

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<sup>39</sup> THE OXFORD DICTIONARY OF QUOTATIONS 573 (3d ed. 1979).

<sup>40</sup> The Premiere Speakers Bureau, a firm that arranges for speeches by noted public figures advertises Arney as "the primary author of the 'Contract With America.'" Premiere Speakers Bureau, *Dick Arney*, <http://premierspeakers.com/2708/index.cfm> (last visited Feb. 19, 2005). Arney is also involved with an organization devoted to reducing the size of government, Citizens for a Sound Economy, that boasts, "For 18 years in the House of Representatives, Dick Arney fought tirelessly for lower taxes, less government, and more freedom. Now, he's joining Freedom Works/CSE to lead the same political revolution at the grassroots level." Citizens for A Sound Economy, *Freedom Works Co-Chairman and Former House Majority Leader Dick Arney*, <http://www.cse.org/armey/index.php> (last visited Feb. 19, 2005).

<sup>41</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 32.

originator of the Pareto criterion for economic efficiency.<sup>42</sup> Ackerman and Heinzerling describe how Pareto was one of Mussolini's favorite teachers, and how Mussolini looked forward to every one of Pareto's lectures.<sup>43</sup> They comment that "Pareto's connection to Fascism is not usually mentioned in economics textbooks,"<sup>44</sup> suggesting that the economic profession is trying to hide something. But it seems odd to suggest that the Pareto criterion were somehow responsible for instilling in Mussolini his ideas about fascism. It is incongruous for the authors to argue that economics has inspired the ideals of both fascists like Mussolini and libertarians like Dick Armey—polar opposites. Fascism calls for the centralized control of everything, enforced by a brutal police state; Armey's brand of extreme libertarianism calls for the shrinking of government, and the minimization of centralized control. I agree with the authors that both of these extremes are bad. But what gave them the idea that the economics profession stands for either of these extremes?

Ackerman and Heinzerling are, in my opinion, on the mark when they argue that economists tend to believe a little too fervently in the power of free markets and that they are a little too skeptical of governmental intervention. Economists that seem to have had the most visible influence on public policy have tended to be neo-classicists such as Milton Friedman and Alan Greenspan, who have fairly consistently argued for libertarian policies.<sup>45</sup> Another economist often in the spotlight is former Senator Phil Gramm, Armey's compatriot in deregulation.<sup>46</sup> And unfortunately (in my view), the version of economics that is most frequently taught in undergraduate programs and the economics-lite punditry that is invoked in political debate seems unduly celebratory of the beauty of the free market. But if Ackerman and Heinzerling are indeed making the claim that economics has become too wedded to a *laissez-faire* approach to

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<sup>42</sup> A Pareto superior policy is one in which at least one member of society is made better off, and none are made worse off. A potentially Pareto superior policy is one in which there are those that benefit from the policy—"winners"—and those that are worse off—"losers"—but in which a compensation scheme can be devised in which the winners can compensate the losers so that the end result is a Pareto superior policy. The compensation scheme does not have to be implemented, however; potential Pareto superiority only requires that such a compensation scheme exist. ANDREU MAS-COLELL, MICHAEL D. WHINSTON, AND JERRY R. GREEN, *MICROECONOMIC THEORY* 313 (1995).

<sup>43</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 33.

<sup>44</sup> *Id.*

<sup>45</sup> See, e.g., MILTON FRIEDMAN, *CAPITALISM AND FREEDOM* 108–15 (1962) (advocating a *laissez-faire* approach to discrimination); Milton Friedman, *The Social Responsibility of Business Is To Increase Its Profits*, N.Y. TIMES MAG., Sept. 13, 1970, at 32 (maintaining that corporations' only responsibility is to their shareholders, rather than the public good); Alan Greenspan, *Corporate Governance*, Address at the Stern School of Business, New York University (Mar. 26, 2002) (suggesting that market problems related to the Enron scandal would largely correct themselves), <http://www.federalreserve.gov/boarddocs/speeches/2002/200203262/default.htm>; Alan Greenspan, *Federal Reserve Board's Semiannual Monetary Policy Report to the Congress* (Feb. 11, 2003) (supporting President George W. Bush's tax cuts), <http://www.bis.org/review/r030212a.pdf>.

<sup>46</sup> Bill Lambrecht, *Reality Check for GOP Candidates Finds Voters More Concerned With Losing Jobs Than The Contract With America*, ST. LOUIS POST-DISPATCH, Feb. 18, 1996, at 1B.

government, then their accusation that somehow economics is responsible for or complicit in the rise of 20th century fascism is implausible.

But the broader problem with the authors' attack on economics is its astonishing breadth. Ackerman and Heinzerling seem to be saying, "Look at these rascals—Pareto, Armey, and the whole bunch. Can we trust them with *anything*?" Ackerman and Heinzerling seem determined, by their attacks on individual economists, to write the whole lot of them out of public policy altogether. But would we typecast classical composers by referring to the example of Richard Wagner, a favorite of Hitler's?<sup>47</sup> Never mind fairness issues; it would be self-defeating! Should we banish physicists from involvement in environmental decision making because some physicists were responsible for uncorking the nuclear genie? Even now, as some physicists are arguing passionately that global climate change is an overstated concern,<sup>48</sup> are we supposed to shut out the entire profession because their findings do not aid our cause? It is as if Ackerman and Heinzerling see the economic profession as a monolith, united in its purpose to enrich the rich at the expense of the poor. Not only is this a misconception of economics, but not all economists can be so smartly caricatured. Nobel Laureates George Akerlof and Joseph Stiglitz have made their mark in identifying and studying market failures that warrant governmental intervention.<sup>49</sup> It is difficult to confuse these intellectual giants with Dick Armey and Phil Gramm, but Ackerman and Heinzerling seem determined to impute the latter two upon the entire economic profession.

The temptation to go too far in generalizing about economists is evidently quite strong. The authors also seem to blame economics for the Enron scandal, the symbol of a laissez-faire attitude gone awry.<sup>50</sup> Their argument is that the drive to maximize profits has led us to temptation and delivered us to evil. But is this an example of the shortcomings of economics or of human nature? True, Enron's frauds were only made possible by the push for electricity deregulation, a notion favored by economists, who

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<sup>47</sup> See ROBERT L. SHIRER, *THE RISE AND FALL OF THE THIRD REICH* 101–05 (1990).

<sup>48</sup> Sallie Baliunas and Willie Soon of the Harvard-Smithsonian Astrophysics Center have been noted detractors of the idea that greenhouse gas emissions are likely to lead to global climate change. See, e.g., WILLIE SOON & SALLIE BALIUNAS, *LESSONS AND LIMITS OF CLIMATE HISTORY: WAS THE 20TH CENTURY CLIMATE UNUSUAL?* (2003) (claiming insufficient proof that the temperature changes of the 20th century were unusual), available at <http://www.marshall.org/pdf/materials/136.pdf>.

<sup>49</sup> Among the most seminal of contributions by Stiglitz, a former chief economic advisor to President Clinton, is his creation of the area of "information economics," the economics of having, lacking, and obtaining information. See, e.g., Michael Rothschild & Joseph E. Stiglitz, *Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information*, 90 Q.J. ECON. 629 (1976); Joseph E. Stiglitz, *The Theory of Screening, Education and the Distribution of Income*, 65 AM. ECON. REV. 283 (1975) (discussing situations for greater governmental regulation). More recently, Stiglitz has been engaged in a study of those hurt by trends towards globalization. JOSEPH E. STIGLITZ, *GLOBALIZATION AND ITS DISCONTENTS* (2002). Awarded the 2001 Nobel Prize in Economics concurrently with Stiglitz was Akerlof, who wrote most famously on the need for regulation of market transactions where sellers have information that buyers do not, such in the market for used cars. See George Akerlof, *The Market for Lemons*, 84 Q.J. ECON. 488 (1970).

<sup>50</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 30.

believed that it would lead to lower electricity prices. But does that make out a conclusive case that deregulation is really just a mechanism for the privileged to defraud the innocent and poor? The airline industry, the first major regulated industry to deregulate (under the amoral Carter administration), is currently experiencing something of a shakeout, with two major airlines currently in bankruptcy and a third teetering on the edge.<sup>51</sup> But this is more of an example of poor management rather than dishonesty. Airline passengers may be too frequently inconvenienced by inexcusable flight delays and missed connections, but there is no question that fares are much lower now than in the regulated era before 1978.<sup>52</sup> Railroad deregulation, as well, has been less than completely successful,<sup>53</sup> but has also not emerged as an example of corporate fraud and abuse. Deregulation may or may not be successful, and may or may not ultimately lower consumer prices (it has in the airline and the freight rail industries), but it seems hard to make out the case that deregulation is simply part of a corporate conspiracy to pirate the poor and enrich the rich.

Ackerman and Heinzerling also blame economists for the advance of regulatory takings jurisprudence in ways that are more favorable towards landowners, and less favorable for environmental and land-use regulators.<sup>54</sup> In my reading of the major regulatory takings cases, I can discern no basis for concluding that the expansion of private property rights protection has been accomplished by the manufacture of economic rationalizations. The underpinnings of regulatory takings jurisprudence sound in fairness considerations, not economic ones.<sup>55</sup> To this date, the three-pronged *Penn Central* test for regulatory takings smacks of fairness considerations, not economic ones. The “economic impact . . . on the claimant,” the

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<sup>51</sup> Susan Carey, *UAL Says It Must Cut Expenses By More Than \$1.1 Billion a Year*, WALL ST. J., Sept. 20, 2004, at A8.

<sup>52</sup> See, e.g., STEVEN A. MORRISON & CLIFFORD WINSTON, *THE EVOLUTION OF THE AIRLINE INDUSTRY* 82 tbl.4-13 (1995) (showing estimated traveler welfare benefits at \$18.4 billion per year); *id.* at 154 (“Even under the most disastrous scenario for the deregulated industry’s evolution, travelers will be no worse off than they would have been had regulation continued under its established rules. And there are reasons to believe that travelers’ welfare will actually improve as the industry evolves.”); Cindy Skrzycki, *Big Airlines Bristle at Having a Ref on the Runway*, WASH. POST, April 3, 1998, at D1 (“Almost everyone agrees that deregulation has been good.”); *Heavens! Deregulation Works*, ECONOMIST, Nov. 6, 1993, at 96 (citing a Brookings Institute study that found welfare gains of \$13.7 to \$19.7 billion per year from airline deregulation).

