"More Good Than Harm": A First Principle for Environmental Agencies and Reviewing Courts

Edward W. Warren*
Gary E. Marchant**

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* Partner, Kirkland & Ellis in Washington, DC. Mr. Warren litigated Corrosion Proof
and several other cases cited in this article.

** Associate, Kirkland & Ellis. Ph.D. 1986, University of British Columbia; J.D. 1990,
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The physician must be able to tell the antecedents, know the present, and foretell the future—must mediate these things, and have two special objects in view with regard to diseases, mainly, to do good or to do no harm.

—Hippocrates
Of The Epidemics

INTRODUCTION

Environmental protection always involves choices. Which risks should be regulated and how should they be regulated? How much protection is enough? Which of several alternative approaches is best? Will new risks be created by regulating existing ones? How much is too much to spend in controlling any particular risk? Could more health protection be provided by diverting the same amount of resources to other uses? Regulators are expected to make “reasonable” or “rational” decisions about these matters. Like the physicians counseled by Hippocrates, regulators must somehow “be able to tell the antecedents, know the present, and foretell the future.” And also like physicians, regulators must deploy their expertise rationally so as “to do good or do no harm.”

Experience under the environmental statutes1 enacted since 1970 shows that regulators have frequently fallen short of this mark. Espe-

1. In this article, the terms environmental statute and environmental agency refer to all federal statutes and agencies concerned with environmental protection, occupational health and safety, fuel economy, food, drugs and cosmetics, and product and vehicle safety. While this article is limited to the regulation of environmental and safety risks, the principle that regulation should do more good than harm can appropriately be generalized to all regulatory programs.
cially at the margin, where costs skyrocket in relation to benefits, the United States has misdirected or inefficiently expended many hundreds of billions of dollars in pursuit of environmental, health, and safety protection. Typical examples of regulatory failure include a reluctance to compare benefits and costs and to adopt the most efficient regulatory alternative, unrealistic attempts to achieve zero-risk outcomes, and a blindness to “risk-risk” tradeoffs. The single-mission orientation of environmental agencies is partially to blame for these failures, but so also are media exaggeration, congressional “oversight,” and occasionally over-zealous executive “deregulation” efforts.2

The judiciary, assigned responsibility by Congress for reviewing agency decisions, has not prevented these prototypical agency failures. The courts have developed no principled basis for judging the substantive reasonableness of an agency’s regulatory product. Instead, they have focused substantive review on the agency’s explanation for each discrete step in its decisionmaking process, apparently assuming that if the process is rational, then so must be the end result. In practice, this unfocused “process-oriented” judicial review has been hopelessly unpredictable and inconsistent. The outcome in a given case often appears to depend more on the predilections of the judicial panel than on neutral criteria that courts can consistently apply in future cases.3 On balance, process-oriented judicial review of an agency’s decisionmaking process has proven counterproductive, both to improved environmental protection and to expeditious agency action, as evidenced by the lengthy preambles and massive administrative records typically prepared by agencies to avoid judicial reversal on peripheral issues.4

This article suggests a more principled approach. It is universally agreed that agencies must act reasonably, but without rules giving content to this requirement, judicial review cannot be expected to check the common types of environmental agency failure. Even so simple a maxim as “do more good than harm,” first suggested by Hippocrates and echoed more recently by then-Professor Scalia,5 would provide a starting point for deriving rules that would make judicial review of such actions more predictable and efficacious. Absent express congressional direction to the contrary, a regulation would do more good than harm if it produced a

2. See infra part I.A.2.
3. See infra part I.B.
4. See Richard J. Pierce, The Role of the Judiciary in Implementing an Agency Theory of Government, 64 N.Y.U. L. REV. 1239, 1263-65 (1989). “There is mounting evidence that fear of judicial rejection of a policy based on the requirements of reasoned decisionmaking has introduced into the policymaking process delay and resource commitments so great that agencies have abandoned their efforts at policymaking completely.” Id. at 1264.
5. See Antonin Scalia, Reagulation—The First Year, REGULATION, Jan./Feb. 1982, at 19, 19-20 (noting that it would be inconceivable for a rule not to be invalidated as arbitrary or capricious if the rule expressly acknowledged that it “probably does more harm than good”).
net benefit to society, taking account of risk-risk tradeoffs and the various regulatory options open to the promulgating agency. By focusing judicial review on these criteria, courts would apply a more predictable, rule-like approach to the agency's end result, replacing their current focus on the agency's process and the totality of the circumstances in which the agency's decision is made. As a byproduct of this more principled approach, fact-based and law-based policy judgments under *Chevron U.S.A. v. NRDC*\(^6\) would be reviewed under a similar reasonableness test which, in turn, would help cabin the sweeping and constitutionally suspect delegations found in many environmental statutes.\(^7\)

Judicial review of whether an agency's action does more good than harm is grounded in both the traditional presumption that Congress acts in the public interest and the historic practice of reviewing courts to seek solutions that maximize societal wealth.\(^8\) The Administrative Procedure Act\(^9\) (the APA) endorsed this tradition and strengthened judicial review by expressly prohibiting "arbitrary" or "capricious" actions.\(^10\) The APA's expanded judicial review was seen as a necessary counterweight to agency "experts" dispensing "discretionary justice" on matters of major economic and social significance in the absence of traditional "rule of law" controls.\(^11\) The fears of "administrative absolutism" that prompted the APA's enhanced judicial review apply to environmental agency decisionmaking just as they do to New Deal economic regulation,\(^12\) in light of substantive changes in administrative law since the APA's enactment.\(^13\)

A recent Fifth Circuit decision, *Corrosion Proof Fittings v. EPA*,\(^14\) illustrates how more good than harm judicial review might work. The case concerned the U.S. Environmental Protection Agency's (EPA's) ban on asbestos products, issued after ten years of proceedings, summarized in a typically lengthy preamble, and accompanied by the usual immense administrative record. Despite this massive support, the Agency's own

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14. 947 F.2d 1201 (5th Cir. 1991) [hereinafter *Corrosion Proof Fittings*].
analysis revealed that the costs of banning asbestos products were greatly disproportionate to the benefits and that EPA had given little consideration to risk-risk tradeoffs or to more cost-effective alternatives for reducing asbestos exposure risks. The court eschewed the usual process-oriented inquiry and reversed because these substantive flaws impugned the reasonableness of the agency's regulatory end result. In remanding to EPA, the Fifth Circuit effectively required EPA to reconsider whether its action would do more good than harm.

_Corrosion Proof Fittings_ is a leading, but far from the only, case reflecting a more principled and substantive form of judicial review. _Motor Vehicle Manufacturers Ass'n v. State Farm_, for example, signals the Supreme Court's willingness to reverse when an agency has improperly compared the costs and benefits. Many courts similarly have required agencies to weigh costs and benefits to ensure that agencies do not act arbitrarily in disregard of the overall public interest. Judicial decisions requiring agencies to consider less burdensome alternatives, to tolerate _de minimis_ risks, or to account for risk-risk tradeoffs reflect the same trend of court decisions that promote more reasonable agency decisionmaking and ultimately enhanced overall environmental protection.

Deriving rules to achieve more good than harm and employing them as substantive touchstones for arbitrary and capricious review under the APA also would encourage the judicial, executive, and legislative branches of government to perform their functions better. Judicial review would be made more effective (and less intrusive) by channelling the record assembled and the parties' briefs and arguments through rules that bear directly on the substantive reasonableness of the agency's result. More good than harm review would also encourage executive oversight that is formally part of the record, through professional submissions likely to play a central role in judicial review. Eventually judicial review under such principles might lead to an interdisciplinary, centralized executive regulatory review program, which could provide the necessary "hard look" scrutiny prior to judicial review. Finally, the presumptive applicability of more good than harm rules would push Congress to address the tradeoffs inherent in environmental regulation expressly and, thereby, to legislate net beneficial social outcomes in most instances. If, for whatever reason, Congress chose to depart from these

15. See id. at 1229.
17. See Cass R. Sunstein, Deregulation and the Hard Look Doctrine 1983 SUP. CT. REV. 177, 210; see also infra notes 264-273 and accompanying text.
18. See infra part IV.A.
19. See infra parts IV.B-D.
20. See infra part V.B.
21. See infra part V.C.
welfare maximizing criteria, it would be required to do so explicitly and hence would be made more politically accountable for its choice.23

This article covers these issues in the following sequence: part I identifies the prototypical examples of environmental agency unreasonableness and discusses the failure of the current form of unchannelled process-oriented judicial review to check these excesses; part II argues that traditional notions of the legislative and judicial roles, reflected in the APA prohibition of arbitrary actions, could support the judicial application of simple rules growing out of the more good than harm criterion; part III illustrates an application of such principles, as mandated under the Toxic Substances Control Act (TSCA),24 to EPA's asbestos ban, mandated in Corrosion Proof Fittings; part IV discusses other decisions reflecting versions of the same core principle; and part V summarizes how rules derived from the more good than harm criterion would improve agency, congressional, judicial, and executive performance in the regulation of environmental risks.

I
THE TWIN PROBLEMS OF UNREASONABLE AGENCY ACTION AND UNFOCUSED, INEFFECTUAL JUDICIAL REVIEW

All agencies, including environmental agencies, are expected to make rational or reasonable decisions in exercising the authority delegated to them by Congress.25 Environmental agencies have failed this test all too often, despite the environmental progress that has been made since 1970.26 Section A below identifies common types of agency failure

23. See infra part V.A.
25. See cases cited infra note 169; Daniel J. Gifford, Rulemaking and Rulemaking Review: Struggling Toward a New Paradigm, 32 ADMIN. L. REV. 577, 582 (1980); Comment, The Fourth Branch: Reviving the Nondelegation Doctrine, 1984 B.Y.U. L. REV. 619, 625. The requirement that an agency act reasonably is implicit when legislative authority is delegated, but Congress also sometimes makes this point explicitly. See, e.g., TSCA § 2(c), 15 U.S.C. § 2601(c) (1988) ("It is the intent of Congress that the Administrator shall carry out this chapter in a reasonable and prudent manner.").
26. See COUNCIL ON ENVIRONMENTAL QUALITY, ENVIRONMENTAL TRENDS (1989). This survey reports significant progress in reducing, for example, air and water pollution, citing specific declines in "[e]missions of total suspended particles, sulfur dioxide, nitrogen oxides, volatile organic compounds, carbon monoxide, and lead" and reductions in water concentrations of pollutants such as "suspended solids, oxygen-demanding wastes, and phosphorus." Id. at vii. The record even for air and water pollution, however, is far from uniformly positive. See, e.g., NATIONAL RESEARCH COUNCIL, RETHINKING THE OZONE PROBLEM IN URBAN AND REGIONAL AIR POLLUTION, at vii (1991) ("Despite more than two decades of massive and costly efforts to bring this problem under control, the lack of ozone abatement progress in many areas of the country has been disappointing and perplexing."); OFFICE OF WATER, U.S. ENVTL. PROTECTION AGENCY, EPA 440-4-90-003, NATIONAL WATER QUALITY INVENTORY: 1988 REPORT TO CONGRESS, at xi (1990) (noting that despite some water quality improvement, problems such as "sedimentation, nutrient enrichment, runoff from farmlands, and toxic contamination of fish tissue and sediments . . . may be on the
to make reasonable environmental decisions and discusses briefly the "vicious circle" of external influences that complicate agencies' tasks. Section B argues that judicial review has been unsuccessful in checking these excesses primarily because it has looked almost exclusively at agencies' decisionmaking processes, rather than at whether an agency has reached a principled end result.

A. An Assessment of Environmental Agency Performance

The United States has devoted enormous resources to environmental protection over the past two decades, largely without regard to the cost-effectiveness or overall economic consequences of such expenditures. Today, this country spends more than two percent of GNP on environmental protection, with expenditures expected to exceed $200 billion annually (in current dollars) by the year 2000. Experts continue to debate the extent to which environmental outlays of this magnitude depress U.S. productivity growth or handicap the competitiveness of American companies in the world economy. Whatever the adverse impact of such immense expenditures on the economy and on productivity, there is widespread agreement that the benefits achieved to date have been far fewer than would have been obtained had the same resources been targeted more cost-effectively on the most serious environmental and health problems. Particularly at the margin, much environmental reg-

27. See BREYER, supra note 22.
28. Moreover, this figure represents only expenditures under existing programs. See Policy, Planning, and Evaluation, U.S. Envtl. Protection Agency, EPA-230-11-90-083, Environmental Investments: The Cost of a Clean Environment, at xvii (1990). The costs of environmental pollution control alone were $115 billion or 2.1 percent of GNP in 1990. Adding in the Clean Air Act Amendments of 1990 and other new requirements, environmental expenditures will escalate to $185 billion (estimated 1990 dollars), or 2.8 percent of GNP, by the year 2000. Id.; see also THOMAS D. HOPKINS, COST OF REGULATION 11 (Dec. 1991) (Rochester Inst. of Technology Pub. Policy Working Paper) (noting that costs of environmental regulation have grown steadily over the past 15 years and are projected to rise sharply in the future).
30. See, e.g., Bruce A. Ackerman & Richard B. Stewart, Reforming Environmental Law, 37 STAN. L. REV. 1333, 1333 (1985) (noting that the "present regulatory system wastes tens of billions of dollars every year, misdirects resources, stifles innovation, and spawns massive and often counterproductive innovation"); CASS R. SUNSTEIN, AFTER THE RIGHTS REVOLUTION 97-102 (1990); see also sources cited supra note 29 and infra note 31.
ulation has been inefficient or even counterproductive considering how the same resources might otherwise have been spent.31

Both national economic constraints and the rising costs of environmental regulation make it critical that resources for environmental protection be spent more wisely and efficiently in the future. The slow growth of the U.S. economy since the early 1970's and continuing budget deficits limit the economic resources available for environmental protection. The marginal cost of future regulatory efforts inevitably will escalate, as already regulated entities are subjected to additional requirements and the scope of regulation is expanded from large companies to smaller businesses and individual consumers.32 Advances in analytical technologies will enable detection of potentially hazardous substances at lower and lower concentrations, thus further expanding the list of potential regulatory targets and increasing the need to set priorities among regulatory goals.33 The pressures for efficient use of resources dedicated to environmental protection also will mount as relatively new issues such as stratospheric ozone depletion, climate change, groundwater contamination, and the cleanup of nuclear weapons plants and other federal facilities command additional resources.34 The environmental challenge suggested by these many competing demands has prompted EPA itself to warn that “[t]he nation cannot do everything at once” and instead must set priorities and ensure that available societal resources are spent wisely in regulating risks.35


32. See, e.g., General Accounting Office, GAO/RCED-92-40, Water Pollution: Non-Industrial Waste Water Pollution Can Be Better Managed, (1992) (concluding that household detergents and cleaners and toxic chemicals from small businesses may be significantly polluting municipal sewerage systems); Matthew L. Wald, California Air Agency Limits Personal Goods, N.Y. Times, Jan. 10, 1992, at A12 (reporting that recently adopted California regulations control emissions from consumer products such as perfumes, household adhesives, laundry starch, and charcoal lighting materials).


34. For example, the potential costs of significantly reducing carbon dioxide emissions could be staggering. See, e.g., William D. Nordhaus, The Cost of Slowing Climate Change: A Survey, 12 Energy J. 37 (1991); Alan S. Manne & Richard G. Richels, CO2 Emission Limits: An Economic Cost Analysis for the USA, 11 Energy J. 51 (1990). With respect to federal facilities, the cost of environmental cleanup at military establishments alone has been estimated to exceed $100 billion, and the cost of cleaning up Department of Energy nuclear facilities is expected to be double that amount. See Murray Weidenbaum, Return of the "R" Word, Pol'y Rev., Winter 1992, at 40, 42.

1. Archetypical Failures of Environmental Regulation

Several well-known types of "regulatory failure" have led to inefficient environmental regulation in the past. First, agencies often do not balance the benefits of proposed standards against the costs, with the consequence that standards may be either too stringent or too lenient.\textsuperscript{36} The overall costs of many regulations exceed overall benefits;\textsuperscript{37} for many more regulations, costs exceed benefits at the margin.\textsuperscript{38} Recent surveys of federal regulations show that the value agencies explicitly or implicitly assign to saving a statistical life ranges from $100,000 to over $5 \textit{trillion}.\textsuperscript{39} By contrast, empirical data on society's willingness to pay to reduce risks consistently show a value of less than $10 million per statistical life saved.\textsuperscript{40} Moreover, the imbalance between costs and benefits appears to be increasing. Before 1985, only one regulatory action imposed costs as high as $100 million per statistical death prevented; since 1985, at least eight regulations have exceeded that figure.\textsuperscript{41}

\textsuperscript{36} Executive Order No. 12,291 was issued in February, 1981. Exec. Order No. 12,291, 3 C.F.R. 127 (1981), \textit{reprinted in} 5 U.S.C. § 601 (1988). It requires that "to the extent permitted by law," an agency should not undertake regulatory activity "unless the potential benefits to society for the regulation outweigh the potential costs to society." 3 C.F.R. 128. Regulatory analyses under this program have indicated that many contemplated environmental regulations were set too stringently, while others, such as EPA's lead in gasoline regulations, were originally not set stringently enough. See U.S. Env. Protection Agency, EPA 230-05-87-028, EPA's USE OF BENEFIT-COST ANALYSIS: 1981-1986, at 5-1 (1987).

\textsuperscript{37} See ROADS TO REFORM, supra note 31, at 6. For example, the costs of many new programs to reduce ozone pollution levels far outweigh the most optimistic estimate of the health benefits of such reductions. See Alan J. Krupnick & Paul R. Portney, \textit{Controlling Urban Air Pollution: A Benefit-Cost Assessment}, 252 SCIENCE 522, 524-25 (1991). Nevertheless, EPA estimates that the cost of meeting its ambient ozone standard under the new programs required by the 1990 Clean Air Act Amendments will exceed $10 billion per year by the year 2005. See OFFICE OF AIR AND RADIATION, U.S. ENVTL. PROTECTION AGENCY, CLEAN AIR ACT AMENDMENTS: COST COMPARISONS 9 (1990).

\textsuperscript{38} The cost of regulation typically rises dramatically at the margin, while marginal benefits, at best, remain constant. Accordingly, costs of reducing exposure to a hazardous substance by 95% may dwarf the costs of reducing exposures by 90%, even though the benefits of the two actions are roughly comparable. See Tom Tietenberg, \textit{Environmental and Natural Resource Economics} 314-15 (2d ed. 1988).

