

BEYOND COST-BENEFIT ANALYSIS: A PRAGMATIC REORIENTATION

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I. INTRODUCTION

More than fifty years ago, Harold Lasswell proposed the development of policy sciences that, by producing knowledge for the resolution of pressing public policy issues, would minimize unproductive political debates by mediating among academics, officials, and citizens.¹ The methodology was to be interdisciplinary, organized around public policy problems, qualitative and quantitative, and explicitly normative. The normative aspiration was to advance the cause of human dignity and support the evolution of democratic

¹ James Farr et al., *The Policy Scientist of Democracy: The Discipline of Harold D. Lasswell*, 100 AM. POL. SCI. REV. 579, 582 (2006) (“[T]he policy scientist was (to be) a practitioner of a kind of science that took the lawyer’s or doctor’s practice as its model, putting the methods and findings of a general science to work in solving real-world problems.”).

government.² In Lasswell's words, this was to be "the policy sciences of democracy."³

Today, however, policy analysts typically operate within a single discipline dominated by its connections to economics, use empirical rational choice methodologies, and consider the separation of research and normative judgments a virtue.⁴ The exemplar of the modern approach is the federal regulatory review process — regulatory impact analysis ("RIA") — superintended by the Office of Information and Regulatory Affairs ("OIRA"), with its emphasis on cost-benefit analysis ("CBA").

CBA has become a one-size-fits-all technique applied to policy problems as varied as regulating mercury emissions from power plants to the roof strength standard for new automobiles. Its foundation rests on a positivist approach to knowledge — facts can be pursued independently of values, only information subject to empirical verification counts as fact, and the goal of policy research is to discover universal laws that can then be applied to all policy problems — that has been discredited in a wide-ranging literature that continues to develop Lasswellian ideas and ambitions. The unifying theme of this diverse literature has been "its commitment to broadening rather than narrowing the theories, issues and processes" relevant to public decisionmaking, as well as its aspiration to an analytic process that is "problem-oriented, contextual, eclectic, and process-sensitive."⁵ These criticisms, however, have remained a dissenting tradition, as CBA has only strengthened its dominance in the past twenty-five years.

This Article pursues these same themes, drawing on the work that has gone on before. It aims its critique specifically at the current federal form of RIA, as it is practiced with regard to environmental, health and safety regulations, centered institutionally on OIRA and centered methodologically on CBA. The RIA process we propose is problem-oriented, normative, discursive, and transparent. This reorientation eschews the use of CBA, except where it is legally required, because it is unnecessary and irrelevant in other contexts, it lacks sufficient accuracy if relevant, and it pursues a normative vision of regulation that is inconsistent with the precautionary policies concerning protection of people and the environment that Congress has adopted.

² FRANK FISCHER, REFRAMING PUBLIC POLICY 3 (2003); *see also* Douglas Torgerson, *Contextual Orientation in Policy Analysis: The Contribution of Harold D. Lasswell*, 18 POL'Y SCI. 241, 251 (1985).

³ *E.g.*, Harold D. Lasswell, *The Policy Orientation*, in THE POLICY SCIENCES 3, 10 (Daniel Lerner & Harold D. Lasswell eds., 1951) (internal quotation marks omitted). Lasswell apparently referred to the new field using the plural "policy sciences" to highlight the interdisciplinary nature of his proposal. Torgerson, *supra* note 2, at 242 n.4.

⁴ Lasswell's own work is admittedly not easy to follow, given his penchant for continually repackaging his concepts inside ever changing neologisms, and for their lack of clarity on several key points. *See* Farr et al., *supra* note 1, at 583. Still, the failure to follow Lasswell's ideas is traceable to many more significant factors than his obscurantism — or so we argue here.

⁵ William Ascher, Editorial, *Policy Sciences and the Economic Approach in a "Post-Positivist" Era*, 20 POL'Y SCI. 3, 4 (1987).

More broadly, as practicing pragmatists, we measure the worthiness of an idea by how well it works for its intended purpose. Purpose in turn depends on context, and one of the significant contextual aspects of a “policy sciences for democracy” is whether an analysis is conducted to aid in the implementation of democratic decisions already made or to assist in the initial decision. A crucial contextual feature of federal environmental, health and safety statutes is that almost all of these statutes reject the use of a cost-benefit test to establish the level of regulation.⁶ A CBA-centered RIA is simply inappropriate in that context. More generally, such an RIA fails as an intermediary among academics, decisionmakers, and the general public in the administration of health, safety, and environmental statutes. It inevitably produces complex, dense, and highly technical reams of analysis that do not analyze policy options in terms that administrators can use and that citizens can understand. Pragmatic policy analysis addresses these limitations, making it both more helpful to administrators and accessible to the public.

Our insistence on the relevance of context is important to bear in mind in what follows. While many of our critiques of CBA as a decision guide also provide reasons for a legislature to avoid using the approach in its decisions or writing it into statutes in the first place, our specific focus is on the RIA process as practiced currently in the federal government, where the use of CBA is entrenched. Among other things, this means that our focus is considerably narrower than Lasswell’s, whose work aims at developing a way for multiple disciplines, voices, and fields of expertise to communicate with the first decisionmaker (typically having the legislature in mind), not a decisionmaker who has been delegated authority subject to significant constraints.

We are not so Pollyannaish as to believe that the present commitment to CBA can be easily displaced. Nevertheless, the time has come to consider carefully the theoretical and practical defects of making positivist methodologies the centerpiece of regulatory analysis. While a reorientation of RIA in the federal government presents a number of challenges, this Article concludes that the payoff is well worth the effort.

The argument for pragmatic policy analysis proceeds in several steps. Part II describes the evolution of the theory of policy analysis. It shows that the current infatuation with CBA is out of step with a significant segment of the policy science and social science literature. Part III describes the quite different evolutionary path of federal RIA as well as its vulnerability to the same criticisms that have been leveled at the general project of positivist policy analysis. This Part also offers some explanations for the persistence of CBA-dominated RIA, notwithstanding those criticisms. Part IV offers and explains a pragmatic alternative. Then, Part V presents two case studies to demonstrate how pragmatic regulatory analysis would work and how it dif-

⁶ See *infra* note 246 and accompanying text.

fers from CBA-centered regulatory analysis. Finally, Part VI considers potential objections to it and offers our conclusions.

II. POLICY SCIENCE

The evolution of policy science dates back to the Progressive movement's desire to reduce the role of power and politics in the development of social policy. To fulfill this aspiration, Harold Lasswell proposed a distinct "science" devoted to the examination of public policy. But Lasswell's vision was soon eclipsed by the use of positivism and rational choice methodologies to study public policy. Since the 1960s, however, these methodologies have come under strong criticism in the policy science and post-empiricist literatures. Prominent scholars in public administration, environmental policy, political science, and the policy sciences now endorse a more Lasswellian approach to the evaluation of public policy.

A. *The Progressive Aspiration*

The idea of using scientific principles to guide policy and administration dates back to the late 1880s, when Progressives began to champion the use of rationality and science in government.⁷ Progressives looked forward to the day when science and expertise would reduce the sway of politics and power relationships in the administration of government.⁸ The assumption that knowledge could trump politics continued into the 1960s, although its proponents — social scientists — came to believe that the agency staffs, rather than an agitated citizenry, constituted the audience for policy research and the agents of reform.⁹

So, beginning in the early 1900s, scientists began to play a significant role in the formulation of government policy.¹⁰ President Herbert Hoover expressed "his commit[ment] to the rational, unemotional building of a new, scientific society,"¹¹ and President Franklin D. Roosevelt turned to his "brains trust" to figure out how to get the country out of the Great Depression.¹² The government's successful use of quantitative tools developed by

⁷ See EDWARD A. PURCELL, JR., *THE CRISIS OF DEMOCRATIC THEORY* 6-12 (1973); see also RICHARD HOFSTADTER, *THE AGE OF REFORM* 148-62 (1955).

⁸ Progressives assumed that "once the society knew, really *knew*, the facts and figures of social disorganization, corrective action would inevitably follow" as enlightened citizens "[rose] up to demand and ensure action." Carol H. Weiss, *Ideology, Interests, and Information: The Basis of Policy Positions*, in *ETHICS, THE SOCIAL SCIENCES AND POLICY ANALYSIS* 213, 214 (Daniel Callahan & Bruce Jennings eds., 1983).

⁹ *Id.* at 215. But see *infra* Part II.D (discussing the demise of the assumption that science could trump political concerns).

¹⁰ See Barry D. Karl, *Presidential Planning and Social Science Research: Mr. Hoover's Experts*, in *III PERSPECTIVES IN AMERICAN HISTORY* 347, 350 (Donald Fleming & Bernard Bailyn eds., 1969).

¹¹ *Id.* at 408.

¹² ELLIOT A. ROSEN, *HOOVER, ROOSEVELT, AND THE BRAINS TRUST* 329-61 (1977).

operations research in World War II “provided the stimulus and support for what was to emerge as directed, policy-oriented research.”¹³

B. Lasswell's Vision

Starting in the 1950s, Lasswell, Yehezkel Dror, and others proposed a discipline specifically devoted to the examination of socially critical problems.¹⁴ Their focus was on the study of both how policy decisions are reached and on what constitutes good public policy, with the goal of improving both aspects of public policy.¹⁵ The latter focus has led to the field of “public policy analysis,” an applied and discrete form of policy science.¹⁶

Lasswell believed that few social problems could be adequately understood through a single disciplinary lens, and he therefore proposed that the new approach be multidisciplinary and organized around specific problems.¹⁷ The new approach was normative because the goal was to improve the practice of democracy and to better society and not merely to produce new knowledge.¹⁸ To aid the practice of democracy, policy science would inform both citizens and governmental officials and serve as a bridge between them.

Today the practice of public policy analysis is “virtually ingrained in the woof and warp of government.”¹⁹ Under a series of executive orders dating back to the Reagan Administration, the White House has required agencies to prepare an RIA for significant proposed regulations that includes a quantification of the costs and benefits of the proposed regulation.²⁰ Most departments and agencies in the federal government have in-house policy assessment offices typically headed by a high-level official.²¹

¹³ PETER DELEON, *ADVICE AND CONSENT: THE DEVELOPMENT OF THE POLICY SCIENCES* 57 (1988); *see also* ANNE LARASON SCHNEIDER & HELEN INGRAM, *POLICY DESIGN FOR DEMOCRACY* 29-30 (1997).

¹⁴ *See* HAROLD LASSWELL, *A PRE-VIEW OF POLICY SCIENCES* xiii, 4 (1971); YEHEZKEL DROR, *DESIGN FOR POLICY SCIENCES* 51 (1971). Lasswell argued that a new field was necessary because traditional disciplines did not pay sufficient attention to “the fundamental problems of man in society.” Lasswell, *supra* note 3, at 8.

¹⁵ DELEON, *supra* note 13, at 29 (Lasswell and others were interested in both “knowledge of and in the policy process”).

¹⁶ *Id.* at 8.

¹⁷ Lasswell, *supra* note 3, at 14.

¹⁸ *See supra* notes 2-3 and accompanying text; *see also* LASSWELL, *supra* note 14, at 3-4. According to Dror, “The main test of policy science is better policy making, which produces better policies; these, in turn, are defined as policies which provide increased achievement of goals that are preferred after careful consideration.” DROR, *supra* note 14, at 51.

¹⁹ PETER DELEON, *DEMOCRACY AND THE POLICY SCIENCES* 7 (1997).

²⁰ *See, e.g.*, Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (Feb. 17, 1981). The current order is Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993), *as amended by* Exec. Order No. 13,258, 67 Fed. Reg. 9385 (Feb. 26, 2002) and Exec. Order No. 13,422, 72 Fed. Reg. 2763 (Jan. 18, 2007).

²¹ *See* THOMAS O. MCGARITY, *REINVENTING RATIONALITY: THE ROLE OF REGULATORY ANALYSIS IN THE FEDERAL BUREAUCRACY* 6 (1991) (discussing the role of “program offices” in the context of rulemaking).

The methodology of contemporary public policy analysis, however, is not based on Lasswell's vision. Analysts use rational choice methodologies, operate within a closed disciplinary framework dominated by economics and positive political theory, and aspire to objective and value-free analysis.²² As Neiman and Stambough observe, "[i]t is fair to say that the dominant approach to making, implementing, and evaluating public policy is one variation of the rational choice theme or another."²³

C. *Positivism and Rational Choice*

The use of rational choice methodologies has been part of the widespread adoption of positive methodologies in the social sciences. The emerging fields of social science adopted the scientific model to associate their fields with the considerable prestige that science had in the country at the time. The founders of modern economics, political science, sociology, and the other social sciences also seized on the failure of earlier social scientists to use scientific methods to explain their predecessors' lack of success. As a result, they looked with disfavor on the mixture of fact and value that characterized early efforts at social science.²⁴ The initial practitioners of policy science in the government were trained as positivists and thus had a quite different orientation to the policy sciences from Lasswell's.²⁵ This same trend has influenced the narrower field of RIA for reasons explored in Part III.A.1.

Positivists share an epistemology that holds that knowledge is an objective phenomenon discoverable by empirical falsification of rigorously formulated causal generalizations.²⁶ Positivism supports the separation of facts and values because knowledge accumulation should occur independently of the researcher's preferences or expectations.²⁷ Replicability furthers the goal of objectivity by aspiring to design analyses in a manner that the same results would be achieved by anyone else who duplicated the analysis.

The concept of "scientific objectivity" influenced social scientists to treat observed phenomena as a series of separate and individual units.²⁸ Quantification became a hallmark of social science because it could be em-

²² See DELEON, *supra* note 19, at 98 ("The 'day to day' policy sciences (especially under the rubric of policy analysis) have . . . adopted an expertise, whatever the discipline, based on positivism, 'instrumental rationality,' . . . and technocracy.").

²³ Max Neiman & Stephen J. Stambough, *Rational Choice Theory and the Evaluation of Public Policy*, 26 POL. STUDIES J. 449, 450 (1998).

²⁴ PURCELL, *supra* note 7, at 15.

²⁵ Systems analysts and operations researchers did some of the first work and they were followed by analysts trained as economists. DELEON, *supra* note 13, at 23-24.

²⁶ See FISCHER, *supra* note 2, at 118.

²⁷ *Id.* at 119 (noting importance of neutrality and objectivity in logical empiricism); GIANDOMENICO MAJONE, EVIDENCE, ARGUMENT AND PERSUASION IN THE POLICY PROCESS 34-35 (1989) (same).

²⁸ PURCELL, *supra* note 7, at 22 ("A fact existed and could be observed, and it was the social scientist's function to separate the verifiable, objective facts from the confused and subjectively colored interpretations that men habitually gave them.").

ployed to observe phenomena in a regularized and ostensibly objective manner.²⁹ At the same time, social scientists came to focus on human behavior because “[b]ehavior itself was a functional concept. As a readily identified phenomenon external to the observer’s mind it was objective.”³⁰ Objectivity in social science therefore depends on “evidence that can be stated in experimental sentences, the truth or falsity of which can be objectively determined” using the techniques of statistical quantification.³¹

The adoption of positivism in the social sciences served non-epistemological ends as well.³² Social scientists sought to justify and protect their place in the academy by characterizing their efforts as scientific.³³ It was politically important for foundations that supported social science research to claim that their efforts were neutral and unbiased.³⁴ Finally, social scientists sought to wall off their enterprise from political influence and pressure. Reacting to the events that led to World War II, Karl Popper argued for an “open society” in which governmental policy resulted from discussions based on “critical and rational” information obtained from scientific research.³⁵ Popper believed that the continual testing and critique of ideas was necessary to thwart the efforts of those who sought political power on the basis of passion, ideology, power, and violence.³⁶

D. *The Reappraisal in Policy Science*

A critical reappraisal of the commitment to empirically-based rational decision methods in the policy sciences began in the 1960s and 1970s. It was prompted by domestic and foreign policy failures in the Great Society, Vietnam, and the energy crisis, and the role that policy science played in those efforts.

The involvement of social scientists in the Great Society was so extensive that a contemporary journalist, Theodore White, depicted them as the “driving wheels of the ‘Great Society.’”³⁷ Social scientists not only furnished many of the ideas for programs, they also developed methods of policy evaluation.³⁸ These retrospective evaluations found little evidence that

²⁹ *Id.* at 35.

³⁰ *Id.*

³¹ DAVID C. PARIS & JAMES F. REYNOLDS, *THE LOGIC OF POLICY INQUIRY* 22 (1983).

³² PURCELL, *supra* note 7, at 25-28.

³³ *Id.*

³⁴ *Id.*

³⁵ *Id.*

³⁶ *Id.* at 25 (“striking use of propaganda during the war brought psychologists, political scientists, and sociologists to a new emphasis on human irrationality and the manipulative procedures employed by dominant social groups”); SCHNEIDER & INGRAM, *supra* note 13, at 30 (discussing Popper).

³⁷ Theodore H. White, *The Action Intellectuals*, *LIFE*, June 16, 1967, at 43; *see also* FISCHER, *supra* note 2, at 6 (the policy community became “professionally consumed” devising new programs for President Johnson’s Great Society).

³⁸ FISCHER, *supra* note 2, at 7.

government programs were successful in mitigating social problems.³⁹ It also became clear that policy knowledge did not necessarily displace politics,⁴⁰ and that interest groups and government officials sought to use policy knowledge to further their own interests.⁴¹

In the 1960s, “policy planning in Vietnam was often characterized as the paradigm of ‘rational analysis.’”⁴² When the war was lost, it became apparent that many war planners failed to consider adequately the political and social dimensions of the war and were oblivious to the moral dimensions, which became the rallying cry of the anti-war movement.⁴³ Moreover, as journalists like David Halberstam and Neil Sheehan made clear, the data on which the Department of Defense relied had been subjected to substantial political distortions.⁴⁴

A similar failure occurred during the energy crisis in the 1970s, which offered the positivists a golden opportunity to prove the merits of their approach. As Frank Fischer observes, “[n]ot only did the energy crisis offer policy analysts a dramatic opportunity to demonstrate their analytical proficiencies at modeling a complex technical policy problem, but the raw data for the calculations were at hand.”⁴⁵ Nevertheless, the models not only lacked accuracy, but it became obvious that the results were driven by underlying and undisclosed political and social assumptions.⁴⁶ As Michael Thompson might put it, the analysts belonged to different tribes engaged in rituals around their own assumptions.⁴⁷

³⁹ Weiss, *supra* note 8, at 216 (evaluations indicated only “fitful success in solving social problems”); see also FISCHER, *supra* note 2, at 7 (“there was far less to show for these programs than the Johnson administration and its supporters had promised”).

⁴⁰ JEFFREY L. PRESSMAN & AARON B. WILDAVSKY, *IMPLEMENTATION* (1973) (demonstrating how policy implementation remains intertwined with the political process after a law is enacted and how the political process can distort the original policy goals of the legislation).

⁴¹ Giandomenico Majone & Aaron Wildavsky, *Implementation as Evolution*, in *IMPLEMENTATION* (Jeffrey Pressman & Aaron Wildavsky eds., 1984) (proposing that the content of policy evolves as interest groups seek to influence the outcome and that the outcome is influenced by negotiations between interested parties).

⁴² FISCHER, *supra* note 2, at 9. “The defense community was at the forefront of the development of analytical techniques for guiding management and policy” dating back to statistical analysis of bombing by the Air Force in World War II. *Id.*

⁴³ *Id.*

⁴⁴ DAVID HALBERSTAM, *THE BEST AND THE BRIGHTEST* (1972) (documenting how pro-interventionist officials pushed faulty analyses and suppressed assessments that contradicted these assessments); NEIL SHEEHAN, *A BRIGHT SHINING LIE: JOHN PAUL VANN AND AMERICA IN VIETNAM* (1988) (illustrating the self-deceiving illusions of the American military and civilian bureaucracy).

⁴⁵ FISCHER, *supra* note 2, at 10.

⁴⁶ DELEON, *supra* note 13, at 70.

⁴⁷ See Michael Thompson, *Among the Energy Tribes: A Cultural Framework for the Analysis and Design of Energy Policy*, 17 *POL’Y SCI.* 321, 321 (1984). When we refer to political assumptions, we mean this in the broad sense employed by Thompson, who describes energy experts as disagreeing because they embrace “alternative assumptions about the nature of the world, about the nature of man, and about the nature of the relationship between man and the world,” all of which are “socially constructed.” *Id.* at 328. Alternative assumptions may map onto partisan political distinctions such as between Republicans and Democrats, but that is not a subject we explore here. Policies toward risk — a primary concern in crafting environmental, health and safety rules — exhibit similar sets of alternative assumptions. Indeed, it was in

In light of these experiences, policy analysts began to reconsider their commitment to empirically based rational decision methods. The lesson they drew was that useful policy advice had to take into account the social and normative elements that influence the development and implementation of public policies. This reassessment called for a greater emphasis on the normative, ethical, and qualitative dimensions of policymaking.⁴⁸

E. *The Reappraisal in Post-Empiricism*

Many social scientists have come to doubt the usefulness of empirically based rational decision methods in understanding or resolving public policy disputes. The post-empiricist literature has raised a further, even more fundamental, challenge to rational choice methodologies.

Post-empiricists challenge the belief that science produces an objective description of reality on the ground that all knowledge is ultimately socially constructed. Sociological investigation has shown that an academic discipline is a “practice” consisting of socially constituted modes of argument used by a community of scholars.⁴⁹ Science, like all other forms of knowledge, is couched in language, and language reflects the meanings that people use to construct their social worlds. As modes of argument, scientific practices are necessarily embedded in a language and culture, and research results are bounded by that cultural horizon.

thinking about risk policy that Thompson and others first developed the hypothesis that “political culture” shapes how any individual approaches a policy question. See Michael Thompson & Aaron Wildavsky, *A Proposal to Create a Cultural Theory of Risk*, in *THE RISK ANALYSIS CONTROVERSY: AN INSTITUTIONAL PERSPECTIVE* 146 (Howard C. Kunreuther & Eryl V. Ley eds., 1982).

⁴⁸ FISCHER, *supra* note 2, at 10; see, e.g., Martin Rein, *Value-Critical Policy Analysis*, in *ETHICS, THE SOCIAL SCIENCES AND POLICY ANALYSIS*, *supra* note 8, at 83. A similar reassessment occurred in political science. See, e.g., IAN SHAPIRO, *THE FLIGHT FROM REALITY IN THE HUMAN SCIENCES* (2005); DONALD R. GREEN & IAN SHAPIRO, *PATHOLOGIES OF RATIONAL CHOICE: A CRITIQUE OF APPLICATIONS IN POLITICAL SCIENCE* (1994); JANE J. MANSBRIDGE, *BEYOND SELF-INTEREST* (1990); STEPHEN KELMAN, *MAKING PUBLIC POLICY: A HOPEFUL VIEW OF AMERICAN GOVERNMENT* (1987); JON ELSTER, *RATIONAL CHOICE* (1986); Lawrence A. Schaff & Helen M. Ingram, *Politics, Policy, and Public Choice: A Critique and a Proposal*, 19 *POLITY* 613 (1986). Donald Green and Ian Shapiro, for example, have found that public choice analyses using empirical analysis, economic assumptions and rational choice methodologies have been largely unable to explain key political events. GREEN & SHAPIRO, *supra*, at 6. For example, the theory predicts that, rationally, no one will vote because it is so improbable that any one person’s vote will decide an election. Since the costs of voting outweigh the extremely negligible benefits, a rational person will stay at home. The reality, however, is that millions of persons do vote. *Id.* at 50-52. Shapiro therefore calls for a political science discipline that employs diverse methodologies, such as history and psychology, as well as economic theory, to build explanations that fit the facts on the ground. Shapiro and other like-minded scholars have joined the “Perestroika” movement in political science to object to the hegemonic role that rational choice methodologies have taken on in research, publication and teaching. The movement seeks greater plurality in the field. See Catarina Kinnvall, *Not Here, Not Now: The Absence of a European Perestroika Movement*, in *PERESTROIKA: THE RAUCOUS REBELLION IN POLITICAL SCIENCE* 21 (Kristen Renwick Monroe ed., 2005) (describing the movement).

