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Environmental Ethics and Cost-Benefit Analysis

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I. INTRODUCTION

A Greek proverb predicts: "A society grows great when old men plant trees in whose shade they know they will never sit."[1] The Greeks, quite rightly, understood that nations prosper when they develop the ability to make wise, forward-looking decisions. Few will disagree with this commonsensical position – yet, twenty-five hundred years after the golden age of Athens, there is little consensus on *how* to make judicious and effective judgments. In both this country and in Europe, an intense debate exists in the legal literature over the best method of allocating resources, regulating risk, and making difficult policy choices.[2] Much of the heated intellectual debate has focused on cost-benefit analysis (CBA).[3]

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1. See, Greek Proverb Quotes (2006), *available at* http://thinkexist.com/quotes /greek_proverb/.

2. *See, e.g.*, FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: OF KNOWING THE PRICE OF EVERYTHING AND THE COST OF NOTHING (2004) [hereinafter ACKERMAN & HEINZERLING, PRICELESS]; STEPHEN BREYER, BREAKING THE VICIOUS CIRCLE: TOWARD EFFECTIVE RISK REGULATION (1993); CASS R. SUNSTEIN, THE COST BENEFIT STATE: THE FUTURE OF REGULATORY PROTECTION (2002) [hereinafter SUNSTEIN, THE COST BENEFIT STATE]; CASS R. SUNSTEIN, LAWS OF FEAR: BEYOND THE PRECAUTIONARY PRINCIPLE (2005); CASS R. SUNSTEIN, RISK *AND* REASON: SAFETY, LAW, AND THE ENVIRONMENT (2002) [hereinafter SUNSTEIN, RISK *AND* REASON]; Matthew D. Adler & Eric A. Posner, *Rethinking Cost-Benefit Analysis*, 109 YALE L.J. 165 (1999); Kenneth J. Arrow et al., *Is There a Role for Cost-Benefit Analysis in Environmental, Health, and Safety Regulation?*, 272 SCIENCE 221 (1996); Kenneth J. Arrow & Robert C. Lind, *Uncertainty and the Evaluation of Public Investment Decisions*, 60 AM. ECON. REV. 364, 366-67 (1970); Douglas A. Kysar, *Climate Change, Cultural Transformation, and Comprehensive Rationality*, 31 B.C. ENVTL. AFF. L. REV. 555 (2004) [hereinafter Kysar, *Climate Change*]; Thomas O. McGarity, *MTBE: A Precautionary*

Cost-benefit analysis is the most widespread decision-making tool employed by federal government agencies.[4] Broadly speaking, cost-benefit analysis is a method of *quantitatively* evaluating whether or not to implement a proposed action. For government regulators, CBA typically consists of adding up all of the benefits of a public policy and comparing them to the costs.[5] The underlying principle is that projects merit undertaking only if the "pros" outweigh the "cons."[6] At its best, cost-benefit analysis is seen as an unbiased, objective, and consistent decision-making procedure.

Since 1980, the rise of cost-benefit analysis in all branches of the federal government has been nothing less than remarkable. For twenty-five years, American presidents have compelled administrative agencies to complete a cost-benefit analysis before enacting major rules and regulations.[7] The promise of CBA has also caught the attention of Congress. Most notably, the Safe Drinking Water Act

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Tale, 28 HARV. ENVTL. L. REV. 281 (2004); Richard Posner, *Cost-Benefit Analysis: Definition, Justification and Comment on Conference Papers*, 29 J. LEGAL STUD. 1153 (2000) [hereinafter Posner, *Cost-Benefit Analysis*]; Amy Sinden, *The Economics of Endangered Species: Why Less is More in the Economic Analysis of Critical Habitat Designations*, 28 HARV. ENVTL L. REV. 129 (2004) [hereinafter Sinden, *Endangered Species*]; Amy Sinden, *In Defense of Absolutes: Combating the Politics of Power in Environmental Law*, 90 IOWA L. REV. 1405 (2005) [hereinafter Sinden, *In Defense of Absolutes*]; Cass R. Sunstein, *Cognition and Cost-Benefit Analysis*, 29 J. LEGAL STUD. 1059 (2000) [hereinafter Sunstein, *Cognition*]; Barton H. Thompson, *What Good is Economics?,* 37 U.C. DAVIS L. REV. 175 (2003).

3. *Id.*

4. All federal agencies charged with regulating public health, safety, and the environment must conduct a cost-benefit analysis before promulgating a major regulation. *See* Exec. Order No. 12,866, 3 C.F.R. 638 (1994), *reprinted in* 5 U.S.C. § 601 (Supp. V 1993).

5. For an overview of how the federal government tabulates costs and benefits, see U.S. Office of Mgmt. & Budget, Circular No. A-94 (Revised), Memorandum for Heads of Executive Departments and Establishments (Oct. 29, 1992) *available at* http://www.whitehouse.gov/omb/circulars/a094/a094.html. For a stinging critique of a government administered CBA, see ACKERMAN & HEINZERLING, PRICELESS, *supra* note 2, at 91-98.

6. *See, e.g.*, Amartya Sen, *The Discipline of Cost-Benefit Analysis*, 29 J. LEGAL STUD. 931, 934 (2000), *reprinted in* COST BENEFIT ANALYSIS: LEGAL, ECONOMIC, AND PHILOSOPHICAL PERSPECTIVES 95, 98 (Matthew D. Adler & Eric A. Posner eds., 2001) (stating that the "basic rationale of cost-benefit analysis lies in the idea that things are worth doing if the benefits resulting from doing them outweigh their costs").

7. *See* Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (Feb 17, 1981); Exec. Order No. 12,866, 3 C.F.R. § 638 (1994).

and the Toxic Substances Control Act (TSCA) authorize agencies to balance costs and benefits.[8] The courts, moreover, have adopted a series of CBA-inspired default rules that permit agencies to evaluate cost and ignore de-minimis risks.[9]

For their part, many prominent legal academics – including Cass Sunstein,[10] Richard Posner,[11] and Justice Stephen Breyer[12] – defend CBA as an invaluable decision-making tool. Proponents from the law and economics tradition argue that CBA ensures that government resources are allocated with maximum efficiency.[13] Advocates of good-government principles claim that CBA limits the influence of powerful interest groups.[14] Recently, Professor Sunstein has also established that CBA helps decision-makers overcome a number of cognitive failures in the decision-making process.[15] All of these scholars have reached the same conclusion: the normative case for CBA is overpowering.[16]

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8. Safe Drinking Water Act, 42 U.S.C. § 300g-1(b)(3) (2000); Toxic Substances Control Act, 15 U.S.C. 2605(a) (2000), Also notable, the promulgation of effluent discharge limitations under the Clean Water Act involved a complex series of cost-benefit analyses with increasingly more stringent outcomes phased in over time. *See* 33 U.S.C. §§ 1311-1314 (1994). For a list of all statutes requiring cost-benefit analysis, see Edward R. Morrison, Comment, *Judicial Review of Discount Rates Used in Regulatory Cost-Benefit Analysis*, 65 U. CHI. L. REV. 1333 (1998).

9. *See* Cass R. Sunstein, *Cost-Benefit Default Principles*, 99 MICH L. REV. 1651, 1654 (2001).

10. *See, e.g.*, SUNSTEIN, RISK *AND* REASON, *supra* note 2; SUNSTEIN, THE COST BENEFIT STATE, *supra* note 2.

11. Posner, *Cost-Benefit Analysis*, *supra* note 2.

12. BREYER, *supra* note 2.

13. *See, e.g.*, W. KIP VISCUSI, FATAL TRADEOFFS: PUBLIC & PRIVATE RESPONSIBILITIES FOR RISK (1992); W. Kip Viscusi, *Risk Equity*, 29 J. LEGAL STUD. 843, 855 (2000).

14. SUNSTEIN, THE COST BENEFIT STATE, *supra* note 2, at 27-28.

15. *Id.*, at 25-26; Sunstein, *Cognition*, *supra* note 2 at 1059-60.

16. *See* Sunstein *supra* note 9, at 1655 (declaring victory for the proponents of cost-benefit analysis); Douglas A. Kysar, *It Might Have Been: Risk, Precaution, and Opportunity Costs*, 22 J. LAND USE & ENVTL. L. (forthcoming 2006) (unpublished manuscript on file with author) [hereinafter Kysar, It Might Have Been] (stating that Posner, Breyer, and Sunstein "have come to the conclusion that the normative case in favor of CBA is simply overpowering"). For these scholars, the debate about CBA's superiority is firmly settled – all that remains is to figure out how to implement the system with maximum efficiency and fairness. *See also* SUNSTEIN, RISK *AND* REASON, *supra* note 2, at 5-6 (arguing that the "'first generation' debate about whether to base regulatory choices on cost-benefit analysis at

A glance at the most recent literature, however, indicates that any victory celebrations are premature. A new generation of scholars, working primarily through the lens of environmental law, is casting fresh doubts on the basic desirability of CBA as a policy-making tool.[17] Perhaps the most common objection to CBA is its insistence on monetizing the value of non-market goods such as human life and clean air.[18] How much, after all, is the value of a pretty view? Opponents of CBA also argue that the procedure lacks transparency, fails to account for intergenerational equity, and undermines democracy.[19] In short, these scholars believe that CBA's conceptual and practical limitations render it an inappropriate framework for policy analysis and agency decision-making.

This Note is a small attempt to bridge the growing divide that has opened between the supporters and opponents of CBA. In the heated debate over the appropriateness of quantitative decision-making, only a handful of scholars have attempted to find links between the focused rationality of CBA and the more holistic goals of the environmental camp – and their attempts have been roundly criticized for their narrow focus, lack of faith in empirical analysis, and overconfidence in the deliberative process.[20]

Despite such criticism, the goal of ending the stalemate between environmental thinkers and proponents of cost-benefit analysis remains necessary and admirable. Lasting and effective policy will

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all . . . is now ending, with a substantial victory for the proponents of cost-benefit analysis").

17. *See, e.g.*, ACKERMAN & HEINZERLING, PRICELESS, *supra* note 2; SIDNEY A. SHAPIRO & ROBERT L. GLICKŞMAN, RISK REGULATION AT RISK: RESTORING A PRAGMATIC APPROACH (2003); David M. Dreisen, *The Societal Cost of Environmental Regulation: Beyond Administrative Cost Benefit Analysis*, 24 ECOLOGY L. Q. 545 (1997); Lisa Heinzerling, *Regulatory Costs of Mythic Proportions*, 107 YALE L. J. 1981 (1998); Kysar, *Climate Change*, *supra* note 2; Thomas O. McGarity, *The Goals of Environmental Legislation*, 31 B.C. ENVTL. AFF. L. REV. 529 (2004); Thomas O. McGarity, *Professor Sunstein's Fuzzy Math*, 90 GEO L. J. 2341 (2002); Amy Sinden, *Cass Sunstein's Cost-Benefit Lite: Economics for Liberals*, 29 COLUM. J. ENVTL. L. 191 (2004); Kysar, It Might Have Been, *supra* note 16.

18. *See, e.g.*, ACKERMAN & HEINZERLING, PRICELESS, *supra* note 2, at 61-89 (arguing that the government's valuation of human life is riddled with inconsistencies and bad science).

19. *See, e.g.*, Sinden, *In Defense of Absolutes; supra* note 2, at 1423-30 (2005) (providing a brief overview of the traditional critiques of cost-benefit analysis).

20. *See, e.g.*, Richard A. Epstein, *Too Pragmatic by Half*, 109 YALE L.J. 1639 (2000) (book review).

only emerge when both diehard economists and militant conservationists agree upon a framework for making decisions about the natural world. To that end, this Note attempts to present a new perspective on CBA that satisfies both the "bean-counters" and the "tree-huggers." Unlike Farber and the other eco-pragmatists, I do not call for a watered-down form of quantitative decision-making that takes qualitative factors into account. Instead, this Note takes a different course. I argue that the traditional, unthinking cost-benefit process is largely compatible with the main tenets of the environmental movement. Used correctly, cost-benefit analysis not only promotes the practical goals of environmental activists but also bolsters the values that underlie the entire progressive agenda. I contend that CBA has the power to 1) promote thoughtful deliberation, 2) protect the dignity of those in contested environmental debates and, 3) improve the standing of environmental groups in the eyes of the public. Part I of this Note will provide a brief overview of the history and methodology of CBA. Part II will explore the traditional defenses of cost-benefit analysis. Part III will then outline current thinking on CBA's shortcomings. Finally, Part IV, paying particular attention to the conflict over the spotted owl, will examine a few significant ways in which critics of CBA have understated its normative merit.

II. HISTORY AND METHODOLOGY

People have been thinking about cost-benefit analysis for over seventy years – certainly long enough to have outlined its main features. But in discussing CBA, scholars have often disregarded some things and confused others. The aim of the following sections is to present a comprehensive, if brief, survey of the history and major arguments for and against cost-benefit analysis, trying to highlight arguments that have been overlooked and to distinguish between those functions that have been confused.

The basic principles of cost-benefit analysis first entered American legal thinking in the beginning of the nineteenth century.[21] In early

21. *See* MORTON J. HOROWITZ, THE TRANSFORMATION OF AMERICAN LAW 1870-1960: THE CRISIS OF LEGAL ORTHODOXY 57 (1992) (showing that the emergence of industrialization coincided with the triumph of negligence principles over strict liability). For a detailed history of the rise of cost-benefit analysis, see Adler

nuisance cases judges employed a rudimentary form of CBA – often weighing the social benefits of an industrial polluter against the costs imposed on neighbors. [22] Despite these early attempts at balancing, the notion of scientifically quantifying all costs and benefits remained undeveloped until the 1930s, when the Army Corp of Engineers began using CBA to evaluate flood control projects.[23] Despite the Corp's best efforts, cost-benefit analysis suffered from an inability to fully weigh all of the pros and cons of a project. Most importantly, the army officers who initially utilized CBA had no procedure for monetizing the cost of human life, the value of recreation, or any other commodity that was considered intangible.[24]

In the 1950s and 1960s, however, economists began to devise a theoretical foundation for assessing the dollar value of previously unquantifiable goods. One innovation, "hedonic pricing," attempts to infer the value of non-tradable items by examining otherwise observable market behavior.[25] An economist, for example, might cal-

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& Posner, *supra* note 2, at 167-76; Sinden, *In Defense of Absolutes, supra* note 2, at 1413-23.

