

# WHITHER RATIONALITY?

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REVIVING RATIONALITY: SAVING COST-BENEFIT ANALYSIS FOR THE SAKE OF THE ENVIRONMENT AND OUR HEALTH. By *Michael A. Livermore* and *Richard L. Revesz*. New York: Oxford University Press. 2020. Pp. ix, 293. \$34.95.

## INTRODUCTION

While the Trump administration accomplished little of substance, it did make progress on one objective: casting public doubt on the legitimacy of federal agencies. Both as candidate and as president, Donald Trump railed against the federal administrative bureaucracy—what he called the “deep state.”<sup>1</sup> The resulting erosion of trust is deeply troubling, as not only do federal agencies make decisions with profound substantive consequences, but the process by which they make them is critical in maintaining confidence in American government. The Trump administration tainted federal agencies by using them as purely political levers and adopted shoddy, outcome-directed decisionmaking processes, often invoking bizarre reasoning.<sup>2</sup> In this perverse way, even while bumbling Trump officials failed to advance their substantive agenda, they furthered the objective of undermining federal agencies by making them into the cartoons that Donald Trump always said they were.

The Trump administration was particularly capricious in its use of cost-benefit analysis in agency decisionmaking. Cost-benefit analysis (CBA) is never completely objective, but the Trump administration’s distorted analyses,<sup>3</sup> violations of basic economic principles,<sup>4</sup> and defiance of common

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1. See, e.g., DAVID ROHDE, *IN DEEP: THE FBI, THE CIA, AND THE TRUTH ABOUT AMERICA’S “DEEP STATE,”* at xii–xvi (2020).

2. See, e.g., Shi-Ling Hsu, *Anti-science Ideology*, 75 U. MIA. L. REV. 405, 438–41 (2021) (documenting the moving of the U.S. Department of Agriculture’s Economic Research Service from Washington, D.C., to Kansas City, which the Trump administration justified through an eleven-page cost-benefit analysis that counted summer interns as part of the Service’s excessive turnover due to high costs of living).

3. See chs. 5–10.

4. Ch. 5 (noting the Trump administration’s Office of Information and Regulatory Affairs (OIRA) performing CBA without estimating the benefits).

sense<sup>5</sup> reflected an intent to destroy government credibility. Done properly and carefully, CBA remains an important decisionmaking input, providing an economic perspective that is especially important when federal action triggers large-scale changes. Done poorly, it becomes just another example of economics being misused to further political objectives. Exploiting CBA as a partisan tool damages its credibility as an administrative tool and sets administrative practice back decades, which appears to have been the whole point.

The Trump presidency was only the most recent chapter in a continuing campaign by Republicans to reject any economic, scientific, or analytical data that runs counter to their political objectives.<sup>6</sup> In the Republican Party, credible analysis has been largely displaced by the advancement of *values*—beliefs about social or economic ordering that might be affected by federal policy. Moral certainty has displaced analytically backed welfarism.<sup>7</sup> Cost-benefit analyses that conflict with the stated values of the Republican Party are attacked as instruments of overbearing government.<sup>8</sup>

But it is not just Republicans that have sought to minimize the role of CBA. Progressive Democrats have long harbored deep reservations about CBA, believing that the process is controlled by regulated industries and systematically produces results pointing toward less regulation.<sup>9</sup> Like Republicans, progressives tout the advancement of their particular values in administrative decisionmaking.<sup>10</sup> These values—including environmental protection and public health—are elevated above others, such as liberty and economic prosperity, that are touted by Republicans. To be sure, progressives, who often

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5. P. 100 (noting that the Trump administration projected that a decrease in the price of vehicles would result in fewer cars being sold).

6. For example, former Texas congressman Lamar Smith sponsored the Secret Science Reform Act of 2015, which sought to exclude from federal rulemaking long-standing epidemiological studies suggesting that emissions from coal-fired power plants caused hundreds of thousands of premature deaths. See *infra* notes 75–77 and accompanying text.

7. Welfarism is a normative framework in which policy outcomes are ranked only by their impacts on the well-being of individuals. Welfarism is a form of consequentialism, which evaluates actions against their impacts, discounting or ignoring deontological constraints. See, e.g., MATTHEW D. ADLER, MEASURING SOCIAL WELFARE 27 (2019).

8. P. 79 (“Many in the Republican coalition continued to level hyperbolic criticism of regulations adopted under Obama, despite the strong cost-benefit arguments in favor of many of the rules. This trend toward disregard for cost-benefit analysis became even more extreme in the run up to the 2016 election, with candidates in the Republican primary lambasting the Obama record on regulation.”).

9. See, e.g., Amy Sinden, *In Defense of Absolutes: Combating the Politics of Power in Environmental Law*, 90 IOWA L. REV. 1405, 1457–58 (2005) (“[E]fforts at quantification are inevitably systematically skewed in favor of the costs and against the benefits of environmental protection. . . . [E]stimates of the costs of regulations are often provided by the industry facing regulation, they are often artificially, self-servingly high.”).

10. See, e.g., Lisa Heinzerling, *Regulatory Costs of Mythic Proportions*, 107 YALE L.J. 1981, 2068 (1998) (“If no one believes that such numbers are neutral reflections of some factual reality, that is, if everyone sees that they reflect contestable choices about values, then a debate based on the numbers will be no more informed or informative than an explicit discussion about the values underlying the numbers, in which case one could dispense with the numbers altogether.”).

couch their complaints about CBA in terms of consistency with federal statutes, have never been as nihilist as current Republicans.<sup>11</sup> But progressive skepticism about CBA broadly rejects economic quantification and, like Republican skepticism, falls back on a values-based discourse in lieu of an analytical one.

Michael Livermore<sup>12</sup> and Richard Revesz<sup>13</sup> are familiar and leading voices in this increasingly urgent debate. Their recent book, *Reviving Rationality: Saving Cost-Benefit Analysis for the Sake of the Environment and Health*, is a historical account of CBA in federal policymaking (with a focus on environmental policy) and a call for its revival. It follows their first book on the subject, *Retaking Rationality*,<sup>14</sup> in which they sought to convince skeptical readers of the need for a more fruitful way forward in policy disputes affecting the environment. In their recent book, Livermore and Revesz renew their case for CBA, updating their argument with experiences under the Obama and Trump administrations, aiming to strike a chord with progressives and the diminishing segment of Republicans still interested in policy analytics.

This Review of *Reviving Rationality* summarizes and evaluates Livermore and Revesz's arguments and proffers applications and extensions of their work in the hopes of building upon them. Part I of this Review situates the book in the historical context of CBA, including some of the arguments that have been made for and against CBA, many of which were developed by Livermore and Revesz. Part II grapples with past and present challenges to CBA and suggests that doubling down on CBA—Livermore and Revesz's prescription for modern disinformation—is part of an appropriate response. Toward that end, it offers an example of how CBA might help reconcile deeply divisive policy disputes, such as those over COVID-19 policy. Finally, Part III extends Livermore and Revesz's argument to a broader notion of rationality. If Livermore and Revesz's defense of CBA can preserve the role of economic analysis in federal lawmaking, it can also strengthen the case for the application of analytical sciences other than economics.