\textsuperscript{39} See Office of Management and Budget, \textit{Regulatory Program of the United States Government} 10, 12 (1992). These cost estimates represent the \textit{average} cost-per-life of a regulation, but the marginal cost-per-life generally will be much higher. Moreover, the actual cost-per-life saved also is likely to be higher than estimated because the risk assessments used to calculate benefits usually employ conservative assumptions that overestimate true risk. See Morrall, supra note 31, at 32; Albert L. Nicholls & Richard J. Zeckhauser, \textit{The Perils of Prudence}, REGULATION, NOV./DEC. 1986, at 13, 13.

\textsuperscript{40} See Ann Fisher et al., \textit{The Value of Reducing Risks to Death: A Note on the New Evidence}, 8 J. POL'Y ANALYSIS & MGMT. 88, 96 (1989).

\textsuperscript{41} Office of Management and Budget, supra note 39, at 11. Seven of the post-1985 regulations with costs greater than $100 million per case avoided were promulgated by EPA; the other was issued by OSHA. Id. at 12. EPA and OSHA regulations tend to be significantly less cost effective than the regulations of other agencies, even though the estimated benefits of such regulations are typically based on worst-case estimates that may substantially exaggerate actual benefits. Id. at 11; see also COUNCIL OF ECONOMIC ADVISERS,
Regulated products or chemicals often tend to be overregulated, but many other potentially dangerous substances are insufficiently controlled or not regulated at all. For example, in the twenty years prior to the Clean Air Act Amendments of 1990, EPA had regulated only seven substances as hazardous air pollutants under the Clean Air Act. Similarly, the Occupational Safety and Health Administration (OSHA) has established occupational permissible exposure levels (PEL's) for only twenty-six substances. Agency unwillingness to weigh costs and benefits paradoxically produces both overregulation in some cases and underregulation in others. By "going to the mat" to defend overly stringent regulations that provide limited extra benefits at high marginal costs, busy agencies expend both resources and precious political capital. Doing so limits their capability to address other, more significant problems.

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ECONOMIC REPORT OF THE PRESIDENT 189 (1992) ("[R]egulations issued during the 1980s were, on average, far more costly per unit of safety achieved than earlier ones had been.").

42. See JOHN M. MENDELOFF, THE DILEMMA OF TOXIC SUBSTANCE REGULATION 2-3 (1988); Cass R. Sunstein, Paradoxes of the Regulatory State, 57 U. CHI. L. REV. 407, 414-15 (1990); James C. Robinson & William S. Pease, From Health-Based to Technology-Based Standards for Hazardous Air Pollutants, 81 AM. J. PUB. HEALTH 1518, 1521-22 (1991); Zeckhauser & Viscusi, supra note 33, at 559 ("We overreact to some risks and virtually ignore others. We may set stringent emission standards, which impose high costs per unit of environmental quality gained, yet ignore the haphazard operation of nuclear weapons plants."). For example, enormous resources are being committed to reduce air pollutants such as ozone and sulfur dioxide, which affect health and the environment but have not been shown to cause death while relatively little has been spent to reduce small soot particles, which EPA estimates may be causing as many as 60,000 premature deaths in the United States per year. See Philip J. Hilts, Studies Say Soot Kills Up to 60,000 in U.S. Each Year, N.Y. TIMES, July 19, 1993, at A1.

43. See Note, Toward Sensible Regulation of Hazardous Air Pollutants Under Section 112 of the Clean Air Act, 63 N.Y.U. L. REV. 612, 613-14 (1988); John D. Graham, The Failure of Agency-Forcing: The Regulation of Airborne Carcinogens Under Section 112 of the Clean Air Act, 1985 DUKE L.J. 100. In 1990, Congress amended the Clean Air Act to list 189 substances that must be regulated using the "maximum achievable control technology" (MACT), followed by a possible second round of regulatory controls to reduce residual risks. 42 U.S.C. § 7412 (Supp. 1990). This legislative response to possible underregulation of some air contaminants will almost certainly produce wasteful overregulation by requiring technological measures that contemplate no explicit consideration of the benefits and costs of regulation.

44. See Robinson & Pease, supra note 42, at 1521. In 1989, OSHA promulgated an "Air Contaminants" standard that established exposure levels for 428 additional potentially toxic chemicals. 54 Fed. Reg. 2332 (1989). However, this standard was reversed by a federal court because OSHA had failed to make the required chemical-by-chemical "significant risk" finding. American Fed’n of Labor v. OSHA, 965 F.2d 962, 986-87 (11th Cir. 1990).

45. See Sunstein, supra note 42, at 416 ("A crazy quilt pattern of severe controls in some areas and none in others is the predictable consequence of a statute that forbids balancing and tradeoffs.").

46. See MENDELOFF, supra note 42, at 8-12; BARDACH & KAGAN, supra note 31, at 119 ("[R]egulatory toughness in its legalistic manifestation creates resentment and resistance, undermines attitudes and information-sharing practices that could otherwise be cooperative and constructive, and diverts energies of both sides into pointless and dispiriting legal routines and conflicts.").
The net result, as one would expect, is less, not more, environmental protection.47

A second recurring problem is that agencies often do not allow the most cost-effective means of achieving compliance with the chosen regulatory objectives.48 Many regulations could have achieved as much (or more) environmental protection by alternative means at a fraction of the cost.49 For example, the benefits of emissions control programs could have been purchased far less expensively had agencies employed market-based incentives instead of "command-and-control" requirements.50 By not allowing regulated entities to use the most cost-effective approach to meet environmental goals, agencies achieve less environmental protection than otherwise would be possible and preserve fewer resources for addressing other pressing societal needs.51

Third, agencies sometimes regulate trivial risks, wasting agency and societal resources and sometimes increasing net risks to society.52 For example, enormous resources are being spent for hazardous waste cleanups to eliminate the minute residual risks that would remain if much less expensive cleanup options were undertaken.53 The benefits of regulating de minimis risks are outweighed by the administrative or opportunity costs of simply considering such regulation, even apart from compliance costs.54 Moreover, attempts to reduce de minimis risks often increase net

47. See supra notes 42-44. Overly stringent regulations may also undermine effective enforcement of the requirements and may render the regulations so burdensome that they will be less able to survive judicial review. See Frank B. Cross et al., Discernible Risk—A Proposed Standard for Significant Risk in Carcinogen Regulation, 43 ADMIN. L. REV. 61, 65 (1991); Sunstein, supra note 42, at 416.

48. As used in this article, "cost-effectiveness" refers to the comparison of the costs of regulatory alternatives for achieving a particular objective. In contrast, cost-benefit analysis asks whether the benefits of a particular action exceed the costs overall and at the margin. Thus, cost-benefit analysis is used to set the stringency of a standard, while cost-effectiveness can be used to determine the most efficient alternative for achieving such standard.

49. See Richard B. Stewart, Economics, Environment, and the Limits of Legal Control, 9 HARV. ENVTL. L. REV. 1, 7 (1985) ("[T]he cost of clean-up under the existing system is probably twice or more what it would be under a least cost approach."); Ackerman & Stewart, supra note 30, at 1338-39. Of twelve studies on the costs of controlling air pollutants, "seven indicated that traditional forms of regulation were more than 400% more expensive than the least-cost solution; four revealed that they were about 75% more expensive; one suggested a modest cost-overrun of 7%.") Id.


51. See PROJECT 88, supra note 50, at 1-2.


54. See Jeryl Mumpower, An Analysis of the de minimis Strategy for Risk Management, 6 RISK ANALYSIS 437, 438 (1986) ("The argument underlying the de minimis notion is that
risk to society because the indirect secondary effects of regulation may actually impair overall public health protection.55

Finally, when agencies regulate a particular substance or technology, they often fail to consider the secondary impacts of regulation, such as the risks presented by substitute products or activities. Many products or technologies have been banned or restricted, only to be replaced by more hazardous substitutes. 56 For example, the banning of cyclamates resulted in greater use of saccharin, which scientists now believe to be a more potent carcinogen than cyclamates. 57 Certain pesticides have been banned, only to be replaced by pesticides more dangerous to human health. 58 Fuel efficiency regulations have contributed to downsized cars with higher fatality rates and injury rates. 59 The human health benefits of cleaning up many Superfund sites are dwarfed by the increased transportation risks created by remediation requiring removal and transportation of contaminated soil and waste. 60 Moreover, compliance with environmental regulation can divert a company’s resources from other programs with direct health benefits, such as employee health insurance, or can reduce productivity and raise unemployment, thereby indirectly increasing health risks. 61

55. See infra note 61.
57. See WILDAVSKY, supra note 56, at 55.
58. See, e.g., William R. Havender, EDB and the Marigold Option, REGULATION, Jan./Feb. 1984, at 13, 16 (noting that most likely substitutes for the pesticide EDB, banned by EPA, will present equal or greater cancer risks to consumers and greater risks to pesticide applicators); Richard L. Stroup, Environmental Policy, REGULATION, 1988 No. 3, at 43, 45 (noting that when pesticide DDT was banned, it was replaced by pesticides more dangerous to human health, although less damaging to ecosystems).
61. Regulatory expenditures can result in lower incomes and higher unemployment; these are associated with higher mortality risks that can significantly reduce, or even outweigh, the health benefits of controlling trivial environmental risks. See Ralph L. Keeney, Mortality Risks Induced by Economic Expenditures, 10 RISK ANALYSIS 147, 157-58 (1990); Keeney & von Winterfeldt, supra note 56; Whipple, supra note 56, at 42; WILDAVSKY, supra note 56, at 65-66; see also 57 Fed. Reg. 26,002, 26,005-09 (1992). At OMB’s request, OSHA conducted “risk-risk analysis” for proposed occupational exposure standards that attempted to evaluate health risks created by increased unemployment and other economic consequences of more
Each of these examples of unreasonable agency action adversely affects regulated interests, and ultimately consumers, as the costs of regulatory compliance are reflected in higher prices for goods and services. Yet an equally important consequence of these typical regulatory failures is that, by misallocating both agency and societal resources, government agencies produce less environmental protection than would otherwise be possible.62

2. Causes of Regulatory Failure

The symptoms of regulatory failure described above stem, at least in part, from the institutional incentives for regulatory agencies to overpursue their assigned mission, with little regard for competing societal goals.63 Similarly, professional and personal incentives operating within regulatory agencies consistently encourage more, rather than less, regulation.64 It should not be surprising then that agencies often are insensitive to the costs and burdens they impose,65 particularly the cumulative impact of separate regulations imposed by different agencies on a single industry.66 To environmental regulatory agencies, the costs of regulation are often viewed as an “externality”—an “unfortunate byproduct” of their pursuit of the goal of environmental protection.67

Environmental agency failures also are attributable to what Judge Breyer has recently described as the “vicious circle” of external stringent standards. Id. 62. See MENDELOFF, supra note 42; SUNSTEIN, supra note 30, at 91-92. 63. See Christopher C. DeMuth & Douglas H. Ginsburg, White House Review of Agency Rulemaking, 99 HARV. L. REV. 1075, 1081 (1986) (“[A] government agency charged with the responsibility of defending the nation or constructing highways or promoting trade will invariably wish to spend too much on its goals.”); ROADS TO REFORM, supra note 31, at 163 (separate statement of Judge Henry J. Friendly) (“Each agency has a natural devotion to its primary purpose . . . no matter how many statutes . . . say that it shall 'consider' other interests as well.”); Note, Regulatory Analyses and Judicial Review of Informal Rulemaking, 91 YALE L.J. 739, 740-41 (1982). 64. Lester B. Lave, Balancing Economics and Health in Setting Environmental Standards, 2 ANN. REV. PUB. HEALTH 183, 195 (1981) (“Organizations attract professionals that tend to believe in their mission. More important, when a group of professionals disposed to believe in the importance of, for example, protecting workers, gets together, they will reinforce each other's beliefs about the importance of their mission. . . . The result is a persistent bias in favor of protection and against balancing.”). 65. See, e.g., William Lilley & James C. Miller, The New “Social Regulation”, PUB. INTEREST, Spring 1977, at 49; MARTIN M. BAILEY, REDUCING RISKS TO LIFE 10-11 (1980); ROADS TO REFORM, supra note 31, at 6. 66. For example, the Federal Government regulates automobiles in three primary areas: emissions control, fuel economy and vehicle safety. Regulations in each of these areas affect performance in the other two; however, each is imposed by different agency offices with virtually no interagency coordination. The cumulative effect of these regulations has been to increase the retail price of a new vehicle by an average of $2582. See MOTOR VEHICLES MANUFACTURERS ASS'N, MOTOR VEHICLE FACTS & FIGURES '91, at 76 (1991); NATIONAL RESEARCH COUNCIL, AUTOMOTIVE FUEL ECONOMY: HOW FAR SHOULD WE GO 8-9 (1992). 67. See BARDACH & KAGAN, supra note 31, at 196.
ences that inhibit the development of "more rational regulation" of environmental risks. The best efforts of environmental agency officials to set priorities that maximize environmental protection regularly fall victim to media "sensationalism" and public misperceptions. These pressures divert agency resources and attention to respond to the most recent "carcinogen of the month" spotlighted by the media, or to meet judicially imposed mandates resulting from litigation brought by interest groups. Because of this constant firefighting, EPA itself acknowledges that there "has been little correlation between the relative resources dedicated to different environmental problems and the relative risks posed by those problems." For all these reasons, it is easy to characterize countless environmental agency decisions as unreasonable or irrational and to suggest that EPA and other agencies should do a better job targeting priority problems and adopting solutions that maximize net societal benefits. But given the incentives of agency staff and the external pressures on agencies, they are unlikely to adopt, or be able to implement, more efficient approaches on their own. Instead, such approaches must be externally imposed—by Congress, the Executive, the courts, or some combination of these three traditional sources of agency oversight.

68. See Breyer, supra note 22, at 33.
70. One of the most recent scares was over the apple growth hormone known commercially as Alar. Like many alarms before it, the risk turned out to be exaggerated. See Joseph D. Rosen, Much Ado About Alar, ISSUES SCI. & TECH., Fall 1990, at 85; Eliot Marshall, A Is for Apple, Alar, and . . . Alarmist?, 254 SCIENCE 20 (1991).
72. Reducing Risk, supra note 31, at 3. Another recent study by three EPA regional offices found that the Agency's priorities are driven far more by external pressures than by risk. As a consequence, EPA is devoting most of its limited resources to problems that pose the least risk to human health or the environment. Janice Long, EPA Focuses on Environmental Problems Posing Least Health Risk, CHEM. & ENG. NEWS, Jan. 15, 1990, at 16. A key EPA official summarized the problem as allocating EPA's priorities based upon "what the last phone call from Capitol Hill or the last public opinion poll had to say." Leslie Roberts, Counting on Science at EPA, 249 SCIENCE 616 (1990) (quoting Frederick Allen of EPA's Office of Policy Analysis).
73. Some commentators have estimated that the overall costs and benefits of environmental regulation may have been roughly equivalent, but costs greatly exceed benefits at the margin for most regulations and overall for some types of standards (e.g., OSHA health standards). See Hahn & Hird, supra note 29, at 254, 256. If this is true, environmental agencies could have achieved far larger net benefits by more reasonable regulation.
74. Internal agency reform initiatives such as EPA's recent "comparative risk" emphasis are commendable, but they are unlikely to offset appreciably the internal and external pressures that produce unreasonable agency decisions. See, e.g., Reducing Risk, supra note 31.
B. The Failure of Unchannelled Process-Oriented Judicial Review

The task of checking unreasonable environmental action has fallen primarily to the courts. Ideally, perhaps, this need not have been the case. Congress could have squarely confronted the many choices and tradeoffs inherent in providing environmental protection when debating and enacting legislation. Time and again, however, Congress has ducked those questions, although the mechanisms it has chosen for doing so take many forms. During the 1970's, for example, Congress commonly set aspirational or symbolic goals and delegated to agencies the impossibly difficult choices of how to reach them. More recently, Congress has taken an apparently opposite tack, writing highly specific statutory instructions with no mention of the tradeoffs involved, and then blaming agency officials when they are unable to meet the impossibly short statutory deadlines for action. Neither of these approaches encourages responsible or reasonable agency action, or makes Congress politically accountable for the success or failure of specific environmental programs.

Partly in response, every President since Nixon has sought to influence environmental agency performance by establishing an oversight group of economists or policy analysts within the Office of Management and Budget (the OMB) or the Office of the President. While these programs have curbed occasional excesses, critics have charged that OMB personnel have pursued, especially in recent years, a covert agenda of deregulation aimed at blocking, rather than improving, environmental protection. The most recent executive regulatory review program under Executive Order No. 12,291, requiring cost-benefit analysis unless otherwise precluded by law, is noteworthy for having explicated gov-


76. See generally Sunstein, supra note 30, at 84-97 (attributing regulatory failure to overly technocratic rulemaking); Dwyer, supra note 75, at 233, 236-44 (discussing legislative and regulatory history of section 112 of the Clean Air Act); Sidney A. Shapiro & Robert L. Glicksman, Congress, The Supreme Court, and the Quiet Revolution in Administrative Law, 1988 Duke L.J. 819, 835-36.

77. See Shapiro & Glicksman, supra note 76, at 835-36.


80. See supra note 36.
erning principles, but such presidentially established principles are judicially unenforceable.81

Without legal leverage82 and the interdisciplinary expertise necessary to conduct an in-depth assessment of many agencies' work products,83 executive review has relied primarily on informal "jawboning" and OMB "delaying tactics" to try to persuade agencies to adopt more reasonable and cost-effective regulations.84 Most conflicts between the OMB and agencies are eventually resolved in this way, but occasionally an agency and the OMB remain stalemated, usually requiring the conflict to be elevated to political levels within the administration.85

Executive oversight also has been hampered by the fact that, during much of the modern era of environmental statutes, different political parties have controlled Congress and the Presidency. Because of political disagreements between the executive branch and Congress throughout the 1980's, Congress has resisted presidential intrusions in directing environmental regulatory policy. This has resulted in Congress exerting tighter control over agency actions by imposing ever more specific requirements, deadlines, and "hammer" provisions that limit the opportunity for executive oversight.86 The OMB, for its part, often has used the principles embodied in the various Executive orders in a manner that has significantly slowed the administrative process.87 Suspecting that these efforts may be a disguised attempt at deregulation, Congress has attempted to cripple executive oversight by refusing to confirm political

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82. See Exec. Order No. 12,291, § 3(d), 3 C.F.R. 127 (1981) ("Nothing in this subsection shall be construed as displacing the agencies' responsibilities delegated by law.").
84. See generally Bruff, supra note 78, at 560; MCGARITY, supra note 83, at 271 (quoting one former high-level OMB official as stating: "We yell and scream, jump up and down, do whatever we can to get them to listen to us.").
85. See Bruff, supra note 78, at 560-61.
86. See Shapiro & Glicksman, supra note 76, at 828-30. "Hammer" provisions automatically impose drastic statutory requirements if an agency fails to enact its own regulations within a specified time period. Such provisions, plus the numerous deadlines found in virtually every environmental statute, severely limit agencies' discretion to set priorities.
appointees to head the program,88 and by attacking the program’s appropriations.89

The preoccupation of the other two branches with checking each other rather than the agencies has left the judiciary with the principal responsibility for reviewing environmental agencies’ actions. For reasons that are largely historical, however, the courts generally have avoided evaluating the substantive reasonableness of an agency’s regulatory result. Instead, they have focused substantive judicial review primarily on an agency’s decisionmaking process.90 Now the norm, such process-oriented judicial review91 has not improved environmental agency performance. Instead, it has proven unpredictable, arbitrary, and all too often counterproductive to the goal of improving environmental protection.