<sup>53</sup> Carl D. Martland, *Productivity and Prices in the U.S. Rail Industry: Experience from 1965 to 1995 and Prospects for the Future*, 38 J. TRANSP. RES. F. 12, 18 (1999) (estimating productivity savings of \$25 billion per year); FEDERAL RAILROAD ADMINISTRATION, U.S. DEPARTMENT OF TRANSPORTATION, *IMPACT OF THE STAGGERS RAIL ACT OF 1980* (n.d.) (noting a rebound in the railroad shipping market share and a decrease in shipping rates since deregulation), [http://www.fra.dot.gov/downloads/policy/staggers\\_rail\\_act\\_impact.pdf](http://www.fra.dot.gov/downloads/policy/staggers_rail_act_impact.pdf); *Heavens! Deregulation Works*, *supra* note 52, at 96 (citing a Brookings Institute study that found welfare gains of \$10.4 to \$12.9 billion from railroad deregulation).

<sup>54</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 20–24.

<sup>55</sup> One seminal work by Richard Epstein argues that government has absolutely no legitimacy at all in making *any* kind of wealth redistribution. See RICHARD EPSTEIN, *TAKINGS: PRIVATE PROPERTY AND THE POWER OF EMINENT DOMAIN* 93–104 (1985).

“interference with distinct investment-backed expectations,” and the “character of the governmental action”<sup>56</sup> are all factors that measure the degree to which a regulation *unfairly* treats a property owner. The notion that regulations should provide an “average reciprocity of advantage”<sup>57</sup> is aimed at ensuring that disadvantaged landowners be provided, in *fairness*, with some countervailing benefit. The economic concern with regulatory takings—that unduly burdensome regulations would chill investment—appears in the economic literature and in legal scholarship, but neither of these sources appears to have been particularly influential in the development of regulatory takings jurisprudence.

To the extent that economists have weighed in on the subject of regulatory takings, the literature has been quite ambivalent as to whether and when compensation should be paid for a land-use or environmental regulation that diminishes property value. A seminal paper on the economics of takings by Blume, Rubinfeld, and Shapiro argues that decisions to take land for public use should *not* depend on the current land use.<sup>58</sup> This is a counter-intuitive result for lawyers because one would think that if a landowner expended great sums of money in developing land, we should only reluctantly take her land. But what Blume, Rubinfeld, and Shapiro point out is that such a policy position only rewards over-investment; if landowners know that government will only take land that is dedicated to low value uses, they will attempt to overdevelop or overinvest as a way of avoiding a taking.<sup>59</sup> In short, the prescriptions have been mixed and complex, and no sensible review of the economics literature could reveal a bias in favor of compensation (and thus against regulation) that Ackerman and Heinzerling seem to think plagues the economic profession. Add to that the fact that economists are not cited in takings cases anyway, and it becomes clear that the expansion of private property rights has everything to do with ideology and virtually nothing to do with what economists say about the subject.

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<sup>56</sup> Penn Central Transp. Co. v. City of New York, 438 U.S. 104, 124 (1978).

<sup>57</sup> This is the notion that, in a situation in which the landowner is disadvantaged by regulation but is also, like everyone else around her, benefiting from the regulation, the countervailing benefits should be considered in assessing the extent of the interference with the landowner's property rights. *Id.* at 140.

<sup>58</sup> Lawrence Blume et al., *The Taking of Land: When Should Compensation Be Paid?*, 100 Q.J. ECON. 71, 72-73 (1984).

<sup>59</sup> *Id.* at 78 (explaining that the level of compensation must be independent of the level of capital investment). Other economic papers in the takings and regulatory takings field also address this problem of “moral hazard,” the propensity of landowners to exploit the ignorance of government regulators. *See, e.g.*, Robert Innes, *Takings, Compensation, and Equal Treatment for Owners of Developed and Undeveloped Property*, 15 J.L. & ECON. 403, (1997) (proposing an “equal treatment” policy to counter the over-development incentive); Timothy J. Brennan & James Boyd, *Stranded Costs, Takings, and the Law and Economics of Implicit Contracts*, 11 J. REG. ECON. 41, 50 (1997); THOMAS J. MICELI & KATHLEEN SEGERSON, COMPENSATION FOR REGULATORY TAKINGS: AN ECONOMIC ANALYSIS WITH APPLICATIONS 49 (1996). On the flipside of that problem, however, economists have also written about governmental incentives to over-regulate unless there is a compensation requirement, a phenomenon known as “fiscal illusion.” Blume et al., *supra* note 58, at 80.



At bottom, Ackerman and Heinzerling seem to be arguing that profit maximization has become more of an ethic than a simplifying assumption for economic analysis. They even seem to suggest that economists would condone slavery and child labor.<sup>60</sup> Their argument is that profit maximization assumes producers will utilize all lawful means to make a profit, including enslavement and exploitation. But *explaining* such behavior, which is what economics seeks to do, is a far cry from calling for or even condoning such reprehensible practices.

The truth is that the subversion of the public interest in environmental and safety regulation has been accomplished with little help from economists. Ackerman and Heinzerling believe that the economic profession has become a stooge for polluting and other regulated industries. This fear has no basis in reality. Even if Robert Hahn and Kip Viscusi, the economists most often criticized by Ackerman and Heinzerling, were truly the faces of evil, it does not ring true that they are somehow secretly helping the White House justify anti-environmental policies.<sup>61</sup> Ackerman and Heinzerling condemn Hahn and economist Jason Burnett for criticizing an EPA cost-benefit analysis for ignoring the “threshold effects” of arsenic. In determining the appropriate level of regulation of arsenic exposure, Hahn and Burnett argued EPA inappropriately ignored the fact that very small amounts of arsenic are harmless or beneficial, and that arsenic only becomes harmful above certain threshold amounts. Instead, EPA assumed that harm from arsenic begins at the lowest levels of exposure.<sup>62</sup> Whether Hahn and Burnett, or EPA is right about this scientific issue is beside the point. The fact is that EPA prevailed, and implemented a rule that did not assume threshold effects. What Ackerman and Heinzerling fear most—that the likes of Hahn and Burnett are really secretly calling the shots in terms of environmental policy—seems unduly fearful. Ackerman and Heinzerling blame economics for too much. The fault lies within us, and not our economists.

### *B. The Problem With Moral Outrage as a Rhetorical Strategy*

The authors do not waffle about their conviction. As gifted writers and rhetoricians, they believe that they can bring the rest of the world around to their point of view. They attempt to do this by calling upon our sense of

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<sup>60</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 17–18.

<sup>61</sup> *See id.* at 41. The authors write,

Robert Hahn [and] W. Kip Viscusi are not exactly household names. But they have had an influence on attitudes toward protective regulation that is out of all proportion to their name recognition and their size as a group. These analysts and their institutional homes . . . are responsible for generating the critical pieces of “antiregulatory” data and analysis, upon which the second Bush administration bases its ardently pro-industry stance.

*Id.*

<sup>62</sup> *Id.* at 111–14.

moral outrage at the wrongs perpetrated by polluters and other persons engaged in harmful behavior.

For example, the book leads off with their telling of a tragic automobile accident in which a cellphone-using driver struck and killed two pedestrians. For moral emphasis, Ackerman and Heinzerling highlight the fact that the driver, Cheryl Chadwick, was an affluent lawyer with a Mercedes, and the pedestrians were two elderly Russian immigrants living in a nearby senior residence.<sup>63</sup> Should we enact a federal ban on cellphone usage while driving? Ackerman and Heinzerling clearly believe we should. A number of cities and states already have. Some cost-benefit analyses by researchers at the American Enterprise Institute, however, suggest that such a ban is not justified, given the benefits of cellphone usage during automobile operation.<sup>64</sup>

Ackerman and Heinzerling have chosen an excellent story to illustrate their point that cost-benefit analysis cannot answer the most important regulatory questions. This story certainly tugs at my sense of moral outrage. Why indeed, should we allow people to use cellphones in cars, when it quadruples the risk of an automobile accident?<sup>65</sup> Is cell phone use while driving not so different from drinking and driving, as Ackerman and Heinzerling convincingly argue?<sup>66</sup> The temptation certainly exists to agree with them. My own blood boils when I am driving and I spy a self-centered Washington, D.C. motorist carrying on his indispensably important business on his cellphone as he attempts (without signaling) a left turn from the right lane in his Hummer.

But even assuming that a story like this can sway public opinion,<sup>67</sup> it is not always easy to find such sympathetic plaintiffs and unsympathetic defendants. In fact, for most environmental problems, it is quite difficult to find *any* victims, since the most that can usually be said about specific injuries is that there is a *chance* that pollution or some environmental harm was the culprit, and not some other cause. In the meantime, those on the regulated side have succeeded in raising awareness of the costs—in economic and *human* terms—of environmental regulation. Consider the following three examples of this rhetorical strategy.

First, Senator Robert Byrd has made a nearly five-decade-long career of blocking, weakening, stalling, and manipulating clean air legislation to benefit his constituency of coal mining companies and coal miners. And he has been just as successful in tugging at our heartstrings as Ackerman and Heinzerling have. The constant in Byrd's long history of legislative

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<sup>63</sup> *Id.* at 1–3.

<sup>64</sup> *Id.* at 3.

<sup>65</sup> *Id.*

<sup>66</sup> *Id.*

<sup>67</sup> Professor Christopher Stone, the author of the famous essay *Should Trees Have Standing?—Toward Legal Rights for Natural Objects*, 45 S. CAL. L. REV. 450 (1972), noted recently that congressional floor debates almost never invoked any ethical bases for their positions on environmental issues. Christopher Stone, *Do Morals Matter? The Influence of Ethics on Courts and Congress in Shaping U.S. Environmental Policies*, 37 U.C. DAVIS L. REV. 13, 14 (2003).

obstruction is the invocation of the image of the downtrodden coal miner as a symbol of the human costs of regulation.<sup>68</sup> And he has succeeded. Despite compelling evidence of the enormous ecological and human costs of coal combustion, coal still accounts for more than 50 percent of the electricity generated in the United States, unchanged from 14 years ago, when the last round of amendments to the Clean Air Act were passed.<sup>69</sup>

Second, the Michigan congressional delegation has similarly made sure that clean air legislation has never hampered the ability of the auto industry to make and sell automobiles. Senator Byrd's counterpart in the automobile industry has been Congressman John Dingell, who has been an equally immovable object when it comes to regulation of emissions from automobiles.<sup>70</sup> The automobile industry has not been dilatory in emissions control—tailpipe emissions rates have decreased by 95 percent over the past four decades. But the decrease in emissions *rates* has been offset by an explosion in vehicles miles traveled. The end result is that the overall quantity of automobile emissions has *increased*.<sup>71</sup> The automobile industry

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<sup>68</sup> Consider the following example:

Arguments have been made that costs and dislocations caused by the compliance requirements of this legislation pale in comparison to the public health benefits. But what will we really have accomplished if we succeed in removing certain pollutants from the air and at the same time level the economies of whole communities and regions? is that progress?

Is that kind of devastation not even to be considered here? Is it our intention to mindlessly punish communities that mine coal or produce steel or chemicals or automobiles? These activities are essential to the economic health and national security of this Nation, and a means of support for millions of Americans. These are also real people with real families—men and women who do hard, dirty, and often dangerous work. Are we to punish certain regions because of some sort of legislated value judgment about who is responsible for the quality of our air?