## I. THE CASE FOR COST-BENEFIT ANALYSIS

*Reviving Rationality* is written against the backdrop of a controversial history of CBA. An important contribution of the book is its rich historical treatment of CBA, tracing its development from a federal mandate under President Reagan's Executive Order 12,291,<sup>15</sup> to its deployment by President Obama in

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11. See, e.g., Amy Sinden, *The Economics of Endangered Species: Why Less Is More in the Economic Analysis of Critical Habitat Designations*, 28 HARV. ENV'T L. REV. 129, 139 (2004) (noting the primary purpose of the Endangered Species Act was to protect species, despite economic considerations).

12. Edward F. Howrey Professor of Law, University of Virginia School of Law.

13. AnBryce Professor of Law and Dean Emeritus, New York University School of Law.

14. RICHARD L. REVESZ & MICHAEL A. LIVERMORE, *RETAKING RATIONALITY: HOW COST-BENEFIT ANALYSIS CAN BETTER PROTECT THE ENVIRONMENT AND OUR HEALTH* (2008).

15. Exec. Order No. 12,291, 3 C.F.R. 127 (1981). The original executive order required CBA for all "major" federal rulemakings, defined as those having an economic impact of greater

support of progressive initiatives,<sup>16</sup> and finally to its spiteful misuse by the Trump administration.<sup>17</sup> This historical context makes it possible to gain a more sophisticated and nuanced understanding of the role of CBA in federal agency decisionmaking.

Despite controversy, CBA has been remarkably resilient through Republican and Democratic presidencies. In a presentation at a conference of the Society for Benefit-Cost Analysis over a decade ago (at which I was present), then-Dean Revesz contrasted CBA with the disappointing progress made in matters of environmental justice. Both CBA and environmental justice were matters taken up in earnest by executive order in the Clinton administration.<sup>18</sup> But while CBA has continued to grow in importance, environmental-justice awareness in the federal government has been, by all accounts, weak.<sup>19</sup> Revesz noted that one explanation of this difference is having the Office of Information and Regulatory Affairs (OIRA) as an institutional champion situated in the White House, while the Office of Environmental Justice sits in the Environmental Protection Agency (EPA), layers down from the president.

This previously secure place for CBA in federal decisionmaking is now under threat, as CBA is in the crosshairs of the Republican Party.<sup>20</sup> President Trump downgraded the prestige of OIRA by nominating inexperienced political ideologues with little training in economics (pp. 101–02). At the same time, the Trump administration's mishandling of CBA has spawned new calls to do away with CBA,<sup>21</sup> as if CBA was the problem rather than Trump. In this fraught context, and in a time of political upheaval and division, Livermore and Revesz make their case for CBA in federal lawmaking. Good governance and pragmatic considerations call for doubling down on CBA to ensure rational policymaking.

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than \$100 million. *Id.* at 127–28. That number has never been adjusted upward and has ceased to be a meaningful threshold, as subsequent presidents have been content to apply CBA to nearly every federal rulemaking.

16. Ch. 2 (reviewing Obama initiatives supported by CBA).

17. Chs. 5–10 (documenting the ways that the Trump administration's OIRA distorted cost-benefit analyses).

18. Exec. Order No. 12,898, 3 C.F.R. 859 (1994).

19. See, e.g., David A. Dana & Deborah Tuerkheimer, *After Flint: Environmental Justice as Equal Protection*, 111 NW. U. L. REV. ONLINE 93, 94 (2017) (“Scores of poor, often minority communities across the United States bear extreme risks from lead and other hazards—risks that should not be tolerated in a civilized nation.”).

20. P. 3 (quoting criticism of CBA by Mitt Romney).

21. See, e.g., James Goodwin & Amy Sinden, *We Need to Uproot Roadblocks to Just, Equitable Safeguards. Here Are 10 Things the Biden-Harris Team Can Do to Make That Happen*, CPRBLOG (Nov. 18, 2020), <http://progressivereform.org/cpr-blog/we-need-uproot-roadblocks-just-equitable-safeguards-here-are-10-things-biden-harris-team-can-do-make-happen> [perma.cc/4L3E-8ZQT].

A. *The Governance Justification*

Livermore and Revesz's case for CBA is rooted in notions of governance. They view CBA as striking a balance between "the demands of democratic accountability with the sometimes countervailing desire to facilitate sound decision making" (p. 5). As evidence for the value of this good-governance approach, Livermore and Revesz cite examples from the Obama and Trump administrations. A core theme of *Reviving Rationality* is how the Obama administration used CBA to support its environmental and public health initiatives. Even while the Republican Party cast off any governing principles and set as its sole purpose the obstruction of the Obama administration,<sup>22</sup> significant advances were made with the support of rigorous CBAs.<sup>23</sup> These included the Mercury Air Toxics Rule,<sup>24</sup> the Cross-State Air Pollution Rule,<sup>25</sup> rules tightening National Ambient Air Quality Standards under the Clean Air Act,<sup>26</sup> increases in vehicle fuel efficiency standards,<sup>27</sup> and a rule to limit the amount of methane leaking from oil and gas operations.<sup>28</sup>

But just as important as the potential for CBA to support progressive regulation is its role in curbing reckless deregulation. The Trump administration's effectiveness in implementing its ideological, deregulatory agenda was abysmal, with even friendly judges tossing aside most of the administration's flails (p. 97). In no small part, the Trump administration's failures were attributable to its casual relationship with CBA (p. 98). Because the Obama administration had done rigorous analysis in support of its regulations, the Trump administration's attempts to undo them needed to be rigorously supported as well,<sup>29</sup> a challenge for which Trump officials were hopelessly overmatched.

*Reviving Rationality* spends a great deal of time on the Trump administration because it highlights a key Livermore–Revesz argument: the practice of

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22. See, e.g., pp. 81–83.

23. See, e.g., ch. 2 (reviewing Obama initiatives supported by CBA).

24. National Emission Standards for Hazardous Air Pollutants, 77 Fed. Reg. 9303 (Feb. 16, 2012) (to be codified at 40 C.F.R. pt. 60, 63).

25. Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 Fed. Reg. 48,207 (Aug. 8, 2011) (to be codified at 40 C.F.R. pt. 51, 52, 72, 78, 97).

26. National Ambient Air Quality Standards for Particulate Matter, 78 Fed. Reg. 3085 (Jan. 15, 2013) (to be codified at 40 C.F.R. pt. 50, 51, 52, 53, 58); Primary National Ambient Air Quality Standard for Sulfur Dioxide, 75 Fed. Reg. 35,519 (June 22, 2010) (to be codified at 40 C.F.R. pt. 50, 53, 58); Primary National Ambient Air Quality Standards for Nitrogen Dioxide, 75 Fed. Reg. 6473 (Feb. 9, 2010) (to be codified at 40 C.F.R. pt. 50, 58).

27. 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62,623 (Oct. 15, 2012) (to be codified at 40 C.F.R. pt. 85, 86, 600).

28. Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, 81 Fed. Reg. 35,823 (June 3, 2016) (to be codified at 40 C.F.R. pt. 60).

29. See, e.g., Caroline Cecot, *Deregulatory Cost-Benefit Analysis and Regulatory Stability*, 68 DUKE L.J. 1593, 1597–98 (2019).

CBA can help prevent environmental backsliding.<sup>30</sup> More generally, CBA provides “guardrails” against bad policy. “Bad,” in Livermore and Revesz’s vernacular, is policy that swerves too far from a notion of “rationality,” which is largely, but not exclusively, determined by resort to CBA. Rationality is thus some sense of how worthwhile an action is, with monetary quantification as a key metric, bearing in mind that monetary quantification is sometimes impossible (as is often the case with environmental benefits). This notion of rationality, while imperfect, nevertheless acts as a bulwark against grossly inefficient policies championed by political opportunists. Livermore and Revesz argue that CBA has worked as a “counterbalance to strong constituencies during both Republican and Democratic administrations” (p. 24). Rent seeking, in Livermore and Revesz’s view, is less effective because OIRA’s mission is methodological in nature, not substantive, and methodological inertia in economics poses a barrier to rent seeking (p. 24).