22. In one example, the Tennessee Supreme Court refused to issue an injunction against a copper smelting plant emitting noxious fumes because the value of the factory far outweighed the value of the neighboring land. *See* Madison v. Ducktown Sulphur, Copper & Iron Co., 83 S.W. 658 (Tenn. 1904). This rough balancing of collective benefits rejected common law rules that favored the victims of pollution over industrial aggressors.

23. The Flood Control Act of 1936 was the first piece of legislation to mandate cost-benefit analysis. The act stated that federal projects should be done only when "the benefits to whomsoever they may accrue are in excess of the estimated costs." 33 U.S.C. § 710(a) (1976). In *American Textile Manufacturers Institute v. Donovan*, 452 U.S. 490, 510 (1981), the United States Supreme Court ruled that the statute's language demonstrated Congress intended to require a cost-benefit analysis.

24. *See, e.g.*, Namekagon Hydro Co., 12 F.P.C. 203, 206 (1953) (stating that "[T]he [Federal Power] Commission realizes that in many cases where unique and most special types of recreation are encountered a dollar evaluation is inadequate as the public interest must be considered and it cannot be evaluated adequately only in dollars and cents.").

25. For an example of hedonic pricing in action, see A. Mitchell Polinsky & Daniel Rubinfeld, *Property Values and the Benefits of Environmental Improvements: Theory and Management*, *in* PUBLIC ECONOMICS AND THE QUALITY OF LIFE 154-80 (Lowdon Wingo & Alan Evans, eds., 1977); W. Michael Hanemann, *Valuing the Environment through Contingent Valuation*, 8 J. ECON. PERSP. 19, 21-26 (1994); Robert W. Hahn & John A. Hird, *The Costs and Benefits of Regulation: Review and Synthesis*, 8 YALE J. ON REG. 233, 241-43 (1991); Dennis M. King & Marisa Mazzotta, *Dollar-based Ecosystem Valuation Methods*, ECOSYSTEM

culate the value of clean air by comparing the price of a house in smog-filled region with the price of an identical home in a pristine area.

Academics also devised "contingent valuation theory," a survey-based technique for inferring the dollar value of seemingly inalienable goods.[26] Unlike hedonic pricing, the contingent valuation method works directly – researchers ask respondents how much they would be willing to pay for specific non-market items.[27] One prominent "willingness to pay" survey discovered that the average American household would give $285 dollars to save the bald eagle from extinction.[28] It is important to emphasize that contingent valuation theory is based on what people say they would do, as opposed to what people actually do; this imbues the process with great flexibility, but also opens its methodology to criticism.[29]

Armed with these new tools, economists argued they could measure *all* of the costs and benefits of a proposed policy, not just the tangible or market-oriented goods. For its most ardent supporters, cost-benefit analysis promised to employ rational, objective, and scientific methods to resolve the country's most controversial politi-

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VALUATION, *available at* http://www.ecosystemvaluation.org/hedonic_pricing.htm (last visited July 17, 2006).

26. Contingent valuation surveys were first proposed by S.V. Ciriacy-Wantrup in 1947. *See* S.V. Ciriacy-Wantrup, *Capital Returns from Soil Conservation Practices*, 29 J. FARM ECON. 1181 (1947). Later Ciriacy-Wantrup analyzed the problems of contingent valuation more extensively. *See* S.V. CIRIACY-WANTRUP, RESOURCE CONSERVATION: ECONOMICS AND POLICIES (1952).

27. The Office of Management and Budget (OMB) Circular A-4 contains a long list of principles governing the design, implementation, and evaluation of a contingent valuation study. OFFICE OF MGMT. & BUDGET, CIRCULAR A-4, REGULATORY ANALYSIS (2003). For a general critique see John M. Heyde, Comment, *Is Contingent Valuation Worth the Trouble?*, 62 U. CHI. L. REV. 331 (1995).

28. John B. Loomis & Douglas S. White, *Economic Benefits of Rare and Endangered Species: Summary and Meta-analysis*, 18 ECOLOGICAL ECON. 197, 199 tbl.1 (1996) (prices converted into 2005 dollars by author).

29. For a thorough discussion of the history, application, and theoretical problems with contingent valuation, see Robert Cameron Mitchell & Richard T. Carson, USING SURVEYS TO VALUE PUBLIC GOODS: THE CONTINGENT VALUATION METHOD (1989); Richard C. Bishop & Thomas A. Heberlein, *The Contingent Valuation Method*, *in* ECONOMIC VALUATION OF NATURAL RESOURCES: ISSUES, THEORY, AND APPLICATIONS 80-104 (Rebecca L. Johnson & Gary V. Johnson eds., 1990).

cal debates.[30] Despite the theoretical breakthroughs, Congress ignored CBA in the 60s and 70s, largely because elected officials were apprehensive about the process's complexity.[31]

The federal government remained skeptical of CBA until the early 1980s, when Ronald Reagan was elected president. Seeking greater efficiency and accountability from his administrative agencies, the President issued executive order 12291, which required the government to prepare a cost-benefit analysis for all major rules.[32] Reagan also enacted initiatives that allowed the executive branch to block projects that threatened to cost much and deliver little.[33] These changes constituted a watershed moment in the history of the American administrative state. With some minor exceptions,[34] every President in the last twenty years has continued to implement the same basic plan.[35] The process is now firmly entrenched in federal decision-making procedures. Indeed, all agencies charged regulating public health, safety, and the environment must conduct a cost-benefit analysis before promulgating a major regulation.[36]

The ascendance of CBA in the workings of both federal and state government has transpired so quickly and so completely that Professor Sunstein declared that America is fast becoming a "CBA

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30. In a modern example, The Risk Assessment and Cost Benefit Act of 1995 indicates that the legislature thinks cost-benefit analysis can produce "scientifically sound, objective, and unbiased" regulations. H.R. 1022, 104th Cong. (1995).

31. *See* Sinden, *Endangered Species*, *supra*, note 2, at 184-85. During the 1970s, the nation was also in the midst of an environmental law revolution that favored absolutist statutes to combat the country's dramatic pollution problems. Ideologically, the political culture of the 1970s was at odds with CBA's utilitarian ethos. *See* ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW SCIENCE AND POLICY 363-64 (4th ed. 2003) ("[T]he climate in Washington in the 1970s was relatively inhospitable to efforts to apply quantitative methods to regulatory issues involving health and safety, especially when those efforts were ultimately directed toward use in a cost-benefit or risk-benefit analysis."); R. Shep Melnick, *The Politics of Benefit-Cost Analysis*, *in* VALUING HEALTH RISKS, COSTS, AND BENEFITS FOR ENVIRONMENTAL DECISION MAKING 23 (P. Brett Hammond & Rob Coppock eds., 1990).

32. *See* Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (Feb. 17, 1981).

33. *Id.*

34. Clinton replaced executive order 12,291 with executive order 12,886, which required similar regulatory analysis but mandated that agencies consider equity and distributive impacts. *See* Exec. Order No. 12,886, 58 Fed. Reg. 68,709 (Dec. 28, 1993).

35. *See* Exec. Order No. 12,866, 3 C.F.R. 638 (1994), reprinted in 5 U.S.C. § 601 (2005).

36. *Id.*

state."[37] Yet, as the following sections will demonstrate, the debate over cost-benefit analysis remains far from settled. Both the advocates and detractors of CBA can point to numerous, well-reasoned defenses of their positions. Unfortunately for those seeking compromise, the scholars on both sides of the conversation seem far too willing to dismiss the strength of their opponents' arguments. In an effort to find middle ground, this Note now attempts to sift though the arguments currently illuminating the debate.

III. THE TRADITIONAL DEFENSES OF COST-BENEFIT ANALYSIS

A. Economic Efficiency

CBA is most often justified on conventional economic grounds as a method of reducing inefficiency.[38] In a world of scarcity, so the argument goes, governments, donors, and policymakers must continually confront the problem of how limited resources can be used to produce the greatest societal benefits. Cost-benefit analysis helps on two fronts. First, by drawing attention to economic considerations, CBA ensures that governments only undertake actions where the benefits outweigh the costs. In this way, the most obviously undesirable programs can be abandoned or modified.[39]

Second, CBA helps decision-makers overcome poor priority setting. In a famous study, economist John Morrall showed that U.S. safety regulations vary enormously in their cost and effectiveness. According to Morrall, seat belt regulations save one life for every $100,000 spent. In contrast, the costs of projects like formaldehyde

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37. *See* SUNSTEIN, THE COST-BENEFIT STATE, *supra* note 2, at ix.

38. *See, e.g.*, W. KIP VISCUSI, FATAL TRADEOFFS: PUBLIC & PRIVATE RESPONSIBILITIES FOR RISK (1992).

39. For example, CBA helped the Occupational Safety and Health Administration (OSHA) identify problems with its methylene chloride regulations, which had projected annual costs of 100 million but only promised to provide 40 million in annual benefits. Robert W. Hahn & Cass R. Sunstein, *A New Executive Order for Improving Federal Regulation? Deeper and Wider Cost-Benefit Analysis*, 150 U. PA. L. REV. 1489, 1490 (2002). For current methylene chloride standards see Methylene Chloride OSHA Standards, *available at* http://www.osha.gov/SLTC/methylenechloride/standards.html (last visited Sept. 8, 2006). The Environmental Protection Agency also scrapped three separate programs to control benzene emissions on the grounds that they achieved too little risk reduction in comparison to their costs. *See* ACKERMAN & HEINZERLING, PRICELESS, *supra* note 2, at 48.

control reach as high as $72,000,000 for every life saved.[40] In a later study, Tammy Tengs and John Graham found the government could save 60,000 lives every year if the federal agencies simply reallocated existing resources to the most cost-effective regulatory programs.[41] Although some scholars forcefully criticize the methodology of the Tengs and Graham study,[42] the underlying argument retains its power; CBA can help policymakers identify the most effective regulations and guide the allocation of resources to programs that generate the most societal good. This priority-setting rationale for CBA is well supported by evidence from EPA records. Cost-benefit analysis has, for example, sparked the rigorous regulation of leaded gasoline,[43] encouraged stricter controls on the amount of lead in public drinking water,[44] and generated tighter regulations on some air pollutants.[45] CBA has also helped produce rules that achieve

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40. *See* John F. Morrall III, *A Review of the Record*, REGULATION, Nov.-Dec. 1986, at 86. In general, Morrall's study demonstrates that safety regulations intended to prevent deaths from accidents are the most cost-effective. These regulations include mandating energy-absorbing steering columns in cars and fire extinguishers on airplanes. The least effective rules are those targeted at hazardous chemical exposure. There has been a substantial amount of follow-up literature on this subject. See, for example, Indur M. Goklany, *Rationing Health Care While Writing Blank Checks for Environmental Hazards*, REGULATION, Summer 1992, *available at* http://www.cato.org/pubs/regulation/regv15n3/reg15n3.html (last verified Sept. 12, 2006); Robert W. Hahn, *Regulatory Reform: What Do the Government's Numbers Tell Us?*, *in* RISKS, COSTS, AND LIVES SAVED: GETTING BETTER RESULTS FROM REGULATION 208 (Robert W. Hahn ed., 1996); Randall Lutter & John F. Morrall III, *Health and Health Analysis: A New Way to Evaluate Health and Safety Regulation*, 8 J. RISK & UNCERTAINTY 43 (1994).

41. *See* Tammy O. Tengs and John D. Graham, *The Opportunity Costs of Haphazard Social Investments in Life-Saving*, *in* RISKS, COSTS AND LIVES SAVED: GETTING BETTER RESULTS FROM REGULATION 167-68 (Robert W. Hahn, ed. 1996); Tammy O. Tengs, John D. Graham, et al., *Five Hundred Life Saving Interventions and Their Cost-Effectiveness*, 15 RISK ANALYSIS 369 (1995).

42. ACKERMAN & HEINZERLING, PRICELESS, *supra* note 2, at 44-53 (arguing that the Tengs and Morrall studies have little merit because they include regulations that were never actually adopted, ignore risks and benefits other than human lives saved, and dismiss long-term risks).

43. *See* ECONOMIC ANALYSES AT EPA: ASSESSING REGULATORY IMPACT 455-56 (Richard Morgenstern ed., 1998). Lead was added to gasoline in the 1920s to reduce engine knock and enable engineers to design cars with higher compression in the cylinders, permitting greater power and efficiency.

44. *Id.*

45. *Id.*

regulatory goals at lower cost.[46] Thus, for economists and others concerned with efficiency, the allure of cost-benefit analysis is obvious; the procedure promises to prevent waste while allocating resources to the programs that save the most lives.

B. Overcoming Cognitive Failures

Although economic arguments dominate the CBA literature, according to Professor Sunstein, CBA is most easily defended on cognitive grounds.[47] Ordinary people, it seems, have tremendous difficulty calculating probabilities and appreciating risks.[48] Proponents of quantitative decision-making argue that CBA helps overcome these mental glitches, enabling government regulators and the public to make more well-informed, reasoned decisions.

The literature from law and psychology journals identifies a handful of cognitive failures that repeatedly mar the decision-making process. For one, people tend to evaluate risks based on easily accessible information – like personal experiences and media coverage – rather than on complete scientific data.[49] This causes many to overestimate the probability of commonly reported dangers, such as shark attacks and airplane crashes. Psychologists also point out that individuals often perceive all of an action's risks while failing to fully grasp the benefits. In this way, "dangers are effectively on-screen, but benefits are off-screen."[50] In situations where all costs and benefits are not fully appreciated, citizens may petition the government for wasteful regulation.[51] This widespread cognitive glitch

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46. *See* SUNSTEIN, RISK AND REASON *supra* note 2, at 27 (showing that analysis of the benefits and costs of asbestos regulation led the EPA to link the phase-down schedules to the costs of asbestos substitutes. Additionally, CBA helped promote the use of economic incentives rather than command and control regulation in the control of CFCs).