1. The Historical Roots of Unchannelled Process-Oriented Judicial Review

At least since the enactment of the APA, judicial review of agency rulemaking has had procedural, statutory fidelity, and substantive components.92 When first called upon to review environmental agency decisions in the 1970’s, courts emphasized the procedural strand, requiring agencies to follow certain rulemaking procedures, which often went beyond those required in the APA.93 Those courts believed that additional

88. See generally Jonathan Rauch, The Regulatory President, NATIONAL J., Nov. 30, 1991, at 2902, 2902-03 (discussing Congress’ refusal to confirm President Bush’s nominee to head OIRA).
90. See infra notes 106-114 and accompanying text.
91. Process-oriented judicial review also has been described as “quasi-procedural” review, which focuses on “the internal processes by which agencies reach rational decisions.” Merrick B. Garland, Deregulation and Judicial Review, 98 HARV. L. REV. 505, 510 n.23 (1985). These “‘quasi-procedural’ requirements differ from ‘procedural’ requirements, which focus on the processes by which outsiders present their arguments and evidence to the agency . . . , and from ‘substantive’ requirements, which focus on the reasonableness of the conclusions that the agency ultimately reaches.” Id. at 511 n.23.
92. See Weyerhaeuser Co. v. Costle, 590 F.2d 1011, 1024 (D.C. Cir. 1978). Procedural review rests on the APA’s requirement that courts set aside agency actions undertaken “without observance of procedure required by law.” 5 U.S.C. § 706(2)(D) (1988). Statutory fidelity review is based on the requirement that courts reverse an agency action when it is “not in accordance with law or it is in excess of statutory jurisdiction, authority, or limitations or short of statutory right.” Id. § 706(2)(C). Substantive review derives from the APA prohibition of agency actions that are “arbitrary, capricious, or otherwise not in accordance with law.” Id. § 706(2)(A).
93. See, e.g., Environmental Defense Fund v. Ruckelshaus, 439 F.2d 584, 598 (D.C. Cir. 1971) (requiring administrative officers to articulate in detail the standards and principles that govern their discretionary decisions); International Harvester Co. v. Ruckelshaus, 478 F.2d 615, 631 (D.C. Cir. 1973) (Bazelon, C.J., concurring) (holding right to cross examination may
procedural protections were the best way to ensure fair and rational decisionmaking by agencies that were issuing regulations having enormous economic consequences, based on a loosely defined record, and without the more formal, trial-type procedures to which courts were accustomed. The D.C. Circuit, in particular, imposed more formal, hybrid rulemaking procedures to ensure "a framework for principled decisionmaking." However, the Supreme Court firmly rejected the D.C. Circuit's experiment with enhanced procedural review in Vermont Yankee Nuclear Power Corp. v. NRDC. The Court reasoned that the uncertainty created by judicial second-guessing of agency procedural choices at adjudicative hearings would drive agencies to employ "the full panoply of procedural devices" in every instance. The result would be delay, or even regulatory paralysis, that would deprive informal rulemaking of its "inherent advantages." Since Vermont Yankee, courts have rarely reversed agency actions on procedural grounds.

Statutory fidelity—the search for Congress' "true" intent as reflected in the statutory text, the legislative history, and other indicia of Congress' purpose—became a dominant form of review during the 1970's even before Vermont Yankee. Environmental statutes, often framed in vague, aspirational terms, proved particularly troublesome as courts struggled to discern hidden meanings regarding issues never appreciated, much less addressed or resolved, by Congress.

exist in certain situations); Home Box Office, Inc. v. FCC, 567 F.2d 9, 58 (D.C. Cir.) (requiring evidentiary hearings to determine the nature and source of all ex parte discussions with agency officials in order to determine the effect such discussions had upon promulgation of otherwise valid antisiphoning rules), cert. denied, 434 U.S. 829 (1977); Antonin Scalia, Vermont Yankee: The APA, the D.C. Circuit, and the Supreme Court, 1978 Sup. Ct. Rev. 345; James V. DeLong, Informal Rulemaking and the Integration of Law and Policy, 65 Va. L. Rev. 257, 266-71 (1979).

97. 435 U.S. 519 (1978) [hereinafter Vermont Yankee].
98. Id. at 547.
99. See id.
102. See supra note 75; MELNICK, supra note 101, at 374 (finding, in study of judicial
ever, the Supreme Court ruled that unless "Congress has directly spoken to the precise question," it is presumed to have delegated resolution of interpretative questions to the agency, whose discretion in such matters should be upheld by the lower courts if the agency’s interpretation is reasonable.104 Although statutory fidelity challenges to agency actions still are common after *Chevron*, the number of successful challenges has diminished greatly, especially in the courts of appeals.105

Since *Vermont Yankee* and *Chevron*, courts increasingly have focused judicial review on the APA’s substantive component, which bars agency actions that are “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.”106 This component has always permitted courts to evaluate whether the agency’s substantive result is rational or reasonable.107 But far more frequently, courts have focused on the agency’s explanation of its decisionmaking process on the theory that the agency’s result will be reasonable if each step in the agency’s decisionmaking process is rational.108 This process-oriented review of the agency’s decision derives originally from the APA requirement that agencies provide a “statement of basis and purpose” for their actions.109 Initially, courts required agencies only to explicate their reasoning on significant issues.110 Gradually, the focus on the agency’s process has expanded so that now an agency could be required to elaborate on every

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104. *Id.* at 841. *Chevron’s* limitations on the judicial role inevitably turn on the issue of “how clear is clear.” See *Scalia*, supra note 13, at 520.
106. 5 U.S.C. § 706(2)(A) (1988); see *Breyer*, supra note 6, at 382-83; *Shapiro & Levy*, supra note 100, at 412, 440-55 (noting that survey of case law found that substantive review has become primary mechanism for challenging agency action, and that procedural and statutory objections have become less frequent and successful).
108. See, e.g., Ethyl Corp. v. EPA, 541 F.2d 1, 98-99 (D.C. Cir.) (en banc) (Wilkey, J., dissenting), *cert. denied*, 426 U.S. 941 (1976); United States v. Garner, 767 F.2d 104, 116 (5th Cir. 1985) (“[T]he central focus of the arbitrary and capricious standard is on the rationality of the agency’s ‘decisionmaking,’ rather than its actual decision.”); *Breyer*, supra note 6, at 383; DeLong, supra note 93, at 285 (“[F]inal agency actions now are seen as the product of myriad intermediate choices. If the agency has made choices irrationally, the taint is presumed to carry over into the final action, and the final action will be held arbitrary.”).
element of its decisionmaking process, and the court selectively may subject any element to searching or hard look judicial scrutiny. The criteria used to evaluate an agency's decisionmaking process under this doctrine are amorphous and ill-defined. Accordingly, courts possess wide latitude to affirm an agency decision with only a most cursory judicial explanation, or to reverse whenever the reviewing panel discovers the virtually inevitable flaw in some aspect of the agency's decisionmaking process.

2. The Consequences of Unchannelled Process-Oriented Review

It should come as no surprise that, without criteria for evaluating an agency's end result, judicial review focusing on the agency's decision-


112. Process-oriented review ostensibly focuses on matters such as whether the agency failed to consider an important aspect of a problem, or inadequately explained the basis for its decision. *See Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto. Ins.*, 463 U.S. 29, 43 (1983). However, these criteria are so broad and open ended that they give lower courts almost no guidance on which agency actions are unreasonable. *See Ernest M. Jones, A Component Approach to Minimal Rationality Review of Agency Rulemaking*, 39 ADMIN. L. REV. 275, 276-80 (1987) (noting that despite "[l]itany-like recitals by courts of stock phrases of arbitrary and capricious review," the meaning of such review is "so much at large that its utility is questionable"); Patricia M. Wald, *Judicial Review of Economic Analyses*, 1 YALE J. ON REG. 43, 45 (1983) ("[T]hese legal standards are terms of art that leave enormous room for judicial examination."); Richard J. Pierce & Sidney A. Shapiro, *Political and Judicial Review of Agency Action*, 59 TEX. L. REV. 1175, 1194 (1981) ("The primary arena for judicial activism has been review of the agency reasoning process. The articulated tests for such review are so vague that selection of the level of judicial deference depends on unarticulated standards.").

113. A typical example is the D.C. Circuit's review of EPA's risk assessment of the chemical TCE in drinking water. After summarizing the evidence and the Agency's decisionmaking process, the court simply stated: "We are satisfied that the alternative for which the agency opted was rational, and we therefore have no cause to disturb the EPA's choice." *NRDC v. EPA*, 824 F.2d 1211, 1217 (D.C. Cir. 1987). The court gave no explanation of the factors or criteria it used to reach its "rational" verdict.

114. *See, e.g.*, *Gulf S. Insulation v. CPSC*, 701 F.2d 1137, 1146 (5th Cir. 1983) (overturning the Consumer Product Safety Commission's (CPSC's) ban on urea-formaldehyde foam insulation (UFFI) because the Agency's technical determinations were, in the court's opinion, not "good science"); *International Union, UAW v. Pendergrass*, 878 F.2d 389, 394-96 (D.C. Cir. 1989) (remanding OSHA's formaldehyde standard because the agency selected the "maximum likelihood estimate" rather than the "upper confidence limit" to estimate human health risks); *Public Citizen Health Research Group v. Tyson*, 796 F.2d 1479, 1507 (D.C. Cir. 1986) (upholding OSHA's permissible exposure level for ethylene oxide, the court devoted 16 pages to a judicial discourse on highly technical risk assessment issues); *see Shapiro & Levy, supra* note 100, at 438.

115. *See Ernest Gellhorn & Glen D. Robinson, Perspectives on Administrative Law*, 75 COLUM. L. REV. 771, 780-81 (1975) ("[T]he rules governing judicial review have no more substance at the core than a seedless grape . . . .").
making process has failed to curb unreasonable agency actions. All too often, for example, courts have interpreted vague or fuzzy language as precluding an agency from considering the costs of regulation when setting standards, even when the agency itself has concluded that the balancing of costs and benefits is needed for rational decisionmaking. The courts' reluctance to overturn agency regulations that impose costs that exceed benefits has encouraged agency officials to "err on the side of overprotection."

Moreover, courts sometimes have blocked, rather than promoted, agency attempts to use new, more cost-effective regulatory approaches. Courts even have required agencies to address de minimis risks that the agency found too trivial to regulate. Reviewing courts

116. See Breyer, supra note 6, at 390-93; MELNICK, supra note 101, at 344 ("Taken as a whole, the consequences of court action under the Clean Air Act are neither random nor beneficial."). In contrast to the courts' focus on the process rather than the result of environmental agency actions, a so-called "end result" test is used to judge the "reasonableness" of utility rates. The principles for judging whether rates set by the agency are "just and reasonable" require "a balancing of the investor and the consumer interests." Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591, 603 (1944); Harold Leventhal, Vitality of the Comparable Earnings Standard for Regulation of Utilities in a Growth Economy, 74 YALE L.J. 989, 992 (1965) (stating that the standard for determining fair rates of return is based on comparable earning and "attraction of capital"). These principles have significant substantive content but, when they are ignored, review can become a hollow exercise, rubber-stamping agency rates without regard to their economic consequences. See Richard J. Pierce, Public Utility Regulatory Takings: Should the Judiciary Attempt to Police the Political Institutions?, 77 GEO. L.J. 2031 (1989).

117. For example, the D.C. Circuit has precluded EPA from considering costs when it sets ambient air quality standards under the Clean Air Act. Lead Industries Ass'n v. EPA, 647 F.2d 1130, 1148-49 (D.C. Cir.), cert. denied, 449 U.S. 1042 (1980); American Petroleum Inst. v. Costle, 665 F.2d 1176, 1185 (D.C. Cir. 1981), cert. denied, 455 U.S. 1034 (1982). The statute does not expressly preclude consideration of costs, but simply directs the Administrator to set standards that "protect the public health" with "an adequate margin of safety." 42 U.S.C. § 7409(b)(1) (1988). Congress gave very little attention to how EPA should set such standards when it enacted the Clean Air Act in 1970. See MELNICK, supra note 101, at 252, 297; see also cases cited infra note 288.

118. See, e.g., NRDC v. EPA, 824 F.2d 1146 (D.C. Cir. 1987) (en banc) (remanding EPA's regulation for hazardous air pollutant because it improperly included consideration of costs in setting emission standards).

119. MELNICK, supra note 101, at 295.

120. In one of the only cases to date that has addressed market incentives, the D.C. Circuit rejected EPA's use of a "bubble concept" for the non-attainment portions of the Clean Air Act. NRDC v. Gorsuch, 685 F.2d 718, 726 (D.C. Cir. 1982). The bubble approach gives companies flexibility to adopt the most cost-effective emission controls for a plant by treating all emissions from the facility as a single source. Id. at 720 n.1. The Supreme Court reversed the D.C. Circuit decision in Chevron U.S.A. v. NRDC, 467 U.S. 837 (1984). Similarly, in NRDC v. EPA, 489 F.2d 390 (5th Cir. 1974), the court required continuous emission controls, even though the Clean Air Act at that time did not clearly preclude the more cost-effective intermittent control systems. Id. at 394 n.2, 407; see Richard B. Stewart, The Development of Administrative and Quasi-Constitutional Law in Judicial Review of Environmental Decision-making: Lessons from the Clean Air Act, 62 IOWA L. REV. 713, 737 n.118 (1977).

121. See, e.g., Public Citizen v. Young, 831 F.2d 1108, 1123 (D.C. Cir. 1987), cert. denied sub nom., Cosmetic, Toiletry & Fragrance Ass'n v. Public Citizen, 485 U.S. 1006 (1988); ac-
also have acquiesced in agency failures to balance the risk-risk tradeoffs inherent in their regulations. Courts undoubtedly do not intend to promote unreasonable agency decisions, but this is the inevitable result when the agency’s end product becomes largely irrelevant, and the courts limit themselves to deciding whether the agency’s explanation for each of its many assumptions, estimates, and subsidiary choices was rational.

The potential for courts to second-guess agencies under the guise of taking a hard look at every brick in the edifice of the agency’s decision is problematic on political accountability grounds. When invoking hard look, process-oriented review, courts routinely caution that their role is not to act as a “superagency” that substitutes its own views for those of an agency. But without accepted principles or rules to apply, courts naturally are tempted to overturn agency decisions with which they disagree, ostensibly because of perceived defects in the agency’s decisionmaking process. Given the massive records and substantial uncertainties

cord, Les v. Reilly, 968 F.2d 985, 989 (9th Cir. 1992); SUNSTEIN, supra note 30, at 198-99; infra note 348; see also Environmental Defense Fund, Inc. v. EPA, 636 F.2d 1267, 1283-84 (D.C. Cir. 1980) (rejecting EPA’s determination to exempt as de minimis PCB concentrations below 50 parts per million).


123. See, e.g., Industrial Union Dep’t v. Hodgson, 499 F.2d 467 (D.C. Cir. 1974); Ethyl Corp. v. EPA, 541 F.2d 1 (D.C. Cir. 1976); Public Citizen Health Research Group v. Tyson, 796 F.2d 1479 (D.C. Cir. 1986); Jerry L. Mashaw & David L. Harfst, Regulation and Legal Culture: The Case of Motor Vehicle Safety, 4 YALE J. ON REG. 257, 276 (1987) (“[W]hether an agency’s rule is arbitrary or capricious may turn as much on the agency’s apparent reasoning process as on the good sense of the final judgment under review.”).

124. See Chevron U.S.A. v. NRDC, 467 U.S. 837, 866 (1984) (“[F]ederal judges—who have no constituency—have a duty to respect legitimate policy choices made by those who do.”); Kenneth W. Starr, Judicial Review in the Post-Chevron Era, 3 YALE J. ON REG. 283, 312 (1986) (“Policy, which is not the natural province of [federal] courts, belongs properly to the administrative agencies, and, ultimately, to the executive and legislature that oversee them.”).

125. See, e.g., Motor Vehicle Mfrs. Ass’n v. State Farm Mutual Auto. Ins., 463 U.S. 29, 43 (1983) (“The scope of review under the ‘arbitrary and capricious’ standard is narrow and a court is not to substitute its judgment for that of the agency.”); Ethyl Corp., 541 F.2d at 36 (“The enforced education into the intricacies of the problem before the agency is not designed to enable the court to become a superagency that can supplant the agency’s expert decision-maker.”).

126. See Pierce, supra note 4, at 1265; Loren A. Smith, Judicialization: The Twilight of Administrative Law, 1985 DUKE L.J. 427, 453-54. According to one commentator, “the suspicion has arisen, certainly among practitioners who can say such things, that the grand synthesizing principle that tells us whether the court will dig deeply or bow cursorily depends exclusively on whether the judge agrees with the result of the administrative decision.”
involved in environmental decisionmaking, an unsympathetic court nearly always can spot some flaw in the agency's decisionmaking process if the court wishes to substitute its own policy judgments for those of the agency.127

None of this is to suggest that "searching" judicial review is inevitably detrimental.128 But because the focus of judicial review has become so divorced from the actual regulatory end product, any beneficial effects of such review are outweighed by its adverse effects on the regulatory process. Intrusive scrutiny of every step of the agency's decisionmaking process is not only inherently unpredictable and inconsistent,129 but also it promotes unnecessary caution, which retards environmental improvement.130 Indeed, it has been suggested that "the open-ended requirement of adequate reasoning is having the same effect on agencies that the open-ended requirement of adequate procedure had before Vermont Yankee— it is delaying the policymaking process to the point of paralysis."131

II
TOWARD A MORE PRINCIPLED JUDICIAL REVIEW

Judicial review that looks at the regulatory process without regard to the regulatory end result has not worked. Without significant judicial curbs, agencies have misdirected or wasted hundreds of billions of dollars over the past two decades,132 producing less environmental protection, lower productivity gains, and slower economic growth than could other-


127. See supra note 114. Empirical studies suggest that the outcome of judicial review of agency rulemaking often depends on the political philosophy of the reviewing judges. Richard J. Pierce, Two Problems in Administrative Law: Political Polarity on the District of Columbia Circuit and Judicial Deterrence of Agency Rulemaking, 1988 DUKE L.J. 300, 302 ("In cases with significant ideological implications—most major agency rulemakings—[D]emocratic D.C. Circuit judges are more likely to reverse agency policies at the behest of individuals, and [R]epublican D.C. Circuit judges are more likely to reverse agency policies challenged by business interests.").