### B. Pragmatism

Livermore and Revesz’s governance argument was the strongest argument when CBA was challenged by progressives, and it is the strongest one for addressing the current threat from Republicans. But it still leaves some critical questions unanswered. To the objection that monetizing environmental benefits or costs is too inaccurate, the response is often something like “estimating them is better than tolerating an implicit valuation of zero.”<sup>31</sup> But how much inaccuracy is tolerable? To the objection that CBA should not be a strict decision rule, economists would generally agree, arguing that it should typically only serve as an important input.<sup>32</sup> But how influential of an input? If CBA shares the stage with political considerations, how much weight is accorded CBA? How much weight does welfare maximization get compared with distributional effects? Indeed, the very notion of rationality is a bit vague for a concept that is supposed to serve as an anchor for policymaking.

In my view, it has always been challenging to make a fully satisfying argument for CBA from first principles. Economics has both normative and descriptive elements, and it is difficult to pin down how much of each should factor into agency decisionmaking. And economics is not yet developed

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30. P. 80; see, e.g., *California v. EPA*, 385 F. Supp. 3d 903 (N.D. Cal. 2019) (ruling that the EPA could not delay compliance with the Obama administration’s Landfill Rule, which reduced emissions from landfills); *California ex rel. Becerra v. U.S. Dep’t of the Interior*, 381 F. Supp. 3d 1153 (N.D. Cal. 2019) (vacating Trump administration’s new rules for calculating fossil-fuel royalties on public lands); *Air All. Hous. v. EPA*, 906 F.3d 1049 (D.C. Cir. 2018) (vacating delay of implementation of Obama administration’s Chemical Disaster Rule).

31. See, e.g., Nick Hanley, *Cost-Benefit Analysis and Environmental Policymaking*, 19 ENV’T & PLAN. C. GOV’T. & POL’Y 103, 109 (2001) (“CBA allows for environmental effects to be integrated with financial effects . . . . A worry still seems to persist that environmental effects which are only listed or described, rather than being valued in money terms, carry less weight in decisions.”).

32. *Id.* (“Very few economists would subscribe to this extreme view: rather, the suggestion is that CBA tells us a lot that is interesting and important about a project, but not everything.”).

enough to answer some crucial implementation questions, such as those surrounding valuation. Because there are no definitive answers to these questions, the case for CBA must necessarily be grounded in pragmatism.

The governance justification thus needs reinforcement from some pragmatic arguments. First, as I have argued in the past, CBA may be imperfect, but there is no superior epistemic way forward.<sup>33</sup> No other method weighs the pros and cons on a common metric. Without a common metric, advocacy of opposing viewpoints inevitably moves in different directions, disparaging rather than engaging with disagreement. Second, CBA may dampen support for some rules, but it may enhance others. CBA may provide evidence for the desirability of controversial environmental rules, as was the case with the Obama administration (ch. 2). This is of special importance in environmental law, where health or environmental benefits are often diffuse and inchoate while industry costs are concentrated, tangible, and sometimes exaggerated.<sup>34</sup> Progressives often lament their lack of political influence, so it seems odd that they would reject a process or practice that moves a step away from raw political nihilism. And finally, in the tradition of pragmatism, CBA is in constant development, improving as valuation techniques are refined through practice. Policy decisions are rarely just correct or incorrect, nor are they invariant over time. The very notion of pragmatism contemplates that progress is often made incrementally. That the findings of a CBA could change over time is a feature of CBA, not a weakness.

### C. *Cost-Benefit Analysis Is Structurally Conservative*

Livermore and Revesz also argue that CBA provides policy stability by modulating “wild policy swings.”<sup>35</sup> They view policy stability between administrations as an intrinsic good and CBA’s methodological inertia as a vehicle for maintaining that stability.<sup>36</sup> But stability and deliberation imply delay, and progressives complain that the delay holds up environmental and public health measures that are needed sooner rather than later. It is not just the time-consuming act of performing CBAs that slows down policy but the anchoring of CBAs on previous CBAs and the insistence on consistency.

CBA and OIRA are structurally conservative in their slow pace of evolution. What counts as information in economic analysis is up to economists, and the

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33. Shi-Ling Hsu, *The Accidental Postmodernists: A New Era of Skepticism in Environmental Policy*, 39 VT. L. REV. 27, 87 (2014) (“The relevant question is whether one approach adds epistemological value or not.”).

34. An industry trade group, the Edison Electric Institute, estimated that acid rain regulations under the Clean Air Act would cost its members \$7.4 billion per year. EPA, PROGRESS REPORT ON THE EPA ACID RAIN PROGRAM 4 fig.2 (1999), <https://www.epa.gov/sites/production/files/2015-08/documents/1999report.pdf> [perma.cc/63FS-3UDU]. A widely accepted estimate of the actual cost was \$726 million, one-tenth the industry estimate. A. DENNY ELLERMAN ET AL., MARKETS FOR CLEAN AIR: THE U.S. ACID RAIN PROGRAM 228–31 (2000).

35. See p. 24.

36. P. 24; see also Cecot, *supra* note 29, at 1599–600.

economic profession has trouble legitimizing nonmarket goods, such as environmental quality and public health. Insistence on some replicability and consistency with economic theory limits what can be counted as a monetizable cost or benefit. While techniques for estimating industry costs are well accepted, those for estimating environmental and public health goods are still developing.<sup>37</sup>

There are three responses to the objection that CBA is inherently slow. First, as a political matter, the delay in estimating environmental and public health costs and carrying out environmental and public health initiatives may just be one of the costs of living in an industrialized democratic society. Greater investment in environmental and public health research would greatly diminish the uncertainties surrounding benefit estimation. In my other work, I call for vastly greater government expenditures in these historically impoverished areas of research,<sup>38</sup> which would at least reduce the delay. But in an industrialized United States, it is unrealistic to expect that regulatory fiat can make abrupt changes to the nation's industrial capital base very quickly. By design, regulation and lawmaking are not supposed to move quickly in democratic societies—unlike authoritarian ones.

Progressives may complain that the delay induced by reasoned deliberation over policy analytics is especially costly in the case of climate policy. It has become increasingly clear that the climate crisis is now upon humankind and will become much more dire in the future. Some measures to combat climate change are needed *immediately* rather than just very soon. For example, if a CBA was needed to evaluate a measure to shore up natural beach dunes or buildings or to otherwise protect hurricane-vulnerable areas, it is entirely possible that a powerful hurricane could swoop in and inflict the damage that OIRA was still estimating. But the response to this special concern is familiar. Addressing climate change by reducing greenhouse gas emissions, adapting to ongoing and worsening climatic changes, and engineering potential solutions is an incredibly complex undertaking. An almost intractably wide variety of strategies exist to phase out fossil fuels. Sorting through the many factors affecting decarbonization of the global economy requires a great deal of information and would be impossible to manage without some notion of the costs and the climate benefits. For example, it is now clear that not only must coal use cease as soon as possible but that combustion of natural gas must also phase out quite soon. How quickly? Where? When? There are many nuances to phasing out of fossil fuels that require some analytical input for implementation, and they only comprise a subset of potential climate policies.