⁴⁹ THOMAS KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* (1970); see also MICHAEL POLANYI, *PERSONAL KNOWLEDGE* (1958).

Post-empiricists disagree about the implications of social construction for the idea of scientific reality. For some post-empiricists, empirical observations only establish the compatibility of scientific evidence and the theory used to produce it; there is no means by which to establish that the theory itself is true.⁵⁰ According to this understanding, we lack any definitive criteria for preferring one theory of social relationships to another.⁵¹ Other post-empiricists contend it is more accurate to understand science as a mix of “discovery and construction of reality.”⁵² Even though a well-proven theory may turn out subsequently to be false, these post-empiricists find it sufficient that we can identify theories that show “long-term survival prospects.”⁵³

A post-empiricist perspective further reveals not only that rational choice scholars lack the means to establish the objectivity of their approach, but also that the approach itself is not neutral. Rational choice analysts utilize one particular idea of social welfare. In rational choice methodologies, society is “a collection of autonomous, rational decision makers who have no community life . . . [and who] maximize their self-interest through rational calculation.”⁵⁴ This makes social welfare the aggregation of individual preferences. When policy analysts employ rational choice methodologies, they therefore impose this vision of society in lieu of other visions of society.⁵⁵

We can avoid choosing sides in the debate over the relationship of scientific results and reality. Pragmatists do not value science because it produces proof of objective reality, but because of its contributions to human betterment.⁵⁶ Thus, we do not deny that quantification potentially can be a useful tool in policy analysis, but our test is whether quantification is a useful methodology in a particular context. Moreover, we take seriously the objections of post-empiricists in making this evaluation.

F. Post-Empiricism and Lasswell

The post-empiricist challenge argues for a return to Lasswell’s original conception of the policy sciences. Specifically, post-empiricists object to

⁵⁰ FISCHER, *supra* note 2, at 124.

⁵¹ *Id.*

⁵² *Id.*; see LARRY LAUDAN, SCIENCE & RELATIVISM: SOME KEY CONTROVERSIES IN THE POLICY OF SCIENCE 64-65 (1990) (describing the post-empiricist realist position).

⁵³ See LAUDAN, *supra* note 52, at 67.

⁵⁴ DEBORAH STONE, POLICY PARADOX: THE ART OF POLITICAL DECISIONMAKING 9 (1997).

⁵⁵ Post-empiricists argue there is also a deeper ideological problem: the belief that science is nonideological and neutral is profoundly ideological and political. Robert Bellah explains, “I believe it is not fortuitous that so many of the ‘useful’ technologies, practices, and concepts . . . turn out to be manipulative instruments in the hands of political and economic power. It is precisely a science that imagines itself uninvolved in society, that sees itself as operating under no ethical norm other than the pursuit of knowledge, that will produce instruments of manipulation for anyone who can afford to put them into practice.” Robert A. Bellah, *Social Science as Practical Reason*, in ETHICS, THE SOCIAL SCIENCES AND POLICY ANALYSIS, *supra* note 8 at 37, 41.

⁵⁶ See *infra* note 210 and accompanying text.

the evaluation of public policy without explicit discussion of policy values. As Deborah Stone explains, the rational choice approach “gives us no way to talk about how people fight over visions of the public interest or the nature of the community — the truly significant political questions underlying policy choices.”⁵⁷ She argues that the role of an analyst is not to take a position over what constitutes the appropriate conception of society, but to “reveal and clarify” the value disputes that underlie public policy disputes.⁵⁸

Post-empiricists fulfill this mission by using a methodology that is multidisciplinary, deliberative, and reliant on practical reason. As a multidisciplinary process, it can bring a wider range of evidence and arguments to bear on a particular problem than exclusive reliance on rational choice methodologies.⁵⁹ The goal is to produce a consensus through deliberation and debate concerning what constitutes a valid explanation or projection in light of the contradictions and discrepancies indicated by different perspectives and evidence.⁶⁰ The outcome depends on the judgment of the community of researchers or analysts that are involved. Unlike positivism, there is no assumption that this outcome corresponds to some reality. The goal is to produce the outcome that best “coheres” to the evidence, arguments, and perspectives that have been considered.⁶¹ This approach involves “practical” reason because it considers both normative and positive arguments, and it integrates the two by requiring reasoned argument.⁶²

Because post-empiricist policy scholars consider the range and scope of relevant interpretative standpoints, quantitative research “loses its privileged claim among methods of inquiry.”⁶³ While quantitative methods remain a component of policy science, consensus emerges through a discursive construction of competing viewpoints rather than through a process of testing and replication dependent on rational choice presuppositions.⁶⁴ In other words, knowledge is best understood as the product of a “chain of interpretive judgments, both social and technical, arrived at by researchers in particular times and places.”⁶⁵

⁵⁷ STONE, *supra* note 54, at 10.

⁵⁸ *Id.* at 12.

⁵⁹ FISCHER, *supra* note 2, at 131.

⁶⁰ See Marie Danziger, *Policy Analysis Postmodernized: Some Political and Pedagogical Ramifications*, 23 POL'Y STUD. J. 435, 445-47 (1995).

⁶¹ FISCHER, *supra* note 2, at 130-31.

⁶² Steven J. Burton, *Law As Practical Reason*, 62 S. CAL. L. REV. 747, 747 (1989) (defining “practical reason” as individuals’ capacity to take intentional actions based on reasons for action which are linked to social norms); see also Bellah, *supra* note 55, at 54-64 (explaining practical reason); SCHNEIDER & INGRAM, *supra* note 13, at 57-58 (same). For additional discussion of “practical reason,” see *infra* notes 231-238 and accompanying text.

⁶³ Frank Fischer, *Beyond Empiricism: Policy Analysis as Deliberative Practice*, in DELIBERATIVE POLICY ANALYSIS: UNDERSTANDING GOVERNMENTS IN THE NETWORK SOCIETY 209, 218 (Maarten Hajer & Hendrik Wagenaar eds., 2003).

⁶⁴ *Id.*

⁶⁵ *Id.* Fischer explains:

Through the processes of deliberation and debate, a consensus emerges among particular researchers concerning what will be taken as a valid explanation . . . [I]t is the practical judgment of the community of researchers and not the data themselves

A significant number of scholars in different policy areas have adopted this post-empiricist perspective,⁶⁶ including scholars in public administration,⁶⁷ environmentalism,⁶⁸ political science,⁶⁹ and the policy sciences.⁷⁰ Because including the fullest range of viewpoints in an analysis increases the strength of the conclusions that may be drawn, scholars have also been influenced by post-empiricism to argue for new forms of participatory democracy. John Dryzek, for example, draws on principles of post-empiricism to derive a vision of politics, policymaking, governance, and policy analysis for a democratic society.⁷¹ A subset of this discussion includes the potential for participatory policy analysis.⁷²

The evolution of policy science brings us full circle. The hope that a neutral and objective policy science, grounded in quantification, could resolve policy disputes and thereby displace the operation of politics has not been realized. Moreover, as the post-empiricist literature reveals, this is a quixotic quest. Post-empiricist scholars therefore embrace the direction for policy analysis proposed by Lasswell. Just as Lasswell sought, post-empiricist policy science is multidisciplinary, contextual, normative, and focused on how policy science can serve as a bridge between citizens and government officials. Post-empiricist scholars not only acknowledge that their field is reattaching itself to Lasswell's vision, they find in Lasswell's work a prescient sensitivity to the post-empiricist concerns about the practice of social science.⁷³

that establishes the accepted explanation. Such practical judgments, rather than supposed reliance on proof unto itself, provides the mechanism for not only identifying the incompetent charlatan, but investigating the more subtle errors in our sophisticated approximations of reality.

Id. at 220-21.

⁶⁶ See SCHNEIDER & INGRAM, *supra* note 13, at 52 (listing examples).

⁶⁷ See, e.g., MICHAEL M. HARMON, PUBLIC ADMINISTRATION'S FINAL EXAM: A PRAGMATIST RESTRUCTURING OF THE PROFESSION AND THE DISCIPLINE (2006); JOHN FORESTER, CRITICAL THEORY, PUBLIC POLICY AND PLANNING PRACTICE: TOWARD A CRITICAL PRAGMATISM (1993); CRITICAL THEORY AND PUBLIC LIFE (John Forester ed., 1985); ROBERT P. DENHARDT, THEORIES OF PUBLIC ORGANIZATION (1984).

⁶⁸ See, e.g., JOHN S. DRYZEK, RATIONAL ECOLOGY: ENVIRONMENT AND POLITICAL ECONOMY (1987).

⁶⁹ See, e.g., STONE, *supra* note 54; JOHN GAVENTA, POWER AND POWERLESSNESS (1980).

⁷⁰ See, e.g., FISCHER, *supra* note 2; DELEON, *supra* note 13; SCHNEIDER & INGRAM, *supra* note 13; MAJONE, *supra* note 27; WEISS, *supra* note 8; FISCHER, *supra* note 63; HUGH T. MILLER, POSTMODERN PUBLIC POLICY (2002); WILLIAM DUNN, PUBLIC POLICY ANALYSIS: AN INTRODUCTION (1981); THE ARGUMENTATIVE TURN IN POLICY ANALYSIS (Frank Fischer & John Forester eds., 1993); M.E. HAWKESWORTH, THEORETICAL ISSUES IN POLICY ANALYSIS (1988); DAVIS B. BOBROW & JOHN S. DRYZEK, POLICY ANALYSIS BY DESIGN (1987).

⁷¹ JOHN DRYZEK, DEMOCRACY IN CAPITALIST TIMES (1996); JOHN DRYZEK, DISCURSIVE DEMOCRACY (1990).

⁷² DELEON, *supra* note 19, at 111-14.

⁷³ See, e.g., Torgerson, *supra* note 2, at 242-43.

III. REGULATORY IMPACT ANALYSIS

The regulatory analysis methodology used by the federal government since the 1980s pretends that the evolution in policy science never happened. The methodology of federal regulatory analysis, with its emphasis on CBA, manifests the same weaknesses found in the use of social science and quantification in the Great Society, Vietnam, and the energy crisis. Despite these serious limitations, however, federal regulatory analysis has remained focused on CBA. This section discusses the failure of CBA-centered RIA and the reasons it has nonetheless survived.

We first review the origins of CBA, which indicate that its adoption was predicated on positivist assumptions, intended to promote economic efficiency, and then supported further as a Trojan horse for regulatory relief. We next demonstrate that CBA has largely failed to deliver on the first two reasons for its adoption. The empirical evidence strongly suggests that White House review of agency RIAs has been politicized, the experience with CBA demonstrates that it lacks sufficient accuracy to be useful in assessing economic efficiency, and we know that CBA is easily biased by an analyst's policy preferences because the methodology depends on malleable inferences and assumptions. In addition, because CBA — like other rational choice methodologies — is socially constructed, it is neither objective nor unbiased. CBA supporters, as committed positivists, cannot envision an alternative methodology, but, crucially, they do not defend their commitment against the challenge of post-empiricism,⁷⁴ and it is difficult to see how they could. We suggest finally a number of reasons for CBA's staying power. At bottom, CBA has remained popular because it serves the interests of a number of powerful constituencies and because its proponents have been successful in keeping potential alternative methodologies off the reform agenda.

A. *The Adoption of CBA*

White House executive orders have driven the development of regulatory analysis in the federal government dating back to the Nixon administration.⁷⁵ Beginning in the Reagan administration, regulatory reformers sought

⁷⁴ One of the primary defenses of CBA against its critics is the charge that any other way of approaching policy problems is irrational, subjective, or subject to the "vagaries" of politics. We defend our pragmatic approach against charges of irrationality below. See *infra* Part IV.A.

⁷⁵ The Nixon, Ford, and Carter Administrations mandated a regulatory analysis process that was less comprehensive than the current process and involved an interagency review of an agency's analysis. President Ford required the use of CBA, but President Carter did not. See MCGARITY, *supra* note 21, at 18 (Nixon and Ford administration); Exec. Order No. 12,044, 43 Fed. Reg. 12,661 (Mar. 23, 1978) (Carter Administration). President Reagan ordered agencies to prepare a comprehensive RIA, to use CBA, and to submit the RIA to OIRA for oversight. Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (Feb. 17, 1981). The first Bush Administration left the Reagan approach largely intact. MCGARITY, *supra* note 21, at 18. President Clinton adopted a similar process, and, unlike President Carter, mandated the use of CBA. Exec.

to implement the “comprehensive rationality” that rational choice theorists consider essential to rational decisionmaking. This goal was intertwined with the reformers’ desire to increase the economic efficiency of government regulation and to provide “regulatory relief” for the business community.

1. *Comprehensive Rationality*

Beginning with the Reagan Administration, a goal of persons in and close to the White House was to change the decisionmaking paradigm to one of “comprehensive rationality,” a framework that calls for the adoption of the “optimal” decision.⁷⁶ In order for decisionmakers to choose the optimal solution, they must identify a problem and evaluate all potential solutions adhering to the tenets of positivism.⁷⁷

Before the Reagan Administration, agencies emphasized professional judgment in writing regulations.⁷⁸ The participants were reluctant to engage in more technical analyses, although this was sometimes done, because their experience indicated that such studies were inconclusive because of the substantial uncertainties involved. They saw their mission as “produc[ing] rules that ha[d] a reasonable chance of surviving the inevitable political and legal attacks and that [were] capable of a tolerable degree of effective implementation in the real world.”⁷⁹ The important thing was achieving the agency’s mission to protect people or the environment, as opposed to achieving the best possible solution.

The current executive order reflects the requirements of comprehensive rationality. Agencies must identify the specific market failure that they are addressing, determine whether existing laws or regulations have contributed to that problem, identify and assess available alternatives, evaluate the relative risk they are addressing as compared to other risks they could address, quantitatively evaluate the cost-effectiveness of various solutions, assess both the costs and benefits of the preferred and alternative solutions, and identify and assess alternative forms of regulation.⁸⁰

2. *Economic Efficiency*

The rise of CBA was bolstered by calls for correction of what were perceived to be the inefficiencies of government regulation. Since the 1980s, there had been a steady drumbeat of criticism in business and eco-

Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993). President Bush initially adopted the Clinton order without significant changes, although he later extended the requirement of assessing costs and benefits to significant agency guidance documents. Exec. Order No. 13,422, 72 Fed. Reg. 2763 (Jan. 18, 2007).

⁷⁶ John Forester, *Bounded Rationality and the Politics of Muddling Through*, PUB. ADMIN. REV., Jan./Feb. 1984, at 23, 26.

⁷⁷ MCGARITY, *supra* note 21, at 10-11; Colin S. Diver, *Policymaking Paradigms in Administrative Law*, 95 HARV. L. REV. 393, 396-99 (1981).

⁷⁸ MCGARITY, *supra* note 21, at 6.

⁷⁹ *Id.* at 7.

⁸⁰ Exec. Order No. 12,866, 58 Fed. Reg. 51,735-36, (Sept. 30, 1993).

conomic departments in the nation's universities and in think tanks, such as the American Enterprise Institute and the Brookings Institution, that government regulation was inefficient.⁸¹ Three studies are emblematic of this literature. John Morrall claimed to have found a wide variation in the average cost of preventing one premature death among forty-four proposed, final, or rejected regulations.⁸² Bob Hahn claimed only about one-half of the final major regulations reviewed by OIRA had positive net benefits.⁸³ John Graham and Tammy Tengs contended that an additional 60,200 lives per year would be saved if the annual resources then devoted to various types of life-saving interventions were directed toward interventions costing \$7.57 million or less.⁸⁴

The implication that regulatory critics draw from these widely cited studies is that regulation is highly inefficient in economic terms and that CBA will assist in revealing this problem. Morrall's study or updates of it have been cited numerous times for the proposition that government regulations are irrational in the sense that the country is spending exorbitant amounts of money to save few lives.⁸⁵ Regulatory critics cite Hahn's findings as justifying greater reliance on CBA in the promulgation of regulations.⁸⁶ Graham and others subsequently claimed that the country was committing "statistical murder" by missing the opportunity to save the lives of a large number of unidentified persons because of the high costs of some interventions, particularly the regulation of toxic chemicals.⁸⁷ The validity of the studies, however, is in serious doubt, as will be discussed in the next subsection.

The efficiency justification for using CBA was not new. CBA was developed as an analytical tool in agency decisionmaking in the 1930s, and was first codified in the 1936 Flood Control Act, which permitted water projects to be undertaken by the Army only "if the benefits, to whomsoever they accrue, exceed the costs."⁸⁸ Reformers thought that subjecting the projects to a cost-benefit test would better ensure that those projects were achieving the flood control, navigation, and irrigation benefits for which the

⁸¹ MCGARITY, *supra* note 21, at xiv.

⁸² John F. Morrall III, *A Review of the Record*, 10 REGULATION 25 (1986).

⁸³ Robert W. Hahn, *Regulatory Reform: What Do the Government's Numbers Tell Us?*, in RISKS, COSTS, AND LIVES SAVED: GETTING BETTER RESULTS FROM REGULATION 208, 239 (Robert W. Hahn ed., 1996).

⁸⁴ Tammy O. Tengs & John D. Graham, *The Opportunity Costs of Haphazard Social Investments in Life-Saving*, in RISKS, COSTS, AND LIVES SAVED: GETTING BETTER RESULTS FROM REGULATION, *supra* note 83, at 167, 177-78.

⁸⁵ Lisa Heinzerling, *Regulatory Costs of Mythic Proportions*, 107 YALE L.J. 1981, 1994-95 (1998) (documenting citations of Morrall).

⁸⁶ See, e.g., ROBERT W. CRANDALL, CHRISTOPHER DEMUTH, ROBERT H. HAHN, ROBERT E. LITAN, PIETRO S. NIVOLA, & PAUL R. PORTNOY, AN AGENDA FOR FEDERAL REGULATORY REFORM (1997).

⁸⁷ See Frank Ackerman, *The Unbearable Lightness of Regulatory Costs*, 33 FORDHAM URB. L.J. 1071, 1075 (2006) (discussing claim of "statistical murder" by Graham and others).

⁸⁸ Flood Control Act of 1936, 49 Stat. 1570; see RICHARD N. L. ANDREWS, MANAGING THE ENVIRONMENT, MANAGING OURSELVES: A HISTORY OF AMERICAN ENVIRONMENTAL POLICY 166 (2006); see also THEODORE PORTER, TRUST IN NUMBERS 148-61 (1995).

program was designed, as compared to pork-barrel projects that functioned as a means for influential congressmen to pass along benefits to industries, real estate developers, and municipalities in their districts.⁸⁹

The logic, if not the usefulness, of the extension of CBA from public works and public improvement projects to areas such as health, safety, and environmental policy is straightforward: if it is not economically rational for the government to invest in public works projects whose costs exceed the benefits, it is also not rational for the government to require regulated entities to invest in protecting the public and the environment if costs exceed benefits.⁹⁰ Nevertheless, the use of CBA was not expanded until scholars made two contributions to the theoretical foundation for CBA. The first contribution was changing the basis of welfare economics from Pareto optimality to a hypothetical compensation test based on the work of Kaldor and Hicks.⁹¹ A second theoretical development came when consensus emerged that willingness-to-pay ("WTP") was the right approach to value improvements in morbidity and mortality.⁹²

Recently, a new justification has been offered for CBA that contends that the government both over-regulates and under-regulates in response to mistaken public attitudes about environmental and health and safety risks. Since the public mistakes the degree of risk because of emotional reactions and mental shortcuts, the CBA framework is promoted as a more rational method of assessing the need for regulation.⁹³ But the correction of public mistakes about risk does not require the use of CBA. A regulatory impact analysis process can solicit information from risk assessment professionals about the degree of risks posed by various hazards in order to address mistaken public attitudes, and an agency can base its priorities, if it is appropriate, on this information. Thus, this justification for CBA is still an argument for economic efficiency. The purpose is to reduce the extent of economi-

⁸⁹ Whether the 1936 Act's cost-benefit requirement accomplished its goal is debatable. See *infra* note 155 and accompanying text.

⁹⁰ See, e.g., Christopher C. DeMuth & Douglas H. Ginsburg, *White House Review of Agency Rulemaking*, 99 HARV. L. REV. 1075, 1080 (1986) ("regulation tends to be excessively cautious (forcing investments in risk reduction far in excess of the value that individuals place on avoiding the risks involved)").

⁹¹ See Mathew D. Adler & Eric A. Posner, *Rethinking Cost-Benefit Analysis*, 109 YALE L.J. 165, 170 (1999) (describing this change as a breakthrough). Pareto proposed as a principle of evaluation that a project should be undertaken if it makes at least one person better off and no one worse off. This criterion is difficult to satisfy because almost every government project has winners and losers and compensating the losers is usually not feasible. Kaldor and Hicks proposed that a project should be undertaken if the beneficiaries are enriched sufficiently that they could compensate those who are hurt by the project even though no compensation is actually paid. See Amy Sinden, *In Defense of Absolutes: Combating the Politics of Power in Environmental Law*, 90 IOWA L. REV. 1405, 1413-16 (2005) (describing this theoretical switch).

⁹² E.J. MISHAN, *COST-BENEFIT ANALYSIS* 298-309 (1976); see *infra* note 132 and accompanying text (discussing the use of WTP in regulatory impact analysis).

⁹³ STEPHEN BREYER, *BREAKING THE VICIOUS CIRCLE: TOWARD EFFECTIVE RISK REGULATION* (1993); Cass R. Sunstein, *Cognition and Cost-Benefit Analysis*, 29 J. LEGAL STUD. 1059 (2000).

cally “irrational” regulation, with rationality being measured by the normative baseline of economic efficiency.

3. *Regulatory Relief*

While economic theory provided the rationale for using CBA to assess proposed regulation, there was also a political motivation in the adoption of regulatory analysis. In the 1980s, the business community seized on the economic and think-tank literature to lobby for regulatory reform.⁹⁴ The objective, however, was regulatory relief — the reduction of regulatory costs no matter how this might affect the public interest.⁹⁵ The Reagan Administration had a foot in both the regulatory reform and relief camps. It established a “Task Force on Regulatory Relief,” chaired by Vice President George H.W. Bush, and made it responsible for supervising OIRA’s review of regulations.⁹⁶ This double agenda opened the door for a politicization of the regulatory review process. As discussed in the next Part, the door is still open.

B. *The Failure of CBA*

CBA’s adoption occurred around the same time that the failings of positivist policy science were being revealed and CBA-centered RIA has failed in the same ways as its intellectual predecessor. That is, CBA has not displaced the operation of politics in regulatory review, its methodology lacks accuracy, and it is subject to being manipulated according to an analyst’s policy preferences. These three failures are somewhat interrelated, but each deserves separate analysis.