....

... In my home State of West Virginia, mining employment accounts for more than one out of every four jobs in some of our northern counties. As a result, mining employment sometimes provides in excess of 40 percent of the personal income in these local economies. When mines are shut down, not only do miners and their families suffer but whole communities also suffer.

The EPA estimates that total job losses in northern Appalachia, both those directly attributable to mining and those indirectly dependent on the mining industry, would exceed 50,000 by the year 2000. In a region of our Nation already suffering from high unemployment, such losses would be devastating, creating a series of ghost towns through northern Appalachia and bringing economic ruin to thousands of American families.

Calculate the cost of thousands of families on unemployment. Calculate the lost productivity. Calculate the human misery.

136 CONG. REC. 796–97 (1990) (statement of Sen. Byrd).

<sup>69</sup> Energy Information Admin., U.S. Dep't of Energy, *Historical Electricity Generation*, tbl.8.2a, at <http://www.eia.doe.gov/emeu/aer/txt/ptb0802a.html> (last visited Feb. 20, 2005).

<sup>70</sup> Shi-Ling Hsu, *Fairness Versus Efficiency in Environmental Law*, 31 *ECOLOGY* L.Q. 303, 314 n.14 (2004).

<sup>71</sup> Emissions of nitrogen oxides from on-road vehicles (automobiles, trucks, and motorcycles), for example, increased from 1960 to 1998, but decreased from peaks in 1980. U.S. ENVTL. PROT. AGENCY, NATIONAL AIR POLLUTANT EMISSION TRENDS, 1900–1998, at 3–10 tbl.3-2 (2000), available at [www.epa.gov/ttn/chief/trends/trends98/trends98.pdf](http://www.epa.gov/ttn/chief/trends/trends98/trends98.pdf).

has been grudgingly willing to undertake measures to reduce emissions rates, because it can control this course of regulation. But to reduce the overall quantity of emissions, alternative automotive technologies and alternatives to single-occupant vehicular transportation must be considered. This has been vociferously opposed at every turn by Dingell and the Michigan delegation.<sup>72</sup> Their rhetorical strategy has been to play on sympathies for automobile workers that might be displaced if any form of regulation were to shrink the automobile industry.<sup>73</sup>

Finally, over the past two decades, logging restrictions have been imposed on public and private land in the Pacific Northwest and the Southeastern United States to protect species at risk of extinction. Under the Endangered Species Act,<sup>74</sup> the Secretary of the Interior, acting through the United States Fish and Wildlife Service,<sup>75</sup> is empowered to impose such restrictions if continued logging would threaten the continued viability of populations of endangered or threatened species.<sup>76</sup> These restrictions clearly threaten the viability of logging and milling interests, and even whole towns and regions highly dependent upon these industries. Elected representatives seeking to resist or overturn such restrictions have invoked images of unemployed loggers and other timber industry workers and of depressed logging towns.<sup>77</sup> It took a bulletproof legal argument backed by incontrovertible scientific evidence to overcome this opposition.<sup>78</sup>

These three examples illustrate one reason it has become surprisingly difficult to “win” the environmental debate on moral grounds: The victims of pollution are never identifiable, while the victims (real or not) of regulation are usually quite identifiable. Regulated industries will point to specific groups of workers, such as coal miners, that will lose their jobs if we go

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<sup>72</sup> Hsu, *supra* note 70, at 314.

<sup>73</sup> For example, the proposed Energy Policy Act of 2003, S. 1005, 108th Cong. (2003), included a provision that required the National Highway Transportation Safety Administrator to consider employment effects in the auto industry when setting fuel economy standards. S. REP. NO. 108-43, at 127 (2003).

<sup>74</sup> Endangered Species Act of 1973, 16 U.S.C. §§ 1531–1544 (2000).

<sup>75</sup> See *id.* § 1532(15) (defining “Secretary” as the Secretary of the Interior or the Secretary of Commerce).

<sup>76</sup> *Id.* § 1533(d).

<sup>77</sup> Former Senator Packwood has argued,

The social impacts [of the Endangered Species Act] are no less devastating. . . . [Professor Robert Lee of the University of Washington] has done extensive work on the social trauma that affects timber towns. He points to the destruction of families, long-lasting social fallout. He can identify it, pinpoint it. He points out that, if you are going to go ahead and apply the Endangered Species Act and close the mill in this town . . . he can guarantee that you will see an increase in suicides, homicides, divorce, juvenile delinquency, drug abuse, spousal and child abuse.

141 CONG. REC. 12,341 (1995) (statement of Sen. Packwood).

<sup>78</sup> The legal requirements were unambiguous. An environmental organization sued to force the United States Department of the Interior to list the northern spotted owl (*Strix occidentalis caurina*) species, see *Northern Spotted Owl v. Hodel*, 716 F. Supp. 479 (W.D. Wash. 1988), and to designate the owl's critical habitat, see *Northern Spotted Owl v. Lujan*, 758 F. Supp. 621 (W.D. Wash. 1991).

forward with regulation. The “victims” of regulation are thus made out to be sympathetic figures: working class people that show up for work every day and punch a time clock. Even if regulated industries are actually just holding these workers hostage and daring us to call their bluff, as a society we have proven completely unwilling to do so. We have been driven by a sense of fairness to avoid depriving fellow citizens of jobs, whether the tradeoff is real or not.

The victims of pollution, by contrast, can only be inferred statistically. It is all too easy to view these victims in the abstract. A heightened risk of cancer due to the emission of some carcinogen into the air, especially from familiar pollution sources such as coal-fired power plants, seems to be viewed as just a familiar part of life in an industrial society.<sup>79</sup> A recent study commissioned by the Clean Air Task Force, an advocacy group, estimated that pollution from coal-fired power plants caused more than 23,000 premature deaths per year, in addition to causing a variety of nonfatal illnesses such as asthma.<sup>80</sup> The study, conducted by a reputable air-quality modeling consultant, is the latest and the most sophisticated in an evolving series of studies of the mortality and morbidity effects of air pollution. But what do we do with this information? This seems to be too dear a price to pay for a coal-fired economy,<sup>81</sup> but how do we know this?

Imagine if we knew who would die from this pollution. Would we spare any expense to save these people? I suspect we would see many wholesale conversions of coal-fired power plants to natural gas in a miraculously short time,<sup>82</sup> or perhaps such dramatic changes such as widespread adoption of energy conservation strategies and renewable energy technologies.

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<sup>79</sup> A study surveyed several groups on their perceptions of risk and compared them with expert evaluations. The risks of electric power were considerably underestimated. Paul Slovic et al., *Facts and Fears: Understanding Perceived Risk*, in SOCIETAL RISK ASSESSMENT 191 tbl.2, 193 tbl.3 (Richard C. Schwing and Walter A. Albers eds., 1980) (showing that while 14,000 deaths were estimated to occur from power plant pollution, lay estimates were less than 1000). Sunstein has noted in passing that some risks, if familiar, appear to have already been “coded,” or assumed to be accounted for. Cass R. Sunstein, *Selective Fatalism*, 27 J. LEGAL STUD. 799, 803 (1998); see also Gary Polakovic, *State Smog Risk Found Higher for Children’s Health*, L.A. TIMES, Sept. 16, 2002, at B5 (“If you live in an urbanized, industrialized society with a growing economy you’re going to be exposed to some level of toxic air pollution,” said Jerry Martin, spokesman for the California Air Resources Board.”).

<sup>80</sup> ABT ASSOCIATES, POWER PLANT EMISSIONS: PARTICULATE MATTER-RELATED DAMAGES AND THE BENEFITS OF ALTERNATIVE EMISSIONS REDUCTION SCENARIOS 6-2 tbl.6-1 (2004) (showing 23,604 cases of mortality under the “No EGU,” or no legislative change baseline), [http://cta.policy.net/dirtypower/docs/abt\\_powerplant\\_whitepaper.pdf](http://cta.policy.net/dirtypower/docs/abt_powerplant_whitepaper.pdf).

<sup>81</sup> Coal-fired power plants still account for over 50% of electricity generated in the United States. See Energy Information Admin., *supra* note 69, at tbl.8.2a (showing coal accounting for 1,970 billion kilowatt-hours of electricity out of a total of 3,848 billion kilowatt-hours).

<sup>82</sup> Natural-gas-fired power plants emit virtually none of the sulfur dioxide pollution emitted by coal-fired power plants, and a small fraction of the oxides of nitrogen and particulate matter pollution emitted by coal-fired power plants. ENVTL. LAW INST., CLEANER POWER: THE BENEFITS AND COSTS OF MOVING FROM COAL TO NATURAL GAS POWER GENERATION 4 tbl.2, 12 (2001).

As I have argued in another article,<sup>83</sup> this problem of *identifiability* introduces an inherent bias against environmental regulation.<sup>84</sup> As long as we are focused on who is committing a “wrong,” we will always be drawn to risks to known, identifiable persons. Identifiable risks will always be at the forefront of our public consciousness, even if they are economic risks, as opposed to the health risks faced by unidentifiable victims. As a society, we find it difficult to impose hardship upon a discrete population, even for the purpose of protecting the greater population.

What does this mean for the pollution debate? It suggests that when making arguments for and against environmental regulation, the victims of pollution must be put on an equal footing with victims of regulation. Ackerman and Heinzerling are clearly trying to push environmental risks to the forefront of our public consciousness, but I fear that they have fallen and will continue to fall short. The environmental side may believe that it occupies the higher ground, but this has not translated into public policy successes in the last 14 years. They helped hold at bay the “Contract With America” initiative that held environmental interests hostage for a time in the mid-1990s. But despite growing evidence of the mounting environmental problems we face, Congress has passed no significant U.S. environmental legislation since the Clean Air Act Amendments of 1990.<sup>85</sup> How can that be, despite the fact that environmental awareness has boomed in the 1990s?<sup>86</sup> It is because regulated industries, starting with the Sagebrush Rebellion of the late 1970s and early 1980s,<sup>87</sup> have organized themselves and learned how to protect constituent interests. They will continue to do so.<sup>88</sup> While Ackerman and Heinzerling might have been successful with their moral outrage

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<sup>83</sup> Hsu, *supra* note 70, at 332–35.

<sup>84</sup> This is consistent with recent experimental research in which subjects were given \$10 to begin a game. At random, the \$10 was taken away from half of the subjects. The other half of the subjects who did not lose their money were asked if they would share their \$10 with others. Whether they were willing to do so was highly dependent upon whether the victim was identified specifically. Deborah A. Small & George Loewenstein, *Helping “A” Victim or Helping “THE” Victim: Altruism and Identifiability*, 26 J. RISK & UNCERTAINTY 5, 7–13 (2003); see also Karen E. Jenni & George F. Loewenstein, *Explaining the Identifiable Victim Effect*, 14 J. RISK & UNCERTAINTY 235, 241–53 (1997).