Second, there is no alternative to CBA that would not also produce delays. Matthew Adler has authored or coauthored several works exploring the boundaries of CBA and welfarism; he proposes a welfarist alternative to CBA

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37. See *infra* notes 47–62 and accompanying text; Amy Sinden, *The Problem of Unquantified Benefits*, 49 ENV'T L. 73 (2019).

38. SHI-LING HSU, CAPITALISM AND THE ENVIRONMENT: A PROPOSAL TO SAVE THE PLANET 173–95 (2021).

that is predicated on social welfare instead of monetized economic efficiency.<sup>39</sup> But Adler's proposed social welfare function, while more flexible, would be as computationally intensive as CBA, and probably more so. Progressives offer nothing that would work more quickly than CBA.<sup>40</sup> When environmental rules are controversial, delay is inevitable in nonauthoritarian regimes.

Finally, progressives might choose to argue over values, putting up their environmental, public health, and civic values against Republican values of liberty, jobs, and economic growth. But it is not at all apparent that the former values would win, either politically or in the courts. There is a reason that Republicans have often latched onto the false narrative of "environment versus jobs" (pp. 86–88): it seems to politically favor jobs. There is a reason that Republicans falsely decried a governmental "war on coal":<sup>41</sup> it substituted values for facts and CBA. And I shudder to think how progressives will fare in arguing for their values over those espoused by the agricultural industry, a huge and underregulated source of air and water pollution.

#### D. *Doubling Down on CBA*

Livermore and Revesz are not tone-deaf to the realpolitik of the present political crisis. As part of their discussion of future directions for CBA, they acknowledge an understandable complaint on the Democratic side: "If the Republicans refuse to play by the rules, why should we?" (p. 179). They acknowledge that President Obama got nothing for making rational decisions that took account of Republican preferences (pp. 103–04). And with Republicans now seemingly embracing irrationality over analysis, it may seem feckless to try to govern when opponents seem only interested in sabotage (pp. 103–04). Livermore and Revesz are not completely clear on how to address this problem, but their overarching prescription is definite: in the long run, rational policymaking that makes ample use of CBA will be the most stable. They suggest that as Republicans "retreat from reason," Democrats might pitch themselves as "the better protectors of rationality in regulatory decision making" (p. 184). Without getting into the nitty-gritty of messaging, communications strategies, and social media management, what else is there to do?

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39. See, e.g., MATTHEW D. ADLER, *WELL-BEING AND FAIR DISTRIBUTION: BEYOND COST-BENEFIT ANALYSIS* (2012); ADLER, *supra* note 7. As yet, Adler's seminal work, which emphasizes overall societal well-being rather than raw economic efficiency and is intended as an alternative and a complement to CBA, has yet to be broadly adopted into policy analysis.

40. Professor Sinden has proposed a human rights focus for climate change problems. Amy Sinden, *Climate Change and Human Rights*, 27 J. LAND RES. & ENV'T L. 255 (2007). But that does not obviously speed things up. Leading CBA critic Lisa Heinzerling, as coeditor, has actually collaborated with economists on reforms of CBA. See *REFORMING REGULATORY IMPACT ANALYSIS* (Winston Harrington, Lisa Heinzerling & Richard D. Morgenstern eds., 2009). But proposed reforms, while improving the practice of CBA, would also slow it down. I argue that the delays would be worthwhile. Hsu, *supra* note 33, at 82–83.

41. For a refutation of this claim, see RICHARD L. REVESZ & JACK LIENKE, *STRUGGLING FOR AIR: POWER PLANTS AND THE "WAR ON COAL"* (2016).

Simply working on CBA and developing it as a methodology presents a stark contrast to opposition theatrics from the right and the left.

Understanding CBA is work, and a human temptation to slip into mental shortcuts rather than fight through analysis<sup>42</sup> is a barrier to acceptance of CBA. But a momentous federal agency decision based just on mental shortcuts, values, opinions, or politics—without *some* attempt to analytically compare them—will inevitably excite complaints from the losing side. CBA may not silence dissenters; it should not. But it may channel disagreement into different, less hyperbolic realms. Restoring good governance and the credibility of federal agencies must include a return to sound CBA practices.

## II. IMPROVING CBA, MONETIZATION, AND A COVID EXPERIMENT

What would doubling down on CBA involve? Part of Livermore and Revesz's prescription is to do more CBA and continue to develop its practice, all the better under a Biden administration.<sup>43</sup> Prioritizing the development of CBA and ensuring that it is employed more—and more rigorously—is certainly a way of routinizing CBA, thereby embedding it in government practice. The Obama administration's use of CBA was so important partly because it advanced the practice of CBA and the opportunity for courts to adjudicate the adequacy of CBAs. Courts were called upon to adjudicate industry challenges to Obama administration rules and, later, attempts to overturn Trump administration rules. They were thereby thrust into disputes about CBA more broadly. With this growing and solidifying body of CBA jurisprudence, courts have become more sophisticated consumers of CBA and have helped develop standards for purposes of passing judicial muster.<sup>44</sup> CBA quality is a one-way ratchet: once courts adjudicate a CBA that sets forth a new and more rigorous standard, it becomes arbitrary and capricious to do much less.

Beyond doubling down through routinization, there are certain improvements in CBA practice that might be undertaken. This Part notes some of these improvements, but it also makes the counterintuitive suggestion that CBA might be improved, and its value confirmed, if it were applied more regularly to controversial problems. The value of CBA is in bridging disagreement, not avoiding it.

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42. As one example, the *availability heuristic* is a now widely accepted source of bias first explained in Amos Tversky & Daniel Kahneman, *Availability: A Heuristic for Judging Frequency and Probability*, 5 COGNITIVE PSYCH. 207 (1973).

43. See p. 8.

44. See, e.g., Cecot, *supra* note 29, at 1619–24.

## A. Improving CBA

Part of doing CBA is continuously improving CBA and thus burnishing its credibility. One practice that has been discussed, including in *Reviving Rationality* (p. 191), is ex post review of CBAs, or “lookback.”<sup>45</sup> Ex post review compares the CBA with the actual costs and benefits that materialized after a rule to develop more accurate forecasts in the future. Certainly, improving CBA in this way should be uncontroversial and expand the acceptance of CBA over time.

It also seems time for a substantial updating of Circular A-4,<sup>46</sup> the document developed in 2003 which sets forth accepted practices for CBA. Certainly, much has changed since 2003: the estimate of the social cost of carbon<sup>47</sup> has raised new questions about discount rates and intergenerational equity, nonmarket valuation techniques have improved, and distributional concerns have surged in the public consciousness (pp. 160–63, 192, 204). An updated document could address these changes, and an expanded treatment could set forth new standards that not only enhance quality but help routinize CBA and expand its practice.

In addition to doubling down on, routinizing, and embedding CBA, progress in a particular direction is needed. CBA is criticized for its imperfections but is under greater threat because of its perceived irrelevance. The influence of economic thought on policy seems to be waning.<sup>48</sup> Traditional notions of welfare maximization now seem critically incomplete.<sup>49</sup> Despite some notable progress, economic theory is still in the process of reconciling distributional considerations with its maximization frameworks.<sup>50</sup> In addition to doubts about the ability of CBA to handle distributional issues, CBA seems to shed no light on many important issues. Some of the most violent policy clashes of

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45. Jonathan B. Wiener & Daniel L. Ribeiro, *Environmental Regulation Going Retro: Learning Foresight from Hindsight*, 32 J. LAND USE & ENV'T L. 1 (2016).