1. *Politicization*

The record of the White House’s administration of regulatory analysis in several administrations indicates that CBA has not significantly mitigated the politicization of policy-making. Anecdotal and empirical evidence indicates that White House review tilts in the direction of reducing the stringency of proposed regulations. Scholars have identified dozens of instances in which the Office of Management and Budget (“OMB”) slowed strong regulatory initiatives and/or sought to reduce their stringency.⁹⁷ By compari-

⁹⁴ See Christopher H. Schroeder, *The Story of American Trucking: The Blockbuster That Misfired*, in ENVIRONMENTAL LAW STORIES 321, 331-40 (2005) (explaining how economic efficiency provided the framework for business interests seeking deregulation); Sidney A. Shapiro, *Administrative Law After the Counter-Reformation: Restoring Faith in Pragmatic Government*, 48 KAN. L. REV. 689, 697-706 (2000) (same).

⁹⁵ MCGARITY, *supra* note 21, at 4.

⁹⁶ Exec. Order No. 12,291, 46 Fed. Reg. 13,193, 13,196 (Feb. 17, 1981).

⁹⁷ See David M. Driesen, *Is Cost-Benefit Neutral?*, 77 COLORADO L. REV. 335, 355 (2006) (citing case studies reaching this conclusion).

son, there exist only a few reports of OIRA seeking stronger regulation,⁹⁸ and almost all of these accounts are disputed.⁹⁹ Recent investigations by David Driesen,¹⁰⁰ Lisa Bressman and Michael Vandenberg,¹⁰¹ and Steven Croley¹⁰² offer considerable empirical support for a bias in White House review, although the degree of support varies somewhat among the studies.

This evidence suggests to most observers that the original — politically motivated — regulatory relief motivation for White House review continues to play a significant role in the review process.¹⁰³ CBA supporters are not too bothered by these results because they expect agencies to over-regulate and look to OMB to counter this tendency.¹⁰⁴

There are two flaws in this defense. First, it concedes that OMB comes to the CBA process with a prior bias toward weakening the agency recom-

⁹⁸ See, e.g., Richard D. Morgenstern & Marc K. Landy, *Economic Analysis: Benefits, Costs, and Implications*, in *ECONOMIC ANALYSIS AT EPA 458* (Richard D. Morgenstern ed., 1997).

⁹⁹ Driesen, *supra* note 97, at 354-64 (disputing claims that OIRA seeks stronger regulation).

¹⁰⁰ Driesen looked at twenty-five rules that a GAO study found had been significantly affected by OMB between June 2001 and July 2002. In twenty-four of the twenty-five rules, OMB's recommended changes would have reduced regulatory protections, while the remaining case was neutral. *Id.* at 365.

¹⁰¹ Bressman and Vandenberg studied the impact of OMB review by interviewing top political officials at EPA during the first Bush and Clinton administrations. Lisa Schultz Bressman & Michael P. Vandenberg, *Inside the Administrative State: A Critical Look at the Practice of Presidential Control*, 105 MICH. L. REV. 47, 49 (2006). They found that OIRA "regularly skews rulemaking in a deregulatory direction," *id.* at 50, and concluded that OIRA "may be using cost-benefit analysis to impose its own normative preference for deregulation." *Id.* at 75.

¹⁰² Croley found that politically controversial rules are usually changed in the White House review process, which he thinks contradicts the claim that OMB review is purely technocratic. Steven Croley, *White House Review of Agency Rulemaking: An Empirical Investigation*, 70 U. CHI. L. REV. 821, 877 (2003) ("If OIRA review is indeed primarily technocratic, then political controversy should not be the dominant engine prompting changes in submitted rules."). On the other hand, he found no statistical correlation between whether a rule was changed or approved by OIRA without change and written submissions by various types of interest groups. He also found that the type of interest group that attended a meeting with OIRA officials did not predict whether OIRA would change the rule or accept it as is. Croley suggests these results create doubt that the White House regularly uses the review process to deliver benefits to powerful interests. *Id.* at 858-60.

¹⁰³ See, e.g., Nicholas Bagley & Richard L. Revesz, *Centralized Oversight of the Regulatory State*, 106 COLUM. L. REV. 1260 (2006) ("OIRA's denials notwithstanding, there is substantial evidence that emphasizing the cost side of the cost-benefit ledger remains a pervasive and entrenched feature of OIRA review."); Lisa Heinzerling, *Statutory Interpretation in the Era of OIRA*, 33 FORDHAM URB. L.J. 1097, 1100 (2006) (describing "unidirectional nature" of OIRA review).

¹⁰⁴ Supporters justify White House review on the basis of public choice theory, which predicts that self-interested administrators will seek to maximize the significance of their agency and the size of its budget. DENNIS C. MUELLER, *PUBLIC CHOICE II* 250-57 (1989). This means an agency charged with the responsibility of protecting people or the environment will inevitably attempt to spend too much on its goals. See, e.g., DeMuth & Ginsberg, *supra* note 90, at 1081. White House review by an office with no program responsibilities and answerable to the President responds to this tendency because the office is more likely than any agency to take a broad viewpoint of the value of a proposed regulation. *Id.* at 1081-82.

mentation, so the goal of regulatory analysis is not neutral. The goal instead is to counter the agency's perspective with a cost-cutting perspective.

Second, the idea that CBA and White House review is necessary because agencies propose regulations whose costs vastly exceed the benefits defies political logic. It seems improbable that agencies would be successful in adopting regulations whose costs should greatly exceed benefits in light of the political opposition that such moves would create. Moreover, the charge does not appear to be true. The validity of the Morrall, Hahn, and Graham studies has been called into serious question by Lisa Heinzerling, Richard Parker, and others who have closely examined their methodology and data.¹⁰⁵ Furthermore, as Bagley and Revesz have established, "the claim that agencies are systematically biased in a proregulatory way finds little support in public choice theory, the political science literature, or elsewhere."¹⁰⁶ Even conceding that agency heads seek to increase their budgets, there is no reason to believe that over-regulating is the way to accomplish this. On the contrary, public choice theory points in the direction of the regulated community's exerting disproportionate leverage over agency action, either directly or by influencing members of Congress who sit on the relevant committees.¹⁰⁷

Finally, CBA supporters might contend that it is important to study the efficiency of such statutory standards in order to educate the public about the economic impacts of not using a cost-benefit standard to establish the level of regulation. This argument, however, does not justify the current system. Studying the costs and benefits before a regulation is promulgated slows the rulemaking process. Assuming that it is useful to study the efficiency of regulations, this delay can be avoided by undertaking retrospective cost-benefit studies.¹⁰⁸ Moreover, although retrospective studies pose significant methodological problems,¹⁰⁹ they have the advantage of using real-life data.¹¹⁰

¹⁰⁵ See Heinzerling, *supra* note 85, at 1983-86 (analyzing Morrall); Richard W. Parker, *Grading the Government*, 70 U. CHI. L. REV. 1345 (2003) (analyzing Hahn); Lisa Heinzerling, *Five-Hundred Life-Saving Interventions and Their Misuse in the Debate Over Regulatory Reform*, 13 RISK 151 (2002) (analyzing Graham); see also SIDNEY A. SHAPIRO & ROBERT L. GLICKSMAN, *RISK REGULATION AT RISK: RESTORING A PRAGMATIC APPROACH* 80-91 (2003) (summarizing Heinzerling's critiques of Morrall and Graham and offering additional criticism).

¹⁰⁶ Bagley & Revesz, *supra* note 103, at 1262.

¹⁰⁷ *Id.* at 1284-87.

¹⁰⁸ See Parker, *supra* note 105, at 1417 ("Retrospective studies, though difficult, are indispensable tools for capturing the impact of waivers, variances, and other uses of official discretion; detecting errant predictions of costs and benefits; identifying important sources of estimation error; calibrating ex ante estimates; and, most of all, identifying needed changes to rules.").

¹⁰⁹ See Thomas O. McGarity & Ruth Ruttenberg, *Counting the Cost of Health, Safety, and Environmental Regulation*, 80 TEX. L. REV. 1997, 2039 (2002) (explaining why retrospective studies are difficult).

¹¹⁰ For an RIA, agencies normally have to rely on regulated entities for estimates of regulatory costs, and these entities have an incentive to overstate compliance costs. SHAPIRO & GLICKSMAN, *supra* note 105, at 106. Estimates of regulatory compliance costs may also be too high because forecasters fail to anticipate competitive pressures that will cause firms to find

2. Accuracy

The inability of CBA to measure regulatory costs and benefits accurately in many situations is well known. This obviously limits the usefulness of CBA in determining the economic efficiency of proposed regulations.¹¹¹ CBA as practiced by regulatory agencies and OIRA is imprecise for a number of methodological reasons. On the cost side, as just discussed, agencies are dependent on regulated entities for estimates and this information is unreliable.¹¹² There are a number of significant difficulties on the benefit side, but four problems stand out.

First, the accuracy of a monetization depends on the reliability of scientific information about the risks posed by a chemical or some other hazard, but the risk information available to analysts is often not sufficiently definitive to permit a useful starting point for an estimation of the monetary value of regulatory benefits.¹¹³ The magnitude of cancer risks, for example, is difficult to estimate because few toxic materials have been subject to full-scale toxicological testing in laboratory animals and uncertainty exists about extrapolating from animals to humans even where animal data is available; few toxic materials have been assessed in statistically valid epidemiological studies, and even valid studies frequently lack the power to isolate cause and effect or to quantify risk at low exposure levels.¹¹⁴ Because of uncertain risk data, Cass Sunstein concluded reasonable people, making reasonable assumptions, could peg the benefits of EPA's arsenic rule as low as \$10 million or as high as \$1.2 billion.¹¹⁵ Although this extraordinary range does not shake Sunstein's belief that CBA is helpful in RIA,¹¹⁶ other scholars strongly challenge his conclusion. As Holly Doremus has pointed out, "[i]t is difficult to see how estimates with uncertainty ranges as high as 10 orders of magnitude add anything to the simple recognition that arsenic might or

less expensive methods of compliance and because there can be less compliance with a regulation than an agency estimates. *Id.* at 108. Although there is limited retrospective evidence, what evidence exists indicates that estimates of regulatory costs range from too high to much too high. *Id.* at 106-07 (describing the studies and their findings that costs are overestimated); FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING 37-39 (2004) (same); McGarity & Rutenberg, *supra* note 109, at 2042-44 (same).

¹¹¹ The imprecision of CBA also permits the White House to object to any regulation it finds politically objectionable.

¹¹² See *supra* note 110 and accompanying text; Thomas O. McGarity, *Professor Sunstein's Fuzzy Math*, 90 GEO. L.J. 2341, 2344 (2002).

¹¹³ See SHAPIRO & GLICKSMAN, *supra* note 105, at 94-95; Sinden, *supra* note 91, at 1425; Douglas A. Kysar, *It Might Have Been: Risk Precaution and Opportunity Costs*, 22 J. LAND USE & ENVTL. L. 1, 15 (2006); McGarity, *supra* note 112, at 2344.

¹¹⁴ SHAPIRO & GLICKSMAN, *supra* note 105, at 94. Most risk assessments are subject to uncertainty, but the degree of uncertainty varies. The evaluation of safety risks, for example, may be more accurate than the evaluation of cancer risks because there is better evidence about cause and relationships between risk and injuries and about the size of the exposed population. *Id.*

¹¹⁵ Cass R. Sunstein, *The Arithmetic of Arsenic*, 90 GEO. L.J. 2255, 2258 (2002).

¹¹⁶ *Id.* at 2302.

might not pose a significant human health risk.”¹¹⁷ Analysts have techniques to address the lack of risk data, but they are not capable of producing the accurate pinpoint estimates of actual risks necessary to monetize regulatory benefits in a useful way.¹¹⁸ A related problem is that estimates often end up monetizing only some benefits of a health or environmental regulation because of the inability to monetize all of the risks it reduces. This means that CBA “in practice frequently turns out to be ‘complete cost-incomplete benefit analysis.’”¹¹⁹ Since cost estimates are relatively complete, and overstated, but benefit estimates are substantially incomplete, the practice is “guaranteed to understate true benefits.”¹²⁰

Second, the accuracy of a monetization depends on the reliability of “wage premiums” — the amount of additional compensation that workers seek in return for workplace risks that accompany a more dangerous job — as an indication of the willingness of people to pay for small reductions in safety risks.¹²¹ Economic analysts extrapolate from this wage premium evidence that individuals are willing to pay between \$2.5 million and \$6.8 million to prevent one premature death.¹²² This methodology, however, assumes that workers have accurate information about the risks they face

¹¹⁷ Holly Doremus, *Of Salmon, the Sound, and the Shifting Sands of Environmental Law — A National Perspective*, 82 WASH. L. REV. 547, 564 (2007); see also McGarity, *supra* note 112, at 2366 (“At the end of the day, one is left with a pressing need to know why a person of Professor Sunstein’s obvious intelligence and even disposition would conclude that all of this occasionally incomprehensible, but frequently preposterous and always manipulable number spinning, could possibly lead to better decisionmaking in the real world.”).

¹¹⁸ Two such analyses are “Delphi” and “Monte Carlo.” When analysts use Delphi analysis, they gather subjective assessments of unknown risks from a survey of experts in the relevant field. The goal is to use Bayesian probability theory to find a point of convergence among the responses, thereby generating a basis for calculating expected outcomes. David E. Adelman, *Scientific Activism and Restraint: The Interplay of Statistics, Judgment, and Procedure in Environmental Law*, 79 NOTRE DAME L. REV. 497, 567-82 (2004). Although the expert responses are subjective, the assumption is that objective results independent of the original estimates will be produced as more data are collected. *Id.* at 573. The technique, however, has limited power to harmonize divergent opinions about human and environmental risks, which magnifies the significance of an expert’s starting distribution. As a result, “[s]cientists’ subjectively derived prior distributions are . . . bound to influence greatly, if not determine, the outcome of Bayesian assessments in fields like environmental science where data are often very limited.” *Id.* at 577.

Monte Carlo analysis generates hypothetical distributions of unknown probabilities. These techniques study the effects of policy proposals under thousands of different states of the world with the goal of locating policy prescriptions that predominate over a wide range of possible conditions. See Susan R. Poulter, *Monte Carlo Procedures in Environmental Risk Assessment — Science, Policy and Legal Issues*, 9 RISK 7 (1998) (describing and explaining these simulations). As Douglas Kysar notes, however, these “techniques depend . . . on the specification of certain assumptions about the theoretical nature of unknown probabilities When applied to systems that behave, instead, according to the laws of complexity, such assumptions can lead to dramatically erroneous policy advice, despite the great technological sophistication of the Monte Carlo procedure.” Kysar, *supra* note 113, at 20.

¹¹⁹ ACKERMAN & HEINZERLING, *supra* note 110, at 207.

¹²⁰ *Id.*

¹²¹ SHAPIRO & GLICKSMAN, *supra* note 105, at 98.

¹²² THOMAS O. MCGARITY & SIDNEY A. SHAPIRO, WORKERS AT RISK: THE FAILED PROMISE OF THE OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION 271 (1993).

and that they are able to obtain wage premiums that fully compensate them for such risks but there are strong reasons to doubt both assumptions.¹²³

There are additional flaws with this type of monetization. Although the wage premium studies almost exclusively concern safety risks,¹²⁴ they are used to estimate the monetary benefits of reducing health risks. Analysts lack persuasive evidence that individuals treat safety and health risks similarly.¹²⁵ If anything, individuals may be willing to pay more to avoid health risks, particularly cancer.¹²⁶ Another contextual problem arises from the difference in the valuation of voluntarily and involuntarily incurred risks. Research indicates that people are more adverse to risks that are thrust upon them than risks that they voluntarily take. Since many health and safety risks are involuntary, the use of wage premiums, which are supposed to involve “voluntary” risks, provides an inaccurate accounting of the value of health and safety benefits.¹²⁷

An additional contextual problem arises from the fact that wage premium studies are unrepresentative of the way in which many individuals value reductions in risk. The calculations, for example, ignore those outside the workforce, including persons, like the elderly, the disabled, children, and pregnant and nursing mothers, who are particularly vulnerable to environmental hazards.¹²⁸ In addition, the wage premium studies primarily reflect how much money *men* demand for risky work, but academic studies indicate that women are much more risk-averse than men.¹²⁹ Finally, reliance on the wage premium studies conflates market preferences with civic preferences.¹³⁰ Analysts assume that there is no difference between the price people pay for things in private markets and the value they wish those same

¹²³ See SHAPIRO & GLICKSMAN, *supra* note 105, at 99-100 (discussing that workers lack sufficiently accurate information about risks to bargain for appropriate risk premiums, and many workers, especially minority workers, lack sufficient bargaining power to obtain fully compensating risk premiums or even any premiums at all); ACKERMAN & HEINZERLING, *supra* note 110, at 77-78 (same); see also Kysar, *supra* note 113, at 30-31 (“Thus, what the CBA analyst regards as choice (and hence preference . . .), may actually capture in part the analyst’s inclination to treat pre-existing power relations in employment markets as normatively privileged.”).

¹²⁴ See W. Kip Viscusi & Joseph E. Aldy, *The Value of a Statistical Life: A Critical Review of Market Estimates Throughout the World*, 27 J. RISK & UNCERTAINTY 5, 22 (2003) (“most hedonic labor market studies focus on the risk of accidental death or accidental injury”).

¹²⁵ SHAPIRO & GLICKSMAN, *supra* note 105, at 102.

¹²⁶ See, e.g., George Tolley, Donald Kenkel & Robert Fabian, *State-of-the-Art Health Values*, in VALUING HEALTH FOR POLICY: AN ECONOMIC APPROACH 323, 340-41 (George Tolley et al. eds., 1994); see also Ian Savage, *An Empirical Investigation into the Effect of Psychological Perceptions on the Willingness-to-Pay to Reduce Risk*, 6 J. RISK & UNCERTAINTY 75, 85 (1993).

¹²⁷ Richard L. Revesz, *Environmental Regulation, Cost-Benefit Analysis and the Discounting of Human Lives*, 99 COLUM. L. REV. 941, 971 (1999). Analysts have sought to overcome contextual problems by the use of contingent evaluation, but this methodology also lacks accuracy. See *infra* notes 135-137 and accompanying text.

¹²⁸ ACKERMAN & HEINZERLING, *supra* note 110, at 78.

¹²⁹ *Id.* at 78-79.

¹³⁰ SHAPIRO & GLICKSMAN, *supra* note 105, at 59; Sinden, *supra* note 91, at 1424-25.

things to be assigned in public decisions. Yet, economic analysis itself suggests that because individuals may have multiple preference orderings, they apply different preferences in different contexts.¹³¹

Yet another problem arises from the use of willingness-to-pay (“WTP”) to monetize health and safety risks.¹³² Since WTP is a function of a person’s wealth, a person’s wealth will limit how much money she or he can pay to be safer. By comparison, if regulatory benefits were monetized according to “willingness to sell” (“WTS”), the value of regulatory benefits would undoubtedly be higher since the WTS is not bounded by a person’s wealth.¹³³ In economic theory, the two amounts should have the same value, but considerable experimental evidence indicates that people charge a higher price to be exposed to greater health or safety risks than they are willing to pay to reduce such risks.¹³⁴ The use of WTP in light of this evidence means that regulatory benefits are undervalued.

Finally, analysts lack a reliable methodology for monetizing the value of environmental protection. One problem is that market evidence of WTP to protect environmental resources only measures how much money people will pay to use environmental resources. It does not account for nonuse or existence value.¹³⁵ To overcome this limitation, analysts use contingent evaluation. That is, analysts ask a representative sample of individuals how much money they are willing to pay for an environmental outcome. The same approach has been used to obtain individuals’ preferences concerning health benefits. While contingent evaluation provides data that cannot be obtained from looking at actual markets, this methodology is also highly problematic.¹³⁶ The answers are very dependent on the way in which questions are framed and on whether persons answering the questions have sufficient information to give informed answers. A more fundamental problem is

¹³¹ See Karine Nyborg, *Homo Economicus and Homo Politicus: Interpretation and Aggregation of Environmental Values*, 42 J. ECON. BEHAV. & ORG. 305, 306 (2000).

¹³² As noted, analysts rely on wage premiums to estimate the amount that individuals are willing to pay to prevent a premature death. See *supra* note 121 and accompanying text. When a worker moves to a safer job, he or she gives up the wage premium. This indicates that the person is “willing to pay” in terms of foregone compensation the amount of the wage premium to avoid the risk. SHAPIRO & GLICKSMAN, *supra* note 105, at 98.

¹³³ *Id.* at 97-98; Sinden, *supra* note 91, at 1426-27. Moreover, as discussed in the next section, economics lacks any neutral principle to justify the use of WTP to monetize regulatory benefits. See *infra* note 146 and accompanying text.

¹³⁴ See, e.g., Bernie J. O’Brien et al., *Is There a Kink in Consumers’ Threshold Value for Cost-Effectiveness in Health Care?*, 11 HEALTH ECON. 175 (2002). The two measures might also differ if the value of the asset an individual was being asked to purchase or sell was sufficiently large to generate a wealth effect. The magnitude of the observed discrepancy between the measures in experimental situations is, however, too large to be explained by wealth effects.

¹³⁵ SHAPIRO & GLICKSMAN, *supra* note 105, at 104. For example, while there is market evidence of how much money people spend to visit the Grand Canyon, which is some evidence of its “use” value, this approach fails to account for the fact that many people value protection of the Grand Canyon even though they have no plans to visit the area, which is its “nonuse” or “existence” value. *Id.*

¹³⁶ See *id.* at 104 (describing the problems with contingent evaluation); Sinden, *supra* note 91, at 1429-30 (same).

that the answers are purely hypothetical since respondents are not actually engaged in market transactions. In addition, even if contingent valuation answers are accurate, the amount of money that people are willing to pay (at least what they state they are willing to pay) is limited by their wealth.¹³⁷

CBA supporters offer two reasons why CBA should be retained despite its lack of accuracy. First, they argue that, despite its lack of precision, the methodology is still useful in flagging proposed rules that are potentially highly inefficient.¹³⁸ But the claim that agencies grossly over-regulate is more myth than reality.¹³⁹ Even if CBA serves this function, that scarcely justifies its current role in fine-tuning regulations by precisely identifying costs and benefits. In addition, CBA is unnecessary to raise a red flag when regulation may be inappropriate. Because an agency will have estimates of the number of lives saved as well as other adverse health effects prevented by various regulatory options, this information will alert an agency that some options might not produce significant benefits for the public. Second, supporters argue that CBA brings some useful information to the table, and that if agencies did not use CBA we would be left with no method to assess and discuss the rationality of proposed regulations.¹⁴⁰ It is not true that CBA is the only form of regulatory analysis available for assessing the policy wisdom of proposed regulations. We explore in the next Part an alternative method of regulatory analysis that is no less “rational” than CBA. Moreover, this second argument concedes that CBA cannot deliver comprehensive rationality. If CBA cannot deliver comprehensive rationality — and it cannot — then the issue on the table is what form of regulatory analysis delivers the most helpful information in light of limits of time, money, and information.¹⁴¹ We take up this concession in the next Part.

3. *Bias*

The results of CBA are not only inaccurate, they are often biased by the analyst’s policy preferences or the value judgments that are implicit in rational choice methodologies. It is therefore no accident that regulatory opponents often come up with benefit estimates that are far lower than the

¹³⁷ This problem is not avoided by asking questions of a representative pool of persons who have different amounts of wealth. If regulatory benefits were measured by WTS, rather than WTP, the regulatory benefits would be greater. *See supra* note 133 and accompanying text.

¹³⁸ *See, e.g.,* STEVEN E. RHODES, *THE ECONOMIST’S VIEW OF THE WORLD: GOVERNMENT, MARKETS & PUBLIC POLICY* 135 (1985) (noting that a “fairly wide variation in results is still precise enough to suggest skepticism about the OSHA standards costing tens or hundreds of millions of dollars per death averted . . .”).