47. *See* Sunstein, *Cognition*, *supra* note 2, at 1059.

48. *See generally* Roger G. Noll & James E. Krier, *Some Implications of Cognitive Psychology for Risk Regulation*, 19 J. LEGAL STUD. 747 (1990).

49. *See* Timur Kuran & Cass R. Sunstein, *Availability Cascades and Risk Regulation*, 51 STAN. L. REV. 683 (1999).

50. *See* Sunstein, RISK AND REASON, *supra* note 2, at 40; Ali Siddiq Alhakami & Paul Slovic, *A Psychological Study of the Inverse Relationship between Perceived Risk and Perceived Benefit*, 14 RISK ANALYSIS 1085, 1088 (1994).

51. There are many other common cognitive mistakes. Economists point out that gathering accurate data remains a costly and time-consuming activity. To compensate, people often choose to rely on "facts" conveyed by others they trust. These "information cascades" magnify the spread of rumors and erroneous infor-

greatly influences the way most people think about nuclear power and pesticides. Consider the Alar chemical scare. During the 1980s, framers in Washington routinely sprayed Alar on apples to extend their shelf-life. However, after *60 Minutes* ran a widely seen story linking Alar to increased incidence of pediatric cancer, public outcry forced the EPA to pull the product off the market.[52] Although the claims lacked scientific foundation, the panic caused significant economic harm to the apple growers of Washington State and forced the EPA to waste resources on needless regulation.

To the degree that decision-makers set policy based on second hand information, emotional reactions, mental shortcuts, and incomplete facts, government is likely to both over and under-regulate serious environmental, health, and safety risks.[53] Cost-benefit analysis can be plausibly defended as a corrective to these common mental errors.[54] Perhaps most importantly, CBA presents the public and government regulators with a full-spectrum of accurate information about risks. In this manner, science and statistical analyses replace rumor and sensational media reports as the foundation of decision-making. If panic ensues over a negligible or non-existent risk, accurate cost-benefit analysis can alter public opinion and keep govern-

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mation. *See* Kuran & Sunstein, *supra* note 49; David Hirshleifer, *The Blind Leading the Blind: Social Influence, Fads, and Informational Cascades*, *in* THE NEW ECONOMICS OF HUMAN BEHAVIOR 188 (Mariano Tommasi & Kathyrn Ierulli eds., 1995). Other problems arise because humans have great difficulty understanding the multiple and complex side-effects that regulation can unleash. *See* Sunstein, THE COST-BENEFIT STATE, *supra* note 2, at 27. With respect to pesticides, the international ban on DDT prevented untold environmental harms. However, few regulators anticipated how a ban would affect the spread of malaria in the developing world. *See generally*, David L. Mulliken et al., *DDT: A Persistent Lifesaver*, 19 NAT. RESOURCES & ENV'T 3, (2005). Finally, strong emotional reactions to horrific or traumatic incidences can exacerbate other cognitive failures and lead to even greater distortions in risk perception. *See* W. Kip Viscusi, *Alarmist Decisions with Divergent Risk Information*, 107 ECON. J. 1657, 1657-58 (1997) (showing that "[n]ew information about risks may generate alarmist actions that are not commensurate with the magnitude of the risks"). For a thorough treatment of these ideas see Sunstein, *Cognition*, *supra* note 2, at 1064-73.

52. An estimated 40 million people saw the program. *See* EWG Report, Myth of "Alar Scare" Persists, *available at* http://www.ewg.org/reports/alar/alar.html (last visited Sept. 12, 2006).

53. *See, e.g.*, Cass R. Sunstein, *Probability Neglect: Emotions, Worst Cases, and Law*, 112 YALE L.J. 61, 101 (2002) (arguing that cognitive biases lead courts to over-regulate human-created risks that threaten large numbers of people.

54. For a rich treatment of cognitive defenses of cost-benefit analysis see Sunstein, *Cognition*, *supra* note 2.

ment regulatory bodies from overreacting. Likewise, if serious but unfamiliar risks are being ignored, CBA can focus attention and resources on the overlooked problems. CBA's tabulation of all pros and cons also forces regulators to notice hidden benefits and examine both the immediate and distant consequences of their decisions.

To summarize, cost-benefit analysis acts as an effective tool for counteracting the predictable cognitive failures that tarnish humans' ability to assess risk. Even observers who remain skeptical of CBA's ability to achieve economic efficiency should appreciate its potential to improve the overall quality of risk regulation and policymaking.

C. Preserving Democratic Institutions

Cost-benefit analysis also has a role to play in protecting the democratic process. The academic literature shows that pressure groups and lobbyists often use their wealth and influence to distort government regulation.[55] This has been a particular problem in the context of environmental and health law. For example, in a massive effort to dissuade the government from imposing regulations on the lead industry, lobbyists repeatedly downplayed the serious health risks of lead paint and gasoline.[56] The producers of tobacco products and CFCs also attempted to manipulate data and persuade agency decision makers to drop needed safety regulations.[57] According to some observers, public policy unduly influenced by such special interests poses the single "greatest danger to democracy."[58]

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55. For a classic paper explaining how lobbyists from regulated industries prevented government from imposing taxes to protect the environment, see James M. Buchanan & Gordon Tullock, *Polluters' Profits and Political Response: Direct Controls Versus Taxes*, 65 AM. ECON. REV. 139 (1975).

56. GERALD MARKOWITZ & DAVID ROSNER, DECEIT AND DENIAL: THE DEADLY POLITICS OF INDUSTRIAL POLLUTION 108-38 (2002) (showing that the lead industry covered up a large body of information about the adverse health effects of lead).

57. *See* MARTHA A. DERTHICK, UP IN SMOKE: FROM LEGISLATION TO LITIGATION IN TOBACCO POLITICS (2002) (explaining how tobacco industry covered up health risks); SHARON ROAN, OZONE CRISIS 125-41 (1989) (arguing that from 1974 to 1985, studies of ozone depletion caused by CFCs were refuted by industry researchers and largely ignored by politicians).

58. *See* Katrina Vanden Heuvel, *Sunshine is the Best Disinfectant*, THE NATION, *available at* http://www.thenation.com/blogs/edcut?pid=2250 (last viewed Sept. 12, 2006).

Proponents of CBA argue that quantitative decision-making offers an antidote to the corruption. The requirement that agencies publicly disclose all costs and benefits of a proposed regulation reveals when government has enacted a policy that clearly favors industry over the common good. Put simply, sunshine is the best disinfectant for the plague of agency quid pro quos. In one example, cost-benefit analysis helped expose the massive subsidies the government paid to Western farmers through federal dam-building projects.[59] Thus, at the very least, CBA should be supported as a technique for reducing the influence of self-interested pressure groups over the political process.

Before moving on, it must be acknowledged that the traditional defenses of cost-benefit analysis – economic efficiency, overcoming cognitive errors, and preserving the integrity of democratic institutions – all depend on the reliable implementation of the quantification process. As Cass Sunstein points out, "there can be no assurance that interest groups will not . . . misuse the process."[60] Nevertheless, cost-benefit analysis has great potential to help neutralize the most harmful pathologies of human decision-making.

IV. THE CASE AGAINST COST-BENEFIT ANALYSIS

Before I attempt to harmonize cost-benefit analysis with the tenets of the progressive movement, it will be useful to set forth the arguments opposed to this analytic approach. A growing body of literature rejects cost-benefit analysis as a valid decision-making tool.[61] Environmental law scholars in particular have argued persuasively against the accuracy, honesty, and fairness of the methodology underlying cost-benefit analysis.[62] Although the arguments directed at CBA are numerous, most objections seem clustered around four main points: 1) CBA inappropriately reduces priceless values and intangible goods into dollars and cents; 2) the complexity and indeterminacy of CBA renders the process meaningless; 3) reliance on

59. *See infra* Part IV.B.3 and accompanying notes.

60. SUNSTEIN, THE COST BENEFIT STATE, *supra* note 2, at 29.

61. *See supra* note 17.

62. *See e.g.*, Kysar, *Climate Change*, *supra* note 2; Thomas O. McGarity, *The Goals of Environmental Legislation*, 31 B.C. ENVTL. AFF. L. REV. 529 (2004); Amy Sinden, *Cass Sunstein's Cost-Benefit Lite: Economics for Liberals*, 29 COLUM. J. ENVTL. L. 191 (2004).

willingness-to-pay surveys ignores questions of fairness, and; 4) the use of discounting trivializes future harms and overlooks the duty society owes to future generations. [63]

A. The Problem of Incommensurability

Recall that proper cost-benefit analysis entails comparing all of the costs of a proposed action against all of its benefits. Since there are no natural prices for goods like environmental health or human life, economists approximate the value of non-market goods through hedonic pricing and the contingent valuation method.[64] For example, a rough consensus has emerged in the CBA literature that sets the value of a human life at approximately six million dollars.[65]

Many critics argue that, as a matter of principle, attempting such valuations is wrong. These opponents of CBA contend that the process ignores underlying philosophical questions about the propriety of converting certain values into dollar figures. Most ethical and religious systems, for example, maintain that every life is sacred and its value immeasurable. Moreover, people often wince at the thought of attaching dollar figures to their friendships and intimate relationships.[66] Similarly, some environmentalists argue that it is morally wrong to think of wilderness as a good that can be quanti-

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63. *See, e.g.*, Frank Ackerman & Lisa Heinzerling, *Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection*, 150 U. PA. L. REV. 1553, 1563 (2002).

64. *See supra* Part I. For administrative agencies, translating risks to human life into dollar figures is especially important, as benefits of government regulation often boil down to the number of lives saved.

65. *See* Matthew D. Adler and Eric A. Posner, *Implementing Cost-Benefit Analysis When Preferences Are Distorted*, 29 J. LEGAL STUD. 1, 146 (2000) (showing that between 1997 and 1999, all federal agencies adopted monetary values for human life between 5.6 million and 6.8 million, translated into 2005 dollars); *see also* W. KIP VISCUSI, FATAL TRADEOFFS: PUBLIC AND PRIVATE RESPONSIBILITIES FOR RISK (1992); W. KIP VISCUSI, RATIONAL RISK POLICY (1998). However, Viscusi's literature reviews show that scholars have placed the value of human life anywhere from $900,000 to $21,000,000. It is also vital to note that economists are not actually setting the value of human life at seven million dollars. More technically, the 7 million dollar figure is an aggregation of the value of small risks of death. For example, if people are willing to pay $8.20 to avoid a one in a million chance of death then the 'value of a statistical life' is $8.2 million.

66. Cass R. Sunstein, *Incommensurability and Valuation in Law*, 92 MICH. L. REV. 779, 785-86 (1994).

fied.[67] Although claims that certain values are "priceless" raise problems of their own,[68] the larger point remains: cost-benefit analysis fails to capture the varied ways that people value their lives, their relationships, and the natural environment.

B. The Problem of Indeterminacy

The second major objection to cost-benefit analysis is that the process remains hopelessly indeterminate and riddled with intractable valuation problems. Consider two examples. Regulators have made little progress determining the danger of aflatoxin, a common chemical found in peanuts. As Justice Breyer pointed out, two scientifically defensible studies showed risk levels "differing by a factor of 40,000."[69] The story of arsenic regulation should also undermine the confidence regulators place in cost-benefit analysis. The CBA on arsenic reduction in drinking water, although well-funded and administered by able government scientists, was riddled with sloppy, almost slipshod methodology. For example, EPA employees, unable to acquire information about non-lethal bladder cancer, substituted data from a study on bronchitis – a disease with wholly different symptoms.[70] Government studies also failed to estimate the benefits of arsenic regulation with any precision: separate tallies put the number at anywhere from zero to 3.25 billion dollars.[71] The health benefits of the regulation were so uncertain one commentator suggested "an adroit lawyer, on either side, might mount apparently reasonable challenges to any EPA decision about whether to regulate arsenic in drinking water."[72]

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67. *See, e.g.*, AL GORE, JR., EARTH IN THE BALANCE: ECOLOGY AND THE HUMAN SPIRIT 192-93 (1992).

68. Ackerman and Heinzerling ask, "if life has infinite value, should all available resources be spent on risk-reducing or life saving measures?" ACKERMAN & HEINZERLING, PRICELESS, *supra* note 2, at 67.

69. *See* BREYER *supra* note 2, at 45.

70. *See* National Primary Drinking Water Regulations; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring, 66 Fed. Reg. 6976, 7012 (Jan. 22, 2001).

71. *See* SUNSTEIN, RISK *AND* REASON, *supra* note 2, at 177.