128. See, e.g., Cass R. Sunstein, On the Costs and Benefits of Aggressive Judicial Review of Agency Action, 1989 DUKE L.J. 522, 525 (stating that judicial review provides "both an ex ante deterrent and an ex post check against the domination of administrative processes by irrelevant or illegitimate considerations."); Pedersen, supra note 94, at 60 (stating that judicial review gives "those who care about well-documented and well-reasoned decisionmaking a lever with which to move those who do not.").

129. See supra notes 112-13 and accompanying text.

130. See Mashaw & Harfst, supra note 123, at 312-16; Breyer, supra note 6, at 391-93 (arguing that fear of judicial review distorts agency decisionmaking and deters an agency from acting when it should).

131. Pierce, supra note 4, at 1265; see also Breyer, supra note 6, at 393 (noting that agency statements must be extremely long to satisfy court requirements). For example, prior to the 1990 Clean Air Act Amendments, EPA spent $7.6 million and 150 staff work-years to develop a radionuclides regulation that would pass judicial muster, even though this regulation would only prevent one cancer death every 13 years. See O'Leary, supra note 71, at 562.

132. See supra notes 31-41 and accompanying text.
wise have been the case. Instead of breaking the vicious circle hampering rational risk regulation, courts have compounded the problem by focusing on process details rather than on what particular regulations actually will accomplish and cost.

This assessment of environmental agency performance is not new. A variety of solutions, usually focusing primarily on the role of a single branch of government, have been offered by others. Judge Breyer, for example, believes that "a small, centralized administrative group" within the executive branch "charged with a rationalizing mission" could break the "vicious circle" and thereby improve environmental agency performance. Professor Rose-Ackerman has proposed a legislative solution that would authorize a more "activist federal judiciary" to determine whether an environmental statute's "means plausibly further its stated ends" and whether "appropriations permit the plausible pursuit of statutory purposes." Professor Sunstein has offered more than fifty interpretative canons, including two (favoring "proportionality" and a de minimis exception in risk regulation) that would enable courts to curb some of the environmental agency failures addressed here.

This article presents a more modest proposal: that the APA judicial review provisions presume that Congress intended for environmental agencies to do more good than harm, and that courts should enforce this intent by simple rules derived from that central principle. As discussed below, such an APA net benefit presumption comports with pre-APA judicial review of agency action and the historic practice of common law and equity courts to seek solutions that maximize overall societal welfare. The APA intended to restore the rule of law and strengthen judicial review of agency actions for reasons that apply directly to the environmental agency excesses summarized in part I.A. Moreover, changes in administrative law since enactment of the APA, particularly adoption of the reasonableness standard for review of law-based agency

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133. See supra note 29. Only the magnitude, not the existence, of these effects is in dispute.

134. See Breyer, supra note 22, at 57-59.

135. Id. at 59-61.


138. Others, without elaboration, have suggested that the APA might have a substantive component that would improve judicial review of agency action. See Sunstein, supra note 10, at 642-43; Christopher Edley, Jr., The Governance Crisis, Legal Theory, and Political Ideology, 1991 Duke L.J. 561, 595-96 (echoing Sunstein's suggestion that the arbitrary and capricious test should be interpreted as resting on these or similar principles).
policy judgments, support the need for a comparable test governing all aspects of agency decisionmaking.

A. The Traditional Pre-APA Legislative and Judicial Roles

The classical Anglo-American legal model envisions a neutral state with courts applying objective legal principles to resolve both private and public law disputes. Under this model, legislatures are "made up of reasonable persons pursuing reasonable purposes reasonably." Judges apply the "rule of law," derived from neutral sources, when deciding disputes before them. Both in fashioning the common law and in exercising their general equitable powers, courts developed the necessary neutral principles by balancing public and private interests.

Prior to the APA courts reviewed administrative action in equity in accordance with the same principles. Specifically, judges fashioned rules of law that balanced public and private interests, both when construing statutes and when reviewing agency actions. Exercising this authority, courts frequently nullified agency actions deemed to be irrational either because they disserved the public interest or were otherwise arbitrary or unreasonable. Even before the APA, therefore, courts invoked neutral principles to maximize social welfare when reviewing administrative agency actions.

140. See James M. Landis, Statutes and the Sources of Law, in Harvard Legal Essays 213 (R. Pound ed. 1934) (presuming Congress to be acting in the public interest).
141. See Horwitz, supra note 11, at 230.
142. For example, courts typically have balanced the possibility of irreparable harm to the plaintiff against the harm to the defendant and society when deciding whether to grant a preliminary injunction or a stay pending judicial review. See 11 Charles A. Wright & Arthur R. Miller, Federal Practice and Procedure § 2948 at 430-31, § 2904 at 316 (1973); Mathews v. Eldridge, 424 U.S. 319, 335 (1976) (determining procedural due process hearing rights by weighing "the private interest," "the risk of an erroneous deprivation of such interest," and the "probable value, if any, of additional or substitute procedural safeguards" versus "the Government's interest," including "the fiscal and administrative burdens that [such procedures] would entail").
144. The Supreme Court continues to invoke, where necessary, the pre-APA "common law of judicial review of agency actions." See Webster, 486 U.S. at 608 (1988) (Scalia, J., dissenting); Heckler v. Chaney, 470 U.S. 821, 832 (1985). Moreover, as Professor Sunstein has recently emphasized, courts develop many canons of construction, themselves a form of common law, that may have substantive consequences. See Sunstein, supra note 30 at 147-50.
B. The APA's Endorsement of Principled Judicial Review of Agency Actions

Early in this century, the classical conception of a neutral state with courts applying objective legal principles came under attack, first as applied to common law contract, agency, and tort cases, and then more generally as "legal realists" attempted to transform traditional concepts of property. The distinction between public and private law began to break down and proponents of the administrative state came to view agencies, staffed by experts, as offering a form of objective decisionmaking superior to that provided by the traditional judicial model. As Dean Landis, one of the leading proponents, stated, "[t]here are certain fields where the making of law springs less from generalizations and principles . . . than from a 'practical' judgment which is based on all of the available considerations." Had this view prevailed, it might have deprived courts of their traditional authority to review agency actions in a principled manner, as they had traditionally done in equity prior to the APA.

In the decade preceding the 1946 enactment of the APA, however, notions about the respective roles of the courts and administrative agencies gradually reverted toward the classical conception. The leading spokesman for this legalist tradition was Dean Pound, who warned that uncontrolled administrative agencies would result in "tyranny" and "administrative absolutism." Dean Landis' image of neutral "expert" agencies applying scientific management principles thus began to give way to fears of unelected bureaucrats wielding enormous, unconstrained power and trampling private rights. Dean Pound, in particular, argued that unless "the bar takes upon itself to act, there is nothing to check the tendency of administrative bureaus . . . supplanting our traditional judicial regime by an administrative regime." This concern

146. See Hornitz, supra note 11, ch. 2.
147. Id. at ch. 5.
148. Id. at 213-16, 222-25.
150. Paul R. Verkuil, The Emerging Concept of Administrative Procedure, 78 Colum. L. Rev. 259, 261-62 (1978). A central goal of the APA was to provide added protection to regulated interests subjected to the "twin tyrannies" (substantive and procedural) of administrative law. "Substantive tyranny" was reflected in state and federal legislation that attempted "to control corporate behavior." Id. at 262. "Procedural tyranny" was reflected "in the shift in decision control from the judiciary to administrative boards and tribunals," which lacked the procedural rights of a judicial tribunal. Id.
151. See Walter Gellhorn, The Administrative Procedure Act: The Beginnings, 72 Va. L. Rev. 219, 221 (1986) (quoting Dean Roscoe Pound, Chair of the ABA Special Committee on Administrative Law that prompted the legislative debate eventually leading to the APA); see also Verkuil, supra note 150, at 261-62.
153. See Horitz, supra note 11, at 220 (quoting Pound, Report of the Special Committee
with unbridled administrative discretion, compounded by fears of judicial "abdication" in reviewing agency actions, became the rallying cry for opposition to unconstrained agency decisionmaking. The opposition culminated in an APA precursor, the 1940 Walter-Logan Act, which President Roosevelt vetoed because it would have caused a "widespread crippling of the administrative process." In 1941, the Attorney General's Committee on Administrative Procedure produced majority and minority reports that sparked the legislative debates that eventually led to the APA's passage in 1946. The minority report, which reflected Dean Pound's criticisms and was "inspired by Walter-Logan," became the principal "influence on the underlying assumptions of the APA." According to Senator McCarran, Chairman of the Judiciary Committee and the APA's co-sponsor, Congress expanded judicial review in the enacted bill so as to "cut down the 'cult of discretion' so far as federal law is concerned." The Supreme Court subsequently confirmed this interpretation in a Universal Camera Corp. v. NLRB, holding that the APA has directed "that courts must now assume more responsibility for the reasonableness and fairness" of agency decisions, and "that they are not to abdicate the conventional judicial function."

C. More Good Than Harm: A First Principle for Environmental Agencies and Reviewing Courts

The debates that produced the APA confirm Congress' intent that courts oversee the substance of agency actions. Substantive review, however, can easily dissolve into superficial oversight as it has tended to do under the current form of process-oriented judicial review. Unanchored in substantive rules, such review depends upon the "totality of circum-

154. See NLRB v. Standard Oil Co. 138 F.2d 885, 887 (2d Cir. 1943); Wilson & Co. v. NLRB, 126 F.2d 114, 117 (7th Cir. 1942) (upholding agency despite "shocking injustices" and findings "contrary to the great weight of the evidence").

155. See Horwitz, supra note 11, at 230-33.

156. Id. at 231 (quoting the New York City Bar Association).

157. Id. at 232.

158. See Verkuil, supra note 150, at 277 n.97.

159. Horwitz, supra note 11, at 232.


161. 340 U.S. 474, 490 (1951); Sunstein, supra note 17, at 198-200.
stances" and almost never produces "a decision based on 'principle'."162 What is needed then are rules,163 however simple,164 that give content to what it means for an agency action to be arbitrary or capricious. According to Justice Scalia, the absence of such rules leads to different treatment of similar cases, a lack of consistency and predictability, and ultimately to "judicial arbitrariness."165 The APA, like every "general rule of law," presupposes that the "establishment of broadly applicable principles is an essential component of the judicial process."166 Thus, "even the most vague and general text" can "be given some precise, principled content," and the failure to provide that content ignores "the essence of the judicial craft."167

The APA text expressly requires courts to "hold unlawful and set aside" any agency action that is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."168 Courts have equated these terms with "reasonableness" and "rationality,"169 and have acknowledged that they must constitute substantive limitations.170

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162. On principled decisionmaking, see generally Lon L. Fuller, The Forms and Limits of Adjudication, 92 Harv. L. Rev. 353, 372 (1978) at 372; Posner, supra note 8, at 42-51; Antonin Scalia, The Rule of Law as a Law of Rules, 56 U. Chi. L. Rev. 1175 (1989); Herbert Wechsler, Toward Neutral Principles of Constitutional Law, 73 Harv. L. Rev. 1, 15 (1959) ("[T]he main constituent of the judicial process is precisely that it must be genuinely principled.").

163. See Fuller, supra note 162, at 373. [A]djudication cannot function without some standard of decision, either imposed by superior authority or willingly accepted by the disputants. Without some standard of decision the requirement that the judge be impartial becomes meaningless. Similarly, without such a standard the litigants' participation through reasoned argument loses its meaning. Communication and persuasion presuppose some shared context of principle.

164. See Jones, supra note 112, at 312 (claiming that if "analysis is guided by more specific criteria of rationality, application of minimal rationality is more incisive and confident").

165. See Scalia, supra note 162, at 1179-82. This description captures the present state of "process-oriented" review. See supra notes 122-28 and accompanying text.

166. See Weyerhaeuser Co. v. Costle, 590 F.2d 1011, 1026 (D.C. Cir. 1980) (holding that the judicial function in reviewing agency actions is to analyze records "in the light of the neutral principles in which judicial decisionmaking is grounded").

167. Scalia, supra note 162, at 1183 ("[R]eduction of vague congressional commands into rules that are less than a perfect fit is not a frustration of legislative intent because that is what courts have traditionally done, and hence what Congress anticipates when it legislates.").


169. See, e.g., Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto. Ins., 463 U.S. 29, 42 (1983) (holding that a reviewing court "may not set aside an agency rule that is rational"); Texas Indep. Ginners Ass'n v. Marshall, 630 F.2d 398, 405 (5th Cir. 1980) ("The reasonableness requirement ... stems from the mandate of the Administrative Procedure Act for a reviewing court to hold unlawful and set aside agency action[s] ... that are 'arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law' "); ILGWU v. Donovan, 722 F.2d 795, 815 (D.C. Cir. 1983) (explaining that the "keystone" of judicial review is "to ensure that the Secretary engaged in reasoned decisionmaking"); Frisby v. HUD, 755 F.2d 1052, 1055 (3d Cir. 1985) (holding that agency action is not arbitrary or capricious if it is "rational" based on relevant factors, and within the agency's statutory authority).

170. See Breyer & Stewart supra note 107, at 361 n.105 (citing examples of instances
Courts have not further elaborated the APA's arbitrary and capricious litany, however, despite their having embellished other APA provisions with far less obvious meanings. For example, in addition to the ever-expanding judicial construction of the "statement of basis and purpose" provision already mentioned, courts have spelled out the APA's presumption of judicial review and its exceptions, and have substantially transformed its standing provisions. Moreover, Justice Scalia has justified *Chevron* itself as an "across-the-board presumption," derived by APA interpretation, for deciding whether Congress intended to delegate interpretative authority to the agency.

What should guide the courts in similarly articulating the reasonableness and rationality requirements embodied in the APA judicial review test? While hardly self defining, these terms traditionally have signalled judicial authority to balance social costs and benefits and to seek outcomes that maximize societal welfare. Moreover, the traditional conception of the legislative process, well understood by the APA drafters, presupposes that Congress acts in the public interest and therefore intends to do the greatest good for the greatest number. Welfare maximization follows naturally as a background norm useful both in interpreting statutes and reviewing agency actions. Applying this principle, courts would assess the reasonableness of an agency's action just as they have traditionally done in common law and equity; they would balance the relevant public and private interests, while giving appropriate deference to the agency as Congress' delegate for making policy in the public interest.

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171. See *supra* note 109 and accompanying text.
174. Justice Scalia relied on changes in administrative law since 1946 and the proliferative growth of the modern administrative state to support this presumption. See Scalia, *supra* note 13, at 516.
176. See *Posner, supra* note 8, at 387 (suggesting that "this may be the right default principle, placing on the proponent of departures . . . the burden of demonstrating their desirability").
177. "[A]dministrative review is a branch of equity." *Bethlehem Steel Corp. v. EPA*, 782 F.2d 645, 649 (7th Cir. 1986).
178. See Harold Leventhal, *Environmental Decisionmaking and the Role of the Courts*, 122 U. Pa. L. Rev. 509, 555 (1974) (arguing that the "rule of administrative law," embodied in the APA, ensures that "environmental protection agencies will take into account the congressional mandate that environmental concern be reconciled with other social and economic objectives of our society").
Justice Scalia gave perhaps the most novel expression of this principle when he characterized the APA formula as a version of the medical maxim "first, do no harm": any agency action that "does more harm than good" is necessarily arbitrary or capricious.\(^1\) Justice Scalia's simple maxim could readily provide the foundation for courts to deduce more specific rules for applying the APA's judicial review test. Deriving such rules would both further the APA drafters' intent\(^1\) and account for important differences between environmental agencies and the economic regulatory agencies that predominated when the APA was enacted.\(^1\)

\[\text{D. Some Implications of a More Principled APA Review}\]

Before discussing how a more principled APA review might work in practice, it is useful to note two ancillary benefits that would follow from the approach suggested here. Some observers have argued that hard-look review of the factual and policy aspects of an agency's decisionmaking process conflicts with the deferential posture on legal issues that the Supreme Court endorsed in *Chevron*.\(^2\) Both *Chevron* and hard look review involve policy issues, but on legal policy questions not resolved by Congress *Chevron* requires courts to defer to reasonable agency interpretations.\(^3\) Focusing on the agency's decisionmaking process, hard look review may often be far less deferential in evaluating the agency's fact-based policy judgments.\(^4\)

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179. See Scalia, supra note 5, at 19-20.
180. The APA interpretation advanced here is further supported by three other criteria that Judge Posner suggests should apply in interpreting statutes: specifically, "certainty, coherence [and] pragmatically good results." See Posner, supra note 8, at 387.
181. Judicial review to protect the interests of regulated parties often is considered to be of secondary importance for traditional economic regulatory agencies because such agencies are said to be vulnerable to "capture" by regulated parties. See Sunstein, supra note 42, at 426-28. By contrast, environmental agencies are rarely captured because they "are not charged with maintaining the health of a particular industry while regulating it in the public interest." Martin Shapiro, *APA: Past, Present, Future*, 72 VA. L. REV. 447, 460 (1986). Instead, environmental agencies are far more likely to be controlled by "iron triangles" of agency staff plus interest group activists—a difference that makes substantive judicial checks on these agencies more necessary than for traditional economic regulatory agencies. See Bruff, supra note 78, at 554.
182. See Breyer, supra note 6, at 397; see also Carl McGowan, Reflections on Rulemaking Review, 53 TUL. L. REV. 681, 689 (1979) (noting paradox of current doctrine under which courts must defer to agency procedural choices but conduct hard look scrutiny of technical details of agency's substantive decisions).
183. See Joint Petition for Rehearing with Suggestion for Rehearing en Banc, at 3 n.6; Ohio v. Dept. of Interior, 880 F.2d 432 (D.C. Cir. 1989) (No. 86-1529). A survey of over 200 D.C. Circuit *Chevron* decisions showed that, as of September 1989, only seven reversed the agency on "Chevron II" grounds. In each of these seven cases, the agency gave no explanation whatsoever for its interpretation or policy choice. Id. at 2-3.
184. See supra notes 102, 105 and accompanying text.
These differences pose important questions of institutional competence. Appellate courts have no fact-gathering capability, and often lack the expertise needed to evaluate complex science policy questions. When courts focus on these issues rather than on the overall reasonableness of an agency's result, they exceed the traditional judicial role of balancing public and private interests. The narrower, but more substantive, judicial review suggested here would equalize the degree of judicial deference given to legal-based policy judgments under *Chevron* and hard look scrutiny of fact-based policy judgments. Specifically, courts would uphold both types of policy judgments whenever the agency acts reasonably. Moreover, if review were refocused through reasonableness principles on the agencies' regulatory product, concerns about the courts' institutional competence would also begin to dissolve as courts revert to their traditional function of ensuring agency compliance with rules, rather than engaging in an open-ended, independent assessment of massive rulemaking records.