¹³⁹ *See supra* note 105 and accompanying text.

¹⁴⁰ Cass Sunstein, *In Praise of Numbers: A Reply*, 90 *GEO. L.J.* 2379, 2384 (2002).

¹⁴¹ CBA critics note that this means CBA fails its own test since the benefits of CBA do not justify the considerable costs. *See, e.g.,* Robert Verchick, *The Case Against Cost-Benefit Analysis*, 32 *ECOLOGY L.Q.* 349, 369-77 (2005) (reviewing ACKERMAN & HEINZERLING, *supra* note 110).

agency's estimates or those of pro-regulatory sources.¹⁴² CBA is open to such manipulation because it attempts to resolve "trans-scientific" issues. Trans-scientific issues are questions that can be stated in the language of science, but are not answerable in purely scientific terms.¹⁴³

An issue may not be answerable in purely scientific terms because a scientific discipline lacks a neutral principle or way to resolve the issue; that is, an analyst must choose between methodological alternatives to reach an outcome, but there is no clear agreement in the discipline which choice to make. The use of discount rates in CBA illustrates this problem. Some analysts use a discount rate based on the historical rate of return on risk-free investments, while other analysts use a discount rate based on the historical rate of return on private investments. The disagreement, which reflects the lack of a theoretical consensus concerning what is being measured, can affect measurements of regulatory benefits by millions of dollars.¹⁴⁴

More fundamentally, CBA analysts lack any neutral method to choose between WTP and WTS as the measurement of value that people attach to exposing themselves to less or more risk. The choice between WTP and WTS is basically a choice between the normative allocation of rights or entitlements. If polluters should have the right to pollute until the victims or potential victims pay them enough to stop, then WTP is the measure that should be employed to approximate the results that would be achieved if polluters and victims were actually able to bargain. If victims should have the right to be free of pollution until polluters pay them to accept the pollution, then WTS is the measure that approximates the bargains that would be made. The second approach — the polluter pays principle — is probably the approach that accords better with most people's beliefs. Yet, as noted earlier, the choice of WTP as the basis of CBA was one of the theoretical developments that led to its widespread use.¹⁴⁵ Not only does this choice run counter to our intuition about popular opinion, there is also no principle in economics that provides a neutral way to choose WTP over WTS or vice-versa. The problem, as noted earlier, is that economics assumes that WTP and WTS will reveal the same monetary value, which is not true empirically.¹⁴⁶ Among other things, the use of WTP biases CBA in favor of less protection because it ignores the impact of a person's wealth on the ability to pay for more protection.

An issue may not be answerable in purely scientific terms for a second reason: the data needed to answer the question are unavailable.¹⁴⁷ As discussed in the last Part, the unavailability of data is a central problem for

¹⁴² See, e.g., ACKERMAN & HEINZERLING, *supra* note 110, at 218 ("Washington think tanks render precise, hostile, quantitative judgments which . . . guarantee that environmental policies and regulations will fail cost-benefit tests.")

¹⁴³ Alvin Weinberg, *Science or Trans-Science*, 10 MINERVA 209 (1972).

¹⁴⁴ See SHAPIRO & GLICKSMAN, *supra* note 105, at 113-15 (describing and explaining the divergent approaches to discount rates).

¹⁴⁵ See *supra* note 92 and accompanying text.

¹⁴⁶ See *supra* note 134 and accompanying text.

¹⁴⁷ Weinberg, *supra* note 143.

CBA analysts. To compensate, analysts employ “inferential bridges” to overcome the data gaps. The choice of these bridges is easily influenced by analysts’ policy preferences.¹⁴⁸ Even Cass Sunstein, who believes that CBA brings needed objectivity to the regulatory field, has at times undercut this view by showing ways in which CBA calculations can be easily manipulated by lawyers to benefit a client’s interests (although Sunstein does not endorse such tactics).¹⁴⁹ Consider, for example, Hahn’s study mentioned earlier. The study claimed that only 57 percent of final major regulations reviewed by OMB had positive net benefits.¹⁵⁰ Hahn, however, assigned a zero benefit to forty-one rules in his database because the agency did not quantify and monetize the benefits in the RIA, although many of the rules assigned a zero-value had substantial benefits despite the agency’s inability to quantify and monetize them.¹⁵¹ Hahn has sought to justify the exclusion on methodological grounds,¹⁵² but there is no denying that his choice made the regulatory system appear more inefficient than other equally plausible assumptions would have done.

Both CBA supporters and critics propose better disclosure of inferential bridges so that readers can assess the impact of those assumptions on the results.¹⁵³ While this step would be beneficial, it is not a sufficient answer to the problem of manipulation. The disclosure of biased assumptions does not make a CBA any more neutral or reliable. Moreover, even when assumptions are disclosed, they are often ignored because hard numbers take on a power of their own.¹⁵⁴

C. *The Challenge of Post-Empiricism*

Beyond these practical problems, the post-empiricist perspective challenging the neutrality and objectivity of positivist social science methodologies is largely missing from the legal literature concerning regulatory analysis, although some of the objections to CBA that have appeared reflect

¹⁴⁸ See Catherine A. O’Neill, *Alternative Approaches to Regulatory Impact Analysis: Clean Air Mercury Rule* (Jan. 31, 2008 draft), in *ALTERNATIVES TO REGULATORY IMPACT ANALYSIS* (Lisa Heinzerling et al. eds.), at Part II (forthcoming) (tentatively titled) (reviewing different cost-benefit studies of regulating mercury emissions from coal-fired power plants and discussing how different inferential bridges change the net benefits by orders of magnitude) (on file with the Harvard Environmental Law Review).

¹⁴⁹ Sunstein, *supra* note 115, at 2290.

¹⁵⁰ Hahn, *supra* note 83, at 218.

¹⁵¹ Parker, *supra* note 105, at 1382-83. He also assigned a zero-value to benefits that were quantified and monetized if they did not fall into a select category of benefits that he included within his study. *Id.*

¹⁵² Robert W. Hahn, *The Economic Analysis of Regulation: A Response to the Critics*, 71 U. CHI. L. REV. 1021 (2004).

¹⁵³ William F. Pederson, *Regulation and Information Disclosure: Parallel Universes and Beyond*, 25 HARV. ENVTL. L. REV. 151, 202-03 (2001).

¹⁵⁴ Cf. Lawrence Tribe, *Trial by Mathematics: Precision and Ritual in the Legal Process*, 84 HARV. L. REV. 1329, 1362 (1971) (“Readily quantifiable factors are easier to process — and hence more likely to be recognized and then reflected in the outcome — than are factors that resist ready quantification.”).

a post-empiricist perspective.¹⁵⁵ CBA advocates have failed to come to grips with the post-empiricist challenge to positivism. This is a fundamental, unanswerable problem with CBA.

The failure to include post-empiricism in the debate over CBA makes it easier for CBA's defenders to insist that there can be no competing rational methodology for the evaluation of regulatory policy because other methodologies mix facts and values. This attempt to privilege CBA as uniquely "rational" draws a false distinction between CBA as a "scientific" approach and other methodologies as "subjective" or value-laden approaches. As a problem-solving practice, CBA is no less value-laden than any other approach to public policy problems. All social science practices are modes of argument that have been socially constructed.¹⁵⁶

A post-empiricist perspective also teaches that modes of social construction, such as rational choice methodologies, embed beliefs about human behavior that are not neutral or objective because empiricists are ultimately unable to prove their validity and because they inevitably orient their analysis to favor one set of beliefs over others.¹⁵⁷ The empirical information developed by CBA emerges from a methodology that rests on the assumptions of economics. These are socially constructed presuppositions, representing how one scholarly group — economists — understands human behavior for purposes of undertaking research and analysis.

CBA's critics have made two arguments that reflect this post-empiricist perspective. They object that CBA only addresses the value of economic efficiency even though other values like "altruism, dignity, equity, fairness (in both procedural and substantive senses), decency, mutuality, tolerance, and empathy . . . are highly valued in a civilized society."¹⁵⁸ They also object to analyzing regulatory options on the basis of economic efficiency at all. This objection is to CBA's utilitarian basis. Under CBA, the protection of individuals is treated as a "good," like any other commodity, that can be bought and sold. As a result, people have no claim to protection from harm if their lives do not have sufficient economic value.¹⁵⁹ A significant purpose of post-empiricism is to understand and explain the assumptions that underlie social theories and the linkage between these assumptions and empirical outcomes.

CBA proponents acknowledge these limitations and argue that the goal of an RIA is to indicate the economic consequences of proposed regula-

¹⁵⁵ See *supra* notes 156-57 and accompanying text.

¹⁵⁶ See *supra* Part II.E.

¹⁵⁷ See *supra* note 54 and accompanying text.

¹⁵⁸ See, e.g., Thomas O. McGarity, *A Cost-Benefit State*, 50 ADMIN. L. REV. 7, 72-73 (1998).

¹⁵⁹ See Christopher H. Schroeder, *Rights Against Risk*, 86 COLUM. L. REV. 495, 508 (1986). As Lisa Heinzerling explains, "[d]eciding to allow one person to harm, even kill, another person on the basis of how much it costs the person doing the harm to refrain from doing it denies the person harmed a right against harm. It makes the person's freedom from harm, indeed her life, contingent upon the financial profile of the life-threatening activity." Lisa Heinzerling, *The Rights of Statistical People*, 24 HARV. ENVTL. L. REV. 189, 189 (2000).

tions.¹⁶⁰ Government officials, they maintain, are free to set the stringency of regulation according to statutory standards that reflect other values.¹⁶¹ This claim may not be factually accurate. The White House may insist that agencies adjust their regulatory policies based on the results of an RIA, and if this occurs, the value of “efficiency” is smuggled into decisionmaking even if a statute rejects economic efficiency as a value that should determine the level of regulation.¹⁶²

Even assuming that RIAs are merely used to indicate efficiency consequences and not to force agency reappraisal of proposed regulations, the very fact that CBA proponents insist that CBA should be the basis for an RIA privileges their economic assumptions and technocratic approach to problem-solving. CBA proponents consider CBA to be superior to any other form of regulatory analysis because only CBA adheres to positivistic principles, particularly the separation of facts and values. They view any departure from the results recommended by CBA as involving subjective, not rational, choices: as Michael Harmon notes, “[p]redictive social science is necessarily value free social science, and normative judgment must be someone else’s department.”¹⁶³

This position, however, is untenable in light of post-empiricism. At best, empiricism in economics (and other social sciences) is a mixture of empirical data and social construction.¹⁶⁴ This means it is simply not possible to claim that the results of a CBA study are merely objective revelations of market behavior.

Deirdre McCloskey, one of the few economists who have responded to the post-empiricist challenge, has long contended that economists’ faith in the objectivity of their data is misplaced.¹⁶⁵ Since empirical findings are permeated with uncertain, subjective judgments, she contends that the real work in economics goes on in the story that accompanies those findings.¹⁶⁶ This story is composed of logical arguments why the statistics are persuasive proof of economic theory despite their significant limitations in proving that theory.¹⁶⁷ Thus, a judgment that a study is an accurate representation of real-

¹⁶⁰ See SHAPIRO & GLICKSMAN, *supra* note 105, at 130 (supporters of impact analysis typically oppose regulation at least in its current design and seek to educate agencies and the public about “the potentially deleterious effects of risk regulation on economic development and other important considerations”).

¹⁶¹ See, e.g., Richard H. Pildes & Cass R. Sunstein, *Reinventing the Regulatory State*, 62 U. CHI. L. REV. 1, 74 (1995).

¹⁶² See Thomas O. McGarity & Sidney A. Shapiro, *OSHA’s Critics and Regulatory Reform*, 31 WAKE FOREST L. REV. 587, 631-33 (1996) (identifying conflict between CBA and decisionmaking criterion in the Occupational Safety and Health Act).

¹⁶³ HARMON, *supra* note 67, at 55.

¹⁶⁴ See *supra* notes 50-53 and accompanying text (noting that some post-empiricists consider empirical results as a mixture of empiricism and social construction, while others deny that empiricism can identify reality in light of its social construction).

¹⁶⁵ DEIRDRE N. MCCLOSKEY, *THE RHETORIC OF ECONOMICS* XIX-XXI (2d ed. 1998).

¹⁶⁶ *Id.* at 147.

¹⁶⁷ *Id.*

ity depends on the persuasiveness of the rhetorical conversation that accompanies it.¹⁶⁸

A pragmatic orientation such as ours evaluates economic insights in terms of how successful they are in helping us cope with the world.¹⁶⁹ CBA's advocates spend a great deal of time defending their methodology on a priori grounds, with very little empirical support even for the accuracy of their own conclusions, let alone the utility of those conclusions. The less robust the empirical findings, the more conclusions are influenced by subjective argumentation. Thus, CBA cannot escape the post-empiricist critique. Since CBA, like other rational choice methodologies, is socially constructed, it is neither objective nor unbiased. As a problem-solving practice, CBA is no less value-laden than any other approach to public policy problems.

D. *The Staying Power of CBA*

Notwithstanding the previous important criticisms, CBA has remained the dominant policy technique within the federal government. Its constituent parts — willingness-to-pay, discount rate, value of a human life, shadow prices, opportunity costs, and the like — are the lingua franca of policy discourse in Washington. In light of the serious limitations of the methodology, we consider some of the explanations for its dominance of the federal policy scene.

CBA has staying power because it serves the needs of several powerful constituencies. For government officials, it can be a means to defend decisions as being science-based as long as critics do not perceive its trans-scientific nature. For the regulated community, it is a way to criticize government for over-regulation and to influence the outcome of regulatory battles by targeting the White House review process as a strategic venue for influencing agency rulemaking. For Presidents interested in asserting control over the bureaucracy, CBA offers a standardized methodology that permits a small number of generalists in OIRA to review regulations from agencies that have greatly different regulatory missions.

How well CBA responds to the preferences of the public is more difficult to determine. For those who see arbitrary and capricious government as a real threat, CBA may be appealing because it appears to deter bias and subjectivity in public decisionmaking. The fact that politicians and administrators are reluctant to rely on CBA to defend their decisions to the public, however, suggests that a CBA methodology lacks widespread public support.

¹⁶⁸ *Id.*

¹⁶⁹ *See infra* Part IV.A.1.

1. *The Bureaucracy*

Even if quantitative methods are originally imposed to gain some control over agency decisions, bureaucrats quickly learn that attributing decisions to “science” or the “facts and figures” often redounds to their benefit. For example, after Congress amended the Flood Control Act in the 1930s to limit water projects to those whose benefits exceeded their costs,¹⁷⁰ the Army Corps of Engineers soon became perfectly content to shelter its decision-making behind the alleged objectivity and expertise associated with its increasingly detailed cost-benefit rules.¹⁷¹ The Corps’ internal effort to impose uniformity on the cost-benefit analyses prepared by its numerous regional offices never really “amounted to a campaign to neutralize personal judgments,” but it did help insulate the Corps’ decisions from second-guessing by Congress.¹⁷²

Modern agencies also recognize these same insulating abilities of science and quantification. When Environmental Protection Agency (“EPA”) Administrator Carol Browner faced heavy criticism from members of Congress hostile to EPA’s decisions to tighten the ambient air quality standards for particulate matter and ozone, for example, she was quick to say that she was simply following the dictates of science.¹⁷³ Although modern agencies frequently scuffle with OIRA over the content of regulatory analyses that stand in the way of the initiatives the agencies prefer, they are adept, when attacked, at turning to science and quantification to deflect charges of bias or partisan proclivities.¹⁷⁴ The fact that CBA is filled with components whose precise values are contestable and easily manipulated only aids in this endeavor. The methodology can be used to justify policy decisions as being dictated by the results of the methodology, yet the methodology can justify a wide range of policy options. As long as the agency’s critics do not perceive the trans-scientific nature of the CBA methodology, an administrator can take advantage of the (undeserved) reputation of CBA as being objective.

Agencies have become very sophisticated in using CBA to justify their preferred policy options. At the same time, because of the other forces that we describe in this section, CBA has become embedded in the regulatory system. So long as CBA does not limit administrative discretion significantly, and the methodology provides political cover for administrators,

¹⁷⁰ See *supra* note 88 and accompanying text.

¹⁷¹ See PORTER, *supra* note 88, at 155-62.

¹⁷² *Id.* at 162.

¹⁷³ Oral Testimony of Carol M. Browner, Administrator, U.S. Environmental Protection Agency before the Subcommittee on Energy and Environment of the Committee on Science U.S. House of Representatives, May 21, 1997, available at <http://yosemite.epa.gov/opa/admpress.nsf/7a69cfa127d839658525735900410226/f59da70ee33f70d28525701a0052e3c7!OpenDocument>.

¹⁷⁴ See Wendy Wagner, *The Science Charade in Toxic Risk Regulation*, 95 COLUM. L. REV. 1613, 1640-44 (1995) (discussing the use of science to deflect criticism of policy decisions).

agencies will be inclined to continue using it even though they are aware of its deficiencies.

2. *The Regulated Community*

Regulated industries have become a second constituency for CBA. To supplement its efforts to influence regulatory outcomes in smoke-filled rooms, the business community has commandeered CBA as an alternative instrument of influence. Their central critique of regulation is that it imposes excessive costs, and the CBA methodology offers a well-suited vehicle to criticize the government for excess regulation. In addition, the OIRA process of RIA review offers a convenient venue for influencing agency rules.

Had the regulated community been able to sustain a system of agency decisionmaking that relied upon the expert judgment of agency officials, they might well have not become the proponents of CBA that they are today. When the research funding committee of the Business Roundtable met immediately after Ronald Reagan's election in 1980, one member, recognizing that quantitative methods can be unnecessary adjuncts to decisionmaking if one already expects preferred treatment from an "expert" agency, questioned whether there was any longer a need to fund the cost benefit studies the group had been commissioning in its efforts to prevent what it saw as over-regulation. "Why do we need these studies," the question was raised, "when our folks are going to be in power?"¹⁷⁵

But, by the early 1980s, it was not so easy to return to a world of cozy relationships with agency and congressional personnel. Consumer interests, environmental interests, and others who traditionally had stood outside of the traditional iron-triangles that dominated many agencies were too distrustful of those cozy relationships. Such distrust often promotes a shift from less formal expert judgment to greater quantification.¹⁷⁶ At the same time, the federal courts had begun using "hard look review" to ensure that agencies were not shirking their statutory responsibilities.¹⁷⁷ Moreover, in its *Benzene* decision, the Supreme Court, perhaps unwittingly, made the preparation of quantitative risk assessments obligatory for environment, health, and safety regulation, when it held that the Occupational Safety and Health Administration ("OSHA") had to make a determination that current exposure levels posed a "significant risk" for workers before OSHA could regu-

¹⁷⁵ A conversation with one of the co-authors (Schroeder) in the fall of 1980.

¹⁷⁶ See generally PORTER, *supra* note 88, at 89-90 (describing how abandoning of "reliance on expert judgment in the name of public standards and objective rules . . . [is] never a voluntary affair, but emerge[s] always from a sense of intense pressure or bitter rivalry." Thus, as consumer interests and others who stand outside the traditional iron-triangles seek more public accountability for agency decisions, "rigorous quantification is demanded . . . because subjective discretion has become suspect. Mechanical objectivity serves as an alternative to personal trust.").

¹⁷⁷ Shapiro, *supra* note 94, at 695.

late workplace exposure to toxics.¹⁷⁸ After finding this requirement in the statute, Justice Stevens' plurality opinion ruled that it was up to the agency in the first instance to determine what level of risk was "significant,"¹⁷⁹ but the opinion also went on to provide some illustrative examples of quantities of risk thought by the plurality to be obvious examples of insignificant risk on the one hand and significant risk on the other.¹⁸⁰ The opinion was widely interpreted within the agencies as signaling that quantitative risk assessments were required to survive judicial review.¹⁸¹ Once there were estimates of the number of lives that might be saved by a proposed regulation, the door was opened to estimating the monetary value of this benefit.

Consequently, regulated entities could not return to less formal decision structures. What is more, some in the business community doubted that they would easily be able to re-establish the cozy relationships of the iron triangle days in the context of the new regulatory agencies like EPA.¹⁸² They ended up being just as suspicious of the work product of new agencies as the Progressives had been of the Army Corps' pork barrel projects. In such an environment, CBA works to the advantage of the regulated community in two ways. First, using the methodology as a basis for attacking perceived over-regulation, the regulated community has availed itself of the same use of standardization and quantification as a lever to control decisionmakers as did the Progressives, only this time to serve their ends rather than to promote the public welfare. Second, rather than focusing exclusively on the agencies and committees as the targets of possible capture, the regulated community turned its attention to the small, centralized agency in charge of reviewing regulatory analyses, aiming to capture it instead.¹⁸³ And, as noted earlier, most scholars studying the OIRA process find that the OIRA generally, if not almost exclusively, pushes for regulatory relief.¹⁸⁴

¹⁷⁸ *Indus. Union Dep't, AFL-CIO v. Am. Petroleum Inst.*, 448 U.S. 607, 639-40 (1980) ("Only after the Secretary has made the threshold determination that [a significant] risk exists with respect to a toxic substance" is the Secretary authorized to regulate under the statute).

¹⁷⁹ *Id.* at 655.

¹⁸⁰ *Id.*

¹⁸¹ See, e.g., John F. Martonik et al., *The History of OSHA's Asbestos Rulemakings and Some Distinctive Approaches That They Introduced for Regulating Occupational Exposure to Toxic Substances*, 62 AM. INDUS. HYGIENE ASS'N J. 208, 213 (2001) (observing that "quantitative assessment of risk was the result of the Supreme Court's benzene decision requiring OSHA to perform such an analysis when appropriate data are available").

¹⁸² See ZYGMUNT J.B. PLATER ET AL., ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY 400 (3d ed. 2004) (identifying as an underlying theme of environmental law the penetration of an iron triangle of "private construction and industrial interests, government agencies that service the industry, and congressional delegations that want to attract particular public expenditures into their backyards").

¹⁸³ See *supra* Part III.A.3 (discussion of regulatory relief).

¹⁸⁴ See *supra* Part III.B.1.

3. *The President*

Presidents have also found CBA much to their liking, partially explaining its staying power.¹⁸⁵ Over the years, Presidents have employed a variety of strategies in an effort to prevent a sprawling bureaucracy from taking actions at odds with the President's agenda. Since Richard Nixon, all have utilized some form of centralized control through the Office of Management and Budget, with CBA as the increasingly prominent centerpiece of that centralized review.¹⁸⁶ Indeed, by the time of George W. Bush's first term, the executive order mandating CBA had been in place for twenty years.

The White House has good reasons to focus its control efforts on CBA. Reliance on CBA enables OIRA to generate its own set of standardizing methods and procedures so that it can more easily assess the work of an extraordinarily diverse array of administrative agencies. CBA also plays to the strength of OIRA, a relatively small office dominated by economists, by enabling the OIRA staff to review agency submissions without having nearly the same level of expertise in the agencies' subject matter.¹⁸⁷

Part of the explanation for CBA's central role as a tool for presidential control of agencies is also path-dependent. As noted, the principal executive order formalizing the review procedure in its modern form was President Reagan's.¹⁸⁸ The use of an economic efficiency test as a means to reduce the amount and stringency of federal regulation was completely consistent with his policy preferences. Those preferences continued through the George H.W. Bush Administration. President Clinton then chose to do nothing more than to slightly modify the Executive Order, which by then was quite well-ingrained in the federal policy-making fabric.¹⁸⁹ The decision to continue the Executive Order's commitment to economic efficiency was also symbolically consistent with his first-term priority of addressing the budget deficit. With the election of George W. Bush, there was once again a President with policy preferences similar to those of President Reagan and the first President Bush.