<sup>85</sup> Clean Air Act Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399.

<sup>86</sup> Christopher J. Bosso, *After the Movement: Environmental Activism in the 1990s*, in ENVIRONMENTAL POLICY IN THE 1990S 53, 55–56 (Norman J. Vig & Michael E. Kraft eds., 3d ed. 1997). Opinion polls seem to indicate that Americans at least believe themselves “environmentalists.” Alyson Fluornoy, *Building an Environmental Ethic From the Ground Up*, 37 U.C. DAVIS L. REV. 53, 57 n.8 (2003).

<sup>87</sup> For discussions on the Sagebrush Rebellion, see generally C. BRANDT SHORT, RONALD REAGAN AND THE PUBLIC LANDS 10–39 (1989) (discussing rise of the Sagebrush Rebellion and the environmental response); R. MCGREGGOR CAWLEY, FEDERAL LAND, WESTERN ANGER: THE SAGEBRUSH REBELLION AND ENVIRONMENTAL POLITICS (1993) (tracing the contours of the Sagebrush Rebellion controversy).

<sup>88</sup> Richard Lazarus cautions us that the fairness claims that characterized the “Contract With America” movement will revisit us again in our political future, and give rise to more calls for environmental law reform. Richard J. Lazarus, *Fairness in Environmental Law*, 27 ENVTL. L. 705, 710 (1997).

campaign in the 1970s, it seems unlikely that we will ever return to that heady time again.

So while we legal academics who live in university settings endlessly lament the failure and moral bankruptcy of our political leaders and wonder how anyone could possibly see things differently than we do, we forget about how isolated we are from those constituents that are truly holding up progress in environmental law—those that live in the “red states”<sup>89</sup> that sympathize with the logger, the miner, and the rancher. These people, it is safe to say, will not be swayed by the moral outrage of Ackerman and Heinzerling.

### *C. The Problem with Ackerman and Heinzerling's Moral Absolutism*

Even apart from political and tactical considerations, there is another problem with Ackerman and Heinzerling's moral outrage: It misconceives the nature of risk. Their fundamental position is stated as follows:

[H]ealth and environmental protection cannot be described meaningfully in monetary terms; they are priceless. When the question is whether to allow one person to hurt another, or to destroy a natural resource; when a life or a landscape cannot be replaced . . . then we are in the realm of the priceless, where market values tell us little about the social values at stake.<sup>90</sup>

In other words, “life is priceless—not infinite in value, but rather immeasurable in monetary terms.”<sup>91</sup> The authors are claiming that by allowing cost-benefit analysis to guide environmental and safety regulation, we are literally putting a price on human life.

This claim is mistaken. What government is imposing upon people is *risk* of harm, not harm itself. The reason that government is justified in doing so is that it cannot avoid it. Every decision that a governmental entity makes to act or not act involves some risk of harm to at least some people, somewhere.

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<sup>89</sup> The dichotomy between “red states” and “blue states” was first invoked to illustrate the demographic difference between those U.S. states that voted for George W. Bush (red) and those for then-Vice President Al Gore (blue). See, e.g., *Red States vs. Blue States: Is the Country Still Evenly Divided On Key Issues? New Zogby Poll to be Released January 6*, U.S. NEWSWIRE, Jan. 5, 2004, 2004 WL 57647647.

<sup>90</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 8–9.

<sup>91</sup> *Id.* at 94. It is not obviously inconsistent to argue that life (and physical injury) is not infinite in value but also not monetizable. Ackerman and Heinzerling argue that wrongful death payments are not a “price” but an ex post compensation that is better paid than not paid, to “redress harm already done.” That is, while the authors would never agree that a wrongful death payment compensates for a loss of life, they would evidently consent to the payment on the grounds that after the fact, some payment is better than no payment, but that it does not and is not intended to make the plaintiff whole. What of the counterargument that this wrongful death payment implicitly prices life, by signaling to future tortfeasors that if an accident resulting in death occurs, they will bear this specific cost? Ackerman and Heinzerling would answer that willful conduct placing lives at risk should be punishable by something beyond simply a wrongful death payment. Punitive damages and possibly criminal sanctions would be in order.

But sometimes, a detractor would argue, a government faces a choice between the risk of a physical harm and the risk of an economic harm. Ought we not try to minimize the physical risk? I suspect most would join me in answering, "Not always." As a society, we assume some physical risks in order to further economic goals. We tolerate some air pollution, some water pollution, even some exposure to toxins in order to have things like electricity, transportation, means of communication, and new materials for all of these things.

But more importantly, we are informed by people's behavior. People do not behave as if their own lives are priced, but people do behave as if *risks* to their lives are priced. Risks are undertaken by ordinary people every day that reflect an implicit weighing of the risks against the benefits of risky action. Very few people actually commit suicide, but people undertake risky activities quite frequently. At some point (and this point obviously varies from person to person), a risk becomes so great that we retreat from that risk.

Governmental policy also takes this approach, or should. Certain activities and substances pose a risk to human health and the environment, and if the risk is great enough, we consider regulation or a ban. Some activities and substances almost certainly cause premature deaths—coal-fired power plants almost certainly kill thousands every year. But as long as individuals face this as a *risk* and not a certain death, then it is something that we would consider tolerating. Some moral bound is crossed when we move from the domain of risk to certainty, or perhaps a risk so high that it is intolerable. But what is the trigger point for regulatory government, beyond which a risk becomes so intolerable as to be worth banning?

In the 1970s, the Ford Motor Company was embroiled in controversy over a decision not to recall the Ford Pinto, a model that had been involved in fatal explosions caused by the unusual placement of the fuel tank.<sup>92</sup> Routine rear-end collisions sometimes crumpled the fuel tank and led to a dangerous explosion.<sup>93</sup> Popular belief at the time held that Ford had decided against the recall because the cost of litigating and settling any wrongful death cases was less than the cost of recalling all Pintos and replacing the fuel tanks.<sup>94</sup> On the surface, this seemed like the sort of case that would vindicate Ackerman and Heinzerling's outrage.<sup>95</sup> But a closer look by the late Professor Gary Schwartz indicated that this case was not so cut and dried. As it turns out, the Pinto was not much more dangerous than other cars, particularly subcompacts, in terms of safety.<sup>96</sup> Schwartz's view was that Ford executives did not undertake a cost-benefit analysis in deciding not to recall the Pinto, as Ackerman and Heinzerling assert. Rather, the most likely explanation for Ford's decision was that an alternative design did not yield

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<sup>92</sup> For a general discussion of the facts leading up to litigation over a death resulting from the design of the Ford Pinto, see Gary T. Schwartz, *The Myth of the Ford Pinto Case*, 43 *RUTGERS L. REV.* 1013, 1015–18 (1991).

<sup>93</sup> *Id.*

<sup>94</sup> *Id.*

<sup>95</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 87–89.

<sup>96</sup> Schwartz, *supra* note 92, at 1033–34.



significant safety advantages (Pinto's rear-crash record was only slightly worse than other subcompacts, and not as bad as the Gremlin<sup>97</sup>), and would entail a significant loss of trunk space, something consumers would reject.<sup>98</sup> Thus stated, the case is not as clear a case of trading lives for money as the public generally believed.<sup>99</sup>

Nevertheless, the Ford Pinto case raises difficult questions regarding responsibility for risks imposed upon the public by corporate behavior. Tort defense lawyers know that one sure way to lose a case is to place the costs of correcting a safety design in the same sentence with the danger of harm.<sup>100</sup> Even Schwartz, something of a proponent of cost-benefit analysis,<sup>101</sup> acknowledged that this may be representative of a general public discomfort with cost-benefit analysis, especially when undertaken by a private corporation.<sup>102</sup>

But surely the inquiry does not end here. What if we were talking about a much smaller number, and a less dangerous defect? Most would agree that there is something troubling about the case of the woman who recovered against McDonald's for brewing their coffee at too high of a temperature.<sup>103</sup> The plaintiff spilled coffee in her lap in her car, causing severe burns, for which McDonald's was held to be liable. Is this the sort of injury that is non-monetizable? Ackerman and Heinzerling's position would appear to be yes: We are allowing McDonald's to intentionally harm another, since they were on notice from the hundreds of complaints that their coffee was too hot.<sup>104</sup> But this is out of the millions of cups sold daily. Is this enough evidence such that we should find McDonald's coffee-making practices wrongful?

My father recently forwarded me an email that warned of the consequences of using a cellphone while refueling an automobile. Apparently, some suggestion has been made that the use of a cellphone could create a spark that would cause the nearby gasoline to burst into flames. On the face of it, this seemed unlikely to be a significant hazard. But how likely and how many such incidents are necessary before we would be willing to classify the imposition of this risk as a wrong?

This illustrates the problem with Ackerman and Heinzerling's position and mode of argument. Extreme cases provoke the outrage necessary to sustain their campaign of anger. But do the authors really want to take *all* risk of injury and death off the table? How do we deal with the closer cases? At what point do we draw the line between those risks that are wrongfully

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<sup>97</sup> *Id.*

<sup>98</sup> *Id.*

<sup>99</sup> *Id.* at 1013-15.

<sup>100</sup> *Id.* at 1038.

<sup>101</sup> *Id.* at 1041.

<sup>102</sup> *Id.* at 1044.

<sup>103</sup> *Liebeck v. McDonald's Restaurants, P.T.S., Inc.*, No. CV-93-02419, 1995 WL 360309 (D.N.M. Aug. 18, 1994).

<sup>104</sup> McDonald's was reported to have received over 700 reports of coffee burns, and paid out over \$500,000 in settlements. Consumer News, *Large Award Chills Restaurant Serving Hot Coffee*, 7 LOY. CONSUMER L. REP. 2, 2 (1994).

imposed and those that we tolerate? At what point does a risk become a wrong, and a defendant a willful tortfeasor?

There are at least four dimensions to that question. First, there is the *number* of people that are subjected to a risk. Other things being equal, a risk faced by a small number of people is less compelling than one faced by many. Of course, if there is a conscious decision to subject a specific group of persons to a risk, then serious environmental justice concerns are raised. Such a situation implicates other nonmonetizable values inherent in our society. Second, there is the *magnitude* of risk posed. As noted above, a moral bound is crossed when a risk rises to a particular level, causing us to think of imposition of the risk more as a tort. Third, there is the *severity* of harm posed. Risks of certain death, such as exposure to highly radioactive materials, are clearly more serious than other harms, such as the risk of a burn due to spilled coffee. Fourth, there is the *avoidability* of the risk. If a risk is one that is well-known and avoidable, such as the risk of excessive exposure to sunlight, then it is less necessary to regulate than one that is less notorious or less avoidable. Presumably, Ackerman and Heinzerling would not call for regulation of tanning salons. But because it is relatively difficult to avoid traffic risks, either as a pedestrian or a driver, they would call for regulation of cellphone usage by drivers.