A second advantage of the approach suggested here is that rule-like criteria limiting agency discretion would help circumscribe sweeping delegations of authority often found in environmental, health, and safety enforcement.
statutes. In *Benzene*, for example, the Supreme Court had to decide whether OSHA could regulate occupational exposure to the carcinogen benzene to "the lowest feasible level," simply because "any level above zero presents some increased risk of cancer." Relying on precedents from the 1930's condemning such a "sweeping delegation of legislative power" on constitutional grounds, the *Benzene* plurality interpreted the Occupational Safety and Health Act (the OSH Act) as imposing a "significant" risk limitation, since in "the absence of a clear mandate in the Act, it is unreasonable to assume that Congress intended to give the Secretary the unprecedented power over American industry that would result from the Government's view." The significant risk test found in the OSH Act by the Court imposed substantive limits on the Agency's discretion and narrowed the potentially unlimited delegation that caused Justice Rehnquist to focus on non-delegation in his concurring opinion. Other environmental provisions are framed in similarly vague terms and can be construed as making sweeping delegations like that construed in *Benzene*. More good than harm review, as elaborated below, would immunize such provisions from nondelegation challenges, without resort to novel interpretations of agencies' organic statutes, by imposing generally applicable APA limits on an agency's discretion to prevent the open-ended grant of power giving rise to nondelegation concerns.

III

**CORROSION PROOF FITTINGS: AN ILLUSTRATION OF MORE GOOD THAN HARM REVIEW**

How should courts determine whether agency actions do more harm than good and therefore are arbitrary or capricious under the APA? The Fifth Circuit's recent reversal of EPA's asbestos ban in *Corrosion Proof Fittings* provides a prototype for the application of more good than harm

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191. *Id.* at 636-37 (emphasis in original).
192. *Id.* at 646 (citing A.L.A. Schechter Poultry Corp. v. United States, 295 U.S. 495, 539 (1935); Panama Ref. Co. v. Ryan, 293 U.S. 388 (1935)).
194. *See id.* at 646.
195. *See id.* at 672-80 (Rehnquist, J., concurring).
197. The Supreme Court has noted the availability of judicial review for channelling agency delegations as a factor that may mitigate nondelegation concerns. *See Opp Cotton Mills, Inc. v. Administrator of Wage and Hour Div. of Dep't of Labor*, 312 U.S. 126, 144 (1941); INS v. Chadha, 462 U.S. 919, 953-54 n.16 (1983).
principles. Although decided under the special provisions of the Toxic Substances Control Act (TSCA), the case illustrates both how courts might apply reasonableness principles in reviewing regulatory actions and how such principled review might be less intrusive than today's process-oriented approach.

A. EPA's Proceedings to Ban Asbestos

In 1976, with substances like asbestos in mind, Congress enacted TSCA to coordinate government regulation of chemicals that pose risks to workers and the general public. Congress authorized EPA to take a variety of steps under TSCA up to and including product bans whenever it has a "reasonable basis" for finding that current uses of a substance pose an "unreasonable risk," and it has chosen the "least burdensome" regulatory measure that would "adequately" control that risk.

In 1979, EPA launched a joint proceeding with the Consumer Product Safety Commission (the CPSC) to ban, phase out, or otherwise regulate remaining commercial uses of asbestos. EPA was concerned by evidence suggesting that as many as ten thousand persons were dying annually from past exposure to asbestos fibers, mostly from asbestos insulation products used in shipbuilding during and after World War II. Even before EPA began its proceedings, however, commercial use of asbestos had begun to decline. The products most responsible for the epidemic of asbestos disease had disappeared from the market, as manu-

199. TSCA provides for "substantial evidence" rather than arbitrary and capricious review. 15 U.S.C. § 2618(c)(1)(B)(i) (1988). Courts almost unanimously have ruled, however, that these two standards of review are functionally equivalent when applied to agency rulemaking decisions. See Associated Indus. of New York v. United States, 487 F.2d 342, 349-50 (2d Cir. 1973); Gellhorn & Robinson, supra note 115, at 781 n.29 (characterizing the difference between the "substantial evidence" and "arbitrary and capricious" tests as "the difference between a black zebra with white stripes and a white zebra with black stripes").
200. Asbestos is the generic term for a group of naturally occurring silicate fibers that, depending upon the type and size, have long been associated with progressive pulmonary disease (asbestosis) and various malignancies, including mesothelioma and lung cancer. See IRVING J. SELIKOFF & DOUGLAS H. K. LEE, ASBESTOS AND DISEASE 22-30 (1978). Asbestos was one of the substances Congress was concerned about when it enacted TSCA. See H.R. REP. No. 1341, 94th Cong., 2d Sess. 3 (1976).
203. Id.
facturers and product users became aware of the hazardous properties and potential liabilities of asbestos products, and strict regulatory measures were enacted during the 1970’s.\textsuperscript{207}

Within a few years of the commencement of EPA’s proceeding, only two groups with a commercial interest in asbestos remained. One represented small U.S. manufacturers of asbestos-containing products,\textsuperscript{208} and the other represented Canadian mining interests.\textsuperscript{209} In contrast to products from an earlier era, the products produced by these two groups contained asbestos fibers encapsulated or locked in a plastic, cement, tar, or other matrix that greatly diminished fiber release.\textsuperscript{210} In the early 1980’s, these groups urged OSHA to act on its long-dormant proposal to reduce its asbestos permissible exposure limit to 0.5 fibers per cubic centimeter.\textsuperscript{211} The groups encouraged EPA to defer to OSHA, or to act jointly with it, in taking a series of measures that would make product bans unnecessary.\textsuperscript{212}

EPA’s response to the asbestos industry’s initiative indicates that the Agency recognized the difficulties of banning or phasing out asbestos for all uses. EPA initially accepted the industry’s proposals for tighter labeling and workplace controls, but then reversed its position and rejected such proposals as inadequate in 1983. In February 1985, EPA again switched course and announced plans to conclude its rulemaking by referring all further regulation of asbestos to OSHA and the CPSC.\textsuperscript{213} This announcement immediately sparked a campaign, led by EPA’s employee union, to reverse the Agency’s referral decision.\textsuperscript{214} Shortly thereafter, Representative Dingell’s Subcommittee held oversight hearings on


\textsuperscript{208} This group, the Asbestos Information Association/North America (AIA/NA), consists of companies manufacturing asbestos-cement pipe, friction materials, gaskets, roof-coatings, shingles and other similar products.

\textsuperscript{209} This second group, named the Asbestos Institute, was created in 1984 to promote the safe use of asbestos worldwide. It is funded by the Canadian Federal Government, the Quebec Government and the Canadian mining industry, and is administered by representatives of government, labor and industry. Canada is the world’s second largest producer (after Russia) and largest exporter of chrysotile asbestos, which it sells worldwide with principal markets in Asia, Africa and South America.

\textsuperscript{210} See Joint Brief of Petitioners Asbestos Information Association/North America and The Asbestos Institute at 19, Corrosion Proof Fittings v. EPA, 947 F.2d 1201 (5th Cir. 1991) (No. 89-4596) [hereinafter AIA/AI Joint Brief].

\textsuperscript{211} See id. at 20.

\textsuperscript{212} Id. at 20-21.

\textsuperscript{213} See id. at 22-23; Bruff, supra note 78, at 569.

the Agency's referral decision, including the OMB's legal advice that
EPA terminate its own proceeding in deference to OSHA.215 By this
time, OSHA had reactivated its own proceeding to reduce the asbestos
occupational exposure standard and to regulate asbestos exposures in the
construction industry.216 Ultimately, however, EPA acquiesced to pres-
sure from its own staff and Congressman Dingell, and agreed to press
forward with its proceeding under TSCA.217

In January 1986, EPA proposed to ban or phase out essentially all
asbestos products.218 Following hearings in the summer and fall of 1986,
EPA re-estimated the costs and benefits of its proposed ban, and held
further hearings in the fall of 1988.219 In July 1989, EPA issued its final
rule,220 which banned asbestos products in three stages. Of the 202 can-
cer cases that EPA predicted its ban would avoid, about 144 were ac-
counted for by friction products, most significantly by asbestos brake
pads.221 EPA acknowledged that its ban on these products would re-
quire replacing asbestos in brakes with other fibers that themselves had
been classified as probable or possible carcinogens.222 However, EPA
claimed that it was not able to make a "definitive assessment" of the risks
from substitute products.223 Rather than approximate estimates, EPA
effectively assumed that substitute fibers posed zero health risks.224

EPA also did not consider the potentially greater safety risks of non-
asbestos brakes in its cost-benefit calculations.225 Auto manufacturers
had cautioned that switching from asbestos would pose formidable re-
engineering problems and that repairing brakes designed for asbestos
pads with non-asbestos pads would raise serious safety issues.226 In 1987,
EPA commissioned an independent expert report from the American Society of Mechanical Engineers (ASME), which largely confirmed these concerns.\textsuperscript{227} Further testimony indicated that even a small decrease in safety from the use of non-asbestos pads could dwarf the health benefits estimated by EPA for its asbestos ban.\textsuperscript{228} The Agency nonetheless elected to omit these potential increased safety risks from its benefits calculations.

Finally, EPA rejected arguments that most of the predicted benefits from banning asbestos friction products could be achieved simply by imposing tighter engineering controls on brake repair operations, which accounted for nearly ninety percent of EPA’s projected benefits.\textsuperscript{229} OSHA was then studying brake repair operations on remand from the D.C. Circuit,\textsuperscript{230} and, as a consequence, the National Institute for Occupational Safety and Health (NIOSH) had issued reports showing that engineering controls would reduce asbestos exposures far below current levels in brake repair shops.\textsuperscript{231} Despite these NIOSH reports, EPA refused to alter its benefits estimate or to calculate the alternative benefits that would be achieved by such engineering controls.\textsuperscript{232}

Apart from asbestos friction products, most of the remaining benefits claimed by EPA came from asbestos cement (A/C) pipe, A/C shingles and asbestos roof coatings.\textsuperscript{233} The respective benefits and costs of banning these products are summarized below, accepting EPA’s assumption that the price of substitute products would decline over time and discounting benefits nominally from the time of first exposure.\textsuperscript{234}

\textsuperscript{227} AMERICAN SOCIETY OF MECHANICAL ENGINEERS EXPERT PANEL ON ALTERNATIVES TO ASBESTOS IN BRAKES, ANALYSIS OF THE FEASIBILITY OF REPLACING ASBESTOS IN AUTOMOBILE AND TRUCK BRAKES (1988). \textsuperscript{228} Without estimating precisely the added fatalities that would result from replacing asbestos in brake pads, Robert Crandall, a Brookings Institution economist, testified that even a one percent increase in U.S. annual traffic fatalities would result in an additional 500 traffic fatalities per year—far more than the 202 statistical cancer cases EPA projected over the next 50 years without a ban on asbestos products. Robert W. Crandall, The Cost-Effectiveness of EPA’s Proposed Ban and Phase-Out of Asbestos Products, AIA/Al Comments on New Case, \textit{supra} note 226, Vol. X app. B3 at 32. \textsuperscript{229} See Opening Written Comments of the Asbestos Information Association/North America and the Asbestos Institute, Vol. I, at 97-98 (June 29, 1986) (EPA Docket No. OPTS 62036 [hereinafter AIA/Al Opening Comments]). \textsuperscript{230} See Building & Constr. Trades Dep’t v. Brock, 838 F.2d 1258 (D.C. Cir. 1988) (reversing OSHA’s 0.2 f/cc exposure limit for brake shops because evidence indicated lower level was feasible). \textsuperscript{231} NIOSH found that by using new technology it was possible to reduce average worker exposures to 0.004 f/cc—1/50th of the then current OSHA PEL. See AIA/Al Joint Brief, \textit{supra} note 210, at 66. \textsuperscript{232} 54 Fed. Reg. 29,489 (1989). \textsuperscript{233} \textit{Id.} at 29,485. In 1990, these three products accounted for over 70% of all domestic consumption of asbestos not used in friction products. See \textit{VIRTA}, \textit{supra} note 206, at 3. \textsuperscript{234} EPA assumed that the cost of substitute products for asbestos would decline over time, and discounted the health benefits from the time when exposure occurred rather than from the time much later when the actual benefits (i.e., a cancer case avoided) would occur.
TABLE 1: COST-EFFECTIVENESS OF BAN ON ASBESTOS PRODUCTS\textsuperscript{235}

<table>
<thead>
<tr>
<th>Product Category</th>
<th>Benefits (Cancer Cases Prevented)</th>
<th>Costs ($ Million)</th>
<th>Cost-Per-Case Prevented ($ Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/C Pipe</td>
<td>3.17</td>
<td>227.33</td>
<td>71.7</td>
</tr>
<tr>
<td>A/C Shingles</td>
<td>0.23</td>
<td>34.18</td>
<td>151.5</td>
</tr>
<tr>
<td>Roof Coatings</td>
<td>1.08</td>
<td>177.40</td>
<td>164.3</td>
</tr>
</tbody>
</table>

As with asbestos friction products, industry and other commentators raised concerns that banning these products would produce equivalent or even greater risks from substitute products. Most importantly, the industry argued that A/C pipe would be replaced either by polyvinyl chloride (PVC) or ductile iron pipe, both of which posed carcinogenic risks comparable to A/C pipe.\textsuperscript{236} EPA acknowledged that there may be risks from both of these substitutes but did not approximate quantitative estimates or otherwise discount the relatively small benefits EPA claimed would result from banning A/C pipe.\textsuperscript{237} EPA rejected similar arguments regarding the fibrous substitutes that would replace asbestos in many other products.\textsuperscript{238}

\textbf{B. Reasonableness Principles as an Anchor for Substantive Judicial Review}

Confronted with this record, the Fifth Circuit reversed EPA's asbestos product bans without the usual delving into technical and scientific issues that is common under hard look judicial review.\textsuperscript{239} Instead, the court primarily focused on whether "a reasonable mind" would accept EPA's result.\textsuperscript{240} While nominally anchored in TSCA's "substantial evidence" test,\textsuperscript{241} the Fifth Circuit's approach effectively turned on whether specific choices made by EPA would accomplish more good than harm.\textsuperscript{242}

First, the court ruled that reasonableness review under TSCA required EPA to engage in "a balancing test like that familiar in tort
The required balancing need not include "an exhaustive, full-scale cost-benefit analysis," but EPA did need to show that the "benefits to be achieved" by each element of its regulation "bear a reasonable relationship to the costs imposed." Focusing directly on EPA's projected costs and benefits of banning products such as A/C pipe, the court faulted as unreasonable any action that purported to save so few lives at so high a cost.

The court also faulted EPA for failing to consider whether alternative approaches could have achieved nearly equivalent benefits without the high social costs associated with product bans. EPA unnecessarily limited its analysis to only two choices: "a world with no further regulation . . . and a world in which no manufacture of asbestos takes place." In calculating the benefits of its ban, EPA "explicitly refused to compare it to an improved workplace in which currently available control technology is utilized." For EPA to have acted reasonably, the court ruled, it would have had to show "that there is not some intermediate state of regulation that would be superior to both the currently-regulated and completely-banned world."

EPA sought to excuse its failure to consider intermediate measures, such as improved workplace controls, on the grounds that no such measure would be "completely" effective since "there is no known level of asbestos exposure below which there is no risk." The court rejected this "zero-risk" goal in favor of a "minimum reasonable risk" standard designed to ensure that the benefits achieved outweigh the harm to society. Rather than strive for a risk-free world, EPA's task was to determine "an acceptable level of non-zero risk," and then to "choose the least burdensome method of reaching that level."

These shortcomings in EPA's decision were compounded by the Agency's failure to weigh the health and safety risks posed by substitute

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243. Id.
244. Id.
245. Id. The court noted that EPA's own estimates of the costs of banning asbestos pipe ranged from $43-76 million per life saved. Id. at 1219. While stating its reluctance to decide "what an appropriate expenditure is to prevent someone from incurring the risk of an asbestos-related death," the court opined that for A/C pipe, the benefits estimated by EPA "seem far outweighed by the astronomical costs." Id. at 1219, 1222-23. The court's confidence in this conclusion was bolstered by the fact that its "review of EPA caselaw reveals [that] such high costs are rarely, if ever, used to support a safety regulation." Id. at 1223. As further support, the court cited a recent study showing that deaths from "ingested toothpicks" over the same period would be nearly double EPA's estimate of lives saved from banning "asbestos pipe, shingles, and roof coatings." Id. at 1223 n.23.
246. Id. at 1216.
247. Id.
248. Id. at 1217.
249. Brief for Respondent Environmental Protection Agency at 96, 98 (No. 89-4596).
250. Corrosion Proof Fittings, 947 F.2d at 1215.
251. Id.
products. While acknowledging that EPA does not have "an affirmative duty to seek out and test every workplace substitute," the court nonetheless held that such a duty does arise "once interested parties introduce credible studies and evidence" of the risks from probable substitute products.\(^{252}\) The likelihood that EPA's regulation might do more harm than good was an important basis for overturning EPA's friction product and A/C pipe product bans. The court faulted EPA for overlooking credible evidence from health studies and the ASME Report that "substitute products [for asbestos friction products] actually might [increase fatalities due to] . . . cancer deaths from the other fibers used and highway deaths occasioned by less effective, non-asbestos brakes."\(^{253}\) Likewise, the court reversed EPA's A/C pipe ban partially because EPA "refused to assess the risks of substitutes," despite conceding that "the increased carcinogen risk" associated with both PVC and ductile iron pipe "is both credible and known."\(^{254}\)

Just as important as what the court did do is what it did not do. The court overturned EPA's ban because many elements of the Agency's action might do more harm than good. In so doing, however, the court expressly eschewed the usual hard look review of the Agency's technical or scientific findings or of the Agency's reasoning process on these issues. For example, the court rejected technical challenges to EPA's cost and benefit calculations and to its decision to treat all types of asbestos the same, stating that "[d]ecisions such as these are better left to the agency's expertise."\(^{255}\) In declining to scrutinize EPA's reasoning on such technical issues, the court summarized its reviewing role as follows: "On these, and many similar points, the petitioners merely seek to have us reevaluate the EPA's initial evaluation of the evidence. . . . Decisions such as the EPA's decision to treat various types of asbestos as presenting similar health risks properly are better left for agency determination . . . ."\(^{256}\) In short, instead of focusing on the agency's decisionmaking process, the Fifth Circuit looked directly at the "Medusa" of EPA's decision, not its reflection, in order to determine whether the Agency had acted reasonably.