¹⁸⁵ In one analysis of CBA, Richard Andrews notes "the use of . . . requirements [such as CBA] as a weapon for oversight and control of regulatory decisions by the president." Richard N. L. Andrews, *Economics and Environmental Decisions, Past and Present Analysis*, in ENVIRONMENTAL POLICY UNDER REAGAN'S EXECUTIVE ORDER: THE ROLE OF COST-BENEFIT ANALYSIS 43, 45 (V. Kerry Smith ed., 1984).

¹⁸⁶ See *supra* note 25 and accompanying text.

¹⁸⁷ See Robert W. Hahn & Cass R. Sunstein, *A New Executive Order for Improving Federal Regulation? Deeper and Wider Cost-Benefit Analysis*, 150 U. PA. L. REV. 1489, 1497 n.34 (2002) (comparing OIRA's small staff of about fifty and the large number of regulations it reviews).

¹⁸⁸ Exec. Order 12,291, 46 Fed. Reg. 13,193 (Feb. 17, 1981).

¹⁸⁹ See *supra* note 75.

4. *The Public*

The public's reception of CBA is difficult to gauge. The public may view CBA as a bulwark against the misuse of government power. At the same time, by their behavior, elected officials signal an understanding that the public dislikes the underlying, cold-hearted general premise of CBA that some lives are just too expensive to save. Thus, elected officials and agency administrators regularly decline to defend policy decisions in terms of cost-benefit language.

The feature of CBA that seems to resonate with the public is its objectivity — not objectivity as an epistemological claim of a direct correspondence between knowledge and the world as it really is, for this has not survived the post-empiricist critique,¹⁹⁰ but rather objectivity as a socio-political claim. In that sense, objectivity can be understood as the opposite of subjectivity, personal bias, or private judgment or opinion. In order to combat subjectivity and bias it is not necessary that a methodology be able to access “untainted truth.” “It is enough that there be rules, perhaps quite conventional ones, that limit the exercise of discretion.”¹⁹¹ It is even better if these rules can be rules of quantification, which by resemblance can borrow on the esteem in which most people hold science. “Science stands for the possibility of unanimity, of an end to bickering and strife. Quantification is raised up as a neutral, objective language, a basis for minimizing arbitrariness, and hence for overcoming suspicion and winning allies.”¹⁹²

For members of the public who see arbitrariness, favoritism, and even corruption as the dominant characteristics when surveying public decision-making, CBA may be appealing. When Congress codified the use of CBA in the Flood Control Act of 1936, for instance, it was attempting to get away from decisions for pork-barrel projects reached in backrooms.¹⁹³ So long as the decisionmaking processes remained enmeshed in subjectivity and personal judgment, those who thought public monies could be better spent were left without effective means to challenge those decisions. In this particular context, CBA was a tool that could be wielded in the interests of greater public accountability. Although CBA has not eliminated subjectivity from the choice of water projects,¹⁹⁴ the attraction of having a set of rules for

¹⁹⁰ See *supra* Part II.E.

¹⁹¹ Theodore M. Porter, *Objectivity as Standardization: The Rhetoric of Impersonality in Measurement, Statistics, and Cost-Benefit Analysis*, in *RETHINKING OBJECTIVITY* 197, 197 (Allan Megill ed., 1994).

¹⁹² *Id.* at 210 (citation omitted).

¹⁹³ See *supra* notes 88-89 and accompanying text.

¹⁹⁴ Ollie Houck, for one, has described the Army Corps of Engineers as “a federal agency housed within the United States Army that worked directly for the United States Congress. It is described in the literature as an ‘iron triangle,’ composed of your local congressmen, your local Corps, and your local shippers, real estate developers and other beneficiaries who contributed generously to these same congressmen, and received generously in return.” Oliver Houck, *Can We Save New Orleans?*, 19 *TUL. ENVTL. L.J.* 1, 13 (2006). Theodore Porter is a little more positive. PORTER, *supra* note 88, at 155 (“When, now more rarely, really disgrace-

addressing this issue remains. In addition, as two political scientists have established, the public has a strong desire for democracy without the fractious decisionmaking that marks democracy in a pluralistic society.¹⁹⁵ That desire adds to the allure of a decisionmaking procedure that promises to eliminate politics from decisionmaking.

The belief that CBA achieves objectivity even in this socio-political sense is misplaced. Those seeking to block health-protective measures have become increasingly skilled at manipulating the constituent parts of a CBA.¹⁹⁶ Yet the allure of finding a method to allow public decisions to escape from politics and the influence of power and greed remains.

Despite this potential appeal of CBA, public officials are unwilling to defend their decisions in terms of this methodology. Despite the dominance of CBA logic in policy-making discussions within the Beltway, no government official will stand before a public gathering and announce something like “a tougher regulation could have saved more lives — in fact we have a risk assessment saying it would save sixteen more lives in the next five years — but our cost-benefit study showed that these lives were just not worth the costs that would have been imposed on industry by the regulation.” In fact, even industry spokespeople shy away from a CBA-based defense of their stance on regulation before a public audience. When the EPA held community hearings in an effort to get public input on whether tougher standards should be imposed on smelters operating outside of Tacoma, Washington, no one, be they government officials or industry representatives, made arguments against tighter controls using strict CBA. Industry argued that if tighter controls were required, the plants would be forced to close, and that this would cost jobs, but made no effort to reduce the decision to a technocratic judgment, a simple matter of dollars and cents.¹⁹⁷ This suggests that if the public were offered a form of policy analysis that it believed made decisionmaking more accountable and responsive to their interests, it would likely be receptive.

ful projects were authorized [after the 1936 Act], a modest standard of decorum was maintained. Official economic analyses helped to cut off debate and bargaining in Congress.”).

¹⁹⁵ See JOHN R. HIBBING & ELIZABETH THEISS-MORSE, *CONGRESS AS PUBLIC ENEMY* 147 (1995) (“A surprising number of people, it seems, dislike being exposed to processes endemic to democratic government. People profess a devotion to democracy in the abstract but have little or no appreciation for what a practicing democracy invariably brings with it. . . . People do not wish to see uncertainty, conflicting opinions, long debate, competing interests, confusion, bargaining, and compromised, imperfect solutions. They want government to do its job quietly and efficiently, sans conflict and sans fuss.”).

¹⁹⁶ See, e.g., *supra* notes 150-152 and accompanying text.

¹⁹⁷ See Christopher H. Schroeder, *Clear Consensus, Ambiguous Commitment*, 98 MICH. L. REV. 1876, 1912-13 (2000). The “Straight Talk” memorandum written by Frank Luntz, a prominent Republican strategist, urges candidates to “[s]tay away from ‘risk assessment,’ ‘cost-benefit analysis,’ and the other traditional environmental terminology used by industry and corporations” and to “[p]ut the costs of regulations in human terms,” emphasizing job losses and changes in lifestyle. Memorandum from Frank Luntz, The Luntz Research Cos. 131, 139-40 (2002), excerpt available at <http://www2.bc.edu/~plater/Newpublicsite06/supp mats/02.6.pdf>.

IV. A PRAGMATIC ALTERNATIVE

There has been a substantial challenge to positivism and rational choice methodologies in social science and post-empiricist literatures, and policy scientists have proposed a revised methodology along the lines originally proposed by Lasswell.¹⁹⁸ There has also been a substantial challenge to CBA in the legal literature, but Lasswell's proposal has not been discussed previously. As pragmatists, we are attracted to the Lasswellian vision of policy science.¹⁹⁹ In this Part, we explain how pragmatism justifies revising the current regulatory analysis methodology, identify the essential elements of a pragmatic alternative, explain how a pragmatic alternative would work in the context of health, safety, and environmental legislation, and compare our proposal to other progressive reform proposals.

A. *A Pragmatic Justification*

Pragmatism leads us to three conclusions about the existing methodology for regulatory analysis. First, the methodology should be evaluated by how well it has worked. Second, post-empiricism cannot be ignored. Third, positivism is not essential for rational regulatory analysis.

1. *What Works*

The pragmatist rejects the idea that the rationality of a belief can be established by reference to a metaphysical concept. Instead, an idea is rational if it "leads us into more useful relations with the world."²⁰⁰ In public policy, an idea is therefore rational when it solves some specific problem better than existing beliefs and understandings.²⁰¹ The pragmatist makes this determination through a critical "community of inquiry," a group of persons who, after study, debate, and deliberation, accept a new or revised idea as a better solution.²⁰² Dewey conceived of the citizens in a democracy as one such critical community, and he characterized the democratic process as

¹⁹⁸ See *supra* Part II.F.

¹⁹⁹ The use of pragmatism to design a regulatory analysis methodology is hardly a new idea. Philosophical pragmatism, as originally conceived by John Dewey, William James, and others, became the dominant mode of social analysis in the early decades of the twentieth century. SHAPIRO & GLICKSMAN, *supra* note 105, at xi. Although pragmatism was eclipsed by the turn in the social sciences toward positivism, it has enjoyed a strong comeback, including as a basis for designing and implementing environmental, health, and safety policy. See, e.g., SHAPIRO & GLICKSMAN, *supra* note 105; DANIEL A. FARBER, *ECO-PRAGMATISM* (1999); ENVIRONMENTAL PRAGMATISM (Andrew Light & Eric Katz eds., 1996); Christopher H. Schroeder, *Prophets, Priests, and Pragmatists*, 87 MINN. L. REV. 1065 (2003).

²⁰⁰ PRAGMATISM: A READER, at xiv (Louis Menand ed., 1997).

²⁰¹ SHAPIRO & GLICKSMAN, *supra* note 105, at 15.

²⁰² *Id.* at 16.

mimicking scientific inquiry in the sense that citizens are engaged in an ongoing, experimental search for a durable conception of the public order.²⁰³

When this pragmatic yardstick is applied to CBA, it indicates that reform is needed. CBA has failed to meet its own goals. CBA has not displaced the operation of politics in regulatory review, the methodology lacks accuracy, and it is subject to being manipulated according to an analyst's policy preferences.²⁰⁴ Despite all the effort that has gone into refining the current RIA process, adding to its burdens and complications and thereby raising the costs of developing safety- and health-protective measures, there is no solid evidence that we are better off because we have employed CBA instead of some other decisionmaking technique.

Defenders contend that CBA is nonetheless a useful heuristic for evaluating regulatory policy.²⁰⁵ This much more modest argument for CBA abandons the pretense that CBA achieves comprehensive rationality, an original goal of a CBA-centered RIA process.²⁰⁶ The question for us therefore is whether CBA is a more useful and helpful heuristic than alternatives proposed in the policy science literature. We offer a side-by-side comparison of a pragmatic RIA process and CBA in Parts IV.C and V to support our argument that our alternative works better.

2. *Post-Empiricism*

As pragmatists, we also take into account the post-empiricist critique, which asks us to consider a plurality of traditions, perspectives, and academic orientations. The goal of pragmatism is to clarify and mediate ideas generated from these different traditions, perspectives, and orientations.²⁰⁷ As discussed earlier, the post-empiricists have generated a significant challenge to positivism and logical empiricism.²⁰⁸ CBA analysts, working entirely within the positivist tradition, can ignore this challenge. Pragmatists cannot. Pragmatism is pluralistic. A pragmatic approach explicitly addresses the limitations of CBA and takes account of them in determining what form of regulatory analysis to adopt.

3. *Positivism is Not Essential*

Pragmatism rejects attempts at defending CBA on the sole ground that only CBA is a viable methodology for RIA because only CBA is positivistic. Because pragmatists believe it is not possible to find universal, certain foundations for belief, no particular discipline or culture has a privileged view of

²⁰³ *Id.* at 16-17.

²⁰⁴ *See supra* Part III.B.

²⁰⁵ *See supra* notes 138, 140 and accompanying text.

²⁰⁶ *See supra* Part III.A.1.

²⁰⁷ Gene R. Shreve, *Rhetoric, Pragmatism and the Interdisciplinary Turn in Legal Criticism — A Study of Altruistic Judicial Argument*, 46 AM. J. COMP. L. 41, 58 (1998).

²⁰⁸ *See supra* Parts II.D and II.E.

knowledge or truth.²⁰⁹ This does not mean that pragmatists do not value science. For pragmatists, science's value stems from its contributions to improving society and humanity.²¹⁰

Although pragmatism is not anti-science, it rejects the idea that positivism is the only viable orientation for conducting regulatory analysis. For pragmatists, the question is whether a positivistic orientation or another orientation is more useful. Furthermore, we do not believe that positivism furnishes the only basis for rational judgment. Since pragmatism does not privilege any one particular discipline, it is open to the possibility that some other (non-positivistic) form of rationality, such as the rationality practiced in law or other disciplines, works better for regulatory analysis.

B. *A Pragmatic Methodology*

A pragmatic RIA would reorient regulatory analysis along the lines recommended by a number of post-empiricist policy scientists. The revised methodology would be problem-oriented, normative, discursive, and transparent.

1. *Problem-Oriented*

A pragmatic approach to RIA would focus on the specific problem at issue and deploy whatever tools are proper, based on the statute under which the issue is addressed.²¹¹ In other words, the goal of a pragmatic RIA process is to assist regulatory decisionmakers in analyzing the scientific and policy issues that are presented by the statute being implemented and that must be resolved in order to promulgate a rule.

By comparison, the current RIA process was not created to help agencies work through the issues generated by a regulatory proposal, but to provide a check on an alleged tendency to over-regulate and to provide regulatory relief. Because of this orientation, the present approach detaches regulatory analysis from the statute under which the agency is operating. CBA unhinges regulatory analysis from an agency's statutory mission be-

²⁰⁹ See Morris Dickstein, *Introduction: Pragmatism Then and Now*, in *THE REVIVAL OF PRAGMATISM: NEW ESSAYS ON SOCIAL THOUGHT, LAW, AND CULTURE* 1, 5 (Morris Dickstein ed., 1999) (explaining that pragmatists reject concepts such as "truth" because "truth is provisional, grounded in history and experience, not fixed in the nature of things"); John Stick, *Can Nihilism Be Pragmatic?*, 100 HARV. L. REV. 332, 340 (1986).

²¹⁰ Dewey would not have denied that science advances deep human interests when it is able to provide better explanations of how the world works and what consequences various actions might have. See SHAPIRO & GLICKSMAN, *supra* note 105, at 16-17 (describing Dewey's views on science); see also Robert R.M. Verchick, *Feathers or Gold?: A Civic Economics for Environmental Law*, 25 HARV. ENVTL. L. REV. 95, 127 (2001) (explaining that pragmatism "endorses the scientific method as a means of identifying useful insights from many perspectives").

²¹¹ Lasswell proposed the field of policy sciences because he did not believe that the social sciences were focused on the social problems that democracy was trying to resolve. See *supra* note 18 and accompanying text.

cause, as discussed below, agencies almost never regulate under statutes that use a cost-benefit decisionmaking standard.²¹²

This makes regulatory analysis that is centered on CBA method-driven rather than problem-driven. As Ian Shapiro has argued, the insistence on using a method-driven approach easily degenerates into an ideology in which the analyst becomes more interested in pursuing a theory or point of view than in seeking an accurate understanding of the matter at hand.²¹³ If the policy analyst only has one tool, the analyst has an incentive to make that tool fit even when some other form of analysis would work better. Shapiro's prediction is confirmed by OMB's dense forty-eight pages of instructions on how agencies should complete a CBA.²¹⁴ The instructions indicate an effort to pursue the perfection of CBA techniques without regard to the actual benefits in terms of policy insights produced by such perfection.

A CBA-proponent might object that over-regulation itself is a problem requiring resolution through our democratic form of government. Assuming that this is a problem,²¹⁵ we argue that it best resolved through retrospective studies of regulatory outcomes, which are likely to produce more accurate estimates of regulatory results. This alleged problem cannot and should not be resolved in the context of individual rules because almost all statutory mandates protecting people and the environment reject the use of a cost-benefit test to establish the stringency of a regulation.²¹⁶ This makes a CBA-centered RIA unnecessary and irrelevant to analyzing regulatory issues that arise under a statutory mandate. We make an exception for the rare circumstance where Congress has mandated the use of a cost-benefit test.

2. Normative

A pragmatic regulatory analysis would explicitly recognize the central role of social values in regulatory and social policy decisions, for pragmatism insists on considering the extent to which multiple social values influence a given problem and what solutions they might require. The goal of pragmatism is to find solutions "that accommodate conflicting values to the greatest extent possible."²¹⁷ Distributional considerations such as environmental justice, the loss of jobs, or the differential impact of general rules on different geographical locations and groups all deserve a place in a deliberation where they are neither reduced to a matter of dollars and cents nor treated as features extraneous to clear-eyed CBA analysis. Social values deserve a place in the mix of decisionmaking considerations, rather than being treated as improper deviations from a "best result" indicated by CBA.

²¹² See *infra* note 246 and accompanying text.

²¹³ SHAPIRO, *supra* note 48, at 28.

²¹⁴ OFFICE OF MGMT. & BUDGET, CIRCULAR A-4, Sept. 17, 2003, <http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf>.

²¹⁵ But see *supra* Part III.B.1.

²¹⁶ See *infra* Part IV.C.

²¹⁷ SHAPIRO & GLICKSMAN, *supra* note 105, at 21.

By comparison, to the extent that CBA is defended on normative grounds, it determines the value of proposed policy and regulatory options using just one factor — economic efficiency. This makes CBA unhelpful in implementing the other policy values that underlie most regulatory statutes. Moreover, because it is focused on only one value, CBA does not generate any discussion of how to resolve conflicts between efficiency and other regulatory and policy goals to the extent that this conflict is relevant under a regulatory statute.

3. *Discursive*

Discursive analysis involves an open-ended qualitative evaluation of policy options that relies on discussion and logic to vet empirical information and to develop social ends and values. A discursive format is pragmatic because it requires analysts to give sufficient reasons to justify an option as improving society and the environment. Moreover, it opens the door for multidisciplinary, normative, and deconstructionist arguments, and requires analysts to confront and resolve such issues. It has the additional benefit of being quite familiar to lawyers.

While a pragmatic RIA process is discursive, the intent of CBA is to come to some definitive evaluation of alternatives and rank the options according to the extent that benefits exceed costs. In other words, the goal of CBA is to end a discussion, not start one.

Social scientists have turned to models of argumentation in the communications literature to define how discursive policy analysis would proceed.²¹⁸ Giandomenico Majone has identified four basic elements of discursive policy analysis.²¹⁹ First, the adequacy of the methods used to produce data is judged by the standards used in the discipline from which they come.²²⁰ Second, since “perfection of data is impossible,” whether the data is sufficiently reliable to be used for policy purposes is “based on craft judgments on what is good enough for the functions that data perform in a particular problem.”²²¹ Third, “arguments” are used to connect “data and information” with the conclusions of the analysis.²²² The validity of arguments depends on their cogency, persuasiveness, and clarity. Finally, the

²¹⁸ E.g., FISCHER, *supra* note 2, at 191-98; DUNN, *supra* note 70, at 20-23; William N. Dunn, *Justifying Policy Arguments: Criteria for Practical Discourse*, 13 EVALUATION & POL. PLAN. 221 (1990). These analysts rely on the work of Stephen Toulmin. See STEPHEN TOULMIN, *THE USES OF ARGUMENT* (1958); see also STEPHEN TOULMIN, RICHARD RIEKE & ALLAN JANIK, *AN INTRODUCTION TO REASONING* (2d ed. 1984).

²¹⁹ MAJONE, *supra* note 27, at 46-47. Majone’s work taps into a literature on rhetoric dating back to Aristotle that “defines rationality not in instrumental terms, but as the ability to provide acceptable reasons for one’s choices and actions.” *Id.* at 23.

²²⁰ *Id.* at 47.

²²¹ *Id.*

²²² *Id.*

conclusion reached by analysts has to be evaluated for its “[p]lausibility, feasibility, [and] acceptability.”²²³

Majone’s framework should seem familiar to lawyers for a number of reasons. First, like legal analysis, discursive analysis is a “craft” rather than a “science” in the logical empiricist understanding of that term.²²⁴ Second, both law and policy analysis problems “involve . . . complex arguments and large masses of data . . . where the reliability and relevance of the information cannot easily be assessed by standard methods.”²²⁵ Third, policy analysts perform a function similar to judges and lawyers, who evaluate “evidence” based on tests of relevancy and reliability.²²⁶ Fourth, Majone’s approach to evaluating policy arguments is similar to the framework that lawyers use in assessing the grounds for regulation. He judges the validity of arguments by how persuasively they connect “data and information” with the conclusions of the analysis. In *State Farm*,²²⁷ the Supreme Court explained that “hard look review” required that an “agency must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.”²²⁸

Finally, both discursive policy analysis and legal analysis can be considered as forms of “practical reason.” As noted earlier, practical reason refers to the individual’s capacity to take intentional actions based on reasons that are linked to social norms.²²⁹ In regulatory analysis, these norms are furnished by the statute under which the agency is operating, supplemented by agency policy choices within the boundaries patrolled by the *Chevron*²³⁰ doctrine, and actions are justified by reasons that persuasively explain why the action is consistent with applicable statutory and agency requirements. In legal decisions, the norms are furnished by constitutional, statutory, or common law, and actions are justified by reasons that persuasively explain why the action is consistent with them.

The overlap between discursive policy analysis and legal analysis results from their common origins. Practical reason in law is also pragmatic in orientation, employing a theory of knowledge that does not require a foundational theory.²³¹ Accordingly, “statements that count as truth must be achieved by means of a rule-governed discourse, rather than derived deductively from universal principles.”²³² The goal is “good judgment,” or action

²²³ *Id.* at 67.

²²⁴ FISCHER, *supra* note 2, at 133; MAJONE, *supra* note 27, at 42-46; DUNN, *supra* note 70, at 2-3; *see also* ACKERMAN & HEINZERLING, *supra* note 110, at 209 (stating that the development of an alternative to CBA “begins with the recognition that *there is no formula*”).

²²⁵ MAJONE, *supra* note 27, at 48-49.

²²⁶ *Id.* at 49.

²²⁷ *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29 (1983).

²²⁸ *Id.* at 43 (internal quotation omitted).

²²⁹ *See supra* note 62 and accompanying text (describing “practical reason” in post-empiricist policy analysis).

²³⁰ *Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837 (1984).

²³¹ Brett G. Scharffs, *Law as Craft*, 54 VAND. L. REV. 2245, 2247-50 (2001).

²³² Edward L. Rubin, *Jews, Truth and Critical Race Theory*, 93 NW. U. L. REV. 525, 540 (1999) (book review).

on the balance of legal reasons knowing that certainty is not possible.²³³ This makes legal analysis, like policy analysis, a craft — a form of “judgment or intuition.”²³⁴ Further, like our proposal, the goal of practical reason in law is to implement the normative commands of law. While this may involve conflicting or even incommensurate norms, practical reasoning in law is nevertheless “deeply concerned with reason-giving.”²³⁵ Finally, because practical reason in law also accepts the post-empiricist critique that academic fields are socially embedded practices,²³⁶ this approach is not “objective” in the positivist sense. Instead, discursive analysis strives to be impartial by excluding *ad hominem* considerations.²³⁷

4. *Transparent*

Pragmatism expects regulatory analysis to be transparent and usable not only by government officials, but also by citizens. Pragmatists, as exemplified by John Dewey, recognize the value of science, but “den[y] to social researchers the authority to prescribe solutions.”²³⁸ Instead, they expect scientists and other experts to “bring their intelligence and their findings into the *public realm*.”²³⁹

A pragmatic approach is more transparent than a CBA-centered RIA for three reasons. First, the intent of CBA is to come to some definitive evaluation of alternatives and rank the options according to the extent that benefits exceed costs. By comparison, a pragmatic methodology invites discussion and deliberation about proposed policies. Second, any qualitative explanation that accompanies CBA centers on the explanation and qualification of the statistical calculations undertaken in the analysis. Written by economists for economists, a CBA report is technical and jargon-laden. A pragmatic report centers on statutory priorities and the identification of reasons why particular policy options are preferable. This means that a pragmatic approach has a “continuity with ordinary discourse and hence with real communities, real values, and real politics.”²⁴⁰ Finally, unlike CBA, values and

²³³ Burton, *supra* note 62, at 789-90.