46. OFF. OF MGMT. & BUDGET, CIRCULAR A-4, REGULATORY ANALYSIS (2003), [https://obamawhitehouse.archives.gov/omb/circulars\\_a004\\_a-4](https://obamawhitehouse.archives.gov/omb/circulars_a004_a-4) [perma.cc/3D8J-8XWD].

47. The social cost of carbon is an estimate, derived by an interagency task force, of the marginal damage of emission of one ton of carbon dioxide. Exec. Order No. 13,990, 86 Fed. Reg. 7037 (Jan. 20, 2021).

48. For example, a recent book by economist Dietrich Vollrath questioning the need for constant economic growth has attracted favorable reviews from even conservative publications. DIETRICH VOLLRATH, *FULLY GROWN: WHY A STAGNANT ECONOMY IS A SIGN OF SUCCESS* (2020); see, e.g., *Is Low Economic Growth a Sign of Success?*, *ECONOMIST* (Jan. 23, 2020), <https://www.economist.com/finance-and-economics/2020/01/23/is-low-economic-growth-a-sign-of-success> [perma.cc/XV44-ADL6]. Also of increasing interest are substitutes for traditional economic indicators like GDP, such as the happiness index, a measure of well-being rather than wealth. See, e.g., *Economic Growth Does Not Guarantee Rising Happiness*, *ECONOMIST* (Mar. 21, 2019), <https://www.economist.com/graphic-detail/2019/03/21/economic-growth-does-not-guarantee-rising-happiness> [perma.cc/9PD6-9D38].

49. One important advantage of Matthew Adler’s work is that his proposed social welfare function can be designed to take account of distributional questions. ADLER, *supra* note 7, at 83–95 (reviewing prioritarianism and how a social welfare function can operationalize it).

50. Here again, Adler’s alternative frameworks provide some theoretical underpinnings for analysis, posing certain subjective values as part of subjective well-being. *Id.* at 72–73.

late have included reproductive rights, race and policing, human rights, and immigration. Yet none of these debates are obviously helped by recourse to CBA or economic thought. In many cases, voters and activists have acted against their material interests in advocating for their values. Certainly, voting itself is irrationally selfless, yet voters turned out in record numbers for the 2020 election despite the pandemic, often waiting for hours to vote.<sup>51</sup> Is law and policy mostly about values?

Parrying this serious assault on CBA's relevance will require that the practice of CBA directly confront its most controversial applications. What is true of the environmental and public health realms is also true in many other policy realms: values still need to be weighted *somehow*, where possible. CBA or analytics might not move debates over reproductive rights or race and policing, but an attempt to assign weights to some values can still be tractable and important in many policy clashes. All policies have tradeoffs; how should those tradeoffs be made? Or is public debate (such as it is) going to be solely decided by how effective theatrical politicians are in stoking outrage? One certainly hopes not. There may be alternative discourses, but CBA is an important way of exploring values and feelings without entrenching them.

#### B. *Improving Monetization: A COVID Experiment*

One example of how CBA might have shed some welcome light on a heated debate arose during the COVID-19 pandemic: objections to mask requirements on the grounds that they infringed upon liberty. That is a valid objection. But how *much* do the mask-reluctant value their liberty? Liberty in the abstract is difficult to value, and it clearly exists on a spectrum. Every person in every civilized society suffers dozens of indignities every day that infringe upon liberty and personhood. An unfortunate poverty of public debates over COVID policies has been the operating assumption that policies and values are binary. "Liberty" versus "public safety" or "public health" is a sophomoric framing.

To introduce some framing in an ex post sense, it would have been useful to measure the magnitude of these incremental infringements on liberty. It would not have been difficult to experimentally pose this pair of questions: (1) How much would a mask objector be willing to pay to avoid wearing a mask? (2) How much would a mask objector have to be paid to don a mask? Which question is relevant depends on what the baseline set of rights are,<sup>52</sup> but either

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51. See, e.g., Janet Hook, *America Wakes Up to Politics: 2020 Brings a Tsunami of Voting and Activism*, L.A. TIMES (Oct. 26, 2020, 4:00 AM), <https://www.latimes.com/politics/story/2020-10-26/america-wakes-up-to-politics-in-2020-voting-activism> [perma.cc/RHA4-EAZN]; Kevin Schaul, Kate Rabinowitz & Ted Mellnik, *2020 Turnout Is the Highest in over a Century*, WASH. POST (Dec. 28, 2020, 4:29 PM), <https://www.washingtonpost.com/graphics/2020/elections/voter-turnout> [perma.cc/R48P-BRG8].

52. The two questions reflect "willingness to pay" and "willingness to accept," respectively, and represent the economic value to a respondent, depending on whether they have a right to the environmental good or condition (and thus must be paid to give it up), or not (and thus must pay to secure it). See, e.g., NICK HANLEY & EDWARD B. BARBIER, PRICING NATURE: COST-BENEFIT ANALYSIS AND ENVIRONMENTAL POLICY 16-18 (2009).

would yield useful information. And on the other side of the risk transaction, how much do potential COVID victims value freedom from risk of infection? How *much* would a worried potential COVID victim be willing to pay to be free of the risk? Or, again shifting the baseline set of rights, how much would a potential COVID victim have to be paid to wade into a group of unmasked people? In this clash of public safety and liberty, a CBA weighing the strength of those values could have lent support and political cover for a mask mandate (or the absence of one). I am not naïve: elected leaders made these decisions for the crudest political reasons. But CBA could have embarrassed those whose political motivations led to irrationality, overriding the preferences of their constituents.

These questions could have been answered experimentally during the pandemic. Imagine the following: Near a grocery store entrance, maskless people could have been offered a mask, along with a payment to put it on. Alternatively, and a bit more problematically, unmasked people could have been told that they could not enter the store unless they paid a sum of money, perhaps for the stated purpose of paying for testing or treatment should infections occur. It would be more challenging to measure the willingness to pay of those who wished everyone would wear a mask, but such measurement still could have been done: some jurisdictions refused to require masks in public,<sup>53</sup> so an alternative, mask-required shopping experience could have been manufactured and offered in these jurisdictions, with shoppers being charged higher prices to measure the value risk-averse shoppers place on mask safety. Of course, multiple experimental controls would have been required to make the experience as authentic as possible. But if properly done, such a CBA would have been extremely helpful in the mask and vaccination debates, as it was clearly unpersuasive to argue that mask mandates were “grounded in science.” Scientific analysis, while centrally important, was insufficient for *weighing* the competing values and considerations implicated by COVID policy. And perhaps even more importantly, a CBA on mask mandates could have at least defused some of the vitriol and political theatre.<sup>54</sup>

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53. The sheriff of Marion County, Florida, actually forbade his deputies from wearing masks and prohibited visitors to his office from wearing them. While overruled by the Ocala City Council, the mayor announced that he would not enforce the mask requirement. Giulia McDonnell Nieto del Rio, *A Florida Sheriff Has Ordered His Deputies Not to Wear Masks*, N.Y. TIMES (Aug. 15, 2020), <https://www.nytimes.com/2020/08/12/us/fl-sheriff-billy-woods-bans-masks.html> [perma.cc/RCX4-5TXX]. In September 2020, Florida governor Ron DeSantis preempted the authority of local governments to issue fines for failure to wear a mask. Fla. Exec. Order No. 20–244 (Sept. 25, 2020), [https://www.flgov.com/wp-content/uploads/orders/2020/EO\\_20-244.pdf](https://www.flgov.com/wp-content/uploads/orders/2020/EO_20-244.pdf) [perma.cc/9TKP-LA3V]; see also Greg Allen, *Florida’s Governor: Officials Can Require Face Masks, but Can’t Enforce It*, NPR (Oct. 7, 2020, 2:28 PM), <https://www.npr.org/sections/coronavirus-live-updates/2020/10/07/921216724/floridas-governor-officials-can-require-face-masks-but-can-t-enforce-it> [perma.cc/28BY-9M9W].