How do we synthesize the different dimensions of risk? Monetization should be a serious candidate for this task. While risk assessment has long recognized the sliding scales of magnitude and probability of harm, it has not come to grips with the scale of harm. This may be because we have trouble accepting that harm to a small group is better than harm to a large group. But it is naïve for us to believe that we do not already do this subconsciously. We may believe we take harms to a small group seriously—such as the harm from a particular hazardous waste site—but we certainly take it much more seriously if it is a large hazardous waste site in a highly populated area. If we truly face a choice brought on by limited resources for addressing environmental harm, then we are deluding ourselves if we deny that the number of people at risk matter. And how much should they matter? It should also be some function of the severity, magnitude, and avoidability of the risk.

Monetization also deals with the problem that some activities pose multiple risks. Water pollutants such as arsenic and air pollutants such as sulfur dioxide cause a variety of adverse health effects. Arsenic is believed to increase the risk of bladder, liver, kidney, colon, and lung cancer.<sup>105</sup> Sulfur dioxide pollution presents a risk of premature mortality through cancer, cases of sporadic and chronic asthma, and alteration of ecological systems due to the acidification of lakes and rivers from acid rain. How do we aggregate these effects?<sup>106</sup> At some point, we should mandate the shut-down

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<sup>105</sup> National Primary Drinking Water Regulations; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring, 66 Fed. Reg. 6976, 6980, 7002 (January 22, 2001) (codified at 40 C.F.R. pts. 9, 141, 142).

<sup>106</sup> Consider EPA's monetization of the effects of the Clean Air Act. See U.S. ENVTL. PROT. AGENCY, THE BENEFITS AND COSTS OF THE CLEAN AIR ACT 1990 TO 2010, at iii tbl.ES-1 (1999),

of some coal-fired power plants, but at what point? Can we be trusted to simply eyeball it, making essentially an ad hoc determination as to how much harm is too much? Monetization of course has its flaws—quantifying the harm of the acidification of lakes and rivers seems especially problematic. But somehow, all of the harms from pollution need to be expressed in one metric, so as to provide a meaningful comparison with the aggregate benefits of the polluting activity.

Finally, monetization is the most obvious way to express environmental and safety risks that are faced by large groups or populations. To give credence to every individual's risk preference would cripple government. There will always be one person who is hypersensitive to risk and would reject even the slightest risk imposed by some policy or regulatory decision. I personally am quite risk-averse, and take great pains to avoid certain health-related risks. I avoid red meat and high-sodium foods, jog three to four times per week, and have abandoned the high-stress world of law firm practice. Is it unfair to impute some riskiness to me that is clearly inconsistent with my risk-averse behavior? Yes, but it would be an administrative impossibility to humor everyone who has my unique risk aversion. Government simply cannot govern by unanimous or near-unanimous consent.

The hard part comes when a widespread public perception of risk diverges from what safety experts think. What are we to do when the list of public risk management priorities are quite different from a more expertly developed list, as is often the case?<sup>107</sup> This divergence can be persistent, as people often understandably distrust the judgment of government officials charged with risk assessment and management.<sup>108</sup> But people do indeed engage in "intuitive toxicology," or the misapprehension of public information of environmental risks.<sup>109</sup> As far back as Justice Holmes, who observed that people tend to think "dramatically, not quantitatively,"<sup>110</sup> we have understood that people are poor estimators of risk. People generally do not spend the \$15 for a radon test kit, available at most hardware stores, to

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<http://www.epa.gov/air/sect812/1990-2010/fullrept.pdf>.

<sup>107</sup> See Paula E. Berg, *When the Hazard is Human: Irrationality, Inequity and Unintended Consequences in Federal Regulation of Contagion*, 75 WASH. U. L.Q. 1367, 1403–04 (1997) (arguing OSHA's reliance on unions to set its regulatory priorities has led to a concentration of resources on dramatic but uncommon risks of workplace exposure to infectious diseases, while common but undramatic risks remain unregulated); Ann Bostrom, *Risk Perceptions: "Experts" vs. "Lay People"*, 8 DUKE ENVTL. L. & POL'Y F. 101, 101 (1997) (stating EPA ranks indoor radon and worker exposure at the top of environmental problems, while the lay public ranks chemical waste and water pollution at the top); Paul Slovic et al., *Facts and Fears: Understanding Perceived Risk*, in SOCIETAL RISK ASSESSMENT: HOW SAFE IS SAFE ENOUGH? 181 (Richard C. Schwing & Walter A. Albers, Jr. eds., 1980) (arguing that subjective judgments of experts and lay people are a major component in risk assessment, but if the judgments are faulty, then efforts at public and environmental protection are likely to be misdirected).

<sup>108</sup> Robert A. Pollak, *Government Risk Regulation*, in CHALLENGES IN RISK ASSESSMENT AND RISK MANAGEMENT 32 (Howard Kunreuther and Paul Slovic eds., 1996).

<sup>109</sup> See Cass R. Sunstein, *The Arithmetic of Arsenic*, 90 GEO. L.J. 2255, 2261–63 (2003).

<sup>110</sup> STEPHEN BREYER, *BREAKING THE VICIOUS CIRCLE* 37 (1992).

test their homes for the presence of the second leading cause of lung cancer in the United States.<sup>111</sup>

What to do? Should we be undemocratic and prioritize by expert opinion, or should we prioritize by popular demand? We must bite the bullet and come down on the side of expert opinion. Acknowledging that people are poor estimators of risk is not, as Thomas McGarity has argued, technocratic elitism.<sup>112</sup> It is no more technocratically elitist than acknowledging that most shareholders are at an informational disadvantage vis-à-vis company management, that tenants are at a bargaining disadvantage relative to landlords, and that food and drug consumers are poor judges of safety. The need for cost-benefit analysis to overcome popular misconceptions does not mean that people are simple-minded; it means that the available information is not in such a form that makes it easy for the public to digest. In fact, it is perfectly rational for people to engage in intuitive toxicology, given the amount of effort that would be required to make consistently accurate assessments of personal risk.

So it is not that common folks are not capable of making their own decisions about risk; it is that there is a market failure in information about risk. When markets fail, government intervention is warranted. If people do not have the wherewithal to judge the quality of corporate securities, regulation is warranted. When housing shortages in urban areas place landlords in a vastly superior bargaining position, regulation of residential leasing arrangements are warranted. So it goes with risk. When people lack the resources to adjudge the reality of a risk, intervention is warranted in the form of a cost-benefit analysis. It could be that shenanigans would alter the outcome of cost-benefit analyses conducted to ascertain the worthiness of risk regulation; this is what Ackerman and Heinzerling focus on. But the reality is that those shenanigans are more transparent than the back-room deals that are hammered out by lobbyists, congressional representatives, and administrators.

At bottom, the problem with Ackerman and Heinzerling's moral absolutism is that environmental problems usually implicate competing moral considerations. Yes, it is wrong to pollute and indirectly cause premature deaths, illness, and ecological damage. But it is also troubling, under a Madisonian tradition, to arbitrarily deprive minority groups of economic rights, even for the sake of the physical rights of the majority. That is not to say we should never do so; on the contrary, we should very often do so, since physical safety should usually trump economic security. That is the basis for our well-recognized bias in favor of environmentalism.<sup>113</sup> But it is

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<sup>111</sup> U.S. Env'tl. Prot. Agency, *Indoor Air—Radon (Rn)*, at <http://www.epa.gov/radon/> (last visited Feb. 20, 2005).

<sup>112</sup> See McGarity, *supra* note 8, at 2341 (arguing that Sunstein's approach that courts should give agencies a great deal of deference when reviewing health, safety, and environmental regulations, illustrates his "profound and abiding lack of confidence in the capacity of an uninformed and simple-minded public to make wise decisions about the magnitude of health, safety, and environmental risks, and the steps that should be taken to reduce those risks").

<sup>113</sup> Professor Daniel Farber has described "environmental norms that our society has unmistakably embraced," which justify a "presumption in favor of protecting the environment,"

ultimately self-defeating to refuse to acknowledge the complexity of most environmental issues.

Perhaps even more importantly, what do we want the conversation to sound like when we settle these disputes over values? Up to this point, debates over environmental and safety regulation have been disappointing in that they have really not advanced our understanding of the complexity of the problems, and how to deal with them. Advocates for the environmental side have stated their arguments in mostly moral terms, much the same way that Ackerman and Heinzerling have. So have detractors of regulation, plaintively lamenting the economic opportunities lost to overzealous regulators. The controversy in the late 1980s and early 1990s over logging restrictions imposed to save the habitat of the northern spotted owl (*Strix occidentalis caurina*) featured memorable presidential slogans such as "Owls Versus People,"<sup>114</sup> and Ross Perot's pronouncement that "[n]obody will think about the Spotted Owl if they're starving, except maybe to eat him."<sup>115</sup> Even debate over air pollution controls for power plants have typically taken on a tone of moral righteousness.<sup>116</sup> Is there nothing else we can say in situations such as these, other than "I'm right, you're wrong," or "this is unfair"? Ackerman and Heinzerling should have more faith that they can win another type of debate, instead of complaining about the new debate being inherently rigged.

#### IV. WHEN SHOULD COST-BENEFIT ANALYSIS BE A GUIDING PRINCIPLE?

Clearly, the difference between detractors and advocates of cost-benefit analysis lies in what they believe is monetizable. But why do we believe some things are monetizable and other things not? As I have argued, Ackerman and Heinzerling are mistaken in believing that cost-benefit analysis is a monetization of life. It is not. It is, for most environmental and safety problems, a monetization of *risk*. Risk is monetizable because we commonly observe people acting as if risk were monetizable. This phenomenon is not limited to cases of laborers taking on risky jobs for a wage premium, but extends to ordinary cases of people doing numerous risky things every day, such as driving too fast. People also voluntarily and knowingly increase their risk of chronic diseases, by engaging in activities like eating too much red meat and fatty and high-sodium foods. People do not exercise nearly as much as they know they should. Ambitious people maintain stressful and unhealthy work existences. Why do we do this to ourselves? It is because, as Gary Becker has observed, most deaths are "suicides" in the sense that we are trading off some longevity in favor of

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or an environmental baseline. DANIEL FARBER, *ECO-PRAGMATISM* 93-94 (1999).

<sup>114</sup> Timothy Egan, *10,000 Are Expected to Lose Jobs to Spotted Owl*, N.Y. TIMES, April 28, 1990, at A8; Timothy Egan, *In Timber Country, Bush Will Join Logging War*, N.Y. TIMES, Sept. 14, 1992, at A16.

<sup>115</sup> Dan Balz, *For Perot, the Next Phase Has Begun; Possible Candidate Proves Elusive Target on Questions About Policy*, WASH. POST, May 3, 1992, at A9.