IV
MORE GOOD THAN HARM FURTHER DEFINED AND SUPPORTED

In Corrosion Proof Fittings, the court anchored process-oriented judicial review in substantive rules designed to check the agency failures identified in part I. The court thus refused to accept lopsided relation-
ships between costs and benefits that a "reasonable mind" would consider unacceptable.\textsuperscript{257} It would not sanction product bans when "less burdensome" alternatives appeared more cost-effective.\textsuperscript{258} The court also required EPA to target acceptable risk levels above zero\textsuperscript{259} and to confront the risk-risk tradeoffs of its actions.\textsuperscript{260} Each of these holdings suggests a rule that follows logically from the core principle that agencies act reasonably or rationally only if their actions overall, and at the margin, do more good than harm.\textsuperscript{261}

The rules implicit in \textit{Corrosion Proof Fittings} are not new. The National Academy of Sciences described its recommendation that EPA "identify feasible alternatives" and "evaluate (quantitatively, to the extent possible) the consequences of each alternative decision" as "in essence, an endorsement of well-recognized principles of rational decision making."\textsuperscript{262} Motivated by a similar understanding, courts long have fashioned common law rules that promote efficiency and maximize overall societal welfare.\textsuperscript{263} While judges have been reluctant to review environmental agency actions in accordance with similar rules, \textit{Corrosion Proof Fittings} shows that they might do so without treading on the agency's prerogatives. Moreover, \textit{Corrosion Proof Fittings} is far from the only case of its kind. The following catalog of cases and other authorities supports one or more of the four rules that may be deduced from a general more good than harm principle—namely that agencies should: (1) weigh costs and benefits; (2) choose the least burdensome alternative; (3) disregard trivial risks; and (4) consider and balance risk-risk tradeoffs.

\textsuperscript{257} \textit{Id.} at 1213, 1222-23; cf. \textit{supra} notes 36-44 and accompanying text (discussing agency failure to weigh costs and benefits).

\textsuperscript{258} See 947 F.2d at 1216-17, 1226; cf. \textit{supra} notes 48-51 and accompanying text (discussing agency failure to pursue cost-effective alternatives).

\textsuperscript{259} 947 F.2d at 1215; cf. \textit{supra} notes 52-55 and accompanying text (discussing agency failure to ignore trivial risks).

\textsuperscript{260} 947 F.2d at 1221, 1227; cf. \textit{supra} notes 56-62 and accompanying text (discussing agency failure to confront risk-risk tradeoffs).

\textsuperscript{261} Weighing costs and benefits is equivalent to showing that the agency's action does more good than harm. The need to choose the least burdensome alternative also grows out of the same principle, since choosing an inefficient option yields more harm than good at the margin and wastes resources that could do more good elsewhere. Eschewing the regulation of \textit{de minimis} risks recognizes that the benefits of regulating trivial risks may be outweighed by the costs of developing, administering, and complying with the regulation. Finally, considering risk-risk tradeoffs is a necessary corollary of doing more good than harm, ensuring that an apparently net beneficial regulation is not outweighed by the indirect risks and costs it creates.

\textsuperscript{262} COMMITTEE ON ENVIRONMENTAL DECISION MAKING, NATIONAL ACADEMY OF SCIENCES, II DECISION MAKING IN THE ENVIRONMENTAL PROTECTION AGENCY 25-26 (1977)

\textsuperscript{263} RICHARD A. POSNER, ECONOMIC ANALYSIS OF THE LAW 32 (3d. ed. 1986).
A. Weighing Costs and Benefits

*State Farm*,

the Supreme Court decision often associated with process-oriented review,

itself lays a foundation for focusing review on an agency's regulatory product rather than on details of the decisionmaking process. Prior to *State Farm*, lower court decisions already were hinting at a more substantive review behind the "quasi-procedural veneer" of the hard look doctrine. Something more than "mere consideration and explanation" was beginning to be required: agency policy choices had to be grounded in the record and pass a standard higher than "mere 'minimum rationality.'" In *State Farm*, the Supreme Court squarely rejected the Solicitor General's request that the Court quash this incipient trend. Instead, the Court held that the APA's arbitrary and capricious test requires more than due process "rationality," and remanded to the Agency on grounds reflecting more good than harm principles.

The issue in *State Farm* was the National Highway Traffic Safety Administration's (NHTSA) attempt to revoke its standard requiring the installation of "passive restraints" (i.e., air bags or automatic seatbelts) in new cars. NHTSA had predicted in 1977 when it adopted the standard that passive restraints "could prevent approximately 12,000 deaths and over 100,000 serious injuries annually." When NHTSA subsequently attempted to revoke the standard, the Court found the Agency's action to be irrational because NHTSA "apparently gave no consideration whatever to modifying the standard to require" air bags, which the Court found to be an effective life-saving technology. The Court accordingly unanimously reversed NHTSA's attempted revocation because the agency had failed to consider the potential benefits of a mandatory airbag alternative. The Court's unanimity on this point suggests that not
even one Justice was prepared to sanction revoking the standard unless NHTSA showed that the costs of requiring airbags outweighed its benefits.

The Court in *State Farm*, like the Fifth Circuit in *Corrosion Proof Fittings*, assumed that rational decisionmaking includes balancing benefits and costs. The notion that weighing benefits and costs is inherent to rational decisionmaking is an old one, dating back at least to Ben Franklin's endorsement of such weighing as the "moral or prudential algebra" of everyday life. More or less systematically, everyone makes important decisions by weighing the pros and cons of a particular course of action. This is reason enough for many to argue that federal regulatory agency decisions should reflect a balancing of costs and benefits. Moreover, even those who question whether Ben Franklin's prudential algebra correctly captures the "intuitive" aspect of personal decision-making concede its necessary role in rational societal decisionmaking for regulating environmental risks.
Imposing a more good than harm requirement on agency decisionmakers imports principles often invoked by common law courts. For example, Judge Learned Hand’s famous tort formula requires the weighing of costs and benefits to determine whether a reasonable person would take precautionary measures. Similar risk-utility balancing determines whether products are defectively designed. In reviewing environmental agency decisions, courts frequently have relied on these common law precedents for balancing societal costs and benefits. Such reliance is appropriate given that the weighing of costs and benefits “has always been part (or always should have been part) of rational administration.”

The need to compare benefits and costs has long played a role in judicial review of agency actions regulating health and safety risks. In 1973, the D.C. Circuit overturned EPA’s denial of a one-year suspension of the Clean Air Act automobile tailpipe emission standards. Judge Leventhal’s opinion compared the air quality benefits of the standards taking effect sooner (in 1975 versus 1976) with the costs to auto makers and the economy if EPA’s prediction of technological feasibility proved wrong. Likewise, even though no provision of the Food, Drug, and Cosmetic Act expressly provides that the “FDA may approve a drug only if its benefits outweigh the risks,” Judge Leventhal held that “this is

thing of equal or greater value in return, either immediately or in the future.”). See United States v. Carroll Towing Co., 159 F.2d 169, 173 (2d Cir. 1943) (describing what has become known as the “Hand formula,” which imposes liability if the burden of risk avoidance (B) is less than the injury (L) multiplied by the probability of injury (P), i.e., whether \( B < PL \); RESTATEMENT (SECOND) OF TORTS (1965) § 291 (“The risk is unreasonable and the act is negligent if the risk is of such magnitude as to outweigh what the law regards as the utility of the act or of the particular manner in which it is done.”). See Barbara Ann White, Risk-Utility Analysis and the Learned Hand Formula: A Hand That Helps or a Hand That Hides, 32 ARIZ. L. REV. 75, 106-11 (1990).

See, e.g., Forester v. CPSRC, 559 F.2d 774, 789 (D.C. Cir. 1977) (“The requirement that the risk be ‘unreasonable’ necessarily involves a balancing test like that familiar in tort law: The regulation may issue if the severity of the injury that may result from the product, factored by the likelihood of the injury, offsets the harm the regulation itself imposes upon manufacturers and consumers.”); Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1222 (5th Cir. 1991); Environmental Defense Fund v. EPA, 636 F.2d 1267, 1276-77 n.24 (D.C. Cir. 1980); Gulf South Insulation v. CPSRC, 701 F.2d 1137, 1148 (5th Cir. 1983).

necessarily the crux of any decision to permit a new drug to be marketed or to allow an old one to remain on the market."\textsuperscript{286} More generally, the D.C. Circuit has held that whenever a party can show "that harm clearly outweighs the benefits," a rule lacks the "required rational support," and must be set aside under "the general legal requirement of reasoned, nonarbitrary decision-making."\textsuperscript{287}

In the early years of judicial review under the major environmental statutes enacted in the 1970's, courts often were unreceptive to the need to weigh costs and benefits.\textsuperscript{288} Sometimes courts even stated in dictum that such a rational balancing process is not required (or even permitted) unless Congress "has clearly indicated such intent on the face of the statute."\textsuperscript{289} However, courts have consistently limited, if not ignored, this dictum in subsequent decisions under the OSH Act.\textsuperscript{290} Under this statute, courts accordingly have implied a cost-benefit requirement for national consensus health standards,\textsuperscript{291} emergency temporary health standards,\textsuperscript{292} and safety standards.\textsuperscript{293} The recent judicial trend favoring cost-benefit balancing is equally pronounced under other statutes.\textsuperscript{294}

\textsuperscript{286} Hess & Clark v. FDA, 495 F.2d 975, 994 n.59 (D.C. Cir. 1974) (quoting Richard Merrill, \textit{Compensation for Prescription Drug Injuries}, 59 VA. L. REV. 1, 11 (1973)).

\textsuperscript{287} Thompson v. Clark, 741 F.2d 401, 405 (D.C. Cir. 1984); see also Environmental Defense Fund v. EPA, 636 F.2d 1267, 1277 (D.C. Cir. 1980) (holding that, in considering regulation of PCB's, EPA adopted proper approach of balancing costs and benefits); Forester v. CPSC, 559 F.2d 774, 789 (D.C. Cir. 1977) (holding that agency must balance costs and benefits in setting standards under the Federal Hazardous Substances Act); American Petroleum Inst. v. EPA, 540 F.2d 1023, 1037-38 (10th Cir. 1976) (holding that, although "[i]labels are neither important nor determinative" for how an agency considers the costs of regulation, EPA properly weighed costs and benefits in setting effluent limitations under the Clean Water Act, \textit{cert. denied}, 430 U.S. 922 (1977)); Environmental Defense Fund v. EPA, 510 F.2d 1292, 1302 (D.C. Cir. 1975) (holding that EPA must suspend registration of pesticide known to cause cancer in animals unless the benefits of the pesticide outweigh its risks); New York v. Reilly, 769 F.2d 1147, 1150 (1992) ("Because the \[Clean Air Act\] allows EPA to balance air and nonair benefits and costs, which it did, EPA's decision not to promulgate materials separation rules was neither arbitrary nor capricious.").


\textsuperscript{289} \textit{Cotton Dust}, 452 U.S. at 510. In this 1981 decision, a divided Supreme Court held that Congress intended OSHA to set standards for occupational exposure to toxic substances based on feasibility analysis rather than a balancing of costs and benefits. \textit{Id.} at 509. In fact, the legislative history suggests that Congress did not resolve this issue. \textit{See id.} at 546 (Rehnquist, J., dissenting); SUNSTEIN, supra note 30, at 197; Bangser, \textit{supra} note 283, at 397-404; Richard J. Pierce, \textit{The Role of Constitutional and Political Theory in Administrative Law}, 64 TEX. L. REV. 469, 477-78 (1985).

\textsuperscript{290} See Bangser, \textit{supra} note 283, at 369, 420-28.

\textsuperscript{291} Donovan v. Castle & Cooke Foods, 692 F.2d 641, 647-49 (9th Cir. 1982).

\textsuperscript{292} Asbestos Info. Ass'n/N. Am. v. OSHA, 727 F.2d 415, 425-26 (5th Cir. 1984).

\textsuperscript{293} International Union v. OSHA, 938 F.2d 1310, 1319-21 (D.C. Cir. 1991); National Grains & Food Ass'n v. OSHA, 866 F.2d 717, 733 (5th Cir. 1989).

\textsuperscript{294} See Love v. Thomas, 858 F.2d 1347, 1357 (9th Cir. 1988) (Federal Insecticide, Fungi-
This emerging judicial support for cost-benefit weighing has been encouraged by the greatly enhanced policy analysis capabilities of agency staffs: it reflects the reality of how agencies actually make decisions in most cases. EPA's air office staff "painstakingly calculate the costs and benefits" of ambient air quality standards, which the Administrator then dutifully "refuses to read" when approving the standard recommended by the staff based on such analysis. Rational and accountable decisionmaking is inconsistent with such a subterranean process, which perhaps explains courts' growing unwillingness to pretend that balancing is unnecessary. Congress can therefore be presumed to require an agency to balance the costs and benefits of its proposed actions, unless it expressly exempts the agency from such a requirement. This view is supported by a recent Senate vote (95-3) in favor of requiring EPA, if elevated to Cabinet status, to perform cost-benefit analysis for every final regulation that it promulgates.

The concept that rationality means doing more good than harm does not answer the question of how elaborate or precise any comparison of benefits and costs should be. There are always difficulties and uncertainties that must be addressed.
certainties in quantifying costs and especially benefits of environmental regulations, in considering the distributional aspects of proposed actions, and in fairly accounting for unquantifiable values. The various criticisms on these points have been partially mitigated by the progress made in refining analytic methodologies and techniques and in establishing uniform guidance for conducting cost-benefit analyses. Moreover, unquantifiable factors and the distributional consequences of regulatory actions can be expressly factored into an agency's balancing of costs and benefits, so long as the agency is explicit about the weight it gives to each factor. The courts have repeatedly indicated that the requirement to comparison to require not only that total benefits exceed total costs but also that the marginal benefits of 90% as compared to 80% reduction in thermal pollution exceed the marginal costs).


303. Both the OMB and individual agencies have recently produced guidelines for conducting regulatory impact analysis, including cost-benefit analysis. See, e.g., Office of Management and Budget, Regulatory Impact Analysis Guidance, in Regulatory Program of the United States Government app. V (1991); Office of Policy Analysis, U.S. Envtl. Protection Agency, EPA-230-01-84-003, EPA Guidelines for Performing Regulatory Impact Analysis (1983). The OMB guidance instructs agencies to estimate the "opportunity costs" of proposed regulations, which are the value of benefits foregone. Opportunity costs consist of industry compliance costs, government administrative and enforcement costs, and costs incurred by displaced workers. Expenditures are only counted as opportunity costs if they involve actual use of resources; expenditures that simply consist of transfers from one party to another do not represent true social costs and should not be counted in the cost estimate.

304. See Leonard & Zeckhauser, supra note 301, at 38-41. A cost-benefit analysis must always consider the distribution of costs and benefits. This can be factored in as a quantitative adjustment, or as a qualitative factor to be weighed in the overall balance. For example, it sometimes may be true that the risks from an activity are heavily concentrated on a few individuals while benefits from the activity (and the costs of reducing the risks) are widely dispersed. The equitable considerations that flow from such distributional consequences obviously may affect the agency's balancing. Indeed, they occasionally may be the predominant factor, provided the agency carefully explicates the bases for its decision. Moreover, Congress can stipulate expressly when such distributional and equitable concerns should override the normal presumption of net beneficial regulation. See infra part V.A. See generally Bangser, supra note 283.
balance costs and benefits does not necessitate a formal cost-benefit analysis with strict quantification and monetization of all costs and benefits. Rather, courts typically have required a looser approach in which the agency need only consider the costs and benefits of a proposed action, and show that the estimated costs bear a “reasonable relationship” to the projected benefits. Also, contrary to the claims of some critics, balancing costs and benefits does not inherently lead to less regulation. In short, a judicially elaborated rule requiring the weighing of benefits and costs need involve no more precise policy analyses than agency decisionmakers can readily develop and explain, or for that matter, lay judges can comprehend.

B. Choosing the Least Burdensome Approach

Agencies typically can achieve a given level of protection through alternative regulatory measures, some of which cost more than others. Market-based incentives, such as tradeable permits and pollution taxes, in many cases are the most promising alternatives for achieving environmental objectives at lower cost. Even in situations where market incentives may not be appropriate, more flexible “performance

305. See, e.g., Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1222 (5th Cir. 1991) (holding that EPA is not required to engage in “an exhaustive, full-scale cost-benefit analysis,” but must show a “reasonable relationship” between costs and benefits); Quivira Mining Co. v. NRC, 866 F.2d 1246, 1250 (10th Cir. 1989); American Mining Congress v. Thomas, 772 F.2d 617, 632-33 (10th Cir. 1985). Agencies are not required to monetize all costs and benefits, and even “unquantified benefits” can “permissibly tip the balance in close cases.” See, e.g., Corrosion Proof Fittings, 947 F.2d at 1219; Appalachian Power Co. v. Train, 545 F.2d 1351, 1361 (4th Cir. 1976); American Fin. Servs. v. Federal Trade Comm’n, 767 F.2d 957, 986, (D.C. Cir. 1985).

306. See U.S. ENVTL. PROTECTION AGENCY, supra note 36, at 5-1 (noting that cost-benefit analysis led to more stringent regulations than were originally contemplated for lead in fuels and reporting requirements for small quantity generators); Dale Whittington & W. Norton Grubb, Economic Analysis in Regulatory Decisions: The Implications of Executive Order 12291, 9 SCIENCE, TECH. & HUMAN VALUES, Winter 1984, at 63, 66 (citing several examples where cost-benefit analyses have been used “to support positions contrary to the deregulatory bias of the Reagan administration”); JAMES T. CAMPEN, BENEFIT, COST, AND BEYOND 4 (1986) (“[T]he current widespread perception of [benefit-cost analysis] as an inherently conservative tool is certainly understandable. It is, however, fundamentally mistaken.”).

307. See supra notes 48-50 and accompanying text; NRDC v. Thomas, 805 F.2d 410, 425 (D.C. Cir. 1986) (upholding agency decision to allow emission averaging because, “[l]acking any clear congressional prohibition of averaging, the EPA’s argument that averaging will allow manufacturers more flexibility in cost allocation . . . makes sense”). The goal of doing more good than harm would encourage agencies to use market incentives to the maximum extent of their authority. However, market incentives alone will not solve the problems of regulatory unreasonableness, because they are primarily directed at achieving environmental objectives at the lowest possible cost, rather than in setting such objectives at the optimal level in the first place.