54. Speaking during the 2020 Republican National Convention, South Dakota governor Kristi Noem defended her refusal to wear a mask and her welcoming of a crowded motorcycle rally that became a COVID superspreader event. She railed: “We are not and will not be the subjects of an elite class of so-called experts.” See *GOP Rising Star Kristi Noem Addresses Republican*

With vaccination efforts lagging in some quarters, an experiment of the sort described above is actually underway in some American places. Many Americans have expressed varying degrees of reluctance to receive a COVID vaccine.<sup>55</sup> While the reasons vary greatly, it is still possible to experiment and reach some conclusions about how averse broad populations of Americans are to vaccination, and why. For example, the State of Ohio announced that all those receiving at least one vaccine dose are eligible to enter into a lottery, out of which five Ohioans will receive \$1 million each.<sup>56</sup> With a little more research and questioning, much could be learned about how many people are reluctant to receive a vaccine and could be swayed by a monetary incentive. Some would adamantly refuse a vaccine no matter what the cost, and measuring their well-being would remain a challenge. But combining this kind of information with data about herd immunity and data relating vaccination levels to infections and deaths suggests that a CBA is very possible.

These experiments could have derived rough values of how much “liberty” was actually worth to some people and how costly “risk” was to some people. They would be applications of *contingent valuation methodology*, a survey-based economic technique for estimating the value of nonmarket goods, including environmental goods.<sup>57</sup> Estimates are derived from responses to questions hypothesizing the existence or absence of some environmental good. If survey respondents can provide accurate and sincere estimates of their own personal values for an environmental condition or good, the aggregation of those estimates over a population serves as an estimate of economic value. That estimate substitutes for market transactions that would otherwise reveal value. This technique has been developed over decades of economic research and has been continuously refined to account for the many pitfalls of asking people hypothetical questions involving money.<sup>58</sup>

The mask experiment described above would have been especially reliable because it would have addressed one criticism of contingent valuation methodology research: the hypothetical nature of the survey question, which is typically phrased as something like “would you pay \$\_\_\_ if . . . ?” But the mask experiment would not be hypothetical: in the experiment described above, respondents would *act* on their own valuations of their own liberty or safety. They would accept money to don a mask, or refuse; they would accept money to jeopardize their safety, or they would walk away. Such an experiment would

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*Convention*, NPR (Aug. 27, 2020, 7:22 AM), <https://www.npr.org/2020/08/27/906592669/gop-rising-star-kristi-noem-addresses-republican-convention> [perma.cc/NR5P-XXP8].

55. See *Estimates of Vaccine Hesitancy for COVID-19*, CDC, <https://data.cdc.gov/stories/s/Vaccine-Hesitancy-for-COVID-19/cnd2-a6zw> [perma.cc/G95T-C9VL].

56. Jaclyn Diaz, *Ohio Woman Wins a Million Dollars for Being Vaccinated*, NPR (May 27, 2021, 5:59 PM), <https://www.npr.org/sections/coronavirus-live-updates/2021/05/13/996445109/ohio-raises-the-stakes-to-boost-vaccinations-offers-5-1-million-drawings> [perma.cc/GU8R-56UQ].

57. HANLEY & BARBIER, *supra* note 52, at 44–70.

58. See, e.g., Catherine L. Kling, Daniel J. Phaneuf & Jinhua Zhao, *From Exxon to BP: Has Some Number Become Better Than No Number?*, J. ECON. PERSPS., Fall 2012, at 3.

have the virtue of deriving real-life, real-time, and sincere valuations. Economists typically prefer data on actual choices, or *revealed preferences*, rather than hypothetical questions, or *stated preferences*.<sup>59</sup> This experiment would have had elements of both.

Not all subjective values could be ascertained so reliably. Most contingent valuation studies require some degree of conjecture. Economists specializing in this methodology have developed techniques to closely simulate a market transaction so as to obtain sincere and accurate responses.<sup>60</sup> For example, instead of asking open-ended willingness-to-pay questions, contingent valuation studies pose yes-or-no questions about randomized dollar amounts to induce respondents to ask themselves more carefully if they would be willing to pay some stated amount. Well-executed contingent valuation surveys place subjects in a clean decision environment in which respondents choose between money and some desired, nonmonetary outcome.

Despite more than thirty years of research, it would be fair to say that much work is still left to be done with contingent valuation. But it is a thoroughly tested method, and good studies have satisfied validity tests for reliability and reproducibility.<sup>61</sup> Contingent valuation has been deployed for very important and high-valued problems, such as estimating part of the welfare cost of the Deepwater Horizon tragedy, the offshore oil explosion that killed eleven workers and spilled four million barrels of oil into the Gulf of Mexico.<sup>62</sup> Even if contingent valuation is still a work in progress, it is vital not to give in to the glib (and often uninformed) dismissals of such studies.

Contingent valuation may be imperfect, but if executed competently, it can provide estimates for a range of nonmarket goods, including values that people are unaccustomed to pricing. Nonmarket goods are in great need of valuation, not for purposes of commodification, but for purposes of comparison. Contingent valuation is the main candidate, and the main alternative for avoiding a values-based mode of discourse, which brings out the worst in public debate, incentivizing the most abhorrent demagoguery. Both mask and antimask mandates were imposed for the crudest, most demagogic political reasons. Republican and Democratic lawmakers alike were upbraided for their often-performative decisions, as well they should have been.<sup>63</sup> But they were operating in an analytical vacuum in which inputs were mostly emotional. Of course they descended into the muck.

Of all the new contributions that CBA could make to public policy, monetization of strongly held values may be the most important and would make

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59. E.g., HANLEY & BARBIER, *supra* note 52, at 44.

60. *Id.* at 44–61.

61. *Id.* at 21–23.

62. Richard C. Bishop et al., *Putting a Value on Injuries to Natural Assets: The BP Oil Spill*, 356 SCIENCE 253 (2017).

63. See, e.g., Nicholas Fandos & Jonathan Weisman, *In the Capitol, Revival of Mask Mandate Ignites Partisan Recriminations*, N.Y. TIMES (Nov. 16, 2021), <https://www.nytimes.com/2021/07/28/us/politics/congress-coronavirus-masks.html> [perma.cc/6S8E-WFD8].

the greatest difference in improving both the credibility and relevance of CBA. Imperfect monetization remains one of the most pervasive sources of doubt about the efficacy of CBA.<sup>64</sup> These doubts are especially salient in the realm of environmental regulation, in which progressives perceive environmental valuations as being too low,<sup>65</sup> while industry groups are dismissive.<sup>66</sup> Instead of running away from controversial topics, research on CBA must run toward them. Contingent valuation, as a central technique in monetizing nonmarket values, must take up a larger part of CBA research and assume a larger stage in public policy.