<sup>116</sup> See, e.g., GARY C. BRYNER, *BLUE SKIES, GREEN POLITICS: THE CLEAN AIR ACT OF 1990*, at 143 (1993) (quoting Sen. Mitchell, decrying "extremists").

some life amenity.<sup>117</sup> I have had conversations with Professor Heinzerling about the risks of living in the post-9/11 Washington world of color-coded terror alerts, and of the health hazards of living in an ozone nonattainment area<sup>118</sup> in which chronic health risks are both more serious and more probable. We found little to agree upon with respect to cost-benefit analysis, but we agreed that risk-wise, living in Washington, D.C. was not a good thing. And yet, we agreed that the risks came along with the professional and intellectual benefits of living in the area.

Some, such as Ackerman and Heinzerling, believe that exposing people to a risk of cancer is nonmonetizable and unethical. But is it really? If we think of the administrative state as a means of delegating some of our risk assessment and risk management tasks to an agency, then the goal of environmental and risk regulation should be to emulate, as closely as possible, for as many people as possible, the environmental and risk tradeoffs that we would perform ourselves, but for the insurmountable transaction costs. Clearly, we take some risks, and back away from others. Sometimes, we perform—consciously or not—a weighing of the costs and benefits of a risky action, such as driving faster, eating unhealthy foods, or moving into a large city. Other times, not only do we avoid the risk, but we eschew the cost-benefit analysis, as we do when we avoid extreme hazards. Most people could not be paid enough to climb a rock face without ropes, rush into a burning building, or climb into a boxing ring for a fight. Of course, some people do these things and assume the risks, but these decisions have nothing to do with costs and benefits.

So which risks are monetizable? Where should we draw the line between those problems susceptible of cost-benefit analysis and those that are not? How do we decide that some risks are evaluated by most people as a weighing of costs and benefits, while others are not? Some environmental and safety problems, ones that entail risks that people do not and would not voluntarily assume, should not be imposed even if a cost-benefit analysis seems to suggest that we should. Advocates of cost-benefit analysis would agree that these risks exist; almost all are careful to qualify their support by stating that they do not view cost-benefit analysis as always providing the ultimate decision rule.<sup>119</sup> But then what principle divides those problems that should be guided by cost-benefit analysis from those that should not? If the advocates had their way, in which cases would cost-benefit analysis at least strongly inform the policy analysis, if not provide a decision rule?

This inquiry is most easily begun by thinking about situations in which cost-benefit analysis should *not* be a decision rule. Towards that end, I suggest two situations in which cost-benefit analysis would most likely be inappropriate or yield little useful information. First, cost-benefit analysis

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<sup>117</sup> GARY BECKER, *THE ECONOMIC APPROACH TO HUMAN BEHAVIOR* 10 (1976).

<sup>118</sup> The Clean Air Act requires that certain pollutants (such as ozone) not exceed some threshold level that is considered safe. 42 U.S.C. § 7407(d) (2000). These levels are established by EPA. *Id.* § 7408(a). An airshed in which pollutants regularly exceed these levels will be designated a “nonattainment” area. *Id.* § 7407(d).

<sup>119</sup> See *supra* note 5 and accompanying text.

should not be used to evaluate the imposition of risks that involve a high probability of harm. As I suggested earlier, a moral bound is crossed when the probability of harm increases such that a risk of harm moves from the realm of the uncertain and speculative to the truly dangerous. The meaning of the phrase “high probability” is clearly problematic, but worth at least discussing. Second, risks of physical harm that are imposed upon a group that is selected on some objectionable basis are risks that should not be guided by cost-benefit analysis. By this, I mean that purposefully selecting a group on the basis of, for example, ethnicity, should be prohibited regardless of the result of any cost-benefit analysis. Yet this carve-out should be limited to physical harms, such as those directly affecting health, as opposed to economic ones, such as loss of employment—risks of physical harm, if they are the result of some objectionable selection procedure, simply are not monetizable.

This being only the beginning of what I hope to be a long and productive discussion, I certainly do not intend for this to exhaust the list of situations in which cost-benefit analysis would be inappropriate. Nothing in this Review should be taken as a positive endorsement of cost-benefit analysis for some situation that may escape these preliminary categories. Indeed, I have argued in another article that cost-benefit analysis should also not be applied in some situations involving certain irreplaceable and unique resources, such as the Arctic National Wildlife Refuge or the Grand Canyon.<sup>120</sup> I leave further exposition of this and other similar points, however, to future scholarship, and restrict discussion in this Review to certain aspects of risk regulation.

#### *A. High Probabilities of Harm*

The nature of risk changes as the probability of harm increases. At some point, because the probability of harm is so high, it becomes unethical to impose a risk upon an individual or a population. The tort concept of proximate cause is a reflection of this idea. The inquiry is somewhat different—whereas proximate cause applies to ex post determinations of liability, the question I ask applies to ex ante judgments of what is permissible behavior. But the nature of the inquiry is the same: Where is a line drawn such that that behavior up to that line is acceptable, and beyond that line, unacceptable? Behavior that causes very small increases in the probability of harm should probably be subjected to cost-benefit analysis. Behavior that results in large increases in the probability of harm starts to look like an intentional tort. Throwing a baseball in the direction of someone’s head is clearly something that should not be permitted, even if thrown by someone as inaccurate as myself. And no matter how much utility I would derive from throwing a hard projectile at Rush Limbaugh,<sup>121</sup> it is not

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<sup>120</sup> Shi-Ling Hsu & John Loomis, *A Defense of Cost-Benefit Analysis for Natural Resource Policy*, 32 *Envtl. L. Rep. (Envtl. L. Inst.)* 10,239, 10,243 (2000).

<sup>121</sup> Some have criticized cost-benefit analysis by hypothesizing the existence of a “utility monster” that derives more utility from inflicting pain and suffering upon others than the

an attempt that should be permitted because of the relatively high probability of success. At what point do we take cost-benefit analysis off the table? At what point does an action become so likely to cause physical harm to someone, that it should be prohibited? It would be folly to attempt to derive a precise number, but some thought seems worthwhile. Some observations offer us clues.

Although we say that people engage in some “high-risk” activities, in reality the probability of harm is often still quite low. For example, bike messengers in the notoriously traffic-maniac city of Boston reported that per 100 bike messengers, approximately 31 were injured each year such that medical attention was sought; given the tremendous volume of business done by such messengers, this has to be considered a low rate of injury.<sup>122</sup> The fatality rate in skydiving is approximately 25 per 100,000 jumps, less than the traffic fatality rate.<sup>123</sup> Even running the bulls at Pamplona, while dangerous in terms of injuries, yields a fatality rate of no more than one out of 93,000 runs.<sup>124</sup> So it would appear that some “high-risk” activities are not so after all.

On the other hand, just being a licensed driver in the United States is a substantial risk. There are approximately 195 million licensed drivers in the United States, and in 2002, 26,549 of them died in a vehicle accident.<sup>125</sup> This translates into a one-in-7,300 chance of an average driver dying in a car crash in any given year.<sup>126</sup> Of course, there are careful drivers and careless drivers, and there are those that drive sparingly and those that drive hundreds of thousands of miles every year. But every driver knows that getting in a car presents some nontrivial risk of death. Bicycling, despite its health benefits, is even riskier—bicycle rides represent less than one percent of all trips but more than two percent of all transportation-related deaths.<sup>127</sup>

What does this tell us about the threshold level of risk, beyond which a risk ceases to be monetizable? In all honesty, not much. It shouldn't, as there is clearly no one-number-fits-all threshold level of risk for all problems. But it does highlight the fact that people voluntarily assume fairly substantial

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victims feel pain and suffering. See, e.g., Daniel Farber, *What (If Anything) Can Economics Say About Equity?*, 101 MICH. L. REV. 1791, 1811 (2003).

<sup>122</sup> JACK DENNERLEIN & JOHN MEEKER, OCCUPATIONAL INJURIES AMONG BOSTON BICYCLE MESSENGERS (2002), <http://www.hsph.harvard.edu/ergonomics/bike/index.html>. No formal record-keeping exists for bike messenger fatalities. *Id.*

<sup>123</sup> Dave Appel, Newsgroup Email Communication, May 27, 1992, at <http://www.afn.org/skydive/sta/stats.html> (last visited Feb. 20, 2005).

<sup>124</sup> Since record keeping began in 1924, 13 people have been fatally gored by bulls. Records of the number of runners are not kept, but local estimates are that 2,000 people run on each of the eight days. *Several Gored at Pamplona Bull Run*, CNN.COM/WORLD, July 7, 2002, at [http://www.sfprep.org/complexity/sfi-summer-2002/gallery/bullrun\\_article.htm](http://www.sfprep.org/complexity/sfi-summer-2002/gallery/bullrun_article.htm) (last visited Feb. 20, 2005).

<sup>125</sup> Nat'l Highway Transp. Safety Admin., U.S. Dep't of Transp., *Fatality Analysis Reporting System Web-Based Encyclopedia*, at <http://www-fars.nhtsa.dot.gov> (last visited Feb. 20, 2005).

<sup>126</sup> This figure is derived by dividing the 26,549 yearly driver fatalities by 194,296,000 licensed drivers.

<sup>127</sup> Pedestrian & Bicycle Info. Ctr., *Bicycling Crashes in Perspective*, at <http://www.bicyclinginfo.org/bc/perspective.htm> (last visited Feb. 20, 2005).



risks, and the stakes are often high. In addition to accident risks, people choose unhealthy lifestyles at substantial risk of premature death, for the sake of enjoying things like hamburgers, greasy fries, and fine cheese. How then, does this translate into a policy for when to use and when to eschew cost-benefit analysis? How certain must a harm be, or how high must the probability be, before we ban it without considering the costs and benefits of the ban?

A partial answer is that we should be guided by our rejection of those harms that we have already decided are not worthwhile, no matter what the costs of a ban. For example, the manufacture and sale of the class of chemical compounds polychlorinated biphenyls (PCBs) are banned as part of the Toxic Substances Control Act.<sup>128</sup> This rare legislative declaration of the illegality of a substance, typically left to the Environmental Protection Agency, is evidence of a clear consensus that PCBs are so dangerous that we should not even contemplate their continued use, and that a cost-benefit analysis is not warranted.<sup>129</sup> In addition to the well-documented harms to wildlife and laboratory rats, numerous peer-reviewed studies showed statistically significant increases in cancer rates of humans exposed to PCBs.<sup>130</sup> We now know enough about the biological and chemical pathways to say that producing PCBs is not just risky, but dangerous. The Agency for Toxic Substances and Disease Registry of the Centers for Disease Control states that “[t]he Department of Health and Human Services has concluded that PCBs may *reasonably be anticipated* to be carcinogens. The EPA and the International Agency for Research on Cancer (IARC) have determined that PCBs are *probably* carcinogenic to humans.”<sup>131</sup> These keywords of probability may provide us with some guidance as to when to stop thinking about costs and benefits and when to start thinking *solely* about public safety. Similarly, the close correlation of lead content in gasoline with children’s blood lead levels is suggestive of such a high probability of harm that it ceases to be a monetizable risk; it becomes a truly dangerous substance. As a high-ranking official at the Centers for Disease Control testified in litigation subsequent to the EPA lead rule,

This reduction was real. It was not due to chance, laboratory error, nor sampling of age, sex, race, urban vs. rural areas, income levels, or geographic regions. The most significant environmental change during this time was the reduced amount of lead used in the production of gasoline. . . . [These data]

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<sup>128</sup> 15 U.S.C. §§ 2601–2692 (2000). The PCB ban appears at *id.* § 2605(e)(2).