308. Market-based regulation may not be appropriate for pollutants with localized effects, unless additional measures are taken to prevent the formation of local “hot spots.” See TIETENBERG, supra note 38, at 348-49; TIMOTHY E. WIRTH & JOHN HEINZ, PROJECT 88—ROUND II, at 9 (1991).
standards," which allow regulated companies to choose their own methods of compliance, are more cost effective than "design standards," which impose specific compliance methods.309

Under the APA, agencies must consider reasonable alternatives before deciding which course to choose.310 An agency should select the alternative that achieves its regulatory objective at the lowest cost. Prior to his appointment to the Supreme Court, Justice Scalia noted that the principle that agencies must "choose the least burdensome alternative" is "no more than a description of the current statutory law."311 While courts more commonly invoke the general principle that benefits and costs must be compared, they also have reversed agency decisions for failure to justify rejection of less burdensome alternatives.312 Indeed, the requirement that agencies select the most cost-effective alternative may even apply to OSHA permanent health standards, where cost-benefit comparisons currently appear precluded.313

C. Gains Too Trivial To Be Worthwhile

Rational decisionmaking, in the sense of doing more good than harm, also means that risks should not be regulated if they are so trivial that the administrative costs or other consequences of addressing them

309. See Presidential Task Force on Regulatory Relief, Regulatory Policy Guidelines 4 and 5, Accompanying Explanatory Text, and Supplemental Discussion of Risk Assessment (1983), reprinted in Federal Focus, Inc., supra note 56, at 113, 120 ("To the degree that performance can be measured, or reasonably imputed, a standard based on this level of performance is always superior to more means-oriented regulation.").

310. See, e.g., National Lime Ass'n v. EPA, 627 F.2d 416, 453 (D.C. Cir. 1980) ("[R]easoned decisionmaking . . . [requires] . . . that the rejection of alternate theories or abandonment of alternate courses of action be explained."); Synthetic Organic Chem. Mfrs. Ass'n v. Brennan, 503 F.2d 1155, 1160 (3d Cir. 1974) (holding that judicial review of agency regulations includes "determining whether presently available alternatives were at least considered"); Telocator Network of Am. v. FCC, 691 F.2d 525, 537 (D.C. Cir. 1982) ("[W]e will demand that the Commission consider reasonably obvious alternative . . . rules, and explain its reasons for rejecting alternatives in sufficient detail to permit judicial review.").

311. See Scalia, supra note 5, at 19; Richard R. Pierce et al., Administrative Law and Process 382 (1985) ("[T]he duty to consider alternatives has become so entrenched in judicial review of agency actions over the past twenty years that a reviewing court is almost certain to find some statutory basis for the duty in every case.").

312. See, e.g., ILGWU v. Donovan, 722 F.2d 795, 815 (D.C. Cir. 1983) ("[T]he Secretary's failure to consider alternatives, and to explain why such alternatives were not chosen, was arbitrary and capricious."); Action on Smoking & Health v. CAB, 699 F.2d 1209, 1217 (D.C. Cir. 1983) (holding that agency action improperly rejected proposed alternatives without adequate explanation); Yakima Valley Cable Vision, Inc. v. FCC, 794 F.2d 737, 746 (D.C. Cir. 1986) ("The FCC failed to consider an obvious and less drastic alternative . . . and its failure to consider such an important alternative was arbitrary and capricious under the settled law of this circuit.").

exceed the benefits. Regulatory experts and policymakers have recognized such a *de minimis* risk principle, and courts have long accepted that agencies need not regulate *de minimis* risks. Indeed, courts have held that *de minimis* exceptions should be inferred under regulatory statutes “save in the face of the most unambiguous demonstration of congressional intent to foreclose them.”

More recently, courts have begun to treat an exemption for *de minimis* or insignificant risks as mandatory in “the absence of any specific direction from Congress.” The leading precedent for this principle is *Benzene*, in which the Supreme Court held that OSHA had to demonstrate that the toxic substances or harmful physical agents it proposed to regulate under the OSH Act presented a “significant” risk. *Benzene* has been followed by decisions holding that OSHA need not take additional steps to regulate significant risks if such measures will provide only “a *de minimis* benefit for worker health.” Other courts and commentators have applied the *Benzene* significant risk principle in a variety of statutory contexts. For example, the D.C. Circuit purported to follow *Benzene* when it ruled that EPA was required only to reduce risks to “acceptable” levels in regulating hazardous air pollutants under the Clean Air Act.

314. See supra note 54; SUNSTEIN, supra note 30, at 181-83.
315. See Richard Wilson, *Measuring and Comparing Risks to Establish a de Minimis Risk Level*, 8 REG. TOXICOLOGY & PHARMACOLOGY 267, 281 (1988) (“Assigning a *de minimis* level of risk [that is exempted from regulation] is essential to ensuring a reasonable regulatory procedure that is not arbitrary and capricious.”); Joseph V. Rodricks et al., *Significant Risk Decisions in Federal Regulatory Agencies*, 7 REG. TOXICOLOGY & PHARMACOLOGY 307, 316 (1987) (concluding that “there appears to be almost universal acceptance” within FDA and EPA of the need to exempt *de minimis* or insignificant risks from regulation); Cross et al., supra note 47.
317. Alabama Power, 636 F.2d at 357.
321. See, e.g., Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1228 (5th Cir. 1991); Chemical Mfrs. Ass’n v. EPA, 899 F.2d 344, 359 (5th Cir. 1990); Frank B. Cross, *Beyond Benzene: Establishing Principles for a Significance Threshold on Regulatable Risks of Cancer*, 35 EMORY L.J. 1, 5 (1986) (“In short, *Benzene* seems to establish a presumption that, unless Congress clearly states otherwise, statutes include significant risk requirements.”); Cross et al., supra note 47, at 69.
322. NRDC v. EPA, 824 F.2d 1146, 1164-65 (D.C. Cir. 1987) (en banc).
As the Fifth Circuit recognized in Corrosion Proof Fittings, comparing benefits and costs means comparing all foreseeable benefits and costs.\textsuperscript{323} Obvious tradeoffs, like the health and safety risks of substitutes, must be considered, as well as more subtle consequences, such as the adverse health effects that may result when increased environmental protection expenditures reduce worker wages.\textsuperscript{324} Until recently, both agencies and courts often ignored such risk-risk tradeoffs.\textsuperscript{325}

The D.C. Circuit's recent reversal of NHTSA's model year 1990 corporate average fuel economy (CAFE) standards indicates, however, that such risk-risk tradeoffs are likely to receive more attention in the future.\textsuperscript{326} The tradeoff at issue in CEI II was the benefit of extra energy savings achieved by more stringent CAFE standards, versus the extra safety that might be achieved if manufacturers were not forced to downsize vehicles to meet such standards, given that "small cars remain more dangerous than large ones."\textsuperscript{327} Even though the court had deferred to NHTSA on the same tradeoff issue in a previous CAFE decision,\textsuperscript{328} in CEI II it nonetheless held that "[c]hoice means giving something up," and NHTSA had violated the requirement of reasoned decisionmaking, by "obscur[ing] the safety problem, and thus its need to choose."\textsuperscript{329} Other recent judicial decisions also have demonstrated that the courts and agencies increasingly recognize the need to consider the risks of substitute products and other risk-risk tradeoffs.\textsuperscript{330}

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V
REASONABLENESS RULES AND THE THREE TRADITIONAL Branches of Government

Building on the precedents discussed above, more good than harm judicial review under the APA would help curb many of the agency excesses discussed in part I. Equally important, channeling agency behavior in accordance with the reasonableness rules described above would improve the relationship between agencies and each of the three traditional branches of government. Over the past two decades, Congress, the judiciary, and the executive branch each has attempted to assert its primacy as the supervisor of regulatory agencies.331 This competition among the branches has led to interbranch squabbles, mixed messages to agencies, and, most importantly, no noticeable improvement in the consistency and reasonableness of regulatory actions.332 It is difficult to imagine any reform proposal succeeding unless it leads to an adjustment in the respective roles of each of the three branches.

The approach suggested by this article is directed at achieving just such a realignment. APA reasonableness rules derived from the more good than harm principle would give birth to interpretative canons that Congress could override only by a clear statement of contrary intent. Congress accordingly would be forced to address directly why it chose to depart from the more good than harm principle in particular situations, a requirement that would encourage open debate and increase legislative accountability. More good than harm judicial review also would allow courts to step back from analyzing every detail of an agency's decision-making process and encourage agencies to shift their focus, from justifying every step in their analysis, to justifying their regulatory end results more explicitly. Finally, these respective changes in the roles played by Congress, the courts, and the agencies would lay the foundation for expanded executive oversight prior to and in lieu of judicial review.

A. Congress and the More Good Than Harm Presumption In Statutory Interpretation

Interpreting the APA as suggested in this article would elevate the requirement that agencies do more good than harm into a default principle for interpreting statutes.333 The APA has always consisted of a series of background norms that presumptively apply unless Congress has provided otherwise in an agency's enabling law. The APA expressly antici-

331. See Pierce, supra note 289; Note, supra note 63, at 743-52.
332. See Lloyd N. Cutler & David R. Johnson, Regulation and the Political Process, 84 YALE L.J. 1395, 1410 (1975) (arguing that the battles between the branches over control of agency decisionmaking have "cut agency policymaking adrift from any meaningful [and] coordinated...oversight by politically accountable authority").
333. See Posner, supra note 8, at 387; Sunstein, supra note 10, at 642-44.
pates, for example, that later statutes might alter the principles governing public notice for informal agency actions, the burden of proof in rulemaking and adjudication, the reviewability of various actions, and "finality" for purposes of judicial review. Contrary congressional intent on these and other matters is not to be inferred lightly; instead, the APA specifies that a "[s]ubsequent statute may not be held to supersede or modify [the APA] except to the extent that it does so expressly." Judicial interpretation of the APA has revealed other implicit presumptions that apply absent express congressional intent to the contrary. In *Abbott Laboratories v. Gardner*, for example, the Court concluded that the APA "embodies the basic presumption of judicial review," which can be overcome only by "a showing of 'clear and convincing evidence' of a contrary legislative intent." In *Heckler v. Chaney*, on the other hand, the Court detected a counter-presumption that APA judicial review is usually not available to challenge agency decisions not to enforce. Courts have since expanded this counter-presumption to other types of agency action that were "traditionally committed to agency discretion" prior to the APA. Many similar presumptions have been discovered as the need arises. Interpreting the APA's arbitrary and capricious test as embodying more good than harm rules would have exactly the same consequence—it would require Congress to ex-

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334. 5 U.S.C. § 553(b) (1988) "Except when notice or hearing is required by statute," informal rulemaking procedures do not apply to "interpretative rules, general statements of policy, or rules of agency organization, procedure, or practice"; such procedures also do not apply "when the agency for good cause finds" such procedures "are impracticable, unnecessary, or contrary to the public interest." *Id.*

335. *See id.* § 556(b) ("Except as otherwise provided by statute, the proponent of a rule or order has the burden of proof.").

336. *Id.* § 701(a). Judicial review of an agency action is available "except to the extent that (1) statutes preclude judicial review; or (2) agency action is committed to agency discretion by law." *Id.*

337. *Id.* § 704 ("Except as otherwise expressly required by statute, agency action otherwise final is final.").

338. *Id.* § 559.


340. *Id.* at 140-41.


342. *Id.* at 831-33.


press explicitly its contrary intent if it wishes to override any such rule in a particular statute.345

Requiring a clear statement from Congress in order to override each of the reasonableness rules derived from the more good than harm principle would promote legislative accountability and would reduce the effort required by courts to decipher Congress' intent on a statute-by-statute basis. Like the "wild goose chase" to determine whether Congress specifically intended to delegate interpretative authority to an agency,346 it is often impossible to discern the true intent of Congress on issues such as balancing costs and benefits.347 Congress has seldom,348 if ever, expressly negated the presumptive desirability of doing more good than harm.349 Instead, it has spoken in "fuzzy" or "symbolic" lan-

345. Accordingly, a contrary agency interpretation would fail under the first step of Chevron and, in any event, would be "unreasonable" under Chevron's second step. See supra notes 188-89 and accompanying text; Silberman, supra note 188, at 827 (describing convergence of "reasonableness" requirement of the arbitrary and capricious standard and the "reasonableness" requirement for Chevron deference).
346. See Scalia, supra note 13, at 516-17.
347. See Pierce, supra note 289, at 474-81; see also supra note 289. Instead of expressly addressing whether or not an agency should balance costs and benefits in setting standards, Congress often provides only vague, narrative criteria to guide agencies. Under the Clean Air Act, for example, EPA must set ambient standards for criteria pollutants that provide an "adequate margin of safety." 42 U.S.C. § 7409(b)(1) (1988). In approving modifications of effluent limitations under the Clean Water Act, EPA must prevent discharges "which may reasonably be anticipated to pose an unacceptable risk to human health or the environment." 33 U.S.C. § 1311(g)(2)(C) (1988). In the Resource Conservation and Recovery Act, Congress instructed EPA to set standards for generators of hazardous waste "as may be necessary to protect human health and the environment." 42 U.S.C. § 6922(a) (1988). OSHA must set an occupational standard for exposure to a toxic substance that "most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity." 29 U.S.C. § 655(b)(5) (1988).
348. In the 1990 reauthorization of the Clean Air Act, the Senate bill stated that "[n]o consideration of cost, cost effectiveness, energy, or other factors or technological feasibility shall be included in the determination of the appropriate level of any emissions standard" for hazardous air pollutants. S. 816, 101st Cong., 1st Sess. § 2 (1989). Rejecting such an extreme approach, the final bill passed by Congress directed EPA to "tak[e] into consideration costs, energy, safety, and other relevant factors" in setting emission standards for hazardous air pollutants. 42 U.S.C. § 7412(f)(2)(A) (West. Supp. 1993).
349. Perhaps the enacted statutory language that has come closest to explicitly overriding the presumption of net beneficial regulation is the infamous "Delaney Clause" prohibition on any food additive found "to induce cancer in man or animal." 21 U.S.C. § 376(b)(5)(B) (1988). In Public Citizen v. Young, 831 F.2d 1108, 1113 (D.C. Cir. 1987), cert. denied sub nom., Cosmetic, Toiletry & Fragrance Ass'n v. Public Citizen, 485 U.S. 1006 (1988), the court reluctantly concluded that the language of the Delaney Clause is so "extraordinarily rigid" as to preclude the granting of even de minimis exceptions. Public Citizen 831 F.2d at 1122. Yet even the Delaney Clause text does not expressly negate the presumption that the FDA should consider risk-risk tradeoffs. The court in Public Citizen recognized that its decision "might cause manufacturers to substitute more dangerous toxic chemicals for less dangerous carcinogens," and speculated that Congress might have intended that result "on a view that cancer deaths are in some way more to be feared than others." Id. at 1118. While Congress perhaps could have legislated on the basis of such an artificial premise, there is no explicit evidence that it did.
guage,\textsuperscript{350} often based on simplistic or outmoded scientific premises,\textsuperscript{351} and frequently has refused altogether to make the hard choices that must be made by the elected representatives of the people.\textsuperscript{352} By forcing Congress to address the tradeoffs inherent in environmental regulation forthrightly, APA more good than harm review would curtail symbolic legislation that ignores tradeoffs, imposes impossible demands on regulatory agencies, and leads to public misunderstanding of environmental issues.\textsuperscript{353}

In specific contexts, of course, Congress might actually wish to override certain of the rules suggested above. For example, Congress might itself weigh the costs and benefits of a particular regulatory action and preclude, by statute, the agency from second-guessing Congress’ balance.\textsuperscript{354} But even in the rare instances when Congress commands a definitive regulatory outcome, such as the PCB ban under TSCA,\textsuperscript{355} Congress’ intent should be construed narrowly to allow the agency to adopt de minimis regulatory exceptions and to choose the most cost-effective course, unless Congress has expressly negated these principles as well.\textsuperscript{356} It also is conceivable that Congress might not intend to achieve net beneficial results in situations where the distributional consequences of failing to regulate appear inequitable,\textsuperscript{357} or where Congress’ real legis-

\footnote{350. See Tennessee Valley Authority v. Hill, 437 U.S. 153, 202 (1978) (Powell, J., dissenting) (arguing that the Endangered Species Act provision is “a textbook example of fuzzy language, which can be read according to the ‘eye of the beholder.’ ”); see also supra note 75.}

\footnote{351. See, e.g., MELNICK, supra note 101, at 356 (noting that ambient and hazardous air pollutant standards under the Clean Air Act, for example, are predicated on the mistaken scientific premise that there are health effects thresholds for most pollutants); Alon Rosenthal et al., Legislating Acceptable Cancer Risk from Exposure to Toxic Chemicals, 19 ECOLOGY L.Q. 269, 354 (1992) (noting that drafters of many federal environmental statutes “assume—either naively or dishonestly—that complete elimination of risk is an attainable and preeminent public goal”).}

\footnote{352. See supra note 289; BRUCE A. ACKERMAN & WILLIAM T. HASSLER, CLEAN COAL/DIRTY AIR 54 (1981) (observing that in 1977 Clean Air Act Amendments, Congress “brewed” a statute “whose legal meaning was hopelessly confused” so as to “avoid a potential conference impasse”); see generally, Industrial Union Dep’t v. American Petroleum Inst., 448 U.S. 607, 687 (1980) (Rehnquist, J., dissenting) (stating that it is the job of elected representatives of the people to make the “hard choices”);}

\footnote{353. See Rosenthal et al., supra note 351, at 354 (noting that “symbolic” legislation forces “agency officials to misrepresent regulatory decision rationales” and “ultimately undermines civic education”).}


\footnote{356. For the PCB ban under TSCA, the court initially rejected EPA’s decision to provide a de minimis exemption for PCB concentrations below 50 parts per million. See Environmental Defense Fund, Inc. v. EPA, 636 F.2d 1267, 1283-84 (D.C. Cir. 1980). However, on remand, EPA ultimately reached the same outcome by negotiating a series of regulations that have not been challenged in court. See, e.g., 40 C.F.R. § 761.3 (1991).}

\footnote{357. See Gary E. Marchant & Dawn P. Danzeisen, “Acceptable” Risk for Hazardous Air...
lative purpose is redistributive. Alternatively, Congress might wish to alter the principles advocated here when it wants an agency to set less stringent regulations than would otherwise be warranted, for example, to protect the international competitiveness or economic viability of a struggling industry.