### III. A BROADER CASE FOR A BROADER RATIONALITY

In a politically tumultuous time in which rationality itself seems under attack, the reader might wonder what Livermore and Revesz would say in a broader context, to a broader audience, not just about economics but about any kind of analysis that is sophisticated or technical and inconvenient or embarrassing. CBA is only one of the ways in which principles of good governance are under attack—only one aspect of a broader assault on science and analysis. It is unclear how science and analytics in policy would fare in a future Republican presidency. It also might be a bit of an overintellectualization to say that welfarism and consequentialism are under deontological attack. After all, there is a great deal of misinformation when Republicans decry a “war on coal,” deny climate change, and reject health research showing the harmful effects of coal emissions. But the dominant form of Republican speech now quite clearly eschews analysis and simply asserts, repeatedly, that some values are under assault. The advantage of this strategy seems to be that repetition and values-baiting accomplish what analysis does without all the bothersome, math-heavy work. This is a marked shift in public discourse. Something must shift it back; the oxygen for this demagoguery must be limited.

In my view, *Reviving Rationality* has a broader application. Economics is a social science, and if this book can help preserve the economic practice of CBA in federal lawmaking, it can also help preserve the role of other analytic, quantifiable sciences (what are considered the “hard” sciences of biology, chemistry, physics, and their applied subfields). Of course, climate science must

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64. E.g., Matthew J. Kotchen, *Cost-Benefit Analysis*, in 1 ENCYCLOPEDIA OF CLIMATE AND WEATHER 312, 315 (Stephen H. Schneider, Terry L. Root & Michael D. Mastrandrea eds., 2d ed. 2011).

65. See, e.g., JOHN LOOMIS, NAT. RES. DEF. COUNCIL, FUZZY MATH: WILDLIFE SERVICES SHOULD IMPROVE ITS ECONOMIC ANALYSIS OF PREDATOR CONTROL (2012), <https://www.nrdc.org/sites/default/files/fuzzy-math-IP.pdf> [perma.cc/5SKS-D8DC] (“Most economic analyses of predator control done by Wildlife Services are often incomplete and sometimes incorrect because they (1) are inconsistent with economic analysis guidelines used by most federal agencies, and (2) omit the economic values to society that are lost when large numbers of predators are killed, especially in the case of wolves, a species with well documented ecological value, well documented economic value, and for which great effort at great expense was taken to recover the species.”).

66. See W. Michael Hanemann, *Valuing the Environment Through Contingent Valuation*, J. ECON. PERSPS., Fall 1994, at 19, 21–22.

count. Add to that medical research and some subfields in the public health area, including epidemiology, which have played a vital role in public health policy. I am guilty of a bit of arbitrariness in setting these boundaries, but these fields constitute the bodies of rigorous analytical research that have served as inputs to public policy. These are the fields of research that have featured most prominently in implementing welfarism as a social ordering principle.

First, a definition: while Livermore and Revesz use the term “rationality” in a narrow sense—the rigorous, good-faith application of economics to CBA—it can be usefully defined in a broader sense to connote the application of the hard sciences to policymaking.<sup>67</sup> The case for this newly defined rationality can be extended further afield, beyond CBA, and marshaled in a broader defense for welfarism and a still-broader defense of consequentialism. It is not just monetization that is under attack, but scientific and analytical input into government decisionmaking for the purpose of achieving outcomes in which society is better off.

One example pertains to the regulation of fine particulate matter, abbreviated as PM<sub>2.5</sub>. Epidemiological studies currently suggest that every year about sixty to one hundred thousand Americans die prematurely because of PM<sub>2.5</sub> air pollution.<sup>68</sup> The decades-long Harvard Six Cities Study—which has tracked the health outcomes of tens of thousands of people over decades and along variables of PM<sub>2.5</sub> pollution, income, and health—has now helped to establish a firm and quantifiable link.<sup>69</sup> This linkage between PM<sub>2.5</sub> pollution and premature deaths has been applied to CBA, showing the costliness of the sources of PM<sub>2.5</sub> pollution, most prominently coal combustion and farming.<sup>70</sup> But even without the monetization of premature deaths, this research has profound public health and economic implications. Understanding how and why air pollution is harmful is a basic public health function and a data-intensive effort. The Harvard Six Cities Study, along with a similar study carried out by the American Cancer Society, are beachheads for the epidemiological study of linkages between air pollution and adverse health outcomes. With or without CBA, this research is crucial.

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67. Still, this “rationality” is not nearly as capacious as the meaning commonly ascribed to it in constitutional and administrative law, which connotes only a loose connection between evidence and decision. For example, “rational basis” is a deferential level of scrutiny under the Equal Protection Clause. See, e.g., *City of New Orleans v. Dukes*, 427 U.S. 297, 303–06 (1976).

68. See, e.g., Andrew L. Goodkind et al., *Fine-Scale Damage Estimates of Particulate Matter Air Pollution Reveal Opportunities for Location-Specific Mitigation of Emissions*, 116 PNAS 8775 (2019) (citing *About Underlying Cause of Death, 1999–2019*, CDC, <https://wonder.cdc.gov/ucd-icd10.html> [perma.cc/E49D-G9RA]); Yuqiang Zhang et al., *Long-Term Trends in the Ambient PM<sub>2.5</sub>- and O<sub>3</sub>-Related Mortality Burdens in the United States Under Emissions Reductions from 1990 to 2010*, 18 ATMOSPHERIC CHEMISTRY & PHYSICS 15003, 15003 (2018) (estimating 58,600 deaths per year).

69. See Douglas W. Dockery et al., *An Association Between Air Pollution and Mortality in Six U.S. Cities*, 329 NEW ENG. J. MED. 1753 (1993).

70. See, e.g., Peter Tschofen, Inês L. Azevedo & Nicholas Z. Muller, *Fine Particulate Matter Damages and Value Added in the US Economy*, 116 PNAS 19857 (2019).

Congressional Republicans, many of whom depend upon political support from coal-mining communities and farmers, have sought to block the application of this research to policy, most recently under the guise of “transparency.”<sup>71</sup> Speciously seizing on the need for data anonymity, they have dubbed the studies “secret science,” as if the data had been jointly fudged by the thousands of researchers and dozens of universities involved with the research over the decades. Their stated rationale for excluding the research from rulemaking processes was that it was based on anonymized data, and anonymity precludes their ability to inspect the data for evidence of fraud.<sup>72</sup> This bogus objection ignores the fact that the study has been repeatedly peer-reviewed and its results replicated without revealing personal data.<sup>73</sup> Data of such a personal and sensitive nature *must* be anonymized, or else people would never agree to be part of a study requiring personal health information. The Trump administration picked up this failed legislative initiative and sought to implement it as EPA policy, in essence demoting PM<sub>2.5</sub> research.<sup>74</sup> A federal court unceremoniously vacated the rule, making special note of the Trump administration’s weak legal justification.<sup>75</sup>

Of course, such a line of attack only lies dormant, awaiting a less ridiculous Republican president with a more capable cadre of officials.<sup>76</sup> The assault on science and analytics as policy inputs is everywhere and continuing. Entre-

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71. See Secret Science Reform Act of 2015, H.R. 1030, 114th Cong. (2015).

72. See Puneet Kollipara, *House Approves EPA ‘Secret Science’ Bills Despite White House Veto Threat*, SCIENCE (Mar. 18, 2015, 6:45 PM), <https://doi.org/10.1126/science.aab0344> [perma.cc/D7JC-5VFB].