²³⁴ Scharffs, *supra* note 231, at 2247; Edward L. Rubin, *The Practice and Discourse of Legal Scholarship*, 86 MICH. L. REV. 1835, 1878 (1988) (“[The practical reason movement] is characterized by its vision of the law as an embedded social practice, whose provisions are supported by a complex set of norms, traditions, and pragmatic compromises that lack overarching justifications, but can be evaluated by judgment or intuition.”).

²³⁵ Scharffs, *supra* note 231, at 2266.

²³⁶ Rubin, *supra* note 234, at 1878.

²³⁷ Burton, *supra* note 62, at 789-90.

²³⁸ THOMAS BENDER, *INTELLECT AND PUBLIC LIFE: ESSAYS ON THE SOCIAL HISTORY OF ACADEMIC INTELLECTUALS IN THE UNITED STATES* 137 (1993).

²³⁹ *Id.* (emphasis added). As noted earlier, Dewey regarded the state as analogous to a scientific society in that both were critical communities of inquiry, except that citizens were the ultimate community of inquiry regarding social and policy issues. See *supra* note 203 and accompanying text. “For Dewey, politics in public constituted a proper source of values, purposes, and social knowledge in a democracy.” BENDER, *supra* note 238, at 137.

²⁴⁰ James Boyd White, *Law as Rhetoric, Rhetoric as Law: The Arts of Cultural and Communal Life*, 52 U. CHI. L. REV. 684, 701 (1985).

ideologies in a pragmatic approach are not “hidden behind the comfortable skirts of objectivity.”²⁴¹ A discursive approach therefore permits citizens to understand what is at stake in a regulatory issue.

C. A Pragmatic RIA

This Part describes how we would reorient the RIA process to be problem-oriented, normative, discursive, and transparent, and why this approach is better than a CBA-centered RIA. It also shows how this reworking would be in effect a discussion draft of the Notice of Proposed Rulemaking (“NPR”) and how, if this discussion draft were subject to public comment, citizens could be involved in the discursive aspect of our alternative process.

1. *The Regulatory Two-Step*

Health, safety, and environmental regulation proceeds in two steps.²⁴² The first step is to determine whether a “risk trigger” has been met. The risk trigger specifies when risk is sufficiently serious to warrant regulation under the applicable statute. It operates as an evidentiary burden that an agency has to meet in order to regulate a hazard.²⁴³ Although agencies must demonstrate that the risk to the public or the environment exceeds some threshold, regulators are authorized to act on the basis of anticipated harm.²⁴⁴ For example, EPA is authorized under the Clean Air Act to regulate new stationary sources of air pollution that may cause or contribute to “air pollution which may reasonably be anticipated to endanger public health or welfare.”²⁴⁵

The second step is to determine the level of regulation by using the “statutory standard.” Statutory standards vary, but Congress has almost never chosen a cost-benefit test to establish the level of regulation. Only two of twenty-two major health, safety, and environmental statutes rely on a cost-benefit test as the statutory standard.²⁴⁶

This two-step process signals the importance of health, safety, and environmental regulation as a social priority.²⁴⁷ The risk triggers usually permit regulation on the basis of risk predictions, rather than demanding conclusive proof that a risk will occur. The statutory standards permit regulation beyond the degree determined by a cost-benefit test. Regulatory design thus reflects a commitment to protecting humans and the environment.²⁴⁸

²⁴¹ DELEON, *supra* note 13, at 113.

²⁴² See SHAPIRO & GLICKSMAN, *supra* note 105, at 31-40.

²⁴³ *Id.* at 33.

²⁴⁴ *Id.* at 6.

²⁴⁵ 42 U.S.C. § 7411(b)(1)(A) (2000).

²⁴⁶ SHAPIRO & GLICKSMAN, *supra* note 105, at 40.

²⁴⁷ See *id.* at 51-52.

²⁴⁸ This does not mean that costs are ignored. As explained later in this Part, Congress sometimes requires consideration of costs, but with the goal of ensuring that regulation is not overly disruptive or unreasonable.

At the broadest level, the goal of pragmatic RIA is to implement this normative commitment. CBA, by comparison, supports an entirely different and inconsistent normative commitment — maximization of economic efficiency by identification of the level of regulation that will balance costs and benefits.²⁴⁹ Under pragmatism, our alternative is preferable because it serves democracy by working to implement the laws as Congress intended.

Our pragmatic alternative also uses the other elements of a pragmatic methodology. The problem-oriented goal is to identify and to analyze the specific issues that arise under different risk triggers and statutory standards, including issues relating to the normative commands of those statutory standards, to subject these issues to discursive analysis, and to do so in a manner that is transparent.

a) Risk Trigger

Risk assessors make value judgments when they interpret the existing data, draw inferences from those interpretations, and make assumptions to fill the gaps between data and predictions. These choices are informed by scientific judgments,²⁵⁰ but they also reflect the normative aspirations of a statute and, at times, of the risk assessor.²⁵¹ In the absence of convincing contrary evidence, for example, agencies assume “that a carcinogen has no threshold concentration below which it poses no risk of causing cancer.”²⁵² The use of this and other similar assumptions is consistent “with the protective mandate of risk regulation because it minimizes the danger to the public if an agency underestimates a risk.”²⁵³

A discursive analysis of risk data would identify and discuss issues of reliability and acceptability. As Majone recommends, these judgments would be made by the standards of the discipline from which the evidence

²⁴⁹ As Doug Kysar explains:

Lives lost under the “do the best you can” heuristic and other precautionary approaches are not viewed as efficient “tradeoffs,” accepted in exchange for whatever utility has been gained. Instead, they are viewed as tragic, regrettable consequences of human fallibility and finitude — a “moral remainder” that provides enduring motivation for surviving members of society to seek ways of doing better in the future. In contrast, because it aspires to comprehensive rationality, CBA must invariably round this moral remainder to zero. In the process, it must also fail to encourage an appropriate degree of collective self-awareness regarding the deep normativity of risk regulation.

Kysar, *supra* note 113, at 41.

²⁵⁰ An agency will consider scientific evidence that measures the extent to which a substance or technology is harmful to individuals or the environment in order to decide whether it can meet the evidentiary burden established by the applicable risk trigger. Although this risk assessment is based on scientific evidence, it is not precise because information about the risks being studied is usually limited. See *supra* notes 113-114 and accompanying text.

²⁵¹ See Sidney A. Shapiro, *OMB and the Politicization of Risk Assessment*, 37 ENVTL. L. 1083, 1089 (2007).

²⁵² *Id.*

²⁵³ SHAPIRO & GLICKSMAN, *supra* note 105, at 95.

comes.²⁵⁴ In this context, the regulatory analysis would depend on the standards used by professional risk assessors to evaluate the reliability of the methodologies used to produce risk data. As he further recommends, whether the data are acceptable for purposes of a particular policy analysis is a “craft judgment” based on what function the data perform in a particular problem.²⁵⁵ Agencies, for example, employ a “weight of the evidence” approach to the evaluation of health risks.²⁵⁶ This is a craft judgment because it asks whether, despite particular defects in individual studies, the weight of the evidence is sufficient to meet the risk trigger.

A pragmatic RIA is also an opportunity to offer a transparent accounting of the issues relating to risk assessment that the agency is considering. The analysis should therefore clearly describe “the nature and extent of the potential harm and convey a sense of the uncertainties that surround any quantitative statements.”²⁵⁷ This requires the agency to identify the “assumptions or inferences” the agency has employed and the scientific and policy basis for the inferences.²⁵⁸ If there is a lack of consensus about an issue, “the agency should present both sides of the issue,” and indicate how it might resolve it.²⁵⁹

A pragmatic RIA is more useful than a CBA-centered RIA for the analysis of risk triggers for three reasons. First, a pragmatic RIA would focus on the issues of reliability and acceptability in order to arrive at a characterization of risk that is useful for making the decisions required by the statute, while the discussion of risk data in a CBA is divorced from the statutorily mandated concerns.²⁶⁰ Instead, CBA is interested in risk information to generate monetary estimates of the benefits of a proposed rule. This orientation deflects the analysis into a discussion of monetization rather than a consideration of the risk issues relevant under the risk trigger. Second, a CBA-cen-

²⁵⁴ See *supra* note 220 and accompanying text.

²⁵⁵ See *supra* note 224 and accompanying text.

²⁵⁶ EPA has explained the weight of the evidence approach in the context of carcinogen risk assessment as follows:

Judgment about the weight of evidence involves considerations of the quality and adequacy of data and consistency of responses induced by the agent in question. The weight of evidence judgment requires combined input of relevant disciplines. Initial views of one kind of evidence may change significantly when other information is brought to the interpretation. For example, a positive animal carcinogenicity finding may be diminished by other key data; a weak association in epidemiologic studies may be bolstered by consideration of other key data and animal findings. Factors typically considered are illustrated in figures below. Generally, no single weighing factor on either side determines the overall weight. The factors are not scored mechanically by adding pluses and minuses; they are judged in combination.

Proposed Guidelines for Carcinogen Risk Assessment, 61 Fed. Reg. 17,960, 17,981 (Apr. 23, 1996).

²⁵⁷ Thomas O. McGarity, *On the Prospect of “Daubertizing” Judicial Review of Risk Assessment*, 66 LAW & CONTEMP. PROBS. 155, 165 (2003).

²⁵⁸ *Id.*

²⁵⁹ *Id.*

²⁶⁰ This flaw arises from the fact that CBA is methodology-driven rather than problem-driven. See *supra* note 214 and accompanying text.

tered RIA is not structured to conduct a discursive inquiry into the risk evidence, and such a discussion would likely be beyond the expertise of the economists who are responsible for the CBA. Finally, the emphasis on pinpoint benefit estimates in a CBA-centered RIA has the effect of hiding the underlying uncertainties in the risk evidence.²⁶¹

b) Statutory Standard

A pragmatic RIA focuses on the issues generated by the statutory standard under which the agency operates. Since a CBA-centered RIA is of limited or no assistance to agency decisionmakers in the implementation of most statutory standards, a pragmatic approach would therefore employ CBA only in those few instances where Congress has chosen to establish the level of regulation by the use of a cost-benefit test. We describe how a pragmatic RIA would work under the more common statutory standards of technology-based regulation and open-ended balancing. We also examine its use under other statutory standards.

(1) Technology-Based Regulation

Technology-based standard setting is the most common method of establishing the level of regulation among the statutes surveyed by one of the authors.²⁶² In this type of statute, Congress requires an agency to choose the level of risk reduction by “identifying and patterning regulatory objectives upon some model technology.”²⁶³ Regulated entities are required to achieve the same degree or extent of protection as the model technology. The Occupational Safety and Health Act, for example, mandates employers to reduce employees’ exposure levels to toxic substances to the point “which most adequately assures, *to the extent feasible*, . . . that no employee will suffer material impairment of health or functional capacity.”²⁶⁴ This mandate requires OSHA to achieve the maximum protection for employees in light of any technological or economic considerations that would make this objective unobtainable.²⁶⁵

A pragmatic RIA would focus on the specific issues generated by technology-based regulation. For example, OSHA requires employers to provide the maximum level of protection that can be achieved by available technologies unless the cost of this level of protection will threaten the financial integrity of the industry being regulated;²⁶⁶ a CBA-centered RIA is superfluous to the resolution of these issues. CBA focuses on monetizing the health

²⁶¹ See *supra* notes 113-114 and accompanying text.

²⁶² SHAPIRO & GLICKSMAN, *supra* note 105, at 32-33 (listing statutes that use a “constrained balancing” standard).

²⁶³ *Id.* at 37.

²⁶⁴ 29 U.S.C. § 655(b)(5) (2000) (emphasis added).

²⁶⁵ OCCUPATIONAL SAFETY AND HEALTH LAW 458-62 (Randy S. Rabinowitz ed., 2d ed. 2002).

²⁶⁶ *Id.*

benefits that are achieved by reducing exposure according to the legal standard and not on the determination of what level of regulation that standard requires. CBA is also irrelevant to the resolution of these issues; employers subject to OSHA are legally required to reduce the level of exposure of workers to the extent feasible, regardless of the outcome of a cost-benefit study.²⁶⁷

A pragmatic RIA also better accords than CBA-centered RIA with the normative commitment of technology-based regulation. As mentioned earlier, the design of regulation reflects a commitment to protecting humans and the environment. Technology-based regulation reflects this focus by committing “the country to do the best it can to reduce human and environmental injury” by requiring the most protection achievable by current technologies unless “costs are disruptive or extraordinary.”²⁶⁸ This approach explicitly rejects the economic efficiency norm that underlies CBA, while pragmatism embraces the approach.

(2) *Open-Ended Balancing*

Open-ended balancing is the second-most common method of establishing the level of regulation among the surveyed statutes.²⁶⁹ Statutes with an open-ended balancing standard require an agency to consider a variety of factors, but the statutes do not indicate what weight an agency is to give each factor.²⁷⁰ EPA, for example, is authorized under the Federal Insecticide, Fungicide, and Rodenticide Act to place conditions on the licensing of pesticides to the extent necessary to avoid “unreasonable adverse effects on the environment.”²⁷¹ Congress defined unreasonable adverse effects on the environment as “any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits” of the pesticides’ use.²⁷²

A pragmatic RIA would discuss the potential impact of regulatory options according to each criterion in the statute, and it would identify arguments for how those criteria should be balanced. A CBA-centered RIA is unnecessary to the resolution of these issues. No statute relying on open-ended balancing requires the use of a cost-benefit criterion for establishing the level of regulation.²⁷³ Instead, agencies take cost into consideration, then adopt the level of protection justified by that and other factors.²⁷⁴

²⁶⁷ *Am. Textile Mfg. Inst. v. Donovan (Cotton Dust Case)*, 452 U.S. 490, 509 (1981).

²⁶⁸ SHAPIRO & GLICKSMAN, *supra* note 105, at 52. In some statutes, Congress goes further and forces regulated entities to develop more effective technologies than are currently in use. *Id.*

²⁶⁹ *Id.* at 32.

²⁷⁰ *Id.* at 39.

²⁷¹ 7 U.S.C. § 136a(d)(1)(C) (2000).

²⁷² *Id.* § 136(bb).

²⁷³ SHAPIRO & GLICKSMAN, *supra* note 105, at 39.

²⁷⁴ *Id.* at 43-44.

The normative commitment of open-ended balancing also agrees with a pragmatic RIA and not a CBA-centered one.²⁷⁵ Although the objective is not the same as a commitment to seek the maximum feasible protection, Congress has not limited an agency to adopting the level of protection indicated by a cost-benefit test. Moreover, Congress has made it easier for the agency to regulate by not requiring the quantification of benefits, which is often difficult to do with any accuracy.²⁷⁶ This decision tilts a statute in favor of increasing protection for people or the environment because an agency is authorized to regulate even if it does not have sufficient information to quantify all of the benefits and prove that they exceed costs.

Besides these advantages, an agency is better off in other ways by foregoing CBA when using open-ended balancing. In this context, CBA can easily distort decisionmaking because of the allure of hard numbers.²⁷⁷ In addition, as discussed earlier, a CBA approach is inconsistent with a discursive methodology.²⁷⁸ Once monetary estimates are available, moreover, no matter how imprecise they might be, there is an inevitable temptation to avoid the more difficult process of using a discursive process to choose the level of regulation. By comparison, a pragmatic RIA requires the articulation of reasons for the agency's choice of the level of regulation, which opens the door for deliberation instead of closing it.

Although a CBA-centered RIA is unnecessary to the implementation of open-ended balancing, some of the constituent parts of a CBA are not irrelevant to the agency's decision in the way they are in the case of technology-based statutes. Costs typically increase as the stringency of regulations increases. At the same time, marginal benefits from each increment of stringency typically decrease. Accordingly, costs are relevant countervailing considerations in cases where a range of regulatory options can be arrayed along a continuum according to their stringency. Quantitative information about benefits, even if it is incomplete, can sometimes assist regulators in determining what regulatory level to choose. CBA, however, would only aid in the decisionmaking if it provided a reasonably accurate and reliable measurement of regulatory benefits. But it is unable to do this.²⁷⁹ Simply put, the monetization of benefits is so rife with imperfections and value judgments that the game is not worth the candle.

(3) *Other Statutory Standards*

Unless the statute explicitly requires its use, CBA-centered RIA is similarly unhelpful under other statutory standards for setting the level of regulation. In some statutes, Congress uses a risk-based or ambient-based standard

²⁷⁵ See *id.* at 53 (discussing “the crucial ethical distinction between preventing fatalities or injuries and compensating the victim or his or her family for a death or disability”).

²⁷⁶ See *supra* Part III.B.2.

²⁷⁷ See *supra* note 154 and accompanying text.

²⁷⁸ See *supra* Part IV.B.3.

²⁷⁹ See *supra* Part III.B.2.

that requires an agency to establish a level of regulation sufficient to protect against a designated risk or achieve some safety, health, or environmental goal.²⁸⁰ Since cost is not a consideration in setting the level of regulation in these statutes, CBA is irrelevant to the outcome. In a limited number of instances, Congress has ordered a phased ban of a particular risk-created substance.²⁸¹ A CBA-centered RIA is similarly irrelevant in this circumstance.

The use of CBA is relevant when a statute requires a cost-benefit test. A pragmatic RIA, however, would still be a different process from a CBA-centered RIA. A pragmatic method would include an explicit evaluation of the limitations of CBA data and require a qualitative discussion of how these limitations influence the choice of the level of regulation.²⁸²

2. Discussion NPR Draft

Under current practices, the first time that the public usually becomes aware of how an agency has sorted out the issues relating to the regulatory trigger and the statutory standard is in the NPR. The pragmatic RIA that we envision would in effect be a discussion draft of that document. The difference between the documents is that the RIA would constitute a discussion laying out the key issues that required resolution before a NPR could be issued. By comparison, a NPR typically proposes a tentative resolution of those issues as part of proposing and justifying a rule.

A pragmatic RIA would therefore not only assist decisionmakers in formulating the NPR, it would provide the public with the background to the NPR in a form that should be accessible and understandable. By establishing this relationship between the statute and the NPR, a pragmatic RIA would make the rulemaking process more transparent to the public than a CBA-centered RIA. Moreover, if agencies invited public comment on the RIA, the RIA process would take on a further discursive element. This proposal is not unprecedented. Agencies will, from time to time, issue an Advanced Notice of Proposed Rulemaking (“ANPR”), which, unlike a NPR, proposes various policy options to the public and requests comment on them. Public comment on the RIA would be similar to an ANPR and would be more effective. Because the RIA itself would assist the public in understanding the issues at stake and the advantages and disadvantages of policy options, this process should produce better public input and be of more assistance to the agency.

²⁸⁰ SHAPIRO & GLICKSMAN, *supra* note 105, at 35-36 (noting that, for example, EPA can authorize the sale of food adulterated by a pesticide if, with reasonable certainty, no harm will result from exposure to the pesticide).

²⁸¹ *Id.* at 36 (noting the example that Congress has adopted a series of prohibitions on the production and use of chemicals harmful to the strategic ozone layer to be phased in over time).

²⁸² See *infra* Part V.B (illustrating in arsenic case study how a pragmatic RIA differs from a CBA-centered RIA when a statute requires the use of CBA).

D. Other Alternatives

The pragmatic RIA we envision offers an alternative to a CBA-centered RIA process. Despite the widespread criticism of CBA, we are aware of only two similar proposals. This Part compares our proposal to these alternatives. We find that our alternative is more focused on the RIA process and that it goes beyond the other proposals in a number of ways. Nevertheless, all three alternatives are generally consistent and equally critical of making CBA the centerpiece of analyzing regulatory policy.

Ackerman and Heinzerling have proposed to conduct a cost-benefit study without monetizing benefits.²⁸³ For them, the development of a “sound alternative” to CBA starts with the “recognition that there is no formula.”²⁸⁴ They advocate for a “more holistic analysis, one that replaces the reductive approach of cost-benefit analysis with a broader and more integrative perspective.”²⁸⁵ Their approach would follow a number of other principles: precaution in the face of scientific uncertainty; fairness in the treatment of current and future generations; a sense of moral urgency concerning protection of life, health, and the environment; and the use of public debate and participation.²⁸⁶ Regulatory costs and benefits would be analyzed, but costs and benefits would be compared and analyzed using a “deliberative” process rather than through the quantification of benefits.²⁸⁷

Ackerman and Heinzerling appear to offer their alternative as an approach to policy analysis in general,²⁸⁸ so it is understandable that our two proposals, while broadly consistent, would vary in their details. In particular, we think it important that an RIA be focused on the statute that the agency is implementing, rather than a general assessment of costs and benefits. We see the RIA process as assisting the agencies in promulgating a regulation, and our focus on the statute is necessary to achieve this objective.

David Driesen would focus regulatory analysis on the “feasibility” of a proposed regulation at least in those instances where an agency is implementing a technology-based standard.²⁸⁹ Driesen defends this proposal on the ground that feasibility offers a more suitable normative basis for health, safety, and environmental protection than the normative basis of CBA.²⁹⁰

A pragmatic RIA, as noted, is focused on the statute that an agency is implementing. Thus, our proposal is consistent with Driesen’s when an

²⁸³ ACKERMAN & HEINZERLING, *supra* note 110, at 210-23.

²⁸⁴ *Id.* at 208-09.

²⁸⁵ *Id.* at 11.

²⁸⁶ *Id.* at 10-11, 208-23.

²⁸⁷ *Id.* at 212-13.

²⁸⁸ *See id.* at 215 (“In advocating a holistic approach to weighing costs and benefits, we have been talking about how elected representatives and the public should think about health and environmental problems — not about how broad policies should be implemented.”).

²⁸⁹ David M. Driesen, *Distributing the Costs of Environmental, Health, and Safety Protection: The Feasibility Principle, Cost-Benefit Analysis, and Regulatory Reform*, 32 B.C. ENVTL. AFF. L. REV. 1, 3 (2005).

²⁹⁰ *Id.*

agency is operating under a technology-based standard. Our proposed process, however, would focus on the specific type of technology-based standard that Congress has adopted, rather than the more general approach that Driesen appears to propose. Our proposal also goes beyond Driesen's in its application to statutes that do not adopt a technology-based standard.

V. CASE STUDIES

This Part uses two case studies to compare how a pragmatic RIA would operate, as compared to a CBA-centered RIA. We examine an EPA rule limiting exposure to mercury from electrical generation plants and another EPA rule limiting exposure to arsenic in drinking water.

A. Mercury

In 2005, EPA promulgated a rule that adopted a cap and trade approach to regulating mercury pollution under section 111 of the Clean Air Act ("CAA").²⁹¹ The rule became immediately controversial largely because EPA's legal authority for a cap and trade approach is considered dubious²⁹² — a belief that was recently substantiated in the rule's vacatur by the D.C. Circuit²⁹³ — and because the rule replaced an earlier approach that would have mandated stricter limits on mercury pollution.²⁹⁴ Although we endorse these criticisms, we are interested here in how the process of developing the rule would have proceeded if EPA had used a pragmatic RIA.