In all of these instances, however, several real benefits would flow from requiring a clear statement of Congress' intent. First, such a requirement would ensure notice to the often unorganized legislative factions in opposition, who then might be able to mount an effective response. Second, it would encourage outright wealth transfers to legislative beneficiaries instead of disguised and less efficient redistributive regulations. And finally, it would force Congress to confront and balance the competing interests at stake, rather than leaving to unelected agency staff and judges the task of conjecturing how Congress might have resolved such issues had they been squarely addressed.

B. Substantive Judicial Review Anchored in Reasonableness Rules

Employing more good than harm rules in reviewing environmental agency actions would shift the focus of judicial review from individual trees to the forest, thereby diminishing the need for intrusive judicial second-guessing of every step in an agency's decisionmaking process. The central issue in every case would be whether an agency's proposed regulation does more good than harm overall and at the margin, considering reasonable alternatives and potential risk-risk tradeoffs. An agency's record, containing contributions from both proponents and opponents of the proposed rule, would be shaped through the existing bur-

Pollutants, 13 Harv. Envtl. L. Rev. 535, 549 (1989) (noting that society may wish to regulate activities that pose extremely high risks to one or more individuals, even though the total societal costs of such regulation outweigh the total benefits).

358. Direct transfer payments generally are a more efficient means of shifting wealth from one segment of society to another than substantive statutes with redistributive goals. See Leonard & Zeckhauser, supra note 301, at 40; Rose-Ackerman, supra note 136, at 357; Sunstein, supra note 30, at 55-57. Redistributive objectives are relatively infrequent in environmental regulation because the risks and the eventual costs of reducing them usually are spread over the general population. However, such objectives may partially explain certain types of regulation covered by this article, such as occupational safety and health standards. Perhaps the best known example of environmental legislation with a redistributive motive is the 1977 Clean Air Act provision requiring power plants to install scrubbers, which eliminated the option of meeting the standards by shifting to low-sulfur coal. This requirement was not based on clean air, but on protecting the jobs of high-sulfur coal miners. See Ackerman & Hassler, supra note 352, at 31-35.


361. See Wald, supra note 112, at 61 ("[T]he requirement of cost-benefit and cost effectiveness analyses should improve judicial review of rulemaking.").
den of proof rules so as to facilitate judicial review largely framed by reasonableness considerations. 362

Agencies would continue to bear “an initial burden of promulgating and explaining a non-arbitrary, non-capricious rule.” 363 The APA imposes “the burden of proof” on “the proponent,” 364 (i.e., the agency) in informal rulemaking. 365 An agency would therefore need to provide a prima facie showing that the benefits of its proposed course of action outweigh the costs, and that the expected benefits are not de minimis. An agency’s required showing would be less burdensome than under current process-oriented judicial review because agencies could focus on justifying their end results, rather than each and every element of their decisionmaking processes.

The burden of coming forward with evidence on alternative courses of action, risk-risk tradeoffs, and similar adverse consequences would fall on opponents of an agency’s proposal. Requiring an agency’s opponent to come forward with evidence, while leaving the ultimate burden of proof on the agency, follows from existing precedent. For example, it is not an agency’s responsibility to posit and consider every conceivable regulatory alternative in order to choose the most cost-effective alternative. 366 Parties wishing to persuade an agency to alter its proposal must themselves identify less burdensome alternatives, 367 demonstrate that the marginal costs exceed marginal benefits, 368 or show that substitute risks

362. Focusing judicial review in this way would not preclude parties from bringing, or courts from considering, other claims of agency unreasonableness. However, the court would need to reach these issues far less often than today.
365. See Industrial Union Dep’t v. American Petroleum Inst., 448 U.S. 607, 653 (1980) (holding that agency has burden to show that “it is at least more likely than not” that regulation will reduce “significant” risk); Hazardous Waste Treatment Council v. EPA, 886 F.2d 355, 366-67 (D.C. Cir. 1989); International Harvester Co. v. Ruckelshaus, 478 F.2d 615, 643 (D.C. Cir. 1973).
366. See, e.g., Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 551 (1978) (“[A] detailed statement of alternatives cannot be found wanting simply because the agency failed to include every alternative device and thought conceivable by the mind of man . . . regardless of how uncommon or unknown that alternative may have been.”); see also FEDERAL FOCUS, INC., supra note 56, at 90-91. Nevertheless, an agency does have an initial duty to consider and choose between the more obvious alternatives available for achieving a particular regulatory objective.
367. See ILGWU v. Donovan, 722 F.2d 795, 817 (D.C. Cir. 1983) (construing State Farm to indicate that agencies are not required to consider every conceivable alternative but that they should consider options which are addressed by public comments).
368. See Weyerhaeuser Co. v. Costle, 590 F.2d 1011, 1048 (D.C. Cir. 1978) (“A requirement that EPA perform the elaborate task of calculating incremental balances would bog the Agency down in burdensome proceedings on a relatively subsidiary task. Hence, the Agency need not on its own undertake more than a net cost-benefit balancing . . . . However, when an incremental analysis has been performed by industry and submitted to EPA, it is worthy of scrutiny by the Agency, for it may avoid the risk of hidden imbalances between cost and benefit.”); BASF Wyandotte Corp. v. Costle, 598 F.2d 637, 656 (1st Cir. 1979).
would substantially change that agency’s balance of costs and benefits. 369
When a party comes forward with such proof, 370 the burden shifts to the agency to respond. 371

Once the record is assembled in accordance with these burden of proof rules, how would an agency’s decision be judicially reviewed? When, for example, would a court need to scrutinize the scientific and technical evidence underlying the agency’s balancing determination in order to avoid approving agency actions built on an “elaborate evidentiary house of cards”? 372 The potential need for judicial scrutiny of the underlying issues can never be entirely eliminated, but the occasions would surely be fewer if review of an agency’s compliance with reasonableness rules were framed as suggested below. 373

First, because the issue in every case would be whether an agency’s action does more good than harm, courts would expect agencies to quantify costs and benefits to the extent possible, 374 although this obligation would necessarily be excused to the extent that quantification of specific elements is not feasible. An agency’s calculation of costs and benefits would, as now, be entitled to great deference. 375 However, a court may view an agency’s failure to quantify specific elements as a “danger signal,” especially if opposing parties (or the OMB) provided credible quantitative estimates of the same elements. 376

369. See Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1221 (5th Cir. 1991) (holding that EPA had no “affirmative duty to seek out and test every workplace substitute for any product it seeks to regulate”).

370. Normal administrative exhaustion principles preclude any evidence from being considered by courts unless it is first presented to the agency. See Myers v. Bethlehem Shipbuilding Corp., 303 U.S. 41, 50-51 (1938); NRDC v. EPA, 824 F.2d 1146, 1150 (1987) (en banc).

371. See, e.g., Weyerhaeuser Co. v. Costle, 590 F.2d at 1048; Corrosion Proof Fittings, 947 F.2d at 1221 (“Once an interested party brings forth credible evidence suggesting the toxicity of the probable or only alternatives to a substance, the EPA must consider the comparative toxic costs of each.”).

372. Environmental Defense Fund v. EPA, 598 F.2d 62, 79 (D.C. Cir. 1978); see also Wald, supra note 112, at 50 (noting that court must ensure that an agency does not “immunize arbitrary and capricious substantive decisions by dressing them up in the Emperor’s clothes of economic jargon”).

373. The need for judicial scrutiny of the underlying evidence would be further reduced by the expected improvements in Executive branch review programs discussed at infra notes 388-98 and accompanying text.

374. See supra notes 304-05 and accompanying text.

375. See, e.g., Center for Auto Safety v. Peck, 751 F.2d 1336, 1342 (D.C. Cir 1985) (noting that the need for judicial deference “is especially true when the agency is called upon to weigh the costs and benefits of alternative policies, since [s]uch cost-benefit analyses epitomize the types of decisions that are most appropriately entrusted to the expertise of an agency . . . .”) (quoting Office of Communication of the United Church of Christ v. FCC, 707 F.2d 1413, 1440 (D.C. Cir. 1983)).

376. See Industrial Union Dep’t v. American Petroleum Inst., 448 U.S. 607, 653-55 (1980); Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1219 (5th Cir. 1991); AFL-CIO v. OSHA, 965 F.2d 962, 977 (11th Cir. 1992) (“[W]ithout any quantification or any explanation, this court cannot determine what that ‘zone of reasonableness’ is or if these standards fall within it”). As discussed previously, a court will not require an agency to quantify or mone-
Second, each agency would be required to use its cost and benefit estimates in explaining how its ultimate decision would actually do more good than harm. The court would review an agency's explanation just as it does today, by requiring an agency to "cogently explain why it has exercised its discretion" and to respond intelligibly to contrary positions taken by opposing parties (or the OMB).

Finally, even when an agency has quantified costs and benefits to the extent feasible, and has attempted to explain its choices, there still may be rare cases in which the agency's substantive choices are so patently unreasonable as to be unacceptable, even to an appropriately deferential court. Courts have long recognized that an agency's discretion must operate within a "zone of reasonableness." In Corrosion Proof Fittings, the court conveyed a sense of this limitation when it stated that for EPA to argue that costs of $74 million or more per life saved were reasonable shows that EPA's economic review was "meaningless." In so holding, the court was merely applying the residual APA requirement that calls for remand whenever "there has been a clear error of judgment."

C. Reasonableness Rules Reinforced Through Hard Look Executive Oversight

The current executive oversight program of agency regulation is administered by the Office of Information and Regulatory Affairs (OIRA) within the OMB. As noted previously, this program has a mixed record; it has improved some regulations, but allowed other, equally "unreasonable" rules to issue without significant changes. OIRA lacks the legal tize all costs or benefits as long as the agency provides a reasoned explanation why quantification is not feasible or appropriate, and it explicitly includes the unquantified costs or benefits in a qualitative weighing with the other costs and benefits. See supra notes 304-05 and accompanying text.

378. See id. at 48-49; Texas Power & Light v. FCC, 784 F.2d 1265, 1269 (5th Cir. 1986) ("[A]gency must articulate its findings and the reasons for its policy choices, so that the court may ascertain whether it engaged in balanced, informed decisionmaking."); Chemical Mfrs. Ass'n v. EPA, 899 F.2d 344, 357 (5th Cir. 1990) (holding that agency must articulate meaning of "substantial").

379. See Benzene, 448 U.S. at 655 ("Some risks are plainly acceptable and others are plainly unacceptable."); Corrosion Proof Fittings, 947 F.2d at 1219, 1222-23.

380. See Small Refiner Lead Phase-Down Task Force v. EPA, 705 F.2d 506, 525 (D.C. Cir. 1983); Hercules, Inc. v. EPA, 598 F.2d 91, 107 (D.C. Cir. 1978); Project: Cost-Benefit Analysis, supra note 277, at 580 ("[R]esources being limited, a rational decision-maker can never take the position that he will pay 'whatever it takes' to save lives. At some point, a line must be drawn, which necessarily expresses a judgment about the value of life.").

381. 947 F.2d at 1222-23; see also supra note 40 and accompanying text.


383. See supra notes 78-89 and accompanying text. EPA's asbestos ban is illustrative. OIRA's review of EPA's 1984 internal draft proposal raised four issues: (1) "the comparative
leverage to force the executive oversight program's requirements on recalcitrant agency staff.\textsuperscript{384} The OMB's effectiveness also has been marred by charges that it is "political" and opposed to \textit{all} regulations, not just unreasonable ones.\textsuperscript{385} For these and other reasons, critics have compared the perceived "objectivity" of the Executive Order No. 12,291 oversight program unfavorably to the much more limited oversight program of the Carter Administration.\textsuperscript{386} However, judicial endorsement of APA more good than harm review could be precisely the catalyst needed for more effective executive oversight of agency performance.\textsuperscript{387}

The presumptive applicability of more good than harm principles would permit a more consistent and principled executive oversight. Executive Order No. 12,291 requires agencies "to maximize the net benefits to society" and to choose the alternative approach "involving the least net cost to society," but only to the "extent permitted by statute."\textsuperscript{388} If such reasonableness principles are presumed to apply absent a clear statement by Congress to the contrary,\textsuperscript{389} executive oversight would be precluded in far fewer cases. Examples of cases in which executive oversight is now precluded but would not be under a more good than harm presumption include ambient air quality standards, set under the Clean Air Act, and maximum contaminant levels established under the Safe Drinking Water Act.\textsuperscript{390}
Moreover, executive oversight would become more relevant under the judicial review advocated here. To the extent that OIRA's reasonableness assessment differs from that of an agency, OIRA's assessment could help a court assess whether that agency's decision has the "required rational support" and meets "the general legal requirement of reasoned, nonarbitrary decision-making."  

OIRA regulatory review thus would provide courts with a probing analysis of the validity of the agency's economic analysis and assumptions by conducting, in advance of judicial review, an in-depth, hard look review of that agency's decision. Agencies, frustrated by judicial reversals under today's unpredictable process-oriented review, would have greater incentives to ensure that their policy judgments were "vetted" by an augmented OIRA.  

Enhancing the role of executive branch review also would encourage the Executive branch to improve and expand its oversight program. One important improvement would be to review scientific as well as economic issues. Judge Breyer has recently suggested augmenting OIRA "with scientifically and substantively trained" personnel having "inter-agency jurisdiction," and giving it the "political insulation" and "prestige" necessary to ensure "reasonable" regulations. Modelled loosely on the French Conseil d'Etat, Judge Breyer's augmented OIRA eventually might review not only the scientific, economic, and other technical underpinnings of agency regulations, but even ultimate questions (i.e. whether an agency's action is arbitrary, capricious, or an abuse of discre-

391. See Thompson v. Clark, 741 F.2d 401, 405 (D.C. Cir. 1984). Executive Order 12,291 requires that the Regulatory Impact Analysis, as well as any agency determinations made under the provisions of the order, be included in the record for judicial review. 3 C.F.R. 133-34. As Judge McGowan has noted, "Rigorous regulatory analysis ... could, indeed, be of great help to a reviewing court in coming to grips with what is for the court the hardest part of its reviewing task, namely, review of the substantive aspects of a rule under the arbitrary and capricious standard." Carl McGowan, Regulatory Analysis and Judicial Review, 42 OHIO ST. L.J. 627, 634 (1981).

392. See Project: Cost-Benefit Analysis, supra note 277, at 598-99 ("Problems that [an OMB] desk officer might identify include: situations where the agency has not identified or assessed appropriate alternatives to the proposed option, has supplied inaccurate cost-benefit data, or double counted benefits."); Bruff, supra note 78, at 555-56. OIRA's emphasis on regulatory efficiency therefore helps to counterbalance the zeal often exhibited by single-mission agencies. See supra note 63 and accompanying text.

393. The prospect of being reversed when the court takes the OMB's analysis over the agency's would encourage the agency to bring the OMB on board before judicial review. Others have suggested that an enhanced presidential oversight program could reduce the need for judicial hard look scrutiny. See DeMuth & Ginsburg, supra note 63, at 1081-82; Administrative Law Symposium: Question and Answer with Professors Elliott, Strauss and Sunstein, 1989 DUKE L.J. 551, 555-56 (statement of Professor C. Sunstein).

394. Agency treatment of scientific evidence is often perceived to be skewed or biased in order to support the agency's regulatory decisions. See U.S. ENVTL. PROTECTION AGENCY, EPA/600/9-91/050, SAFEGUARDING THE FUTURE: CREDIBLE SCIENCE, CREDIBLE DECISIONS 24 (1992).

395. See Breyer, supra note 22, at 67-69.
tion), as well as related legal and statutory interpretation issues.\textsuperscript{396} Even without going as far as Judge Breyer suggests, however, much could be achieved by reorganizing executive review to incorporate scientific expertise from the President's Office of Science and Technology Policy.\textsuperscript{397}

Having frequently noted the limits of judicial competence in reviewing scientific and technical issues,\textsuperscript{398} courts likely would defer substantially to an independent, hard look review, whether augmented as suggested above or under Judge Breyer's more ambitious conception.\textsuperscript{399} Congress might resist the Executive taking on some (or most) of the hard look scrutiny now performed by courts, but it might be less opposed if the initiative for such change comes from the courts rather than the President. Also, presupposing (as Judge Breyer does) that there is a broad constituency that "wants better health and more safety overall,"\textsuperscript{400} it is likely that this constituency would support these changes. Indeed, Congress, interested parties, and the general public all might favor a more effective judicial review based on more good than harm rules, with a premium on detached, interdisciplinary oversight within the executive branch, as long as the necessary political insulation is provided.\textsuperscript{401}

\textbf{CONCLUSION}

Environmental protection necessarily requires choices. While expected to make reasonable choices, environmental agencies often bow to

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\textsuperscript{396} \textit{Id.} at 70-72.

\textsuperscript{397} Within the Executive Office of the President, the Office of Science and Technology Policy (OSTP) was established by statute in 1976 to provide scientific and technical advice to the President and to "perform such other duties and functions . . . as the President may request." 42 U.S.C. § 6614(a)(13) (1988). The interagency Federal Coordinating Council on Science, Engineering, and Technology, chaired by the OSTP Director, has been active in trying to improve the quality of agency risk assessments underlying environmental regulation. \textit{See Federal Focus, Inc., supra note 56, at 47.}

\textsuperscript{398} \textit{See Ethyl Corp. v. EPA}, 541 F.2d 1, 69 (1976) (Leventhal, J., concurring) ("Better no judicial review at all than a charade that gives the imprimatur without the substance of judicial confirmation that the agency is not acting unreasonably."); AFL v. Marshall, 617 F.2d 636, 651 n.66 (5th Cir. 1979) ("[O]nce courts... endeavor to judge the merits of competing expert view, they leave the terrain they know. In so doing, the judiciary may mislead the public into believing it provides an expert check on decisions that in fact it does not fully comprehend."). \textit{Rev'd}, American Textile Mfrs. Inst., Inc. v. Donovan, 452 U.S. 490 (1981).


\textsuperscript{400} \textit{See Breyer, supra note 22, at 55.}

\textsuperscript{401} Judge Breyer is undoubtedly correct that the effectiveness of executive oversight, like the effectiveness of central banks, correlates closely with its professionalism and independence. \textit{See, e.g., Robert J. Barro, Keep Political Hands Off the Fed, WALL ST. J., Aug. 26, 1992, at A6.}
internal incentives and external pressures to do just the opposite. Courts have rarely reversed explicitly on the grounds that an agency has adopted an unreasonable result. Simply by interpreting the APA to require that agency actions do more good than harm, courts could spark a chain reaction that would improve agency performance, foster a more explicit and accountable balancing of interests in the legislative process, and lay the foundation for a more effective hard look executive oversight. Eventually, these trends would, in turn, diminish the need for intrusive judicial scrutiny. The public would benefit by achieving more environmental protection at less cost, thereby freeing resources to address other pressing social problems.