72. *Id.* at 154. Other objections to the study are more theoretical. Economists have shown that the results of willingness to pay surveys, the very foundation of most CBA analysis, fluctuate significantly depending on how the questions are phrased. People generally demand a higher price for an entitlement they already possess than they would pay for the same good if they are told they need to acquire it. This principle is referred to as the "offer/asking gap." *See* Russell Korob-

These shortcomings raise a number of questions about the viability of cost-benefit analysis. The repeated examples of imprecision and uncertainty in the arsenic study demonstrate how CBA often fails to accurately measure all relevant costs and benefits. Any procedure that allows so many approximations and interpretations of the "facts" is certainly not the objective and exact decision-making procedure that its supporters claim. The CBA process also obscures the uncertainties, conflicting evidence, and judgment calls that routinely occur during calculations.[73] This, critics argue, gives CBA an undeserved appearance of certitude and a gloss of scientific objectivity that regulators can use to justify decisions that have already been made.[74]

C. The Problem of Fairness

Cost-benefit analysis' reliance on willingness-to-pay-surveys also opens it to criticism on equity grounds. The argument states, in a nutshell, that because a person's willingness to pay is dependent on their income, cost-benefit analysis generally overvalues the preferences of the rich relative to the poor.[75] Imagine, for example, a country with four citizens – one rich and three poor – trying to decide whether to build a smog-producing factory. The rich citizen is willing to pay $2000 to construct the plant. The three poor citizens *strenuously* object to the proposed increase in pollution but can only afford to pay $200 to preserve the environment. Under strict cost-benefit analysis, the factory project would go forward. Thus, critics of quantitative decision-making argue that the CBA approach as-

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kin, *The Endowment Effect and Legal Analysis*, 97 NW. U. L. REV. 1227, 1227-30 (2003). Duncan Kennedy, *Cost-Benefit Analysis of Entitlement Problems: A Critique*, 33 STAN. L. REV. 387, 401 (1981); Russell Korobkin, Note, *Policymaking and the Offer/Asking Price Gap: Toward a Theory of Efficient Entitlement Allocation*, 46 STAN. L. REV. 663 (1994).

73. *See* Sinden, *supra* note 19, at 241 (arguing that CBA is "likely to create a false impression of accuracy that obscures the real issues and value choices behind regulatory decisions").

74. *See* Sinden, *In Defense of Absolutes*, *supra* note 2, at 1454-57.

75. *See* RICHARD POSNER, ECONOMIC ANALYSIS OF LAW 13 (6th ed. 2003); Robert H. Frank, *Why is Cost-Benefit Analysis So Controversial?*, *in* COST-BENEFIT ANALYSIS: LEGAL, ECONOMIC, AND PHILOSOPHICAL PERSPECTIVES 77, 81 (Matthew D. Adler & Eric A. Posner eds., 2001).

signs excessively large weight to the preferences of wealthy persons.[76]

D. The Problem of Discounting

Perhaps the true Achilles' Heel of cost-benefit analysis lies in its tabulation of gains and losses that occur in the future. How exactly should regulators compare benefits that accrue in the future with benefits that materialize immediately? In financial markets, economists link present and future through the use of a "discount rate." The basic principle is that a dollar in hand is worth more than a dollar earned tomorrow. The discount rate, which considers inflation and the investment value of money, helps put all dollars on the same temporal plane for purposes of judging regulations. Thus, applying a 7% discount rate, a gift of $100 a year from now is equivalent to a gift of $93.46 today.

Although economists agree that a discount rate should be applied to market goods, the procedure becomes controversial when scholars apply it to the monetary value of human life.[77] Is it ethical or even possible to correctly discount the value of human lives? Who, after all, can decide if it is better to save one life now or two lives a year from now? Most proponents of CBA think that the monetary value of human life should be discounted like any other investment.[78] If we accept the government studies that peg the value of a human life around six million dollars, then the calculations become relatively simple. If you had to choose between spending $50 million to save ten people today or using the money to save fifteen people from the next generation, you should always choose to save the lives today. Preserving the ten lives yields an immediate benefit of $60 million.[79] In contrast, saving fifteen lives from the next generation produces a

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76. However, many scholars would argue that equity considerations are best remedied through tax and redistribution systems. *See* Frank, *supra* note 75, at 81.

77. *See* Richard L. Revesz, *Environmental Regulation, Cost-Benefit Analysis, and the Discounting of Human Lives*, 99 COLUM. L. REV. 941, 998 (1999) (describing the ethical problems inherent in discounting across generations).

78. *See* John Donahue, *Why We Should Discount the Views of Those Who Discount Discounting*, 108 YALE L.J. 1901, 1904 (1999) (noting that "the process of discounting the future costs and benefits to current dollars has become standard").

79. Calculated by multiplying ten lives by the standard value of six million per life.

benefit of only twenty-three million dollars.[80] The theory becomes even more contentious when pushed to extremes. Again applying a 7% discount rate, CBA would encourage officials to choose a program that saves one life today over a program that would save 600 million lives in 300 years.

Predictably, these results rankle many critics. Some oppose discounting human lives because of the widely held religious and philosophical belief that all human lives are equivalent. As Ackerman and Heinzerling state so eloquently, "Human lives do not come in fractions; they do not compound like bank accounts. No amount of statistical manipulation can change these facts."[81] Taking a slightly different approach, other opponents of CBA argue that discounting both trivializes future harms and ignores the moral duty that we have to future generations.[82] In their eyes, the discounting process sacrifices people and resources without the consent of the affected parties.[83] All of these scholars make one basic point: The problem of how resources should be distributed across time remains fundamentally an ethical question, one that cannot be answered by calculations, considerations of efficiency, or promised wealth transfers to future generations.

E. Other Problems

In the most recent literature on risk regulation, scholars have raised even more questions about the validity of the CBA enterprise. For some, cost-benefit analysis should be jettisoned because of general squeamishness toward consequentialist, utilitarian ethics.[84] Others object to CBA's lack of "practical intelligence."[85] In short, the approach suffers because it does not promote intelligent deliberation

80. We begin again by multiplying the fifteen lives times the standard six million per life. This equals ninety million dollars. However, we must take into account that the benefit occurs in the future. Assuming that twenty years pass between generations, the 7% discount rate converts the future benefit of ninety million into twenty-three million in today's dollars.

81. See ACKERMAN & HEINZERLING, PRICELESS *supra* note 2, at 197.

82. *See, e.g.*, Kysar, *Climate Change*, *supra* note 2, at 585 ("[T]he question of how natural resources should be distributed across time remains fundamentally an ethical question").

83. *Id.* at 580.

84. *See* Frank *supra* note 75, at 79.

85. *See* Henry S. Richardson, *The Stupidity of the Cost-Benefit Standard*, *in* COST-BENEFIT ANALYSIS: LEGAL, ECONOMIC, AND PHILOSOPHICAL PERSPECTIVES 135, 154-56 (Matthew D. Adler & Eric A. Posner eds., 2001).

and makes no allowance for parties to reformulate their goals as the process goes along.[86] Those more technically inclined charge that CBA has no mechanism to handle irreducible uncertainty and system interdependence.[87] Finally, CBA continues to draw fire for its moral failings. Arguably, the theme that unites much of the anti-CBA literature is the notion that quantitative decision-making robs people of their identity as moral agents. As Douglas Kysar puts it, "the danger of the optimization rubric is that it invites a slippery slope of instrumentalist decision-making in which moral boundaries are not only crossed routinely, but crossed without regret. Worse still the rubric seems to invite . . . [a] universe of homogenized interests and influences in which the very distinctiveness of human identity and action is slowly, but irretrievably erased."[88]

V. VALUING COST-BENEFIT ANALYSIS

Given the numerous, well-reasoned objections to CBA, traditional defenses of the procedure begin to feel thin. The critics of quantitative decision-making have made a strong case that CBA's practical and theoretical shortcomings overwhelm any increase in efficiency the approach may yield. In light of this record, is it desirable, or even possible, to resurrect CBA? More importantly for this Note, is it possible to muster a defense of CBA that accords with the goals and tenets of the environmental movement? The answer, I believe, is both yes, and no. Scholars who find monetizing non-market goods morally indefensible are unlikely to be swayed by any re-evaluation of the procedure's appeal. However, I argue that CBA is fully compatible with the values of those environmentalists who seek practical, no-nonsense approaches to improving the preservation, restoration, and enhancement of the natural environment.

First, I maintain that the case for CBA is supported by the weakness of competing paradigms. Academics have suggested four principles to replace CBA as the guiding light of agency decision-

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86. *Id.*

87. Kysar, It Might Have Been, *supra* note 16, at 29-30. For more on uncertainty in environmental regulations, *see* CHRISTOPHER STONE, THE GNAT IS OLDER THAN MAN: GLOBAL ENVIRONMENT AND HUMAN AGENDA 13-16, 20-24 (1993); Daniel A. Farber, *Probabilities Behaving Badly: Complexity Theory and Environmental Uncertainty*, 37 U.C. DAVIS L. REV. 145 (2003).

88. Kysar, It Might Have Been, *supra* note 16, at 52.

making: the precautionary principle, absolute proscriptions, sustainable development, and cost-benefit shortcuts. None of these alternatives provides a coherent, practical approach to the regulation of risk. In the following subsection, I will also argue that CBA is undertheorized. The current literature on risk regulation has overlooked three important functions of cost-benefit analysis that I hope will strengthen the approach's normative and practical appeal. At its best, cost-benefit analysis can 1) promote democratic deliberation, 2) protect the dignity of the losers in contested environmental debates, and 3) improve the standing of environmental groups in the eyes of the public. In these respects, this Note hopes to fashion a new outlook on cost-benefit analysis. The CBA process, I argue, advances the environmental movement's practical goals without violating its moral underpinnings.

A. The Alternatives

Cost-benefit analysis has achieved a level of credibility and acceptance that would have been unimaginable during the heyday of 1970s environmentalism. In light of the numerous, complex criticisms, why has such a flawed decision-making tool gained such universal acceptance? In large part, the case for CBA is bolstered by measuring it against the weakness of alternative approaches to regulating the environment.

1. The Precautionary Principle

In both academic literature and international law, the precautionary principle currently provides the most serious challenge to the supremacy of cost-benefit analysis.[89] In its strongest form, the precau-

89. For a broad discussion of the precautionary principle, see INTERPRETING THE PRECAUTIONARY PRINCIPLE (Timothy O'Riordan & James Cameron eds., 1994); PROTECTING PUBLIC HEALTH & THE ENVIRONMENT: IMPLEMENTING THE PRECAUTIONARY PRINCIPLE (Carolyn Raffensperger & Joel A. Tickner eds., 1999). For examples of the precautionary principle in international law, *see* Rio Declaration on Environment and Development, U.N. Conf. on Environment and Development, Annex I, princ. 15, U.N. Doc. A/ Conf.151/5/Rev.1 (1992) (stating that "in order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation"); Treaty on European Union, Official Journal C 191, 29 July 1992, at art. 130r (stating that the environmental policy of the European community "shall be

tionary principle requires the regulation of any activity that poses an unknown risk to human health – even if the activity is unlikely to produce significant harm.[90] Put simply, until the consequences of an action are well understood, it's better to be safe than sorry. The principle has become so influential in international law circles that any nation caught disregarding the principle risks suffering international censure.[91] Indeed, even the most ardent supporters of CBA recognize that there is "some important truth" in the precautionary principle.[92] Its wisdom lies in the idea that regulators should focus their attention on complex and uncertain risks, like the perils of nanotechnology or genetically modified foods.

Despite its ability to draw attention to unknown risks, the precautionary principle draws heavy criticism from observers. Many object to the principle's inherent ambiguity. One recent study identified fourteen different formulations of the principle in treaties and international declarations.[93] What exactly does the precautionary principle mean? Do scientists need to show that their inventions are "definitely" safe before introducing them to the natural environment, or is it enough to show "probable" safety? Who determines when benchmarks have been met? These ambiguities give regulators no clear framework for making decisions and limit the usefulness of the precautionary principle as a guiding principle.

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based on the precautionary principle); World Charter for Nature, G.A. Res. 7, U.N. GAOR, 37th Sess., Annex, Agenda Item 21, at 5, U.N. Doc. A/RES/37/7 (1982) (giving the principle its first international recognition by suggesting that when "potential adverse effects are not fully understood, the activities should not proceed").

90. Cass R. Sunstein, *Beyond the Precautionary Principle*, 151 U. PA. L. REV. 1003, 1003 (2003). For a well-known formulation of the principle, see the Wingspread Declaration. The Wingspread Declaration was published by a group of environmentalists, government officials, scientists, and labor leaders following a meeting in Racine, Wisconsin to discuss the precautionary principle. The declaration states: "[w]hen an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause-and-effect relationships are not fully established." *See* Global Development Research Center, Wingspread Statement on the Precautionary Principle, *available at* http://www.gdrc.org/u-gov/precaution-3.html.

91. Sunstein, *Beyond the Precautionary Principle*, *supra* note 90, at 1006 n.10.

92. SUNSTEIN, THE COST-BENEFIT STATE, *supra* note 2, at 23.

93. Kenneth R. Foster et al., *Science and the Precautionary Principle*, SCIENCE 979-981 (May 2000).

The more serious criticism of the precautionary principle is that fails to account for opportunity costs and health-health trade-offs.[94] To illustrate, proponents of both the precautionary principle and cost-benefit analysis worry about the danger genetically modified foods pose to the environment. However, the two systems of risk regulation take very different approaches toward the growing "Frankenfoods" industry. The precautionary principle suggests governments should ban modified foods until experts demonstrate there will be no adverse effects on human health or the natural world. On one level, it is hard to disagree with such a reasonable sounding idea. Advocates of cost-benefit analysis, however, criticize the precautionary principle for failing to acknowledge the tradeoffs of such a decision. Specifically, that introducing genetically modified foods into the environment creates a small probability of very serious harm, the failure to develop low-cost, vitamin-enriched Frankfoods will certainly lead to thousands, perhaps millions, of unneeded starvation deaths.[95] There are, in effect, dangers on both sides of the equation and only cost-benefit analysis offers a principled approach for deciding which course of action is more appropriate.

2. Absolute Proscriptions

Other critics of cost-benefit analysis think that the most effective way to preserve the environment is to impose unconditional bans on the most harmful industrial pollutants.[96] During the height of the 1970s, environmentalists achieved great success with such absolutist statutes – the abolition of leaded gasoline is perhaps the best example.[97] What advocates of these laws fail to realize is that, at base, the case for absolute measures makes little sense unless they pass some form of cost-benefit analysis. In regards to global warming, it seems foolish to ban the combustion engine and coal-fueled power plants

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94. *See, e.g.*, Jonathan H. Adler, *More Sorry Than Safe: Assessing the Precautionary Principle and the Proposed International Safety Protocol*, 35 TEX. INT'L L.J. 173, 194-97 (2000); Frank B. Cross, *Paradoxical Perils of the Precautionary Principle*, 53 WASH. & LEE L. REV. 851, 859-60 (1996).