1. Background

The CAA requires EPA to perform a study of the hazards to public health "reasonably anticipated to occur" from pollution generated by electrical generation plants and to regulate such emissions under section 112 of the Act if "such regulation is appropriate and necessary."²⁹⁵ EPA made the first

²⁹¹ Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 70 Fed. Reg. 28,606 (May 18, 2005) (codified at 40 C.F.R. pts. 60, 72, and 75).

²⁹² See Lisa Heinzerling & Rena I. Steinzor, *A Perfect Storm: Mercury and the Bush Administration*, 34 ENVTL. L. REP. 10,297, 10,307-10 (2004) (contending that EPA lacks legal authority for its cap and trade rule).

²⁹³ *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008) (holding that because EPA had not followed procedures prescribed in section 112(c)(9) for delisting electric generating units ("EGUs") from the list of categories subject to section 112's standards for mercury, EPA's decision to regulate mercury emissions from EGUs exclusively under section 111 was erroneous).

²⁹⁴ See Catherine O'Neill, *No Mud Pies: Risk Avoidance as Risk Regulation*, 31 VT. L. REV. 273, 280 (2006) (comparing mercury reductions expected under a maximum achievable control technology standard and under EPA's final rule).

²⁹⁵ 42 U.S.C. § 7412(n)(1)(A) (2000). By comparison, Congress made the initial decision regarding the risk trigger for other sources of mercury pollution by listing mercury as a hazardous air pollutant subject to regulation. *Id.* § 7412(b)(1).

finding in 1997, noting that mercury was among the most worrisome of the hazardous air pollutants emitted by power plants,²⁹⁶ a conclusion confirmed by a panel of the National Research Council.²⁹⁷ In 2000, the Agency made the second finding, that regulation was “appropriate and necessary.”²⁹⁸

Mercury is an extremely toxic heavy metal that accumulates in fish, the consumption of which is the primary exposure for most people.²⁹⁹ Children exposed to mercury in utero and at a young age are at risk of numerous health problems, including mental retardation.³⁰⁰ Approximately eight percent of women of child-bearing age in the United States have levels of mercury in their blood that exceed the level EPA found to be without a risk of adverse effects.³⁰¹ Populations that depend heavily on fish, such as some Native Americans, are at greater risk.³⁰²

After EPA determined that regulation of mercury emissions from power plants was “appropriate and necessary,” section 112 of the CAA obligated it to identify the maximum achievable control technology (“MACT”) and to require power plants to reduce mercury pollution to the level achievable by this technology’s use.³⁰³ Accordingly, EPA convened a panel of stakeholders that met for 21 months to work on the details of a MACT standard.³⁰⁴

In the spring of 2003, EPA disbanded the advisory group, ceased research on the MACT standard, and abruptly changed direction, issuing a notice of proposed rulemaking that asked for public comment on two alternatives for controlling mercury pollution from power plants: (1) a MACT regulatory limit on mercury emissions for all new and existing plants or (2) a “cap and trade” program that would establish an annual limit on total mercury pollution, allocate “allowances” to emit mercury to each coal-fired power plant, and authorize buying and selling allowances among plants. This plan anticipated cleanup by some plants that would then be able to sell their excess allowances to other plants that would continue to operate without control equipment.³⁰⁵ As a predicate for this decision, EPA rescinded its

²⁹⁶ EPA, *MERCURY STUDY REPORT TO CONGRESS*, EPA 452-R-97-003, O-4 (1997), available at <http://www.epa.gov/ttn/oarpg/t3/reports/volume1.pdf>.

²⁹⁷ NAT’L RESEARCH COUNCIL, NAT’L ACAD. OF SCIS., *TOXICOLOGICAL EFFECTS OF METHYL MERCURY* 4 (2000), available at <http://books.nap.edu/openbook/0309071402/html/index.html>.

²⁹⁸ Regulatory Finding on Emissions of Hazardous Air Pollutants from Electric Utility Steam-Generating Units, 65 Fed. Reg. 79,825, 79,825 (Dec. 20, 2000).

²⁹⁹ See Heinzerling & Steinzor, *supra* note 292, at 10,298, 10,300.

³⁰⁰ See *id.* at 10,298-99.

³⁰¹ EPA, *AMERICA’S CHILDREN AND THE ENVIRONMENT* 59 (2003), available at http://www.epa.gov/opeedweb/children/ace_2003.pdf.

³⁰² Heinzerling & Steinzor, *supra* note 292, at 10,300.

³⁰³ See 42 U.S.C. § 7412(d)(2) (2000).

³⁰⁴ Lisa Heinzerling & Rena I. Steinzor, *A Perfect Storm: Mercury and the Bush Administration, Part II*, 34 ENVTL. L. REP. 10,485, 10,488 (2004).

³⁰⁵ Proposed National Emission Standards for Hazardous Air Pollutants; and, in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units; Proposed Rule, 69 Fed. Reg. 4652 (Jan. 30, 2004).

prior finding that regulation of mercury emissions from power plants was appropriate and necessary under section 112 of the CAA.³⁰⁶

2. Cost-Benefit Analysis

OIRA approved publication of the proposed dual-alternative rule even though EPA had prepared no RIA of the type usually required for a significant proposed regulation.³⁰⁷ As it was receiving comments on whether to adopt MACT or trading, EPA was preparing a 570-page RIA for its final rule that compared the costs and benefits of reducing children's exposure to mercury from fish consumption.³⁰⁸

The RIA estimated mercury levels in freshwater fish across the eastern half of the United States, the size of the exposed populations of interest, such as freshwater anglers, and the fish consumption and mercury ingestion rates for the mothers of prenatally exposed children in these populations.³⁰⁹ The report quantified the benefits of mercury pollution reduction under several cap and trade options. These calculations were made by estimating the reductions in expected IQ levels for the exposed population and estimating the expected value of foregone future earnings associated with the IQ decrements.³¹⁰ The study found that, depending on the analytical approach, a child of freshwater fishers lost approximately 0.06 - 0.07 IQ points due to mercury exposure in 2001.³¹¹

Benefits were calculated by relying on economic studies indicating the association between IQ points and earning capacity. The study calculated that the average present value of net earnings losses associated with a one-point decrease in IQ was \$7,765 in 1992 dollars.³¹² The report corrected this amount for inflation and reduced it by \$943 to recognize a partially offsetting change in average education costs per IQ point.³¹³

Based on the RIA, EPA said in the preamble to the final rule, the annualized net benefit in 2020 was either negative \$846 million or negative \$895 million, using a 3 and 7 percent discount rate, respectively.³¹⁴ However,

³⁰⁶ Revision of December 2000 Regulatory Finding on the Emissions of Hazardous Air Pollutants From Electric Utility Steam Generating Units and the Removal of Coal- and Oil-Fired Electric Utility Steam Generating Units From the Section 112(c) List, 70 Fed. Reg. 15,994 (Mar. 29, 2005).

³⁰⁷ Heinzerling & Steinzor, *supra* note 304, at 10,489.

³⁰⁸ OFFICE OF AIR QUALITY PLANNING & STANDARDS, EPA, EPA-452/R-05-003, REGULATORY IMPACT ANALYSIS OF THE FINAL CLEAN AIR MERCURY RULE (2005), available at http://www.epa.gov/ttn/ecas/regdata/RIAs/mercury_ria_final.pdf [hereinafter MERCURY RIA].

³⁰⁹ *Id.* at 10-11.

³¹⁰ *Id.* at 10-11.

³¹¹ *Id.* at 10-3.

³¹² *Id.* at 10-47.

³¹³ *Id.* at 10-47. This last adjustment is based on the fact that people with lower IQ generally have less schooling. As a result, the RIA assumed that children who are mercury poisoned will remain in school for shorter time periods and therefore might earn a few years of additional income, in addition to saving the costs of their future education.

³¹⁴ Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 70 Fed. Reg. 28,606, 28,642 (May 18, 2005).

EPA acknowledged that, “[a]lthough the final rule is expected to result in a net cost to society, it achieves a significant reduction in [mercury] emissions by domestic sources,” and that “the cost of reduced earnings borne by U.S. citizens from [mercury] exposure falls disproportionately on prenatally exposed children of populations who consume larger amounts of recreationally caught freshwater fish than the general population.”³¹⁵

3. *Pragmatic Analysis*

A pragmatic RIA process would be problem-oriented, normative, discursive, and transparent. In this Part, we explain how such a process would have worked in the context of the mercury rule. We also explain why a CBA-centered RIA lacks these attributes.

a) *Problem-Oriented*

The mercury rule is a good example of the advantage that a pragmatic RIA gives EPA over a CBA-centered RIA, which does not focus on issues relevant to technology-based regulation.³¹⁶ Under section 112 of the CAA, EPA must reduce the level of pollution to the amount emitted by MACT, and the Act specifically instructs EPA how to make this determination based on the performance of abatement technologies in existing plants.³¹⁷ A CBA-centered RIA contributes nothing to this examination. The point of a CBA is to determine the costs and benefits of the MACT, or perhaps alternative MACTs, not to determine the MACT itself. A CBA can only be performed after a MACT technology is determined. And, in any event, the CAA does not permit EPA regulations to equalize costs and benefits, making CBA entirely irrelevant to the Administrator’s job under section 112.

The failure of a CBA-centered RIA to address the determination of the MACT shunted aside the key issue in the rulemaking. The determination of MACT for electrical generation plants was complicated by the fact that EPA had limited data on mercury abatement technologies because most existing plants did not abate mercury.³¹⁸ In defending its final rule, EPA maintained that technologies for controlling mercury would not be commercially availa-

³¹⁵ *Id.*

³¹⁶ *See supra* Part IV.C.1.b).

³¹⁷ EPA must “require the maximum degree of reduction in emissions” from new and existing sources, subject to adjustment based on cost and other factors listed in the statute. 42 U.S.C. § 7412(d)(2) (2000). For new sources, however, “the maximum degree of reduction . . . that is deemed achievable . . . shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source.” *Id.* § 7412(d)(3). For existing sources, the MACT can be less stringent than the MACT for new sources, but it cannot be less stringent, and can be more stringent, than “the average emission limitation achieved by the best performing [twelve] percent of the existing sources” if there are thirty sources or more or “the average emission limitation achieved by the best performing [five] sources” if there are fewer than thirty sources. *Id.* § 7412(d)(3)(A)-(B).

³¹⁸ *See* U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-05-216, CLEAN AIR ACT: EMERGING MERCURY CONTROL TECHNOLOGIES HAVE SHOWN PROMISING RESULTS, BUT DATA ON LONG-TERM PERFORMANCE ARE LIMITED 10-11 (2005) [hereinafter U.S. GAO].

ble on a wide scale until 2010 or later,³¹⁹ but this conclusion is debatable. The U.S. Government Accountability Office (“GAO”) reports that experts believe fifty to seventy percent reductions to be achievable by 2008, and Department of Energy testing confirms the availability of technologies to reduce mercury pollution between thirty and ninety-five percent at reasonable costs.³²⁰

b) *Normative and Discursive*

The mercury rule presented an important issue of environmental justice. Both low-income persons and Native Americans are more exposed than others to mercury pollution because both eat tainted fish as a larger part of their diet. While a pragmatic RIA would discuss and analyze this issue, it cannot be analyzed within CBA.

Catherine O’Neill’s impressive analysis of the environmental justice issue raised by EPA’s preference for a cap and trade approach suggests how a pragmatic RIA would proceed.³²¹ She found that EPA data indicate that Native American women who eat fish from the Great Lakes as a major component of their diets are exposed to mercury at levels ten times higher than a safe dose because the Great Lakes have greater mercury pollution than other water bodies.³²² O’Neill then analyzed the MACT and cap and trade alternatives in terms of their differential impact on minority groups or the poor, and found that the cap and trade proposal “fares poorly in terms of environmental justice.”³²³

Pragmatism is open to all perspectives that enlighten and contribute to the resolution of an issue. Thus, because O’Neill’s analysis, for instance, appreciates the cultural significance of fishing in the Native American communities near the Great Lakes,³²⁴ as well as the government’s treaty and trust responsibilities to tribes,³²⁵ it would be explicitly considered under a pragmatic RIA. In contrast, because of its utilitarian focus, CBA is oblivious to

³¹⁹ Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 70 Fed. Reg. 28,606, 28,614-15 (May 18, 2005).

³²⁰ U.S. GAO, *supra* note 318, at 3-4, 16. GAO also indicated that experts believed that the costs of achieving reductions in this range would fall over time as a market for new technologies emerged. *Id.* at 27. At the same time, GAO noted that data on the long-term performance of mercury controls are limited because the use of mercury reduction technology was a new development and most tests have lasted less than three months. *See id.* at 4. GAO concluded that “available data show promising results,” but noted that “when power plants could rely on these technologies to achieve significant mercury reductions — such as by 2008 or later — involves professional judgment.” *Id.* at 28.

³²¹ Catherine A. O’Neill, *Mercury, Risk and Justice*, 30 ENVTL. L. REP. 11,070 (2004).

³²² *Id.* at 11,093.

³²³ *Id.* at 11,115.

³²⁴ *Id.* at 11,110.

³²⁵ *Id.* at 11,112-13.

distributional issues like environmental justice,³²⁶ a point conceded by CBA proponents.³²⁷

A discursive RIA would undertake an open-ended qualitative evaluation of policy options, requiring analysts to give the reasons, pro and con, as to whether an option improves society and the environment. The advantage of this approach is apparent when it is compared to EPA's impoverished treatment of the environmental justice issue.

The RIA considered the potential impact of EPA's final rule on low-income and Native American populations by comparing the loss of IQ points among Native American children with the loss of IQ points among the children of recreational fishers in general.³²⁸ Using a model that assumed a high rate of fish consumption and of a high concentration of mercury in fish, EPA found that consumption "only produced an IQ change of 0.61 points."³²⁹ This led the analysts to conclude, "Although it is likely that high consuming Native American (subsistence) populations, as well as other high consuming populations do experience relatively higher benefits compared with the general recreational angler, because the absolute degree of health benefit (in terms of IQ points saved) is still relatively low (i.e., significantly less than one), we conclude that a compelling argument can not be made on distributional equity grounds for this rule."³³⁰

This naked assertion begs for discursive analysis. First, regardless of the absolute impact on IQ points, the impact is an order of magnitude greater among Native American children.³³¹ Moreover, the analysts ignored the non-health-related environmental justice impacts like those that O'Neill identified.

Ultimately, in the preamble to the final rule, where agencies attempt to justify their decisions, EPA offered environmental justice grounds as one of the reasons why it was adopting a rule whose costs exceeded its benefits, thereby testifying to the relevance of this consideration that the RIA ignored.³³² Under our proposal, a pragmatic RIA would provide a forum to

³²⁶ Carl F. Cranor, *Risk Assessment, Susceptible Subpopulations, and Environmental Justice*, in *THE LAW OF ENVIRONMENTAL JUSTICE* 307, 328 (Michael B. Gerrard ed., 1999) ("Cost-benefit analysis and its philosophic ancestor, utilitarianism, compared with environmental justice are simply two different and incompatible views for addressing the problems of guiding exposures to toxic substances."); O'Neill, *supra* note 290, at 346-47 ("Rather than undertake a sober discussion whether we as a society can support these consequences — whether we can tolerate a particular instance of distributive injustice, a particular affront to human dignity or cultural integrity — decisions made by means of cost-benefit analysis are made without reference to who is affected and without reference to what is at stake *from their perspective*.").

³²⁷ See, e.g., Cass R. Sunstein, *Congress, Constitutional Moments, and the Cost-Benefit State*, 48 *STAN. L. REV.* 247, 293 (1996) (proposing that CBA be modified to take into account "whether the risk is equitably distributed or concentrated on identifiable, innocent, or traditionally disadvantaged victims").

³²⁸ *MERCURY RIA*, *supra* note 308, at 10-130.

³²⁹ *Id.* at 10-134.

³³⁰ *Id.*

³³¹ *Id.* at 10-134 n.29.

³³² See *supra* notes 314-315 and accompanying text.

thoroughly air environmental justice issues, which a CBA-centered RIA does not do.

c) *Transparency*

The final advantage of a pragmatic RIA is that it is more transparent than the jargon-laden CBA-centered RIA. The mercury rule again furnishes an example of a pragmatic approach's advantages and of CBA's failings. A pragmatic RIA would have discussed in an accessible manner the issues that arise under section 112 of the CAA, such as the determination of the MACT³³³ or the choice between the MACT and cap and trade approaches (assuming that it were permissible under the law). The existing RIA, by comparison, is dominated by EPA's highly technical analysis related to the monetization of benefits defined by the Agency as the loss of IQ points. This discussion is nearly impenetrable.³³⁴ Moreover, it does little or nothing to analyze the evidence and arguments that the agency considered, or should have considered, in resolving the previous issues.³³⁵

B. *Arsenic*

In June 2000, EPA proposed an arsenic regulation that would have limited exposure to arsenic in drinking water to five parts per billion ("ppb"), and it asked for comments on alternative standards of three ppb, ten ppb and twenty ppb.³³⁶ On January 20, 2001, the agency adopted a final standard of ten ppb,³³⁷ but it then delayed the effective date for eleven months.³³⁸ In the interim, EPA requested public comment on the data and technical analyses

³³³ See *supra* notes 316-320 and accompanying text.

³³⁴ See RENA I. STEINZOR, MOTHER EARTH AND UNCLE SAM 122 (2008) ("No one but an experienced team of economists with weeks of free time on their hands could possibly hope to evaluate these or any of the other assumptions made in the Regulatory Impact Analysis.").

³³⁵ For example, EPA fails to discuss or justify the particular methodology it adopted to measure benefits, even though this choice had the impact of reducing the amount of benefits as compared to other potential methodological choices. See O'Neill, *Clean Air Mercury Rule*, *supra* note 148, at 34 ("EPA here dazzles with detail, but never engages the question begged by their approach, namely, is it appropriate to consider exposures from the narrowly circumscribed universe of 'recreationally caught freshwater fish,' when there are clearly other sources of exposure . . . from mercury emitted by U.S. utilities . . .").

³³⁶ See Notice of Proposed Rulemaking: National Primary Drinking Water Regulations; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring, 65 Fed. Reg. 38,888, 38,888 (June 22, 2000). The unit "ppb" is used to measure the concentration of contaminants in water and air and stands for one part per billion. One "ppb" is equal to a microgram per liter ($\mu\text{g}/\text{liter}$).

³³⁷ Final Rule: National Primary Drinking Water Regulations; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring, 66 Fed. Reg. 6976, 6976 (Jan. 22, 2001) [hereinafter Final Arsenic Rule].

³³⁸ Delay of Effective Date: National Primary Drinking Water Regulations; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring, 66 Fed. Reg. 16,134, 16,134 (Mar. 23, 2001) (sixty day delay); Delay of Effective Date: National Primary Drinking Water Regulations; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring, 66 Fed. Reg. 28,342, 28,342 (May 22, 2001) (nine month delay).

associated with setting the arsenic standard at three ppb, five ppb, ten ppb, or twenty ppb,³³⁹ and it sought peer reviews of the data and technical analysis from the National Academy of Sciences, from its Science Advisory Board, and from a National Drinking Water Advisory Council workgroup that EPA formed for this purpose.³⁴⁰ In March 2003, EPA announced that it would keep the ten ppb standard.³⁴¹

The Safe Drinking Water Act ("SDWA")³⁴² establishes a technology-based statutory standard, but one that can be adjusted on the basis of a comparison of costs and benefits, which could be accomplished using a CBA. The following case study therefore indicates how a pragmatic RIA would differ from a cost-benefit centered RIA when both methods would employ CBA. As noted earlier, a pragmatic RIA would take the CBA as the starting point for analysis, not as the end point.

1. *Background*

The SDWA establishes a three-step process for regulation. First, EPA determines a "maximum contaminant level goal ("MCLG"), which the statute defines as "the level at which no known or anticipated adverse effects on the health of persons occur and which allows for an adequate margin of safety."³⁴³ EPA then specifies a maximum contaminant level ("MCL") that comes as close as "feasible" to achieving the MCLG.³⁴⁴ Finally, if the benefits of the feasible MCL do not justify the costs, EPA may choose a MCL "that maximizes health risk reduction benefits at a cost that is justified by the benefits."³⁴⁵

EPA's choice of a ten ppb standard was based on this cost-benefit adjustment.³⁴⁶ Although five ppb was the feasible MCL, EPA explained this level of protection had the highest cost of the four alternatives that it considered, and both the net benefits and the benefit/cost disparity at five ppb were the least favorable of those options. On these grounds, EPA concluded that

³³⁹ Notice of Proposed Rulemaking: National Primary Drinking Water Regulations; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring, 66 Fed. Reg. 37,617, 37,617 (July 19, 2001).

³⁴⁰ See *id.* at 37,621-22 (describing planned review process); EPA, Arsenic in Drinking Water: Rule-Making History (Sept. 13, 2006), <http://epa.gov/safewater/arsenic/history.html> (referring to these peer reviews) (on file with the Harvard Environmental Law Review).

³⁴¹ Minor Clarification of National Primary Drinking Water Regulation for Arsenic, 68 Fed. Reg. 14,502, 14,503 (Mar. 23, 2003). A longer description of the arsenic regulations and RIA can be found in ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 253-62 (5th ed. 2006).

³⁴² 42 U.S.C. §§ 300f to 300j-26 (2000).

³⁴³ *Id.* § 300g-1(b)(4)(A).

³⁴⁴ *Id.* § 300g-1(b)(4)(B). "'Feasible' means feasible with the use of the best technology, treatment techniques and other means" that EPA finds available, subject to cost considerations. *Id.* § 300g-1(b)(4)(D).

³⁴⁵ *Id.* § 300g-1(b)(6)(A). EPA may also depart from the feasible MCL if setting a particular standard would have deleterious effects on achieving other drinking water standards. *Id.* § 300g-1(b)(5).

³⁴⁶ Final Arsenic Rule, *supra* note 337, at 7022.

the benefits of the five ppb level did not justify its costs.³⁴⁷ It justified a ten ppb level of regulation on the following grounds:

Both regulatory options of 10 [ppb] and 20 [ppb] have relatively favorable benefit-cost relationships relative to lower regulatory options but are not significantly different from one another based on this comparison metric. However, the incremental, upper-bound benefits at 10 [ppb] are more than twice those of 20 [ppb]; and 10 [ppb] is clearly the more protective level. Thus, we do not believe that an MCL of 20 [ppb] would “maximize health risk reduction benefits” as required for an MCL established pursuant to [the SDWA].³⁴⁸

2. Cost-Benefit Analysis

EPA prepared both a preliminary and final RIA that estimated the costs and benefits of the four options.³⁴⁹ The final RIA monetized regulatory benefits for bladder and lung cancer, but it lacked sufficient data to monetize a long list of other benefits — the reduction of skin, kidney, nasal passage, liver, prostate, and cardiovascular cancer, and of pulmonary, immunological, neurological, endocrine, and reproductive and developmental effects.³⁵⁰ Because cost-benefit estimates were not precise enough to produce pin-point estimates, the RIA relied on ranges of benefits and costs,³⁵¹ which produced the following estimates of net benefits³⁵²:

Arsenic Level (ppb)	Net Benefits, in Millions of Dollars (Upper and Lower Bounds)	
	3 Percent Discount Rate	7 Percent Discount Rate
5	(59.2) – (223.7)	(116.1) – (280.6)
10	17.3 – (40.8)	(7.9) – (66.0)
20	8.5 – (0.6)	(1.2) – (10.3)

³⁴⁷ *Id.*

³⁴⁸ *Id.*

³⁴⁹ ABT ASSOCS., EPA 815-R-00-013, PROPOSED ARSENIC IN DRINKING WATER RULE REGULATORY IMPACT ANALYSIS (2000) (prepared for U.S. EPA, Office of Ground Water and Drinking Water), available at http://www.epa.gov/safewater/arsenic/pdfs/prop_ria.pdf; ABT ASSOCS., EPA 815-R-00-026, FINAL ARSENIC IN DRINKING WATER RULE REGULATORY IMPACT ANALYSIS (2000) (prepared for U.S. EPA, Office of Ground Water and Drinking Water), available at http://www.epa.gov/safewater/arsenic/pdfs/econ_analysis.pdf [hereinafter ABT ASSOCS., FINAL RIA].