<sup>129</sup> PCBs are highly carcinogenic to humans and wildlife and interfere with reproductive processes. Krinsin Bryan Thomas & Theo Colborn, *Organochlorine Endocrine Disruptors In Human Tissue*, in CHEMICALLY INDUCED ALTERATIONS IN SEXUAL AND FUNCTIONAL DEVELOPMENT: THE WILDLIFE/HUMAN CONNECTION 365, 383–84 (Theo Colborn & Coralie Clement eds., 1992); Robert E. Menzer & Judd O. Nelson, *Water and Soil Pollutants*, in CASARETT & DOULL’S TOXICOLOGY: THE BASIC SCIENCE OF POISONS 825, 831 (Curtis D. Klaassen et al. eds., 3d ed. 1986).

<sup>130</sup> U.S. ENVTL. PROT. AGENCY, PCBs: CANCER DOSE-RESPONSE ASSESSMENT AND APPLICATION TO ENVIRONMENTAL MIXTURES 5 (1996), available at <http://www.epa.gov/opptintr/pcb/pcb.pdf>.

<sup>131</sup> Agency for Toxic Substances and Disease Registry, *ToxFAQs for Polychlorinated Biphenyls*, at <http://www.atsdr.cdc.gov/tfacts17.html> (last visited Feb. 20, 2005).

clearly demonstrate[ ] that as we have removed lead from gasoline, we have also removed lead from ourselves and our children.<sup>132</sup>

In light of the very convincing evidence of the link between lead content and children's blood lead levels, we have evidently decided that we should not weigh costs and benefits, but rather simply ban the use of lead in gasoline.

Importantly, what we know about these toxins is that the harm is not speculative; while there may not be unanimous agreement on every aspect of harm, there is nevertheless broad consensus. These are two of the most studied toxins, and we know that exposure to these substances leads to a high likelihood of harm. The higher the probability of harm of exposure to a substance, the more tortious its use becomes, and the more ready we should be to regulate it without consideration of a cost-benefit analysis. This is not to say that we should refrain from regulation until the harm becomes certain. But certainty of harm should move us to act without our necessarily consulting a cost-benefit analysis.

Considering the threshold probability beyond which a monetizable risk becomes a nonmonetizable harm is obviously an extremely difficult question to address. I offer only the seeds of what I hope is a long conversation about this principle in the making. But this is a conversation worth having, and not repressing.

### *B. Environmental Justice Concerns*

Choosing sites for locally undesirable land uses (LULUs) has been challenging, to say the least. This Review has little to add to this complicated debate, except to reassure that cost-benefit analysis is not and should not be used to justify siting decisions that are made in some way that is otherwise objectionable. Environmental justice advocates have been widely opposed to the practice of cost-benefit analysis, in part because of the fear that cost-benefit analyses would be used to justify the further exploitation of the poor by the rich.<sup>133</sup> The nightmare scenario for environmental justice advocates is that some cost-benefit analysis is performed whereby costs are determined by willingness to pay to avoid the LULU. Groups of socioeconomically disadvantaged people with less income have less ability to pay, and thus have less power to stop LULUs from being sited in their midst. Although Ackerman and Heinzerling have not been active environmental justice

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<sup>132</sup> *Small Refiner Lead Phase-Down Task Force v. United States Env'tl. Prot. Agency*, 705 F.2d 506, 528 (D.C. Cir. 1983).

<sup>133</sup> See Eileen Gauna, *An Essay on Environmental Justice: The Past, the Present, and Back to the Future*, 42 NAT. RESOURCES J. 701, 710–12 (2002) (noting the risks of discounting the monetary value of saved lives); Clifford Rechtschaffen, *Advancing Environmental Justice Norms*, 37 U.C. DAVIS L. REV. 95, 104–05 (2003) (arguing the inherent risks of cost-benefit analysis to poor and vulnerable communities); Tseming Yang, *Balancing Interests and Maximizing Rights in Environmental Justice*, 23 VT. L. REV. 529, 542 (1999) (arguing that environmental decision making that focuses on cost-benefit analysis fails to consider other interests, such as autonomy, fairness, and equality).

advocates, their scholarship naturally plays into the deepest fears of these advocates—that behind every cost-benefit analysis is a conspiracy of industrial malefactors and academic mercenaries seeking money, political prestige, or both.

The reality is that cost-benefit analysis has never been intended to be used to make such sensitive moral decisions as who will bear the risk of environmental harm. I do not know of any instances of cost-benefit analysis being used to justify such an outcome, and if there are any, they are extremely isolated and misguided. Different sites with different geographies may yield different cost and benefit estimates, but that is a matter entirely different from using money to measure the risk-worthiness of specific groups, chosen in some way that we find objectionable.

I know of no advocates of cost-benefit analysis that would presume to trump environmental justice concerns. Cass Sunstein, for example, a leading proponent of cost-benefit analysis, has advocated the amendment of the executive orders mandating cost-benefit analyses for major regulations to also require a distributional impact analysis.<sup>134</sup> The law and economics judge that detractors love to hate—Richard Posner<sup>135</sup>—has very explicitly acknowledged the limited usefulness of cost-benefit analysis when it comes to distributional issues. In his text, *Economic Analysis of Law*, he writes:

Suppose that pituitary extract is in very short supply relative to the demand and is therefore very expensive. A poor family has a child who will be a dwarf if he does not get some of the extract, but the family cannot afford the price . . . . A rich family has a child who will grow to normal height, but the extract will add few inches more, and his parents decide to buy it for him. In the sense of the value used in this book, the pituitary extract is more valuable to the rich than to the poor family, because value is measured in willingness to pay, but the extract would confer greater happiness in the hands of the poor family than in the hands of the rich one.<sup>136</sup>

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<sup>134</sup> Sunstein, *supra* note 109, at 2260; see also Richard L. Pildes & Cass R. Sunstein, *Reinventing the Regulatory State*, 62 U. CHI. L. REV. 1, 46–47 (1995) (discussing the distributional issues that cost-benefit analysis fails to address). Professor Sunstein has proposed the following:

First, agencies should provide, and consider, qualitative descriptions of the benefits of regulations, not merely quantitative ones. Second, distributional issues are important; if, for example, a regulation would mostly help children, and poor children in particular, that is an important matter to consider. Third, there are ethical constraints on the promotion of welfare through regulation. Before we investigate how to translate life-years into monetary equivalents, it is necessary to see whether ethical constraints bar the translation.

Cass R. Sunstein, *Lives, Life-Years, and Willingness to Pay*, 104 COLUM. L. REV. 205, 213–14 (2004).

<sup>135</sup> Ironically, Professor Heinzerling was a judicial clerk for Judge Posner. I once remarked that I found it ironic that Heinzerling was a judicial clerk for both Posner and the late Justice William Brennan, when someone pointed out to me that Posner himself was a Brennan clerk.

<sup>136</sup> RICHARD POSNER, *ECONOMIC ANALYSIS OF LAW* 11 (6th ed. 2003). Posner also writes, later in the same chapter,

Judge Posner's lesson here is that economics does not clearly tell us the right social choice, especially when there are wealth inequities implicated. Perhaps some detractors may doubt their sincerity, but is this really a "mad science"<sup>137</sup> run amok? The detractors are off course when they fear that economics is a twisted morality, an insidious corrupting influence on the moral fiber of our smoothly functioning political system. There is simply no reason to believe, except for the parade of horrors imagined by detractors, that a policy world driven more (but not completely) by efficiency and cost-benefit analysis would work to the detriment of socioeconomically disadvantaged groups. In this regard, *Priceless* contributes to the widespread misperception that economics has been captured by regulated interests so that they can exploit people and the environment.

Perhaps the most damning story from the environmental justice viewpoint is that of the emissions trading program implemented by the South Coast Air Quality Management District's Rule 1610. Rule 1610 allowed the issuance of pollution credits to Los Angeles area oil refineries and marine terminals for the scrapping of old and presumably higher-polluting automobiles.<sup>138</sup> The credits enabled the refineries to avoid otherwise binding requirements to install pollution control equipment.<sup>139</sup> The idea behind the program was that retiring those automobiles would induce the owners to replace those automobiles with newer, cleaner automobiles. Vehicle miles traveled on a 1968 Ford Thunderbird would be replaced by vehicle miles traveled on a new, low-emissions Honda Civic. And this emissions reduction from old cars would, it was thought, be larger and less costly to achieve than installing pollution control equipment.

Apart from the problems of those scrapped vehicles not having been frequently driven (and therefore not providing much emissions reduction<sup>140</sup>), the highly variable emissions rates of the scrapped vehicles,<sup>141</sup> and the propensity of owners to drive newer cars more frequently,<sup>142</sup> the program was alleged to have led to an increase in emissions near the facilities

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Economics does not answer the question whether the existing distribution of income and wealth is good or bad, just or unjust, although it can tell us a great deal about the costs of altering the existing distribution, as well as about the distributive consequences of various policies. Neither does it answer the ultimate question whether an efficient allocation of resources would be socially or ethically desirable. Nor can the economist tell us whether, assuming the existing distribution of income and wealth is just, consumer satisfaction should be the preeminent social value.

*Id.* at 14.

<sup>137</sup> Richard Toshiyuki Drury et al., *Pollution Trading and Environmental Injustice: Los Angeles's Failed Experiment in Air Quality Policy*, 9 DUKE ENVTL. L. & POL'Y F. 231, 251 (1999) (using this phrase to describe the economic theory of emissions trading).

<sup>138</sup> *Id.* at 246-47.

<sup>139</sup> *Id.*

<sup>140</sup> Shi-Ling Hsu & Daniel Sperling, *Uncertain Air Quality Impacts of Automobile Retirement Programs*, 1444 TRANSP. RES. REC. 90, 90-92 (1994), available at <http://www.uctc.net/papers/260.pdf>.

<sup>141</sup> *Id.* at 93.