95. Sunstein, *supra* note 2, at 1023. For a discussion of objections to genetic modification, see BILL LAMBRECHT, DINNER AT THE NEW GENE CAFÉ (2001).

96. *See* Sinden, *In Defense of Absolutes*, *supra* note 2.

97. Frank Ackerman et al., *Applying Cost Benefit to Past Decisions: Was Environmental Protection Ever a Good Idea?*, 57 ADMIN. L. REV. 155, 164-67 (2005) (describing the process of Congressional regulation of leaded gas).

when the economic, social, and political benefits of burning fossil fuels far outweigh the costs.[98]

3. Sustainable Development

In other circles, the notion of sustainable development has gained credibility as an alternative to CBA's insistence on commodification.[99] Sustainable development is the idea that communities should attempt to achieve efficient use of their natural resources, but also ensure "*equity* in their distribution and *sustainability* in their scale and manner of usage."[100] In other words, the goal of the movement is to encourage "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."[101] Regarding forest management, for example, advocates of sustainable development might argue that humans should not cut more trees than they can plant. Supporters believe that this ideal combines an understanding of the absorptive and regenerative capabilities of the biosphere with a respect for the necessity of economic progress.

However, even dedicated environmentalists recognize that "sustainable development" is an amorphous concept that threatens to become nothing more than an empty slogan.[102] What, exactly, counts as sustainable? Without the use of cost-benefit analysis, how can decision makers determine whether a proposed set of policies is

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98. Similarly, in *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201, 1207 (5th Cir. 1991), the D.C. Circuit invalidated the EPA's total ban on asbestos because the agency rule could not pass a cost-benefit test.

99. The broad goals of sustainable development remain extremely influential in international environmental law, often shaping the contour of debates over climate change, waste disposal and fishery management. Indeed, policy-makers the world over – told they can achieve both growth and robust environmental protection – have seized on the idea. Almost every country has committed, at least in theory, to the principles of sustainable development. See, e.g., John Pezzey, Sustainable Development Concepts: An Economic Analysis 55-62 (World Bank Envt'l Paper No. 2, Report No. 11425, 1992) (surveying differing conceptions of sustainability).

100. Douglas A. Kysar, *Sustainable Development and Private Global Governance*, 83 TEX. L. REV. 2109, 2114-15 (2005).

101. U.N. World Commission on Environment and Development, *Development and International Economic Cooperation: Environment* ["The Brundtland Report"], 54, U.N. Doc. A/42/427 (Aug. 4, 1987).

102. *See, e.g.*, Kysar, *supra* note 100, at 2117 (describing precautionary principle as "amorphous and ill-specified").

more or less sustainable than the status quo? Currently, there is no consensus statement on the meaning of "sustainable development," and no agreement on how to determine which developments are "sustainable."[103] Moreover, proponents of sustainable development often overlook that cost-benefit analysis mandates consideration of the wellbeing of future generations. Thus, at base, it seems sustainable development is little more than a undefined ideal that obscures the difficulty of making hard policy choices in a world of limited resources.

4. Cost-Benefit Shortcuts

The final alternative to strict cost-benefit analysis is a system of regulatory mechanisms that call only for modest, "apples-to-oranges" balancing. These programs are aimed merely at ensuring that costs and benefits are not grossly disproportionate.[104] Under such a regulatory regime, agencies are not entirely bound by bottom-line calculations; instead they may consider both qualitative considerations and distributive impacts in their final decisions.[105] In the environmental arena, for instance, Congress has commonly substituted technology-based pollution control standards in place of strict cost-benefit analysis. In essence, these tech-based standards only consider costs, setting pollution levels at the lowest point economically achievable.[106] Like other alternatives to cost-benefit analysis, short-cut mechanisms suffer from critical limitations. Some observers complain about their inadequacy in addressing the most daunting environmental problems.[107] Others emphasize their inefficiencies; regulations that do not calculate exact costs and benefits often im-

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103. In one example among many: The 1987 report of the World Commission on Environment and Development implies sustainable development means restricting development to those actions that preserve environmental integrity, whereas in the Rio Declaration from the Earth Summit proposes a wholly different approach that balances economic and environmental interests.

104. Robert W. Hahn & Cass R. Sunstein, *A New Executive Order for Improving Federal Regulation? Deeper and Wider Cost-Benefit Analysis*, 7-8 (Chicago – John M. Olin Law & Economics Working Paper No. 150, 2002).

105. *Id.* at 8.

106. *See* Sinden, *Endangered Species*, *supra* note 2, at 133.

107. For example, John Dwyer has argued that the absolute health-based standards for hazardous air pollutants under the Clean Air Act largely failed to alleviate an important health problem, ultimately leading to regulatory paralysis. *See* John P. Dwyer, *The Pathology of Symbolic Legislation*, 17 ECOLOGY L.Q. 233, 250-82 (1990).

pose tougher standards than necessary to maintain desired environmental quality.[108] Shortcut regulatory mechanisms like technology-based standards also do little to spur innovation. Knowing that the costs could increase, an industry regulated by a best·available technology rule has little incentive to research and develop new pollution control methods. Moreover, once the required level of emissions reduction has been achieved, there is no remaining incentive to intensify anti-pollution efforts.[109]

Looking at the full range of possible alternatives to quantitative decision-making, we can begin to understand why cost-benefit analysis continues to grow in influence throughout the administrative state. The indeterminacy and inherent inefficiencies of competing paradigms seem little match for the precise, reasonable-sounding principles that undergird the cost-benefit process. Whatever its numerous shortcomings, it seems that cost-benefit analysis still offers agencies the most coherent method of regulating health, safety, and the environmental risks.

B. Saving CBA: New Practical and Theoretical Perspectives

The case for cost-benefit analysis cannot rest solely on the weakness of its alternatives. However compelling, arguments against the precautionary principle and its brethren do nothing to resolve the practical and philosophical shortcomings of CBA. In order to fully rehabilitate CBA, supporters of quantitative decision-making must address the approach's underlying theoretical problems before regulators can accept the methodology in good faith.

Along these lines, I argue that cost-benefit analysis offers more advantages than previously assumed. While critics of the procedure have constructed a detailed and comprehensive case against CBA, proponents appear less exhaustive in their thinking. In the sections that follow, I will explore how scholars have ignored at least three important functions of cost-benefit analysis that could extend the approach's normative and practical appeal. First, rather than stifling discussion, CBA promotes deliberation and ethical decision making. Second, the approach's economic focus preserves the dignity of

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108. *See e.g.*, Bruce Ackerman & Richard B. Stewart, *Reforming Environmental Law: The Democratic Case for Market Incentives*, 13 COLUM. J. ENVTL. L. 171, 173-175 (1998).

109. Daniel J. Dudek & John Palmisano, *Emissions Trading: Why is This Thoroughbred Hobbled?*, 13 COLUM. J. ENVTL. L. 217, 235(1998).

those who lose contested moral conflicts. Third, the methodology presses citizens to see the inherent value of the natural world and reduces backlash against environmentalists. In short, I argue that the current literature on risk regulation has understated the normative appeal of CBA and overlooked its potential to foster a community-wide environmental ethos. The true value of cost-benefit analysis lies not in its ability to increase economic efficiency but in its ability to promote both moral reasoning and the practical goals of the environmental movement.

1. Reinforcing Deliberation

As we have seen, one of the oft-repeated criticisms lodged against CBA is that is does little to encourage open and honest deliberation.[110] Detractors charge that the process remains inaccessible, fails to ask important moral questions, and produces answers through rote mathematical formulae that are never justified to the public.[111] At first blush these assessments seem convincing; CBA does rely on obscure, amoral analysis done by expert economists. I argue, however, that the critique holds little water.

Indeed, the most overlooked advantage of cost-benefit analysis is that it has the potential to promote deliberation and ethically-grounded reflection about controversial regulatory policies. Both opponents and supporters of the procedure have failed to acknowledge that CBA generates accessible information that the public can use to enter the conversation about complicated regulatory problems. Perhaps even more importantly, CBA can act as an intermediary between adversaries, kindling new discussions when problems seem most intractable. In these respects cost-benefit analysis not only stimulates better, more reasoned discussion but also helps policy-makers confront ethical questions in that manner deserving of our respect.

a. Generating Information

Skeptics of CBA should embrace the process because it enhances the quality and empirical premise of debates over controversial poli-

110. *See generally* ACKERMAN & HEINZERLING, PRICELESS, *supra* note 2; Kysar, It Might Have Been, *supra* note 16.

111. *See generally* ACKERMAN & HEINZERLING, PRICELESS, *supra* note 2; Kysar, It Might Have Been, *supra* note 16.

cies. Advocates of deliberative democracy have shown that any morally grounded decision-making process must put accurate, easily accessible information in the public domain. In the words of Amy Gutman and Dennis Thompson, the "deliberative [process] does not even get started if those to whom it is addressed cannot understand its essential content."[112] Moreover, those who are not exposed to the empirical premise of a dispute "may simply shut down and ignore issues as impossible to resolve."[113] CBA acknowledges and advances these deliberative principles by injecting clear, easily understood information into complex policy debates.

I offer two examples. First, consider the recent clash over the EPA's arsenic standards.[114] In 2001, the Bush Administration withdrew its support for regulations intended to reduce the amount of arsenic in public drinking water.[115] The President's decision rested on two CBA studies that showed strict arsenic rules would produce, at best, negligible net benefits.[116] In the uproar that followed, environmental economists supplied new CBA studies detailing the false assumptions and bad science that plagued the government's cost-benefit analysis.[117] Reports in the news media also galvanized public opinion against the administration's actions, ultimately forcing the President to accept the stricter arsenic standards.[118] Looking back, the widely distributed accounts of costs and benefits laid key facts and basic data into the hands of the media and the public,

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112. AMY GUTMANN & DENNIS THOMPSON, WHY DELIBERATIVE DEMOCRACY? 4 (2004).

113. Alyson C. Flournoy, *In Search of an Environmental Ethic*, 28 COLUM. J. ENVTL. L. 63, 116 (2003).

114. For lengthy discussions of the arsenic story, see ACKERMAN & HEINZERLING, PRICELESS, *supra* note 2, at 91-93, 111-114; SUNSTEIN, RISK *AND* REASON, *supra* note 2, at 153-190.

115. *See* Environmental Protection Agency, 66 Fed. Reg. 16,134 (Mar. 23, 2001) (to be codified at 40 C.F.R. pt. 9, 141, 142).

116. *See* Jason K. Burnett & Robert W. Hahn, EPA's Arsenic Rule: The Benefits of the Standard Do Note Justify the Costs, American Enterprise Institute-Brookings Joint Center for Regulatory Studies (Jan. 2001).

117. For a concise overview of problems in the arsenic studies see, ACKERMAN & HEINZERLING, PRICELESS, *supra* note 2, at 112-14.

118. For a taste of the vitriol in the public reaction, see John J. Fialka, *Arsenic and Wild Space: Green Activists from Across Spectrum Unite Against Bush*, WALL ST. J., Apr. 11, 2001, at A20; Mark Barabak, *Bush Criticized As Fear of Environment Grows*, L.A. TIMES, Apr. 30, 2001, at A1; Erik Olson, *Arsenic Everywhere, and Bush Is Not Helping*, BALT. SUN, May 14, 2001, at 9A.

sparking further discussion of the controversial rules. The initial CBA, far from ending discussion, sparked an animated scientific and political debate – a debate that ultimately led to the adoption of a policy favored by many progressives and environmentalists.

It seems that what detractors of cost-benefit analysis overlook is that policies based on the CBA approach can be reevaluated in light of new information. After completing an initial analysis, regulators are free to examine new data or administer fresh contingent value studies. At the same time, advocacy groups can agitate for larger, more systematic political changes. In short, an initial CBA is often just the beginning of a dynamic process that allows for careful fact-finding, increased debate, and constant re-evaluation of regulatory aims.

In another example, CBA's information generating qualities helped environmentalists make the case against leaded gasoline. In the weeks before the EPA finalized new gasoline regulations in 1984, lobbyists from the lead industry mounted a heated campaign to gut the proposed rules. The principal lead trade group, for example, sued the Center for Disease Control for exposing the hazards of lead to state officials.[119] The industry group insisted that "leaded gasoline [only] accounts for a small proportion of lead found in human blood," and encouraged the EPA to "look at other things linked to lead levels in human blood, such as the ingestion of lead by children from dirt, paint and other sources."[120] Lead producers also stressed that gas prices and car maintenance costs would increase as a result of the regulations.[121]

The EPA's extensive study of costs and benefits helped overcome these objections and bolstered public support for the regulations in the face of sustained industry pressure. After reviewing the EPA's analysis, *The New York Times* told the public, "The benefits of reducing lead in gasoline would exceed the costs by more than 300 percent. The dollar value of the benefits would reach $1.8 billion [sic] 1986, the first year of the new standard. The higher refining costs in the same year, the agency estimated, would be $575 mil-

119. *See* Kenneth Noble, *Lead Industry Digs in Its Heals on Gas Additives*, N.Y. TIMES, Aug. 5, 1984, at D8.

120. Philip Shabecoff, *EPA Offers Rules to Tighten Curbs on Gasoline Lead*, N.Y. TIMES, July 31, 1984, at A1. *See* Noble, *supra* note 119, at D8.