³⁵⁰ ABT ASSOCS., FINAL RIA, *supra* note 349, at 1-4.

³⁵¹ *See id.*

³⁵² *Id.* at 1-6. Economists are divided concerning what constitutes the appropriate discount rate. *See supra* note 144 and accompanying text.

Because the data were incomplete, the estimates relied on computer simulations of the distribution of risk among the population.³⁵³ Based on wage premium studies, the RIA valued each premature death that would be avoided at \$6.1 million.³⁵⁴ Since EPA did not have any data on willingness to pay to avoid treatable, non-fatal cancers, it used a contingent valuation survey that produced estimates of the willingness to pay to avoid chronic bronchitis, which produced a value of \$607,162 for each non-fatal cancer that was avoided.³⁵⁵

3. *Pragmatic Analysis*

A pragmatic RIA does not normally employ CBA because of the limited value of the empirical information that it generates. When, however, Congress requires the use of CBA, a pragmatic methodology would use CBA because doing so is sensitive to context and problem-oriented. That is, a pragmatic RIA focuses on the issues that an agency must resolve under the statute it is implementing.

A discursive RIA would rigorously consider and analyze the accuracy and value of the monetization used in a CBA. Although the monetization process used in the RIA suffered from all of the defects in monetization discussed earlier,³⁵⁶ these defects were not reviewed in the Arsenic RIA or, for that matter, in the preamble to the final rule. The RIA devotes one paragraph to a list of many of these defects, but there is no effort to engage in a discussion of how these limitations should be incorporated into agency decisionmaking. The paragraph explains that this discussion goes beyond a cost-benefit centered RIA because there is no “clear consensus among economists” concerning how to make adjustments in a CBA in light of these factors and because there are no “adequate empirical data to support definitive quantitative estimates for all potentially significant adjustment factors.”³⁵⁷ A pragmatic RIA would not be limited by these considerations. Instead, it would point out the potential unreliability of monetary estimates and suggest how to address these limitations.

The unavailability of data on the WTP to avoid non-fatal cancer was another obvious defect inadequately discussed in the CBA. The RIA recognizes that using the WTP to avoid chronic bronchitis is a defect in the CBA, but the only explanation is that this substitution had been done before in other RIAs and that the analyst had no better data.³⁵⁸ Such contingent evalu-

³⁵³ ABT ASSOCS., FINAL RIA, *supra* note 349 at 5-11 to 5-14. The analysis used a Monte Carlo simulation. *Id.* at 5-11; *see also supra* note 118 (discussing this technique and its limitations).

³⁵⁴ ABT ASSOCS., FINAL RIA, *supra* note 349, at 5-23.

³⁵⁵ *Id.* at 5-24.

³⁵⁶ *See supra* Part III.B.2; *see also* Lisa Heinzerling, *Markets for Arsenic*, 90 GEO. L.J. 2311 (2002) (identifying problems with the monetization process used in the Arsenic RIA).

³⁵⁷ ABT ASSOCS., FINAL RIA, *supra* note 349, at 5-23.

³⁵⁸ *Id.* at 5-24. The data were based on a more than ten-year-old survey done at a Greensboro, N.C. shopping mall. ACKERMAN & HEINZERLING, *supra* note 110, at 96. As a sensitivity

ation studies are problematic,³⁵⁹ and this one is not an exception.³⁶⁰ The RIA's use of bronchitis data, as Ackerman and Heinzerling point out, was "grasping at straws,"³⁶¹ but the RIA gives no sense of this significant limitation in the RIA's benefit estimates. A pragmatic RIA would give this information to agency officials.

Finally, a pragmatic RIA would have addressed whether the previous and other limitations in the data were sufficiently serious that they would not justify the departure from a feasibility MCL undertaken by EPA.³⁶² The preamble for the final rule contains no justification of the decision in light of the multiple defects in CBA in general and in the arsenic CBA in particular. Since a pragmatic RIA would have contained such a discussion, it is more likely that a pragmatic RIA would have caused EPA officials to engage in such a justification in the final preamble, assuming that discarding the feasible MCL could even have been justified.

VI. CONCLUSION

Much more would need to be said to develop as fine-grained an understanding of how our pragmatic alternative might function as the understanding we currently have about how the CBA-driven RIA process functions. Were our pragmatic alternative to become the approach adopted by the federal regulatory apparatus, that more detailed understanding would evolve over time. We hope we have said enough to demonstrate the attractiveness of the problem-oriented, normative, discursive, and transparent process we have described, especially in how it serves democratic decisionmaking better than CBA by placing in better focus the value choices that are central to democratic governance.

Importantly, our alternative *respects* democratic judgments better than the current RIA process, which insists on imposing CBA requirements on regulatory regimes in which that approach to regulatory decisions has been rejected by the laws that Congress has enacted. Respecting democratic judgments means, of course, that where Congress has made a decision to employ a cost-benefit test, our approach supports it use. In particular situations — like flood control and irrigation projects in the 1930s — where the most basic justification for picking any particular project was its ability to grow the economy, the requirement that the additions to GDP be greater than the costs of producing them has considerable appeal. In contrast, our focus has

analysis, the RIA did compare the medical costs of treating non-fatal bladder cancer. The numbers are not comparable (\$178,405 in medical expenses versus \$607,162 for WTP to avoid chronic bronchitis, ABT. ASSOCS., FINAL RIA, *supra* note 349, at 5-24), but the RIA again contains no additional discussion of the implications of this disparity.

³⁵⁹ See *supra* note 136 and accompanying text.

³⁶⁰ See ACKERMAN & HEINZERLING, *supra* note 110, at 96 (discussing defects of the study).

³⁶¹ *Id.* at 97.

³⁶² See *supra* note 345 and accompanying text.

primarily been on the extension of CBA to health and safety regulation, where the statutes by and large reject the idea that the appropriate level of regulation should be set using a cost-benefit formula. Compared side-to-side in these contexts, our pragmatic alternative offers a distinct improvement over current practice.

A. *Policy and Politics*

Concern that agency choices will end up being driven by self-interest, greed, or corruption drives the search for effective ways to monitor agency action. Examples like the history of the Army Corps of Engineers are invoked to illustrate how CBA operates to prevent wasting or misusing taxpayer dollars.³⁶³ Yet it is arguable that CBA has not lived up to these expectations, and also that our alternative can do better.

As a means to improve agency transparency and accountability, CBA has serious flaws. Most of the elements of CBA — the cost data that goes into the analysis, the conclusions that are extracted from risk information through the “weight of the evidence” approach that agencies follow, the selection of models required at various stages of the quantitative risk assessment process, the assumptions necessary to build the inferential bridges that must be crossed when there are gaps in the data — are all subject to manipulation, whether by interested parties with sufficient resources to do so or by agencies pursuing their own agendas. Manipulation can be done, furthermore, in ways that are far from transparent to the untrained outsider. Even when citizen groups, environmental organizations, or others have the resources to hire the experts necessary to expose questionable data, models, or assumptions, successfully challenging them is extremely difficult. Courts rightly give a good degree of deference to technical decisions reached by health and safety agencies, so that, absent evidence of procedural irregularities, such challenges only succeed on rare occasions.³⁶⁴

CBA has not been able to negate the horse trading, influence peddling, and rent seeking to which agency rule making is sometimes prone because these tendencies can be smuggled inside the development of the data, analysis, and conclusions of CBA. Far from being a defense against this kind of anti-democratic behavior, CBA, by taking advantage of the high degree of esteem in which science generally is held in this country, may end up supplying an additional layer of opacity, not more transparency, impairing our ability to hold agencies accountable.

A pragmatic approach to RIA does not propose to dispense with the technical contributions inevitably involved in health, safety, and environ-

³⁶³ See *supra* notes 88-89 and accompanying text.

³⁶⁴ Even outside the health and safety area, where one might suppose the use of CBA as a monitoring device would be more tractable, its record is not stellar. The installation of CBA at the Army Corps turned out to provide a layer of defense against subsequent attacks, while at the same time not greatly limiting the Corps' ability to select questionable projects. See *supra* note 194.

mental regulations, and so it will not eliminate all the advantages that better financed and staffed participants in the regulatory process have over those less well funded and staffed. But it does promise to open up space in an RIA for recognizing the limits of technical expertise and for providing a richer description and consideration of the human values, norms, and understandings implicated by health and safety decisions. A regulatory analysis process that narrows its focus to the technical questions that dominate preparation of a CBA ends up leaving on the periphery of the analysis the considerations that ordinary people bring to the table.

A pragmatic methodology therefore ousts CBA from its privileged position and replaces it with a discursive approach that combines technical and non-technical considerations. Unable simply to rely upon a cost-benefit computation for justification, an agency will have to address and respond to non-technical claims and arguments in other ways, perhaps by bringing to the surface counter-claims and counter-arguments of like kind. Experience shows that this is what actually happens when an important health and safety decision is aired in a public forum rather than in the confines of a bureaucracy's offices.³⁶⁵ The requirements of a pragmatic methodology would mean that agencies ought to treat these claims and arguments as fully legitimate elements of the process, rather than treating them as seldom-persuasive calls for deviating from the CBA-dictated "best" result.

Such an RIA would increase transparency because the head of an agency would eventually have to articulate a decision that expressed a judgment, a mix of technical and value considerations, and would be unable to hide behind any claim that "the science dictated this result." When such a judgment does not fully satisfy some affected group, as important health and safety decisions invariably fail to do, critics of the decision would not be able simply to point to some allegedly flawed elements of the CBA to justify their objections. That would be as it should under an approach that has deprivileged the CBA in the first place. The agency head also would be required to articulate why he or she had reached the judgment she reached in light of the counter-claims and arguments that were raised. This will enable outsiders to evaluate and critique the judgment according to the same criteria that the agency head utilized in reaching it, thereby producing a debate that focuses on the appropriate questions and concerns.

It is quite likely that evaluators of such an RIA will disagree over whether they think the agency head reached the right decision. Our pragmatic methodology is far from an algorithmic approach to decisions, whereby someone can come along and go through the same decision steps to see if the same outcome results, much as an instructor would check the work of a student who has worked through a math problem. But not only is the CBA not algorithmic either, it stifles the ability of debate about agency action to traverse the full range of issues appropriate to a pragmatic inquiry.

³⁶⁵ See *supra* note 197 and accompanying text.

B. Rationality

CBA sometimes trades on the conceit that it is but a formalization of the only way that rational decisions can be made. Decisions are costly and resources are limited, so we had better adopt a decisionmaking method that forces us to weigh the consequences of our decisions against the resources available to us. Consider the suggested implications, for instance, of taking seriously the public's aversion to placing a value on human life. To some, this aversion seems to suggest that we cannot distinguish between a measure that reduces the risk of mortality and another measure that is much less successful in reducing mortality because we lack a means of comparing the two.

As an objection against our pragmatic methodology, this line of argument relies on a non-sequitur. Just because our methodology does not place at its center the idea that health benefits and compliance costs should both be expressed in dollar terms and then compared to one another, it does not follow that our methodology is indifferent either to variations in health benefits or to the variations in costs between proposals. Both these features of a proposal are germane to most public policy decisions, and they would also be germane to a pragmatic RIA of health and safety decisions.

Our proposal for refashioning regulatory RIAs more closely resembles Ben Franklin's prudential algebra than the reductive rationality attempted by CBA. Writing to a friend facing a difficult decision and unsure about how to proceed, Franklin said:

When those difficult cases occur, they are difficult, chiefly because while we have them under consideration, all the reasons pro and con are not present to the mind at the same time. . . . To get over this, my way is to divide half a sheet of paper by a line into two columns; *writing over the one Pro, and over the other Con*. Then, during three or four days consideration, I put down under the different heads short hints of the different motives, that at different times occur to me, for or against the measure. When I have thus got them all together in one view, *I endeavor to estimate their respective weights*. . . . And, though the weight of reasons cannot be taken with the precision of algebraic quantities, yet when each is thus considered, separately and comparatively, and the whole lies before me, *I think I can judge better, and am less liable to make a rash step*, and in fact I have found great advantage from this kind of equation, in what may be called moral or prudential algebra.³⁶⁶

The approach we have in mind differs from Franklin's, especially because it requires consideration of the pros and cons of a decision from multiple points of view. We also acknowledge the possibility that one's evaluation of

³⁶⁶ EDWARD M. GRAMLICH, *BENEFIT-COST ANALYSIS OF GOVERNMENT PROGRAMS* 1-2 (1981) (quoting Franklin).

pros and cons can change as a result of the process of thought and reflection upon different perspectives, something that Franklin does not explicitly mention.

Franklin's "prudential algebra" makes clear that one does not have to monetize pros and cons to weigh them. Individuals make many decisions (perhaps even very important ones), without conducting formal CBA. A person might face a choice of jobs, one paying less in a city with a better climate and nearer to her parents, the other paying more and with better schools for children she does not yet have. Individuals can deliberate seriously over choices like this without performing CBA. The fact that such choices can be *modeled* by others as CBA does not mean either that the individual making the decision has actually performed CBA or that it would have been wise for her to do so in the first place.³⁶⁷

The prudential approach is as capable of ranking priorities among competing projects as it is capable of determining how to proceed with any single project. Some years ago, EPA undertook to understand better what its priorities ought to be. It asked its own experts what their impressions were; it did not attempt any sort of comparative cost-benefit analysis. Undoubtedly, each expert incorporated his own understanding of the benefits and costs of additional efforts under EPA's various programs in reaching his individual judgment, but each did so according to her own larger sense of what efforts needed to be pushed most strenuously. The result was a report called *Unfinished Business*.³⁶⁸ The ranking that it contains may not have been the ranking of any single individual in EPA, but it represented the collective judgment of the organization. Prioritizing in this way fully deserves the label "rational."

Priority setting in a democracy cannot and should not be reduced to any technical exercise, whether CBA or any other. Setting priorities goes to the heart of the enterprise of governing, frequently implicating a contest among competing values. This is why administrative agency priorities are heavily influenced by congressional decisions and actions that respond to constituents. When unduly influenced by power and greed and ignoring the broader public interest, these communications can amount to one of the weak spots in the governing process, but at other times they are the means through which the public interest is expressed. We believe that an RIA process that articulates a wider range of perspectives, analyzes choices using a broader range of disciplines, and discusses the values that are at stake in particular choices can produce better priority setting by agencies because this approach

³⁶⁷ The very idea of modeling presupposes some technique for simplifying the complexities of reality. The results of the model are then interpreted to have some meaning for the reality it seeks to model. We have argued throughout this paper that the manner in which CBA achieves simplification ignores critical features of reality, claims accuracy when that is not available, and is vulnerable to manipulation. See *supra* Parts III.B.2-III.B.3, IV.C.2. These problems are sufficiently severe so that RIA ought to employ alternative means of recognizing and analyzing the pros and cons of health and safety decisions.

³⁶⁸ EPA, UNFINISHED BUSINESS: A COMPARATIVE ASSESSMENT OF ENVIRONMENTAL PROBLEMS (1987).

will recognize the public concerns and values that are at stake better than a CBA can.

C. *Systemization*

Time and the press of many obligations prevent the top agency decisionmakers from immersing themselves in the details of most decisions they face. Analysts and participants in the rule-making process can spend months and years developing information, performing analyses, responding to suggestions, and coming to a better understanding of the value choices that a particular decision may implicate. Eventually this collective work product will have to be distilled so that the decisionmaker can act.

Our pragmatic approach to RIA would obviously not aspire to reducing an enormous amount of relevant information into a single table of monetized costs and benefits. A pragmatic RIA must be able to function within the practical realities that surround and form the environment in which agencies work.

Compared with CBA, we believe that our pragmatic alternative lends itself quite well to the systemization and condensation that characterize agency decisionmaking. Indeed, in many of the health and environment settings that are our focus, our pragmatic approach will simplify the RIA process and lend itself to more straightforward summaries because it will not subject technology-based and health-based regulatory decisions to full-blown cost-benefit consideration. By respecting the prior decisions that Congress has made, a pragmatic RIA will not deflect the decisionmaker's focus by inserting irrelevant considerations into the analysis.

More generally, a pragmatic methodology will be able to streamline the presentation of its wider array of pros and cons in ways that recognize constraints on time and expertise. A pragmatic RIA can include a discursive executive summary, which identifies the most salient points of the analysis and includes cross-references to their fuller discussions. Such an RIA can also use various visual techniques to summarize information. A common technique in policy-analytic work in which a monetized CBA is not possible presents information in matrix form, with each row representing an option and each column identifying an important value in the discursive exploration of the problem (or the rows and columns could be switched). Each cell might then include a qualitative indicator of how each option "scores" within that element.³⁶⁹ Alternatively, it might include a summary phrase or statement identifying how that element bears on any final decision. As more and more pragmatic RIAs are produced, agencies will gain experience about the most useful ways of producing such visual summaries. Such summary

³⁶⁹ See, e.g., MICHAEL C. MUNGER, ANALYZING POLICY 6-14 (2000) (explaining the use of the "criteria-alternatives matrix" or CAM, and providing examples). Alternatives are the columns, criteria the rows, and each cell contains a measure or evaluation of that row's criteria for the column's alternative. *Id.* at 9. This kind of matrix is useful "to guide policy makers in identifying trade-offs and highlighting the importance of values." *Id.* at 28 n.5.

techniques will of course strip some of the richness from the fuller analysis, but CBA does exactly the same thing when presenting its analysis in tabular or summary form, because the full description of any CBA includes pages and pages of complicated discussion of modeling assumptions, reasons for the inferential bridges that have been chosen, and so on. A pragmatic methodology would do no worse than CBA currently does in summarizing information for decisionmakers.

A pragmatic RIA is more accurate, honest, and open. Its advantage stems from the fact that it would not present a bottom line that may well be misleading or irrelevant. It more accurately articulates the manner in which many important decisions are reached, whereas CBA constitutes an artificial reduction of complex problems to (seemingly) technical methods, thereby hiding both the value choices and the complexity of them.

D. Presidential Oversight

The nature of the White House review process would change under a pragmatic RIA process but would be no less effective because it would require the centralized overseers to focus on a bigger picture. The current emphasis on fly-specking individual regulations is not productive and should be replaced with an emphasis on agenda-setting and coordination. At the same time, while the White House has a legitimate interest in individual regulatory policies, CBA is not necessary for the White House to pursue the President's policy goals in the context of such individual regulations. Furthermore, just as agency heads should not be permitted to shield policy judgments from scrutiny by invoking science and technical analyses, neither should the President.

Commentators, including some friendly to CBA, have recommended that the White House drop its individual review of significant regulations and pursue agenda-setting and coordination.³⁷⁰ The recommendation is based on the fact that OIRA review of regulatory analysis adds limited value.³⁷¹ The small size of OIRA's staff makes review a hit or miss affair.³⁷² Moreover, review tends to be politicized, and the methodology is often not very accurate.³⁷³ At the same time, only OMB is in a position to pursue agenda-setting and coordination, which now go largely unattended.³⁷⁴

Opponents will object that eliminating OIRA review of individual rules would encourage agencies not to take the analysis process seriously. Agencies, however, are likely to embrace an analysis process that is helpful and

³⁷⁰ See, e.g., Bagley & Revesz, *supra* note 103, at 1312-29; Sidney A. Shapiro, *Political Oversight and the Deterioration of Regulatory Policy*, 46 ADMIN. L. REV. 1, 30-32 (1994).

³⁷¹ See Bagley & Revesz, *supra* note 103, at 1307-10.

³⁷² OIRA has "a professional staff of about [forty]" persons. PETER L. STRAUSS, TODD D. RAKOFF & CYNTHIA R. FARINA, *ADMINISTRATIVE LAW: CASES AND COMMENTS* 615 (rev. 10th ed. 2003).

³⁷³ See *supra* Parts III.B.1-III.B.2.

³⁷⁴ Shapiro, *supra* note 370, at 31.

relevant to them. Moreover, the White House can look to its political appointees to ensure its effective use.

The White House does not need a CBA study overseen by OIRA to protect or promote its policy interests or its oversight functions. The President has a legitimate interest in pursuing his policy objectives to the extent that they are consistent with an agency's statutory mandate,³⁷⁵ and various offices in the White House have an interest in specific regulatory areas or proposed regulations.³⁷⁶ These offices either directly or indirectly (through OIRA) press their policy concerns on the agency. The White House can also keep abreast of an agency's regulatory plans through the semi-annual Regulatory Agenda or through any other reporting process it needs. The White House review process is not simply about checking an agency's cost-benefit calculations.

In fact, a pragmatic regulatory analysis process would be better at accommodating White House interests in regulatory policy than the current process. Of course, no agency is authorized to ignore its statutory mandate in favor of political considerations. Once this caveat is accepted, political feasibility is a factor that agencies should (and currently do) consider when analyzing regulations.³⁷⁷ Pragmatic policy analysis would consider the President's policy preferences (generally or specifically) along with other relevant factors in evaluating regulatory options. CBA, by comparison, has no explicit way to build this consideration into the analysis, although experience indicates that the methodology is sufficiently imprecise that presidential preferences, particularly for deregulation or weaker regulation, can be snuck into the analysis.

The weaknesses of CBA are apparent for all to see. The theoretical underpinnings of positivism and rational choice methodologies have been dealt a significant blow in the post-empiricist literature, and the policy science literature has called the performance of rational choice methodologies into serious question. Likewise, the performance of CBA itself has been the subject of a significant and persuasive challenge in the legal literature. The use of CBA, however, continues unabated and largely without acknowledgment of these fundamental weaknesses for a number of political and bureaucratic reasons.

One reason for the continuing dominance of CBA is the success of its proponents in maintaining that there is no viable alternative, but this argument has been discredited in a substantial policy science and post-empiricist literature that is based on Lasswellian ideas and ambitions. Our preference

³⁷⁵ See Elena Kagan, *Presidential Administration*, 114 HARV. L. REV. 2245, 2309-16 (2001).

³⁷⁶ Bressman & Vandenberg, *supra* note 101, at 66.

³⁷⁷ See, e.g., Thomas O. McGarity, *Media-Quality, Technology, and Cost-Benefit Balancing Strategies for Health and Environmental Regulation*, 46 LAW & CONTEMP. PROBS. 159 (1983) (identifying six factors that agencies use for evaluating decisions, including political feasibility).

for such an approach is pragmatic — it will work better in informing decisionmakers and citizens about the actual issues that must be resolved. The methodology will work better because, unlike CBA, it is problem-oriented, normative, discursive and transparent.

In light of the entrenched status of CBA, reform will not come easily. The first step, however, is to recognize that an alternative exists and that it should be compared to CBA on a pragmatic basis to determine which approach is more likely to serve the needs of democracy. The outcome of this comparison, we believe, favors the pragmatic reorientation we propose.