<sup>142</sup> *Id.* at 93-95.

benefiting from the credits—the oil refineries and marine terminals.<sup>143</sup> The environmental justice problem arose because populations around these facilities tend to be Latino and other people of color.<sup>144</sup>

Although this story is told as a condemnation of emissions trading,<sup>145</sup> it is also told as a more general condemnation of the economic way of thinking.<sup>146</sup> What worries environmental justice advocates about cost-benefit analysis and the economic way of thinking is that it seems to give license to the tyrannization of minorities, as long as there is an increase in wealth. Thus, cost-benefit analysis and other economic instruments seem to open the door to the oppression of poor minorities (both in the ethnic and the political sense) for the benefit of the rich, and this L.A. story seems to bear out their suspicions.

But Rule 1610, now over a decade old, is just the kind of red herring that has distracted environmental justice advocates and economists alike. Although compliance cost savings was the driver for this policy, no evaluation was done of the likely environmental impacts of the policy. No real cost-benefit analysis was performed for Rule 1610. Had a distributional impact analysis of the kind advocated by Sunstein been performed, the story could have been different. Rule 1610 was just bad policy, not bad economics or economics gone bad.

In fact, cost-benefit analysis could provide an opportunity to *help* those disadvantaged communities traditionally targeted for bearing a disproportionate share of environmental harms. In addition to an estimate of the total costs and benefits of a policy, cost-benefit analysis could also include a cost and benefit breakdown into groups. That is, a cost-benefit analysis could estimate costs borne and the benefits conferred for specific groups. Such a breakdown could make more transparent what is at stake and for whom. Such a requirement could provide the most critical information for those representing disadvantaged communities. The most crippling problem from the environmental justice perspective is the lack of information available to those disadvantaged by environmental policies or actions.<sup>147</sup> Could it possibly be worse to require the presentation of information as to who benefits and who suffers the costs of a policy? If implemented, this brand of cost-benefit analysis would only make more

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<sup>143</sup> Citizens for a Better Environment, which filed a suit on behalf of affected citizens, claimed the required emission controls would have dramatically reduced emissions. Drury et al., *supra* note 137, at 252.

<sup>144</sup> *Id.* at 254.

<sup>145</sup> It need not be a condemnation of emissions trading. I argue in another article that this is a poorly designed program, and not an emissions trading program in the same sense as the Clean Air Act Amendments' sulfur dioxide trading program. See Hsu, *supra* note 70, at 390–93. The problem of hot spots is not *necessarily* one that is bound to occur with an emission trading program. *Id.*

<sup>146</sup> David M. Dreisen, *The Economic Dynamics of Environmental Law: Cost-Benefit Analysis, Emissions Trading, and Priority-Setting*, 31 B.C. ENVTL. AFF. L. REV. 501, 507 (2004).

<sup>147</sup> See, e.g., EDUARDO LAO RHODES, ENVIRONMENTAL JUSTICE IN AMERICA 7 (2003) (“Minority populations are kept, often deliberately, from entering the environmental decision-making process by inadequate information or an incomplete understanding of the dynamics of the processes or conditions they confront.”).

transparent the transgressions against socioeconomically disadvantaged persons that have given rise to the environmental justice movement.

Unfortunately, few cost-benefit analyses have included analyses of the distributional impacts of proposed regulations. In 1994, President Clinton issued Executive Order 12,898, requiring each federal agency to "make achieving environmental justice part of its mission by identifying and addressing . . . disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations."<sup>148</sup> President Clinton also, surprisingly to some, continued the federal practice of cost-benefit analysis by issuing his own executive order to modify Ronald Reagan's mandate for "regulatory impact analyses."<sup>149</sup> What is needed is a marriage of the two approaches, combining cost-benefit analyses with an explicit analysis of *who* is affected and by how much.<sup>150</sup> The Regulatory Flexibility Act<sup>151</sup> requires an analysis of the economic impacts upon small businesses, so why not one on minorities and socioeconomically disadvantaged persons? In the taxonomy of environmental justice proposed by Robert Kuehn, cost-benefit analysis could play a role in accomplishing "procedural" justice, the notion that decisions involving undesirable land uses should provide more procedural safeguards against exploitation.<sup>152</sup> It cannot be a hindrance to provide more information about who benefits and who is hurt by a siting decision; and in fact it could provide a basis for compensation for disadvantaged communities.

This presents an opportunity for environmental justice advocates. For those reformists that call for more cost-benefit analysis, environmental justice advocates now have a ready answer: If more information is what you seek, then you must not object to a more detailed cost-benefit analysis that includes the cost and benefits for specific groups.

## V. CONCLUSION

Ackerman and Heinzerling seek to persuade by storytelling. They are teachers, and they understand the illustrative power of storytelling, which aids in comprehension by reducing abstract notions down to a manageable level. Storytelling is also a powerful rhetorical tool—seeking to use an illustration as an example of a broader phenomenon. Even Robert Hahn,

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<sup>148</sup> Exec. Order No. 12,898, 59 Fed. Reg. 7,629 (Feb. 16, 1994).

<sup>149</sup> Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Oct. 4, 1993). President Reagan's executive order was Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (Feb. 19, 1981).

<sup>150</sup> In 1992, EPA issued new worker protection standards for those working with agricultural pesticides. Shockingly, the regulatory impact analysis for the proposed rule contained no explicit analysis of distributional issues. Louis P. True, *Agricultural Pesticides and Worker Protection*, in *ECONOMIC ANALYSES AT EPA 303, 324* (Richard D. Morgenstern ed., 1997). This is especially odd since the vast majority of workers protected by the standard would be immigrant laborers and other socioeconomically disadvantaged persons.

<sup>151</sup> 5 U.S.C. §§ 601–612 (2000).

<sup>152</sup> Robert R. Kuehn, *A Taxonomy of Environmental Justice*, 30 *Envtl. L. Rep.* (Envtl. L. Inst.) 10,681, 10,688–89 (2000).

Randall Lutter, and Office of Management and Budget economist John Graham, the targets of the authors' animus, use stories and anecdotes to bring to life conclusions based on their empirical analyses. One of Graham's claims to fame is his coauthoring a compendium of wasteful regulations that fail cost-benefit tests,<sup>153</sup> an exercise in storytelling with which Heinzerling has found substantial problems.<sup>154</sup> But Ackerman and Heinzerling tell the same kinds of stories. Talk enough about cellphone-using drivers such as Cheryl Chadwick, and pretty soon everyone will assume that all cell-phone users are spoiled, affluent lawyers plowing their Mercedes into helpless retirees. Talk enough about the mistakes that have been made in past cost-benefit analyses, and pretty soon everyone will believe that all cost-benefit analyses are inherently mistaken ventures. But these stories are not necessarily representative of the entire story of economics and cost-benefit analysis. In political parlance, Ackerman and Heinzerling are conducting a protracted attack ad on cost-benefit analysis. This has contributed to the continued ossification<sup>155</sup> of environmental regulation, the last thing anybody needs.

Fundamentally, Ackerman and Heinzerling misperceive cost-benefit analysis as a substantive criterion rather than a procedural device.<sup>156</sup> The reason that they do this is that if cost-benefit analysis really is just more information, then it is extremely difficult to criticize it, particularly since environmental battles have often been fought with the regulated side enjoying an advantage in information. If the authors are right in that cost-benefit analysis is really just misleading information, then indeed, it could do more harm than good. But the responsibility for avoiding the misuse of cost-benefit analysis lies with all of us. Throughout their careers, the authors have performed a public service by policing the process for errors. But their error is in seeing systematic biases where there are none and making too much of their discoveries as evidence that cost-benefit analysis is inherently anti-regulatory.

This debate over cost-benefit analysis is reminiscent of the one over the use of legislative history in statutory interpretation. It is not an accident that Justice Stephen Breyer is an advocate of both the use of legislative history<sup>157</sup>

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<sup>153</sup> Graham and others have railed against regulation in response to risks that are perceived to be higher than is rational. Graham's campaign has been to "rationalize" risk regulation, so as to allocate regulatory dollars in accordance with real, as opposed to misperceived, risks. See Tammy O. Tengs et al., *Five-Hundred Life-Saving Interventions and Their Cost-Effectiveness*, 15 RISK ANALYSIS 369 (1995).

<sup>154</sup> Lisa Heinzerling, *Five Hundred Life-Saving Interventions and Their Misuse in the Debate Over Regulatory Reform*, 13 RISK 151 (2002).

<sup>155</sup> I borrow this term, as many others have, from Professor McGarity. See Thomas O. McGarity, *Some Thoughts of "Deossifying" the Rulemaking Process*, 41 DUKE L.J. 1385 (1992).

<sup>156</sup> This point has been made before. See, e.g., Matthew D. Adler & Eric A. Posner, *Rethinking Cost-Benefit Analysis*, 109 YALE L.J. 165, 167 (1999) ("[A] common criticism of [cost-benefit analysis]—that it sometimes produces morally unjustified outcomes—overlooks the fact that [cost-benefit analysis] is a decision procedure, not a moral standard.").

<sup>157</sup> See Stephen G. Breyer, *On the Uses of Legislative History in Interpreting Statutes*, 65 S. Cal. L. Rev. 845, 861-62 (1992).

and of cost-benefit analysis.<sup>158</sup> Textualists such as Justice Antonin Scalia have frequently cited the supposed indeterminacy of legislative history,<sup>159</sup> in the same way that Ackerman and Heinzerling have used ambiguities in cost-benefit analysis to damn its reliability. More information is not better, Scalia and the authors seem to be arguing. Ackerman and Heinzerling even seem to reject the use of science, on the grounds that it is easily manipulable. They lament that “after more than a century of additional experience and research, scientists continue to disagree about exact health impacts of low doses of radioactivity.”<sup>160</sup> But in perhaps the most science-based areas of law, where are we without science? Do Ackerman and Heinzerling propose to conduct this battle on rhetoric alone?

Environmental lawyers should be wary when strangers appear at the doorstep and announce, “We’re from the Economics Department, and we’re here to help.” But wariness should not be paranoia. Ackerman and Heinzerling, economist and lawyer, and both dedicated environmentalists, should recognize that environmental policy should be an interdisciplinary endeavor. Pathways must be built among lawyers, ecologists, toxicologists, political scientists, and economists. Slamming the door on any one of these groups, even the dismal economists, is not the way to begin.

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<sup>158</sup> Breyer inveighs against prioritizing by popular demand in STEPHEN BREYER, *BREAKING THE VICIOUS CIRCLE* 50–51 (1993).

<sup>159</sup> See, e.g., Antonin Scalia, *Foreign Legal Authority in the Federal Courts*, 98 AM. SOC’Y INTL. L. PROC. 305, 309 (2004) (“[L]egislative history . . . ordinarily contains something for everybody and can be used or not used, used in one part or in another, deemed controlling or pronounced inconclusive, depending on the result the court wishes to reach.”)

<sup>160</sup> ACKERMAN & HEINZERLING, *supra* note 3, at 114–15.