121. Stuart Diamond, *Technology; Motor Fuels Without Lead*, N.Y. TIMES, Aug. 2, 1984, at D2.

lion."[122] Although most ordinary people would struggle to understand the mathematical intricacies of the cost-benefit process or the pathology of lead poisoning, the public easily grasped the figures supplied by the lead CBAs. Such information, at least in part, lead citizens to overwhelmingly support the EPA's regulations.[123]

It is a somber fact that most people lack the knowledge required to assess difficult policy choices.[124] One of the most attractive, elegant features of cost-benefit analysis is that the process helps surmount this deliberative failure – even the least sophisticated citizens can understand a tabulated list of losses and gains. Environmentalists and other opponents of quantitative decision-making should rethink their continued opposition to CBA because information generated by the process gives ordinary citizens a simple instrument to challenge political slogans, parcel interest group soundbites, and enter the discussion about contested government decisions.[125]

b. Intermediary

CBA also advances deliberation by serving as a neutral intermediary between adversaries. Too often, disputes over controversial issues become needlessly destructive. In the most heated debates, rhetoric grows polarized, groups become increasingly radical, and adversaries freeze communication with each other.[126] In short, the conditions necessary for thoughtful deliberation disappear. Accord-

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122. Shabecoff, *supra* note 120, at A1. *See* Noble, *supra* note 119, at D8. *See also* Philip Shabecoff, *New Limits on Lead in Gasoline are Planned, EPA Officials Say*, N.Y. TIMES, July 21, 1984, at A1.

123. For example, despite an increase in gas prices as a result of the new regulations, letters to the editor of the New York Times were unanimously in favor of the ban on lead. *See* James W. Ellis, *Let's Get All the Lead Out of Gasoline*, N.Y. TIMES, July 10, 1987, at A34; Paul Levine, *Weight the Leaded Tax*, N.Y. TIMES, Nov. 28, 1995, at A26; James F. Clarity & Warren Weaver, Jr., *Confusion After 60 Years*, N.Y. TIMES, Apr. 15, 1985, at A16; Christopher Daggett, *On City Traffic; The Environment Also Counts*, N.Y. TIMES, Oct. 27, 1984, at A24; Jack Campbell, *Price Tag for Getting Lead Out of Gasoline*, N.Y. TIMES, Sept. 24, 1984, at A18.

124. *See* BRUCE A. ACKERMAN & JAMES FISHKIN, DELIBERATION DAY 180 (2004); Daniel C. Esty, *Toward Optimal Environmental Governance*, 74 N.Y.U. L. REV. 1495, 1565-67 (1999).

125. ACKERMAN AND FISHKIN, *supra* note 124, at 180.

126. LOUIS KRIESBERG, CONSTRUCTIVE CONFLICTS: FROM ESCALATION TO RESOLUTION 151 (1998). *See also* Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, *in* JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 20 (1982) (identifying a variety of cognitive glitches that create barriers to the resolution of disputes).

ing to literature on conflict resolution, an outside intermediary can often break these impasses and restart productive discussion. Intermediaries facilitate conflict resolution by providing common space for communication, transmitting information between sides without distortion, and penetrating emotional barriers.[127] Perhaps most importantly, intermediaries give parties the opportunity to save face; if an outsider voices an idea, so the theory goes, it may be accepted without seeming to yield to an adversary.[128] In a familiar example, mediators are often used as a go-between during employment strikes, cajoling the parties to restart dialogue and offering outside, independent assessments of the parties' options.

Cost-benefit analysis can serve a similar intermediary function in environmental conflicts. In this light, I argue that more scholars should embrace CBA as a method for restarting productive, morally-grounded discussion about persistent ecological problems. Consider, for example, the dispute over the spotted owl in the Pacific Northwest.[129] In the early 1990s, environmentalists sued the Fish and Wildlife Service for violations of the Endangered Species Act when they discovered evidence that unsustainable logging practices were endangering the Northern Spotted Owl.[130] In a series of landmark

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127. Howard Raiffa, *Analytic Barriers*, *in* BARRIERS TO CONFLICT RESOLUTION 143 (Arrow et al., eds., 1995).

128. KRIESBERG, *supra* note 126, at 226.

129. For a brief summary of the conflict see, Rob Taylor, *Who's There? Biologists Chance Encounter Inspired Campaign to Save the Owl*, SEATTLE POST-INTELLIGENCER, June 21, 1990, at A1. For a slightly longer treatment, see Victor M Sher, *Travels With Strix; The Spotted Owl's Journey Through the Federal Courts*, 14 PUB. LAND L. REV. 41 (1993). The spotted owl conflict grew out of a larger controversy over the fate of old-growth forests in the Pacific Northwest. Since the mid-1970s, a coalition of environmental groups had fervently resisted the clearcutting of ancient trees in Washington, Oregon, and Northern California. *See* THE ENDANGERED SPECIES ACT: LAW, POLICY, AND PERSPECTIVES 5-6 (Donald C. Baur & William Robert Irvin eds., 2002). For many conservationists, the dark, deep-rooted, and spiritually evocative trees symbolized nature's timeless character. ALSTON CHASE, IN A DARK WOOD: THE FIGHT OVER FORESTS AND THE MYTH OF NATURE 162 (2001). Others were more concerned with the trees ecological value – far from being devoid of life as once thought, ecologists realized that old-growth strands served as primary habitat for a rich variety of animal and plant species. ALSTON CHASE, IN A DARK WOOD: THE FIGHT OVER FORESTS AND THE MYTH OF NATURE 152 (2001).

130. Environmentalists had first adopted a mixture of legal strategies to slow the massive clear-cutting, winning a steady stream of court battles for violations of NEPA, the Clean Water Act, and the National Forest Management Act of 1976. However, these small victories never had the potential to force a final settlement

cases, federal judges in Seattle and Portland ruled that the government had repeatedly failed to protect the owl's habitat.[131] The courts then issued a series of controversial injunctions that ended all logging on public lands until a final owl conservation strategy could be approved.[132]

For the environmental movement, the rulings seemed a just reward for years of fighting to preserve the fragile ecosystem of the Northwest.[133] To those directly employed by the logging industry, however, the outcome seemed impulsive and callous – the product of a misguided fixation with the environment at the expense of "a culture and livelihood whose existence depended on logging."[134] Each side believed the other was destroying a way of life and failing to respect the natural world.

Very quickly, productive deliberation over a final, comprehensive resolution to the owl problem deteriorated. Newspaper accounts from the *Seattle Post-Intelligencer* between 1990 and 1992 reveal that the sides made few attempts to compromise and exhibited a stubborn refusal to acknowledge the arguments and values of the opposing camp. Environmentalists, for example, demonstrated little compassion for the plight of threatened timber communities. Expressing a typically coarse sentiment, one writer stated, "[E]conomic difficulties here weigh lightly on these scales. Some thousands of loggers will go through the inconvenience of changing jobs and perhaps moving, something that happens every day for far less cause, a pain in the neck perhaps but scarcely tragic ([a]nd of course they brought it on themselves through decades of overcutting)."[135] For

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of the dispute. THE ENDANGERED SPECIES ACT: LAW, POLICY, AND PERSPECTIVES 5-6 (Donald C. Baur & William Robert Irvin eds., 2002).

131. TERRE SATTERFIELD, ANATOMY OF A CONFLICT: IDENTITY, KNOWLEDGE, AND EMOTION IN OLD-GROWTH FORESTS 5-6 (2002); THE ENDANGERED SPECIES ACT: LAW, POLICY, AND PERSPECTIVES 5-6 (Donald C. Baur & William Robert Irvin eds., 2002).

132. *Id.*

133. SATTERFIELD, *supra* note 131, at 5-6.

134. *Id.*

135. Phillip Johnson, *Saving Spotted Owl Could Keep Thousands of Other Species Alive*, SEATTLE POST-INTELLIGENCER, Oct. 15, 1990, at A11. *See also Saving Owls, Saving People*, SEATTLE POST-INTELLIGENCER, Apr. 8, 1990, at D2 (showing little sympathy for the pain of small logging communities and telling timber towns they need to adopt more of a "can-do" attitude); Rob Taylor, *Forest Harvest May be Halved*, SEATTLE POST-INTELLIGENCER, June 14, 1990, at A1 (quoting Jean Durning, the Northwest representative of the Wilderness Society. In the face of mill closings, Durning blamed the timber industry for the logger's plight); Stan-

their part, loggers struggled to see the importance of preserving ecosystems and often failed to respect the values of environmentalists. The environmental coalitions, they believed, were "made up of a lot of rich white kids who never held a . . . damn job and who want to tell you what to do. All they care about is their own elitist agenda."[136]

As time passed, the rhetoric and tone of the conflict became more and more contentious, while opportunities for genuine dialogue dwindled. Loggers printed "shoot an owl, save a logger" bumper stickers,[137] the head of the U.S. Bureau of Mines said he did not believe in endangered species,[138] the timber industry accused conservationists of trying to drive the public out of the Olympic Peninsula, and loggers were accused of being "anti-environmental carpetbaggers."[139] Tense protests and violence also tainted the conflict[140] –

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ford Young, *Trying to Save Few Remaining Old Trees*, SEATTLE POST-INTELLIGENCER, Sept. 1, 1990, at A7 (arguing for saving trees but showing little concern for the pain small timber communities will face); *The Clones of the Interior*, SEATTLE POST-INTELLIGENCER, May 16, 1990, at A8 (arguing for preserving owl habitat without mentioning its effect on loggers); Larry Werner, *Owl Another Bump on the Logging Road*, SEATTLE POST-INTELLIGENCER, Sept. 3, 1990, at A1 (quoting Jim Pissot, director of the National Audubon Society's Washington Office, saying that loggers were "going to have to deal with public values" as they faced 26,000 job losses).

136. *Loggers' Rally Aims At Environmentalists*, SEATTLE POST-INTELLIGENCER, Sept. 23, 1991, at C7. *See also* Larry Werner, *Loggers Blast Away at Environmentalists*, SEATTLE POST-INTELLIGENCER, May 24, 1991, at C2 (reporting that loggers said, "It's the same people who demonstrated against the Vietnam War. It's the same people who did not support our troops in the gulf. That's who we're fighting . . . . Send 'em to California; that's where they can [sic] from"); Debera Carlton Harrell, *Loggers to Block Highway 101 in Protest Over Owl*, SEATTLE POST-INTELLIGENCER, Apr. 28, 1990, at B1 (describing loggers who seem only concerned with the economic consequences of national timber policy); Christopher Hanson, *Scientists Side With the Owl*, SEATTLE POST-INTELLIGENCER, Apr. 5, 1990, at A1 (showing that the timber industry tried to turn the conflict into a "stark choice between people and owls"); *Sen. Groton's Quiz*, SEATTLE POST-INTELLIGENCER, Aug. 14, 1991, at A4 (demonstrating that politicians saw the conflict in stark, owl v. people, terms).

137. *The Owl's Message*, SEATTLE POST-INTELLIGENCER, June 25, 1990, at A10.

138. *Threatened Species are Disavowed*, SEATTLE POST-INTELLIGENCER, Mar. 23, 1991, at A6.

139. Steven Goldsmith, *Decision is Bitter Blow for Grays Harbor Mills*, SEATTLE POST-INTELLIGENCER, Apr. 5, 1990, at A6. For other examples of heated rhetoric in the owl conflict see, Joe Mooney, *Mill Town Finds Proposed Restrictions Hard to Swallow*, SEATTLE POST-INTELLIGENCER, Apr. 5, 1990, at A6 (re-

fistfights broke out,[141] spotted owls were nailed to signs in Olympic National Park,[142] Ranger Stations were burned,[143] and radical environmentalists seriously injured a number of loggers.[144] At the low-

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porting that Darrington City Councilman Lee Fenley said, "The spotted owl? They make good soup, but they're hard to digest."); Lori Walker, *Spotted Owl; An Extinct Timber Industry Threatens the Middle Class*, SEATTLE POST-INTELLIGENCER, Oct. 15, 1991, at A8 (stating, "if you people don't wake up and help us fight this absurd myth of an extinct bird . . . [y]our money is going to be extinct"); Larry Mason, Editorial, *Spotted Owl Recovery Plan; Plan Offers Little Hope for Foresters*, SEATTLE POST-INTELLIGENCER, Mar. 31, 1992, at A8 (accusing environmental forces of having "more compassion for birds than people").

140. For examples of protests in the early 1990s, see Gil Bailey, *The Owl or Loggers? Timber Families Take Their Case to Courthouse Steps*, SEATTLE POST-INTELLIGENCER, May 7, 1991, at B1; Rob Taylor & Arthur C. Gorlick, *Owl Habitat Timber Sales Barred*, SEATTLE POST-INTELLIGENCER, May 24, 1991, at A1; Gordy Holt, *Loggers Camp out in Seattle to Send Adams a Message*, SEATTLE POST-INTELLIGENCER, Oct. 22, 1990, at B1; *Protestors Call for Tough Forest Protection Bill*, SEATTLE POST-INTELLIGENCER, Sept. 17, 1990, at A3; *California Moves to Save Owl*, SEATTLE POST-INTELLIGENCER, July 13, 1990, at A3; Larry Werner, *Tension Builds in Logging Communities; Concern Focuses on Amount of Timber Available*, SEATTLE POST-INTELLIGENCER, June 23, 1990, at A2; *Loggers Target Adams*, SEATTLE POST-INTELLIGENCER, June 15, 1990, at C1; Steve Geissinger, *Logging Protesters Vow to Put 'Bodies on the Line'*, SEATTLE POST-INTELLIGENCER, June 8, 1990, at B13; James Wallace, *Logging Protestors Implore Truckers to 'Stop and Talk'*, SEATTLE POST-INTELLIGENCER, June 5, 1990, at B3; Scott Maier, *Anti-Logging Protestors Chain Up at Forest Office*, SEATTLE POST-INTELLIGENCER, May 31, 1990, at B3.

141. *Loggers, Millworkers Stage Huge Rally Against Owl Plan*, SEATTLE POST-INTELLIGENCER, Apr. 14, 1990, at A1.