73. The Harvard Six Cities Study was in fact independently evaluated, under strict confidentiality conditions, by the Health Effects Institute, which is funded in part by Congress and in part by industry groups. See HEALTH EFFECTS INST., REANALYSIS OF THE HARVARD SIX CITIES STUDY AND THE AMERICAN CANCER SOCIETY STUDY OF PARTICULATE AIR POLLUTION AND MORTALITY (2000), <https://www.healtheffects.org/system/files/Reanalysis-ExecSumm.pdf> [perma.cc/5BES-GD8N]. Subsequent reanalyses by both the Harvard authors and the Health Effects Institute have found still stronger effects and greater statistical significance. D. Krewski et al., *Reanalysis of the Harvard Six Cities Study, Part I: Validation and Replication*, 17 INHALATION TOXICOLOGY 335 (2005).

74. See Strengthening Transparency in Regulatory Science, 83 Fed. Reg. 18,768 (proposed Apr. 30, 2018) (to be codified at 40 C.F.R. pt. 30).

75. *Env’t Def. Fund v. EPA*, 515 F. Supp. 3d 1135, 1151–52 (D. Mont. 2021). The Trump administration invoked the “Federal Housekeeping Statute,” which permits the EPA to set certain internal procedural rules. 5 U.S.C. § 301; see also *Chrysler Corp. v. Brown*, 441 U.S. 281, 309 (1979) (describing the statute as “simply a grant of authority to the agency to regulate its own affairs”).

76. See, e.g., Benjamin Wittes, *Malevolence Tempered by Incompetence: Trump’s Horrifying Executive Order on Refugees and Visas*, LAWFARE (Jan. 28, 2017, 10:58 PM), <https://www.lawfare-blog.com/malevolence-tempered-incompetence-trumps-horrifying-executive-order-refugees-and-visas> [perma.cc/FQ3G-R79Y].

preneurial politicians have been successful in convincing voters that rationality conflicts with their values, even when it doesn't. The social psychology literature does not provide reason for optimism.<sup>77</sup>

How are assaults of this sort to be turned back in the future?

At the end of the day, there may be no better campaign for rationality than just making the conventional case of stating the known facts and probabilities. Livermore and Revesz argue, in favor of CBA, that "the best course of action is to double-down on the Obama strategy by going even further to integrate cost-benefit analysis with a progressive regulatory agenda" (p. 5). What is true for CBA is also true, in a broader sense, for rationality in science and analytics. Making as accurate a description as possible is its own best defense against demagogic smears by biased politicians.

Describing the consequences is the best case for consequentialism. PM<sub>2.5</sub> air pollution causes some uncertain, but certainly a large, number of premature deaths. Hundreds of thousands of American lives have been saved due to restrictions on coal-fired power plants that have reduced PM<sub>2.5</sub> emissions over the past several decades.<sup>78</sup> Failure to take certain precautions against COVID-19 infections will generate infections and deaths; how many is uncertain, but the number is not small. Climate change increases the global average temperature, raising the entire distribution, and increases the risks of destructive climate events. These are the facts produced by rigorous research and analysis, which must necessarily, in a democratic society, be open to challenge and debate. And in a democracy, there are only a limited number of ways to combat misinformation of the sort that the Trump presidency has cultivated. Communication of analytical information clearly needs to be *much* more sophisticated than has been traditionally required, and research communications must embody a better understanding of how information and misinformation spread, especially through social media. That is not the focus of this Review. But no matter what the media environment, the best case for rationality must still be anchored in the rational analysis itself.

As a political matter, I can think of no discursive alternative to rationality for complex problems. A rights-based discourse, with courts as the ultimate arbiters, is as indeterminate as a values-based discourse and has contributed to the polarization of Americans.<sup>79</sup> Opposing the Republican Party could mean something like countering outrage with opposing outrage, expressing values against opposing values, or asserting rights against opposing rights. But that would only further degrade public discourse and further polarize the

77. Those working in the area of climate change are acutely sensitive to that class of difficulties. See, e.g., Dan M. Kahan, Hank Jenkins-Smith & Donald Braman, *Cultural Cognition of Scientific Consensus*, 14 J. RISK RSCH. 147 (2011) (showing high polarization despite scientific consensus).

78. Zhang et al., *supra* note 68, at 15008 tbl.1 (showing change in mortality of about 36,000 fewer deaths per year from PM<sub>2.5</sub> pollution reduction).

79. Jamal Greene laments the fixation on rights as if they were absolutes, so that courts declare winners and losers when mediative political processes should be employed. JAMAL GREENE, *HOW RIGHTS WENT WRONG: WHY OUR OBSESSION WITH RIGHTS IS TEARING AMERICA APART* (2021).

American polity. Without some attempt to move away from the indeterminacy of a values-centered discourse, there is no halting the descent of public discussion into constant, vituperative, unredressed grievance.

Some may say it is feckless to just double down on rationality and keep saying the same thing when clearly so many are stridently unwilling to listen. If the death of nearly eight hundred thousand Americans from COVID-19 is insufficient to dissuade some Republicans from continuing to rail against mask wearing and vaccination, what could possibly be said on behalf of rationality?<sup>80</sup>

It is not a lost cause to establish or maintain alternative discourses that are informed by science and analytics. Anywhere that decisions are made at least partially based on analytical information is a policy space in which such decisions, over time, will prove to be superior. Values can and *should* be expressed in public policy and law, but a polity deserves to know how much the values will cost, and even how effectively values will be served by a policy or law. It is also worth bearing in mind, lest one become despondent, that this most recent attack on rationality comes from a minority faction. It is a motivated minority, but the political opportunity to preserve rational decisionmaking still exists.

#### CONCLUSION

I personally find it doubtful that if the assault on rationality, welfarism, and consequentialism is deontological in nature, that strength of conviction is truly as great as the costs of those convictions. On some level of consciousness, even the most indoctrinated conspiracy theorists accept the fact of tradeoffs in life and society. That acceptance of tradeoffs is the entry point for a discussion about how to make those tradeoffs, and an entry point for rationality.

*Reviving Rationality* is a state-of-the-art review of and argument for CBA in federal agency decisionmaking. Livermore and Revesz tout to Democrats the progressive uses of CBA and the need to guard against possible backsliding under future Republican presidents. To a diminishing sliver of Republicans that are interested in policy analysis, Livermore and Revesz's argument is familiar: CBA is still needed to reign in rulemakings that are too expensive for what they accomplish (p. 5). For the traditional base of Republican conservatism that is still interested in economic growth as a proxy for welfare maximization, this is uncontroversial.

But the broader value of *Reviving Rationality* lies in an exposition of what is at stake. If federal agencies and other instrumentalities of American government turn their backs on analytical decisionmaking, then the Trump administration is an example of what awaits. Livermore and Revesz's scholarly decapitation of the Trump administration's agenda and execution makes clear that rejecting rationality—either in the narrow sense that Livermore and Revesz employ, or in a broader sense—represents a lurch toward a medieval society.

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80. *COVID-19 Mortality Overview*, CDC, <https://www.cdc.gov/nchs/covid19/mortality-overview.htm> [perma.cc/NTZ8-EQZZ].

To be sure, there have always been reasons to question the legitimacy of federal actions. It is impossible to get exactly right the amount of consultation with the right interest groups affected by any momentous decision, so dissatisfaction is inevitable. And the higher the stakes, the greater the dissatisfaction. What seems different now is that the losers of policy conflict are not necessarily willing to accept as legitimate the results of some previously accepted process. This is a dangerous situation. A call for rationality is a call for policy combatants to stand down a bit and agree to place some process, and some analysis, above outcomes. We should all hope that rationality is revived in the coming years.