142. *See Second Dead Owl Found Nailed to Sign*, SEATTLE POST-INTELLIGENCER, Feb. 9, 1991, at B3; *Dead Spotted Owl is Found Nailed to Threatening Note*, SEATTLE POST-INTELLIGENCER, Jan. 16, 1991, at B4 (reporting that owl was found bearing a note warning, "the match has yet to be struck"). For other owl deaths see Arthur C. Gorlick, *Young Owl Carcass Found Nailed to Sign*, SEATTLE POST-INTELLIGENCER, Aug. 1, 1991, at B5 (stating that dead owl was found in Snohomish County); *Young Owls May Have Been Killed*, SEATTLE POST-INTELLIGENCER, Oct. 9, 1990, at A3 (suggesting that someone may have stolen information on spotted owl nests in Siskiyou National Forest and used it to kill the young birds).

143. Joel Connelly, *Vandals Destroy Trees at Park Visitor Center*, SEATTLE POST-INTELLIGENCER, Nov. 8, 1991, at A14 ("Three northern entrances to [Olympic National] park have sustained eight major act of vandalism. . . ."); Michael A. Barber, *Arson Probed at Olympic Park Stations*, SEATTLE POST-INTELLIGENCER, Feb. 9, 1991, at B4.

144. The radical environmental group, Earth First!, pioneered the tactic of "tree spiking" to discouraging logging. The Earth First!ers drove nails or ceramic spikes into trees. If a chain saw hit a spike, the saw rebounded wildly, threatening

est points, the entire battle threatened to descend into farce; the Forest Service's Woodsy Owl and the "Give a Hoot, Don't Pollute" campaign were banned from Western Oregon schools over fears that the bird would be confused with a spotted owl.[145] In short, by the spring of 1992 the twenty-year battle over the fate of the Northwest's old-growth had become an intractable, ideologically charged conflict that few people believed could be resolved peacefully. Politics, court battles, and all attempts at direct discussion between the adversaries had failed to find common ground.

Yet, a-year-and-a-half later, the intensity and anger generated by the conflict had dwindled. Although many factors contributed to the swift détente,[146] newspaper accounts suggest the real turning point arrived once the government introduced cost-benefit analysis into the crisis. The formal CBA process began in September of 1991, when the Bureau of Land Management invoked a little-used clause of the Endangered Species Act that forced the federal government to consider the pros and cons of allowing forty-four small-scale timber sales on spotted owl lands.[147] Throughout late 1991 and early 1992, the Department of the Interior conducted a sophisticated CBA of the proposed actions. Seven months later, the Secretary of the Interior published a thorough yet very accessible cost-benefit statement, which weighed the short-term benefits of logging against the long-term advantages of resource conservation.[148] Based on this report, a cabinet-level committee, commonly called the "God Squad," approved thirteen of the forty-four sales.[149] Locally affected logging

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to cut the operator. If a mill blade hit a spiked log, the blade could shatter, throwing deadly shrapnel into the air. For example, on May 8, 1987, a tree spike broke the jaw of millworker George Alexander and nearly severed his jugular vein. *See* ALSTON CHASE, IN A DARK WOOD 229-30 (2001).

145. *Foresters Raise a Hoot Over Pollution Mascot*, SEATTLE POST-INTELLIGENCER, Apr. 13, 1990, at B5; *see also,* Woodsy Owl, USDA, *available at* http://www.fs.fed.us/spf/woodsy/ (last visited Sept. 9, 2006).

146. Almost surely, general exhaustion with litigation and the changed political circumstances after the 1992 election both contributed to the eventual de-escalation.

147. *See* Sher, *supra* note 129, at 51; *see also* Portland Audubon Soc'y v. Endangered Species Comm., 984 F.2d 1534 (9th Cir. 1993) (describing the exemption process).

148. UNITED STATES DEPARTMENT OF THE INTERIOR, REPORT OF THE SECRETARY OF THE INTERIOR TO THE ENDANGERED SPECIES COMMITTEE (1992).

149. Endangered Species Committee, Application for Exemption By the Bureau of Land Management to Conduct 44 Timber Sales in Western Oregon 6-7 (May

communities hailed the exceptions, but the real importance of the government's CBA resonated far beyond the economic consequences of the small timber sales. I argue that cost-benefit analysis worked as a calming go-between in the dispute over the spotted owl and ultimately helped forge a compromise between the timber workers and conservationists.

First, the cost-benefit process presented both loggers and environmentalists with a productive outlet for their anger, disgust, and apprehension. During the course of the CBA analysis, ninety-seven people gave testimony about the commercial, recreational, and non-economic value of the Northwest's remaining wilderness.[150] Moreover, over 1800 people wrote letters to the Secretary of the Interior addressing everything from the importance of biodiversity to the unique character of the timber communities of the Olympic Peninsula.[151] Allowing parties to voice negative emotions and providing a space for communication are two of the key roles that intermediaries play in deescalating conflicts.[152] Unsurprisingly, after parties vented their frustrations through the CBA process, the incidence of violence and the scale of protests plummeted. *The Seattle Post-Intelligencer* records only two small-scale protests and no acts of violence after the spring of 1992.[153]

The Interior Department's cost-benefit analysis also improved deliberation by transmitting information between sides without distortion, giving the parties an occasion to reassess facts with cool heads. Armed with the independently produced statistics, both loggers and environmentalists had the opportunity accept the government's analysis without being seen as yielding to the enemy. Change came almost immediately. After the Interior Department published its cost-benefit report, environmentalists and loggers both demonstrated increased willingness to acknowledge the values of their opponents and work toward a compromise. Rather than fight with environmentalists, timber workers finally accepted that the wood products indus-

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15, 1992); Endangered Species Committee, Notice of Decision, 57 Fed. Reg. 23,405, 23,406 (June 3, 1992).

150. UNITED STATES DEPARTMENT OF THE INTERIOR, REPORT OF THE SECRETARY OF THE INTERIOR TO THE ENDANGERED SPECIES COMMITTEE Intro-5 (1992).

151. *Id.*

152. KRIESBERG, *supra* note 126, at 224-25.

153. Rob Taylor, *Loggers Protest With Chain Saws*, SEATTLE POST-INTELLIGENCER, July 7, 1992, at B1; *16 Arrested After Downed Timber Cut in Owl Habitat*, SEATTLE POST-INTELLIGENCER, July 23, 1992, at B3.

try was plagued by more problems than the spotted owl; increased mechanization and growing global competition caused a rapid loss of jobs throughout the 1980s and 90s.[154] In return, environmentalists embraced legislation to help displaced workers and encourage timber communities to diversify their economies.[155]

The change in tone generated by the cost-benefit analysis quickly led to more reasoned decision-making. A consensus formed on the number of job loses that would result from the logging restriction, helping to focus the debate.[156] Moreover, union workers and environmentalists came together to criticize politicians standing in the way of compromise,[157] Republican and Democratic legislators began discussing long-term solutions to the conflict,[158] and conservationists agreed to allow some logging on owl-protected lands.[159] In the words of one environmental lawyer, "We're in agreement on a process to arrive at the legislation [to end the conflict] . . . . It's the process that's important and that, I think, has been missing."[160] Thus, examining the tenor of the conflict both before and after the publication of the cost-benefit analysis, it seems that the government's quantification of pros and cons improved both the amount and quality of the deliberation over the fate of the spotted owl. In the immediate aftermath of the report's publication, dialogue improved, tensions waned, and the parties fashioned some compromises.

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154. Gayle McKeller, resident of the logging community of Colville, Washington. McKeller acknowledged that jobs were lost to many other factors beside the owl. She said, "We've seen automation of mills and federal subsides of log exports." *See* Joel Connelly, *Bush to Play Paul Bunyan in State Today; He'll Use Campaign Stop in Colville to Back Timer Workers*, SEATTLE POST-INTELLIGENCER, Sept. 14, 1992, at A1.

155. *See, e.g.*, *Adams-Backed Bill Would Curb Logging Exports*, SEATTLE POST-INTELLIGENCER, June 26, 1992, at A2 (pushing for $700 million in aid to logging communities).

156. In the early years of the debate environmental groups underestimated the number of job losses while the timber industry wildly overstated the economic impact of the Endangered Species Act on the Northwest. In the end, a consensus emerged that the owl protection would cost from 20,000 to 34,000 jobs in Washington, Oregon, and northern California. *See* Paul Shukovsky, *Owl-Debate Cools*, SEATTLE POST-INTELLIGENCER, May 19, 1992, at B1.

157. *See* Neil Modie, *'Jobs Over Owl' Policy Criticized*, SEATTLE POST-INTELLIGENCER, Sept. 15, 1992, at A16 [Hereinafter *Jobs*].

158. *See* Neil Modie, *The Owl and Us: Agreement of Sorts in a Policy Thicket*, SEATTLE POST-INTELLIGENCER, Sept. 28, 1992, at C11.

159. Rob Taylor, *Spotted Owl Reserves Questioned*, SEATTLE POST-INTELLIGENCER, Feb. 1, 1993, at B1.

160. *See Jobs*, *supra* note 158, at A16.

CBA may generate other benefits that the struggle over the spotted owl failed to reveal. Like any good intermediary, CBA and its focus on long-term losses and gains can draw attention to parties and ideas that are not being represented in settlement negotiations.[161] The academic literature on conflict resolution shows that giving all parties some measure of representation improves the ultimate quality and fairness of decision-making and leads to more lasting compromises.[162] In a famous example, President Jimmy Carter helped forge an enduring peace between Israel and Egypt at the 1978 Camp David summit by considering the interests of groups not present at the negotiating table, namely the Palestinian people and absent Arab governments.[163] Used correctly, CBA could serve a similar function in large-scale environmental conflicts by highlighting a decision's effect on parties that lack the resources or know-how to make their voices heard.

In sum, as the conflict over the owl demonstrates, once parties are immersed in heated disputes over political values, they often find it impossible to respect ideas of the other side. Emotional responses to the stress of conflict, the growth of vested interests in perpetuating a struggle, and the spread of a desire for revenge all freeze adversaries in a state of mistrust that restricts productive dialogue.[164] Lack of deliberation remains a particular problem in environmental law conflicts. Many struggles persist at terrible cost to all parties – even when participants themselves regret that a conflict has so deteriorated.[165] However, the record of the spotted owl dispute shows that when government employs CBA in the midst of an enduring struggle, the process acts like an outside intermediary, providing common space for communication, transmitting information between sides without distortion, and penetrating emotional barriers that inhibit compromise. Thus, the most powerful normative argument against CBA – that it stifles deliberation and moral decision-making – is undercut by empirical evidence from the field. Although CBA may not alter the course of all disputes, at the very least, the process encourages parties to hold their beliefs in a new and different spirit –

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161. KRIESBERG, *supra* note 126, at 228.

162. *Id.* (stating that intermediaries are capable of representing diffuse interests and "upholding general norms of fairness").

163. *Id.*

164. *Id.* at 153-54.

165. *Id.* at 151.

one befitting a conscientious citizen who makes the effort to think critically about the common good.

2. Protecting Dignity Values

An equally salient if largely undertheorized advantage of cost-benefit analysis is that it protects the dignity of those engaged in contested moral conflicts. There are at least two significant ways that CBA works to uphold dignity values in disputes over health, safety, and environmental regulation. First, well-done, agency-administered CBAs demonstrate that the government has openly contemplated all sides of a regulatory problem. Even if parties object to the eventual outcome, most observers agree that there is innate value in having one's opinions heard and seriously considered. As Jerry Mashaw writes, participation in decision-making prevents "alienation and a loss of the dignity and self-respect that society properly deems independently valuable."[166]

Such feelings of impotence were commonplace at the outset of the conflict over the Northern Spotted Owl; loggers often felt the outside world did not treat their concerns with genuine moral seriousness. Specifically, timber workers felt the media ignored the economic plight of their communities.[167] Loggers also insisted they lacked access to public forums and had no remedy to combat the public's perception of their culture as boorish and destructive.[168] The cost-benefit analysis conducted by the Interior Department appears to have helped timber workers overcome these feelings of powerlessness and stigmatization. Valerie Johnson, leader of a pro-timber group, championed the government's CBA: "We have run up so many blind alleys and bloodied ourselves on so many brick walls in this whole endangered species process, where they tell us that people are specifically excluded . . . . This is the only place that the law allows people to be considered, so this is our only chance." Others in the timber industry expressed their gratitude for the opportunity to be heard,[169] saying the God Squad's actions gave them a chance to

166. Jerry L. Mashaw, *The Supreme Court's Due Process Calculus for Administrative Adjudication in Mathews v. Eldridge: Three Factors in Search of a Theory of Value*, 44 U. CHI. L. REV. 28, 50 (1976).

167. SATTERFIELD, *supra* note 131, at 71.

168. *Id.*

169. Kathie Durbin, *God Squad Hearing Ends Early As Pool of Speakers Dries Up*, THE OREGONIAN, Feb. 14, 1992, at C1.

achieve a modicum of "dignity" in a process that had long ignored their concerns.[170] At the very least, the owl conflict shows that agency-administered cost-benefit analysis can make otherwise disempowered groups feel that their views are being considered.

Second, and just as significantly, cost-benefit analysis advances dignity values by protecting the pride and principles of those who *lose* the most heated disputes. As clashes over abortion and gay marriage demonstrate, parties who wind up on the losing side of ideologically-charged conflicts often feel that the government has attacked their most cherished beliefs. CBA can preempt this reaction. The process' sharp focus on economics and optimization keeps the federal government from directly endorsing one set of ethical norms over another. Parties win or lose, at least in theory, because they present the most economically efficient policy choices. In this way, the defeated side in a morally-charged conflict can plausibly believe that it lost because of faulty economic analysis, rather than confront the possibility that its most cherished values were scorned.

Dan Kahan has vividly demonstrated how a CBA-like process can limit the government's ability to cast moral judgment on policy decisions.[171] According to Kahan, in the late 19th and early 20th century there was an impassioned controversy over a person's duty to retreat when confronted with physical harm. Generally speaking, the law in the South and West favored the "true man" doctrine; any violent act by a bully could be met with immediate and deadly force.[172] In one notable formulation of the rule, the Missouri Supreme Court argued that the man who defends himself from attack should be celebrated for correctly valuing his "rights," "liberty" and "sacredness of . . . person" more than the well-being of a "wrongful" aggressor.[173] Retreat, in short, was for cowards – a man was expected to administer *deadly* force to prevent any threat to his autonomy. Many Easterners found such sentiments abhorrent. In their eyes, the honor norms of the South and West seemed one step removed from a world of duels

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170. Kathie Durbin & Foster Church, *Emotional Testimony Fills Spotted Owl Hearings*, THE OREGONIAN, Feb 13, 1992, at A1.

171. Dan M. Kahan, *The Secret Ambition of Deterrence*, 113 HARV. L. REV. 413, 428-35 (1999).

172. *See, e.g.*, La Rue v. State, 41 S.W. 53, 54 (Ark. 1897); People v. Lewis, 48 P. 1088, 1089-90 (Cal. 1897); Ragland v. State, 36 S.E. 682, 684-85 (Ga. 1900); McCall v. State, 29 So. 1003 (Miss. 1901).

173. State v. Bartlett, 71 S.W. 148, 151-52 (Mo. 1902).

and lynching.[174] Within the moral universe of the Eastern gentlemen it was "undoubtedly distasteful to retreat; but . . . ten times more distasteful to kill."[175] The real "true man," they believed, was one who valued the life of his fellow-beings more than any personal code of honor.[176]

As Kahan shows, the debate over the duty to retreat raged until Justice Holmes used a rudimentary form of cost-benefit analysis to dispel the controversy. In *Brown v. United States*, Holmes upheld the *essence* of the "true man" doctrine, ruling that a person could defend himself with deadly force in the face of an attack.[177] However, Holmes managed to suppress the controversy by refusing to endorse the contested honor norms that Easterners looked upon with contempt. Unlike the Missouri Supreme Court, he never suggested that the law should applaud the courage of the man who chooses to stand firm in the face of an attack. Instead, Holmes reasoned that courts should not punish defenders because an "attack triggers an unthinking impulse to fight."[178] According to Holmes, it was simply human nature to use violence to resist an assault; for the law to punish defenders acting out of this impulse would impose a heavy cost with no benefit of future deterrence.[179] Thus, under Holmes' logic, the 'no retreat' rule morphed from a story about the virtue of the 'true man' into a tale about the reactions of a terrified man trying to defend himself. This reformulation striped the duty to retreat doctrine of much of its moral force, protecting the dignity and values of Easterners. As Kahan tells us, "Having gotten what they wanted, the southern and western proponents of the 'no retreat' rule were in no position to complain; moreso, having been spared an official endorsement of the honor norms they abhorred, the eastern opponents had little to complain about either."[180]

Like Holmes' story about the duty to retreat, modern CBA refuses to endorse the moral weight of government policies. Decisions are based, at least officially, on the amoral and mathematical optimiza-

174. *See* Joseph H. Beale, Jr., *Retreat from a Murderous Assault*, 16 HARV. L. REV. 567, 577-81 (1903) (stating "the feeling at the bottom of the [rule] is one beyond all law; it is the feeling which is responsible for the duel, for war, for lynching").

175. *Id.* at 581.

176. Kahan, *supra* note 171, at 431-32.

177. Brown v. United States, 256 U.S. 335, 343 (1921).

178. Kahan, *supra* note 171, at 430.

179. *Id.*

180. *Id.* at 433.

tion of social good. Policy-setters have no opportunity to champion one ethical code over another. In the most contentious debates this protects the dignity of the defeated faction because it enables them to blame the failure of their arguments on flawed empirical analysis rather than admitting that their core values have been rejected. And ultimately, if parties feel that regulations respect their core principles, comprises are more likely to stand the test of time.

3. Advancing Practical Goals

As one can see, the expanded use of cost-benefit analysis can help progressive thinkers spur more thoughtful and respectful discussions about environmental, health, and safety regulations. In addition to bolstering these rather theoretical aims, cost-benefit analysis also promises to advance the practical goals of the environmental movement. Most importantly, CBA's focus on economics can improve the likelihood that legislatures will adopt pro-environmental policies. On top of that, CBA has the potential to rehabilitate the image of environmental crusaders and press ordinary people to see the inherent value of the natural world. Thus, even those cost-benefit opponents who are most appalled by the process' methodology should accept CBA as a strategic political tool to advance the pragmatic goals of the environmental movement.

Perhaps CBA's most attractive feature lies in its ability to promote the legislative aims of pro-environmental politics. All too often in policy disputes, ecologically sound ideas fail to receive a fair hearing because of the public's general aversion to environmentalists. Over the last thirty years, the opponents of government regulation have launched a rhetorical assault on environmentalists, successfully branding conservationists as treehuggers, bunny-lovers, neo-paganists, practitioners of a new-age eastern religious cult, and champions of the U.N. and one-world government.[181] The increased

181. *See, e.g.*, JACQUELINE VAUGHN SWITZER, GREEN BACKLASH: THE HISTORY AND POLITICS OF THE ENVIRONMENTAL OPPOSITION 209 (1997); Marcilynn A. Burke, *Klamath Farmers and Cappuccino Cowboys: The Rhetoric of the Endangered Species Act and Why it Still Matters*, 14 DUKE ENVTL. L. & POL'Y F. 441, 478 (2004); Michael Allan Wolf, *Overtaking the Fifth Amendment: The Legislative Backlash Against Environmentalism*, 6 FORDHAM ENVTL. L.J. 637, 651 (1995). On the other side of this imagined debate stand the defenders of capitalism, private property, the Constitution, the American Way, and democratic self-government. Michael Allan Wolf, *Overtaking the Fifth Amendment: The Legislative Backlash Against Environmentalism*, 6 FORDHAM ENVTL. L.J. 637, 651

use of cost-benefit analysis offers environmentalists a defense against these stereotypes and childish slanders. After all, the ability to argue in terms of wealth-maximization paints environmentalists as scholars concerned about public welfare rather than as radicals bent on destroying the modern economy.

Moreover, evidence shows that legislators, bureaucrats, and ordinary voters are all most likely to support proposals that are backed by empirical arguments centered on economic efficiency.[182] Ecologists who quantitatively demonstrate that their policies advance the common good can prompt quick political change at the highest level. For example, environmental moralists long opposed the federal reclamation program, which built hundreds of dams throughout the West.[183] The dam projects were intended to encourage agriculture but ultimately destroyed wetlands, devastated fish species, and encouraged inefficient farming.[184] Although environmentalists had been arguing against Western water projects since at least the 1950s, change came only when the Natural Resources Defense Council (NRDC) deemphasized its moral objections over the loss of biodiversity and attacked the reclamation projects with economic analysis. In 1985 it published a major report showing that federally constructed dams imposed huge costs on taxpayers while generating almost no public benefits. Every year the program forked over $300 million in water subsidies to a handful of California farmers who were planting "surplus" crops – crops that the government was paying others not to grow.[185] Primarily as a result of the NRDC's eco-

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(1995). However sensible, environmental regulations stand little chance against such a backdrop.

182. *See* Thompson, *supra* note 2, at 180.

183. *See, e.g.*, MARC REISNER, CADILLAC DESERT: THE AMERICAN WEST AND ITS DISAPPEARING WATER (1986); Harrison Dunning, *Confronting the Environmental Legacy of Irrigated Agriculture in the West: The Case of the Central Valley Project*, 23 ENVTL. L. 943, 944 (1993) (describing environmental damage caused by the reclamation program); Lawrence MacDonnell, *Managing Reclamation Facilities for Ecosystem Benefits*, 67 U. COLO. L. REV. 197 (1996) (detailing ecological ills created by reclamation program).

184. See *e.g.* REISNER, *supra* note 183; Dunning, *supra*, note 183; MacDonnell, *supra* note 183.

185. *See* E. PHILLIP LEVEEN & LAURA B. KING, TURNING OFF THE TAP ON FEDERAL WATER SUBSIDIES (1985) (criticizing water subsidies for Western farmers).

nomic analysis, Congress reduced the water subsidies and abandoned large-scale irrigation projects.[186]

Some scholars may view such base economic concerns as a normatively inappropriate matrix for thinking about environmental problems. However misguided, such concerns are a political reality. Appeals based on morality and non-economic values, so favored in some environmental circles, have achieved little resonance in legislative debates and judicial opinions during the past several decades.[187] As the reclamation project example indicates, quantitative analysis remains a potent, almost indisputable force in the political arena. Any environmental or progressive thinker hoping to achieve an immediate transformation of regulatory policy must acknowledge this truth and learn to exploit CBA to their advantage.

Cost-benefit analysis also has the potential to affect long-term changes in the way ordinary citizens think about the environment. By pressing people to put dollar figures on environmental goods and publishing the results, CBA compels the public to consider the inherent value of the natural world. One widely discussed cost-benefit analysis found that the average American household would be willing to pay $285 to save the bald eagle.[188] Although it may be asking too much, over time such studies could foster a community-wide environmental ethos. After all, if citizens habitually acknowledged the worth of the environment it seems plausible that they might begin voluntarily exceeding "the minimum level of environmental protection that the government demands."[189] Already, observers have noted how purely procedural obligations can change prevailing environmental norms. The bureaucratic requirements of the National Environmental Policy Act (NEPA), for example, have improved the quality of environmental decision-making and forced federal agencies to internalize thinking about the environment.[190] Thus, far from

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186. *See* REPORT OF THE WESTERN WATER POLICY REVIEW ADVISORY COMM'N, WATER IN THE WEST: CHALLENGE FOR THE NEXT CENTURY 5-23, 5-25 (1998) (outlining principal changes in federal reclamation program since 1970s).

187. *See* Thompson, *supra*, note 2 at 180 *(citing* Christopher D. Stone, *Do Morals Matter? The Influence of Ethics on Courts and Congress in Determining U.S. Environmental Policies,* 37 U.C. DAVIS L. REV. 13 (2003)).

188. John B. Loomis & Douglas S. White, *Economic Benefits of Rare and Endangered Species: Summary and Meta-analysis*, 18 ECOLOGICAL ECON. 197, 199 tbl.1 (1996) (value converted into year 2005 dollars by author).

189. *See* Thompson, *supra* note 2, at 197.

190. MATTHEW J. LINDSTROM & ZACHARY A. SMITH, THE NATIONAL ENVIRONMENTAL POLICY ACT: JUDICIAL MISCONSTRUCTION, LEGISLATIVE

rejecting the environment, cost-benefit analysis may fundamentally enhance the way people think about the natural world.

VI. CONCLUSION

In the July 2005 edition of the Sierra Club magazine, Jonathan Rowe authored a broadside attack against the free-market system and the entire field of economics.[191] For astute observers of American politics, this came as no surprise. Diehard environmentalists have long been skeptical of economics and scientific analysis.[192] Some left-leaning thinkers continue to argue that the progressive movement should resist the increasing influence of empirics. After all, science and economics seem to encourage the atomization of interests, commodification of dearly held values, and unthinking fulfillment of human wants that so many environmentalists reject.

Such reasoning, however, represents a real threat to the larger environmental agenda. For better or worse, the American administrative state continues to lurch toward a complete embrace of quantitative decision-making. Over the last fifteen years, the Environmental Protection Agency has spent tens of millions of dollars on cost-benefit analysis, a trend that shows no signs of slowing. The public has also grown unwilling to accept environmental programs that do not show a good return on investment. Thus, it seems that the continued vitality and strength of the environmental movement depends quite importantly on developing policies that impose efficiency and discipline on government programs.

Cost-benefit analysis has long been touted as the most promising method of improving such agency decision-making. At its best, the

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INDIFFERENCE & EXECUTIVE NEGLECT 126-127, 133 (2001); Oliver A. Houck, *Is That All? A Review of Lynton Keith Caldwell, The National Environmental Policy Act: An Agenda for the Future*, 11 DUKE ENVTL. L. & POL'Y F. 173, 188 (2000) (book review).

191. Jonathan Rowe, *The Common Good*, SIERRA, July/Aug. 2005, *available at* http://www.sierraclub.org/sierra/200507/commongood.asp (last visited Sept. 9, 2006).

192. Only two environmental groups, for example, had the scientific skill and economic know-how to comment on the pollution standards for new industry under the Clean Air Act. As one environmental group admitted, "We do not possess the technical competence to discuss in detail the standards themselves or the specified testing procedures; We therefore confine our comments chiefly to administrative procedures and to the general principles." *See* SWITZER *supra* note 181, at 110.

procedure lessens the influence of self-interested lobbying groups, helps regulators overcome cognitive failures, prevents government waste, and allocates resources to programs that save the most lives. Environmentalists, however, have resisted cost-benefit analysis, and for good reason. Their objections to the procedure's morality, fairness, indeterminate methodology, and use of discounting challenge CBA's suitability as a proper decision-making tool.

While this Note makes no attempt to answer every objection, I have tried to show that cost-benefit analysis retains more practical and normative force than most observers have assumed. Rather than stifling discussion about important ethical issues, CBA's ability to generate accessible information and restart discussion over controversial issues can increase both the amount and quality of deliberation in the public sphere. Just as importantly, cost-benefit analysis' single-minded use of dollar figures and optimization prevents agency regulators from passing open moral judgment on policy outcomes, preserving the dignity of those who lose contested moral conflicts. This pride-saving feature of CBA remains especially important in the environmental arena, where many of the litigants repeatedly face each in court battles and legislative conflicts. Finally, widespread use of cost-benefit analysis and its insistence on economics could fundamentally enrich the public's view of both environmentalists and the biosphere.

To summarize, I have attempted to show that CBA advances the environmental movement's political aims without undermining its deep moral foundation. While the procedure suffers from a handful of weaknesses, it remains the most coherent, widely-used, and workable tool for agency decision-making. If environmentalists fail to gesture toward the increased importance of CBA, they risk marginalizing their own voices in the coming debates over risk regulation and biosphere management. Like the ecosystems they seek to defend, the environmental movement must adapt and compromise if it hopes to survive.